



TESIS-KI142502

**EKSTRAKSI FITUR PRODUK DAN *BUG* POTENSIAL DARI DATA OPINI
PENGGUNA**

Divi Galih Prasetyo Putri
NRP. 5114201045

DOSEN PEMBIMBING

Daniel Oranova Siahaan, S.Kom, M.Sc, P.D.Eng
NIP. 197411232006041001

PROGRAM MAGISTER
JURUSAN TEKNIK INFORMATIKA
FAKULTAS TEKNOLOGI INFORMASI
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
SURABAYA
2016



TESIS-KI142502

**POTENTIAL PRODUCT FEATURE AND BUG EXTRACTION FROM
USER OPINION DATA**

Divi Galih Prasetyo Putri
NRP. 5114201045

SUPERVISOR

Daniel Oranova Siahaan, S.Kom, M.Sc, P.D.Eng
NIP. 197411232006041001

**MASTER PROGRAMME
INFORMATICS ENGINEERING DEPARTMENT
FACULTY OF INFORMATION TECHNOLOGY
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
SURABAYA
2016**

KATA PENGANTAR

Puji syukur kepada Allah Yang Maha Esa atas segala karunia dan rahmat-Nya penulis dapat menyelesaikan tesis yang berjudul :

“Ekstraksi Fitur Produk dan Bug Potensial dari Data Opini Pengguna”

Harapan dari penulis semoga apa yang tertulis di dalam buku ini dapat bermanfaat bagi pengembangan ilmu pengetahuan saat ini, serta dapat memberikan kontribusi yang nyata.

Dalam pelaksanaan dan pembuatan tesis ini tentunya sangat banyak bantuan yang penulis terima dari berbagai pihak, tanpa mengurangi rasa hormat penulis ingin mengucapkan terima kasih sebesar-besarnya kepada:

1. Keluarga yang selalu memberikan dukungan penuh untuk menyelesaikan tesis ini.
2. Bapak Daniel O. Siahaan selaku dosen pembimbing yang telah memberikan petunjuk selama proses pengerjaan tesis ini.
3. Bapak, Ibu dosen Jurusan Teknik Informatika ITS yang telah banyak memberikan ilmu dan bimbingan harganya bagi penulis.
4. Dadang, yanita, ira, dan isti yang telah banyak memberikan masukan dan bantuan selama penulis mengerjakan tugas akhir.
5. Teman-teman angkatan 2014 jurusan Teknik Informatika ITS atas saran, masukan, dan dukungan terhadap pengerjaan tesis ini.
6. Serta pihak-pihak lain yang tidak dapat disebutkan disini yang telah banyak membantu penulis dalam penyusunan tesis ini.

Penulis telah berusaha sebaik-baiknya dalam menyusun tugas akhir ini, namun penulis mohon maaf apabila terdapat kekurangan, kesalahan maupun kelalaian yang telah penulis lakukan. Kritik dan saran yang membangun dapat disampaikan sebagai bahan perbaikan selanjutnya.

Surabaya, Januari 2016

Divi Galih Prasetyo Putri

Tesis disusun untuk memenuhi salah satu syarat memperoleh gelar
Magister Komputer (M.Kom.)
di
Institut Teknologi Sepuluh Nopember Surabaya

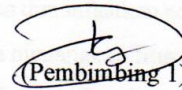
oleh:
DIVI GALIH PRASETYO PUTRI
Nrp. 5114201045

Dengan judul :
Ekstraksi Fitur Produk dan Bug Potensial dari Data Opini Pengguna

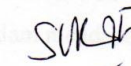
Tanggal Ujian : 13-1-2016
Periode Wisuda : 2015 Gasal

Disetujui oleh:


Daniel Oranova, S.Kom, M.Sc, PD.Eng
NIP. 197411232006041001


(Pembimbing 1)


Dr. Ir. Siti Rochimah, M.T
NIP. 196810021994032001


(Penguji 1)

Fajar Baskoro, S.Kom, M.T
NIP. 197404031999031002


(Penguji 2)

Rizky Januar Akbar, S.Kom, M.Eng
NIP. 198701032014041001


(Penguji 3)


Direktur Program Pasca Sarjana,

Prof. If. Djuhar Manfaat, M.Sc., Ph.D.
PROGRAM PASCASARJANA 196012021987011001

Ekstraksi Fitur Produk dan *Bug* Potensial dari Data Opini Pengguna

Nama Mahasiswa : Divi Galih Prasetyo Putri

NRP : 5114201045

Pembimbing : Daniel Oranova Siahaan, S.Kom, M.Sc, P.D.Eng

ABSTRAK

Proses evolusi dan pemeliharaan ini dikenal sebagai proses yang memiliki biaya dan waktu tinggi. Maka dari itu sangat penting untuk dapat mengidentifikasi masalah yang ada pada perangkat lunak guna meningkatkan efektifitas dan efisiensi proses. Salah satu sumber yang dapat dimanfaatkan adalah data opini pengguna. Timbal balik yang diberikan oleh pengguna ini merepresentasikan keinginan pengguna dan dapat digunakan untuk membantu mengarahkan alokasi usaha pengembangan dan pemeliharaan perangkat lunak serta meningkatkan kualitas produk. Metode terbaru yang bisa dimanfaatkan adalah metode *collocation finding*. Akan tetapi, metode ini belum mampu menangkap fitur-fitur yang jarang disebutkan seperti pada opini pengguna yang termasuk saran fitur baru.

Peningkatan dilakukan dengan memanfaatkan aturan bahasa dalam mendapatkan fitur yang jarang disebutkan. Penelitian menganalisa pola linguistik yang umumnya terdapat pada data opini untuk mendapatkan aturan ekstraksi fitur. Selain itu juga ditambahkan proses pruning untuk menghilangkan hasil ekstraksi yang kurang relevan.

Data yang digunakan merupakan data opini dari *Application distribution platform* atau *app store*. Hasil pengujian menunjukkan bahwa metode ini mampu meningkatkan nilai presisi dan *recall* dari metode *collocation*. Dengan pendekatan tersebut diharapkan rekomendasi yang dihasilkan dapat memberikan informasi yang lebih lengkap pada pengembang perangkat lunak.

Kata kunci: *Product Feature, Product Feature Mining, Opinion Mining*

Potential Product Feature and Bug Extraction from User Opinion

Data

Student Name : Divi Galih Prasetyo Putri
NRP : 5114201045
Advisor : Daniel Oranova Siahaan, S.Kom, M.Sc, P.D.Eng

ABSTRACT

Evolution and maintenance process are known by the huge cost and slow implementation. It is important for developers to determine what features that should be improved and new features that should be built. For this purpose, developer can utilize user opinion data. Opinion provided by user represents user requirement and can be used to direct the allocation of development and maintenance effort as well as improving the quality of software. One of the most recent method that can be used is collocation finding. However, this method is not able to capture the features that are rarely mentioned as in the new feature suggestions.

We built a model to improve the quality of product features extraction by utilizing the dependency rules. We analyzed common linguistic pattern of opinion data to construct the extraction rule. Beside that, we also perform pruning process to eliminate irrelevant result from the extraction process.

We use data review from application distribution platform or app store. The result shows that the proposed method is better in *recall* and precision compared to collocation method itself. This approach is expected to provide more information for the developer.

Keywords: *Product Feature, Product Feature Mining, Opinion Mining.*

DAFTAR ISI

LEMBAR PENGESAHAN BUKU TESIS.....	v
ABSTRAK.....	vii
ABSTRACT.....	ix
KATA PENGANTAR.....	xi
DAFTAR ISI.....	xiii
DAFTAR GAMBAR.....	xv
DAFTAR TABEL.....	xvii
BAB 1 PENDAHULUAN.....	1
1.1 Latar Belakang.....	1
1.2 Perumusan Masalah.....	3
1.3 Tujuan.....	3
1.4 Manfaat.....	4
1.5 Kontribusi Penelitian.....	4
1.6 Batasan Masalah.....	4
BAB 2 KAJIAN PUSTAKA.....	5
2.1 Product Feature Extraction.....	5
2.2 Natural Language Processing.....	5
2.3 Collocation Finding.....	5
2.4 Stanford Dependency.....	7
2.5 Apple App Store.....	7
2.6 Hierarchical Agglomerative Clustering.....	8
2.7 Wu-Palmer Similarity.....	9
2.8 Presisi dan <i>Recall</i>	9
2.9 Timeline Penelitian Ekstraksi Fitur.....	10
BAB 3 METODOLOGI PENELITIAN.....	11
3.1 Studi Literatur.....	11
3.2 Pembangunan Model Rekomendasi.....	12
3.2.1 Ekstraksi Fitur.....	13
3.2.2 Klasifikasi Jenis Opini.....	16

3.2.3	Ekstraksi <i>Infrequent Feature</i>	16
3.2.4	Pruning Fitur	21
3.2.5	Pengelompokan Fitur	22
3.2.6	Hasil Rekomendasi.....	23
3.3	Skenario Pengujian.....	23
BAB 4 HASIL PENELITIAN DAN PEMBAHASAN		25
4.1	Pengujian Metode Ekstraksi Fitur	25
4.1.1	Pengujian Metode 1.....	26
4.1.2	Pengujian Metode 2.....	26
4.2	Pengujian Proses Pengelompokan Fitur	29
BAB 5 KESIMPULAN DAN SARAN.....		31
5.1	Kesimpulan.....	31
5.2	Saran.....	31
DAFTAR PUSTAKA		33
LAMPIRAN A. TRUTH SET.....		35
LAMPIRAN B. HASIL PENGELOMPOKAN.....		133

DAFTAR GAMBAR

GAMBAR 2.1 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “I CANNOT REGISTER”.....	7
GAMBAR 2.2 ALGORITMA HAC	8
GAMBAR 3.1 ALUR METODOLOGI PENELITIAN	11
GAMBAR 3.2. ALUR SISTEM PEMBENTUKAN REKOMENDASI.....	13
GAMBAR 3.3 ALUR PROSES EKSTRAKSI FITUR.....	13
GAMBAR 3.4 METODE PEMBENTUKAN ATURAN	17
GAMBAR 3.5 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “I NEED REGISTER BUTTON”	18
GAMBAR 3.6 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “I CAN’T REGISTER”.....	19
GAMBAR 3.7 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “VIDEO SHOULD BE ADDED	19
GAMBAR 3.8 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “CAN’T CREATE ACCOUNT EITHER”	19
GAMBAR 3.9 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “CAN’T REGISTER”.....	20
GAMBAR 3.10 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “NO WAY TO REGISTER”.....	20
GAMBAR 3.11 REPRESENTASI STANFORD DEPENDENCY UNTUK KALIMAT “THERE IS NO TIMELINE”.....	21
GAMBAR 3.12 SISTEM PENGUJIAN	24

DAFTAR TABEL

TABEL 2.1 TIMELINE PENELITIAN EKSTRAKSI FITUR PADA OPINI PENGGUNA.....	10
TABEL 3.1 CONTOH OPINI.....	15
TABEL 3.2 HASIL <i>PREPROCESSING</i>	15
TABEL 3.3 HASIL PROSES PENCARIAN <i>COLLOCATION</i>	16
TABEL 3.4 POLA LINGUISTIK	17
TABEL 3.5 HASIL PERHITUNGAN KESAMAAN ANTARA FITUR “MESSAGE NOTIFICATION” DAN “CHAT NOTIFICATION”	23
TABEL 3.6 HASIL PERHITUNGAN KESAMAAN ANTARA FITUR “MESSAGE NOTIFICATION” DAN “GROUP CHAT”	23
TABEL 4.1 HASIL PENGUJIAN METODE 1	26
TABEL 4.2 HASIL PENGUJIAN EKSTRAKSI FITUR	27
TABEL 4.3 RATA-RATA NILAI SILHOUETTE INDEX.....	30

BAB 1

PENDAHULUAN

1.1 Latar Belakang

Proses evolusi dan pemeliharaan perangkat lunak merupakan sebuah proses yang tidak bisa dipisahkan dari daur hidup perangkat lunak. Dalam penggunaan perangkat lunak, dimungkinkan munculnya kesalahan-kesalahan atau yang biasa disebut *bug*. Bahkan untuk aplikasi yang sudah stabil, proses evolusi dan pemeliharaan tidak bisa dihindari karena munculnya permintaan pengguna untuk mengembangkan dan mengubah fitur dalam aplikasi (Benneth & Rajlich, 2000). IEEE Standart 1219 mendefinisikan pemeliharaan perangkat lunak sebagai modifikasi sebuah perangkat lunak setelah *delivery* untuk mengoreksi kesalahan, meningkatkan performa atau atribut lain, atau untuk beradaptasi dengan lingkungan baru.

Akan tetapi, proses evolusi dan pemeliharaan ini dikenal sebagai proses yang memiliki biaya dan waktu tinggi. Survey menunjukkan bahwa 75% usaha yang dilakukan pada saat pemeliharaan berfokus pada jenis *adaptive* dan *perfective* sedangkan sisanya digunakan untuk memperbaiki kesalahan dalam perangkat lunak atau biasa disebut *corrective*. *Perfective maintenance* merupakan jenis pemeliharaan yang mengatasi adanya permintaan baru dari pengguna. Maka dari itu sangat penting untuk dapat mengidentifikasi masalah yang ada pada perangkat lunak guna meningkatkan efektifitas dan efisiensi proses.

Penelitian sebelumnya menunjukkan bahwa *review* yang terdapat pada *application distribution platform* atau *app store* dapat digunakan oleh *analyst* dan *designer* sistem untuk menggali informasi yang berguna seperti *user requirement*, *bug report*, *feature request*, dan dokumentasi dari pengalaman user menggunakan fitur tertentu pada aplikasi (Maleej & Nabil, 2015). Pengguna dapat memberikan opininya mengenai sebuah aplikasi melalui layanan *review*. Pengguna menuliskan fitur perangkat lunak yang diinginkan, komentar akan aplikasi, maupun kepuasan atau ketidakpuasan terhadap fitur dalam aplikasi. Timbal balik yang diberikan oleh pengguna ini merepresentasikan keinginan pengguna dan dapat digunakan untuk membantu mengarahkan alokasi usaha pengembangan dan pemeliharaan perangkat lunak serta meningkatkan kualitas produk.

Namun, banyaknya review yang terdapat pada *app store* mengakibatkan sulitnya melakukan analisa terhadap review. Penelitian menunjukkan bahwa pengguna iOS memasukkan rata-rata 22 review setiap hari untuk setiap aplikasi. Aplikasi yang memiliki banyak pengguna seperti facebook menerima 4000 review setiap harinya. Masalah lainnya adalah jenis review yang beragam. Review yang diberikan pengguna dapat berisi saran yang mendukung, ide inovatif, bahkan komen yang buruk. Struktur kalimat yang terdapat dalam review juga cenderung tidak formal. Beberapa *app store* yang ada seperti Google Play, Apple Playstore, dan Windows Phone menyimpan lebih dari 3 juta aplikasi. Pengguna dapat memanfaatkan *app store* untuk mencari, memperoleh informasi, mengunduh, dan melakukan instalasi dengan mudah terutama untuk aplikasi yang berjalan pada perangkat *mobile*.

Oleh karena itu, dibutuhkan sebuah metode yang dapat menganalisa review dari pengguna dalam jumlah besar secara otomatis, mengekstraksi fitur-fitur perangkat lunak yang disebutkan didalamnya, dan mengklasifikasikan review berdasarkan tipenya. Proses-proses ini biasa digunakan dalam proses *opinion mining* atau *sentiment analysis*. Banyak penelitian telah melakukan analisa dokumen yang berisi opini terhadap suatu produk untuk mengekstraksi fitur (Guzman & Maleej, 2014) (Hu & Gong, 2010) maupun sentimen dari sebuah review (Pang & Lee, 2008) (Bing & Zhang, 2012). Salah satu penelitian terdahulu menggunakan metode *double propagation* yang memanfaatkan kata-kata opini dan fitur awal untuk dapat mengekstraksi fitur-fitur perangkat lunak lainnya (Qiu, Bing, Bu, & Chen, 2009). Metode ini pada umumnya mengekstrak fitur yang tergolong kata benda dan bagus digunakan pada data yang berukuran sedang. Namun, pada data yang besar dapat memunculkan noise dan dapat melewatkan fitur-fitur pada data yang kecil. Beberapa penelitian lain memanfaatkan relasi dalam kalimat atau struktur kalimat untuk dapat mengekstraksi fitur.

Salah satu penelitian terbaru menggunakan algoritma *collocation* untuk mendapatkan kandidat fitur dari review produk (Guzman & Maleej, 2014). Dari kandidat-kandidat fitur tersebut, diambil kandidat yang memiliki frekuensi kemunculan paling tinggi (*frequent feature*). Kekurangan penelitian tersebut adalah tidak dapat mendeteksi fitur-fitur yang tidak banyak disebutkan dalam review (*infrequent feature*). Sebagai pengembangan dari analisa sentimen, dokumen review juga dapat diklasifikasikan dalam beberapa tipe diantaranya *bug report* dan *future feature*. Penelitian menunjukkan bahwa

metode Naive bayes mampu mengklasifikasikan review lebih baik dibandingkan metode decision tree dan maximum entropy (Maleej & Nabil, 2015). Hasil klasifikasi opini dapat lebih membantu pengembang untuk menganalisa kebutuhan perawatan dan pengembangan aplikasi.

Pada penelitian ini diusulkan sebuah kerangka kerja untuk membantu *analyst* dan *designer* sistem dalam menggali informasi untuk membantu proses pemeliharaan perangkat lunak dengan memanfaatkan informasi yang dapat diperoleh dari *app store*. Penelitian ini berusaha untuk membuat rekomendasi yang lengkap berisi fitur dan keterangan mengenai fitur tersebut. Keterangan berisi informasi apakah fitur tersebut pernah dilaporkan mengandung *bug* atau merupakan permintaan fitur baru dari pengguna. Aplikasi yang dianalisa adalah beberapa aplikasi yang tergolong dalam beberapa domain. Proses yang akan dilakukan dalam kerangka kerja ini antara lain ekstraksi *frequent* dan *infrequent feature* dari informasi pada *app store*, penggolongan jenis review, dan pengelompokan fitur. Proses ekstraksi *frequent* fitur akan memanfaatkan metode *collocation*. Penggolongan jenis fitur memanfaatkan metode naive bayes yang telah terbukti mampu menunjukkan hasil yang maksimal. Dengan kerangka kerja tersebut diharapkan dapat menghasilkan rekomendasi fitur yang lebih akurat dan informatif.

1.2 Perumusan Masalah

Rumusan masalah yang diangkat dalam penelitian ini adalah:

1. Bagaimana mengekstraksi permintaan fitur baru dan yang berpotensi *bug* pada sebuah aplikasi secara presisi dan akurat dari informasi yang bisa didapatkan pada *app store*?
2. Bagaimana menganalisa review yang diberikan pengguna untuk meningkatkan rekomendasi pada pengembang aplikasi?

1.3 Tujuan

Tujuan yang akan dicapai dalam pembuatan tesis ini adalah membangun sebuah rekomendasi fitur memanfaatkan ekstraksi fitur yang berpotensi *bug* dan fitur baru dari data opini pengguna yang dapat digunakan pengembang perangkat lunak untuk membantu proses pengembangan versi baru dari perangkat lunak. Kerangka kerja yang dibangun memanfaatkan analisa informasi yang didapatkan dari *app store*.

1.4 Manfaat

Manfaat dari penelitian ini adalah untuk meningkatkan metode *collocation* dalam melakukan proses ekstraksi fitur produk. Daftar fitur yang dihasilkan dan dikelompokkan serta diklasifikasi jenisnya dapat menjadi pertimbangan bagi pengembang perangkat lunak dalam mengalokasikan usaha pengembangan dan pemeliharaan perangkat lunak.

1.5 Kontribusi Penelitian

Kontribusi yang diharapkan dari penelitian ini adalah penyusunan rekomendasi untuk membantu pengembang perangkat lunak dalam melakukan pengembangan versi baru sebuah perangkat lunak dengan memanfaatkan informasi dari aplikasi-aplikasi dalam domain yang sama.

Dalam melakukan analisa digunakan informasi aplikasi yang terdapat pada *app store*. Proses ekstraksi fitur memanfaatkan algoritma *collocation*. Fitur-fitur yang diekstraksi akan dilengkapi dari informasi yang dapat diperoleh dari review terutama review mengenai *bug report* dan *future feature* atau saran fitur.

Seperti yang telah diterangkan pada Sub bab 1.1 algoritma *collocation* memiliki kekurangan berhubungan dengan fitur yang jarang disebutkan dalam review. Padahal pada kenyataannya, fitur yang tergolong pada saran fitur cenderung jarang disebutkan pada review. Oleh karena itu, penelitian ini mengusulkan untuk menambahkan proses identifikasi fitur yang dikhususkan pada review yang tergolong dalam kelompok *infrequent feature*. Sehingga, diharapkan hasil dari analisa dapat memberikan informasi yang lebih lengkap kepada pengembang perangkat lunak.

1.6 Batasan Masalah

Batasan masalah pada penelitian ini adalah:

1. Data opini dari aplikasi-aplikasi yang dianalisa disusun menggunakan bahasa inggris.
2. Data opini dari aplikasi-aplikasi didapatkan dari *app store*.
3. Part of Speech Tagger yang digunakan adalah *tagger* dari Stanford.

BAB 2

KAJIAN PUSTAKA

2.1 Product Feature Extraction

Product feature extraction merupakan proses yang penting dalam *opinion mining* atau *sentiment analysis*. Proses ini secara signifikan mempengaruhi performa dari identifikasi opini serta efektifitas dari perangkuman opini (Wei & Chen, 2010). Dari proses ini diperoleh fitur produk yang dibahas oleh pengguna. Ekstraksi fitur produk dari opini pengguna telah banyak diteliti sebelumnya. Metode-metode yang ada dapat dibagi menjadi dua kelompok, *supervised* dan *unsupervised*. Metode *supervised* menggunakan data opini yang telah dianotasi sebelumnya sebagai data training. Meskipun metode ini dapat menghasilkan keluaran yang baik, butuh waktu yang banyak untuk menyiapkan data pelatihannya. Selain itu, keefektifan metode *supervised* sangat tergantung pada kualitas data latihnya. Sebaliknya pada metode *unsupervised* tidak dibutuhkan data latih untuk melakukan ekstraksi fitur. Metode ini banyak memanfaatkan pola atau susunan bahasa pada dokumen (Iacob & Harrison, 2013).

2.2 Natural Language Processing

Data opini yang digunakan dalam penelitian ini ditulis dengan menggunakan *natural language* atau bahasa sehari-hari. Oleh karena itu digunakan *Natural language Processing* (NLP) dalam mengolah data. Proses dalam NLP yang digunakan dalam penelitian ini salah satunya adalah POS Tagging. Sering juga disebut *grammatical tagging* atau *word category disambiguation* merupakan proses penandaan kata pada suatu teks atau *corpus* dalam kaitannya dengan suatu kelas kata tertentu berdasarkan definisi dan maknanya. POS Tagging dapat memberikan berbagai informasi tentang kelas kata dari suatu kata dan kata lainnya yang di sekitar kata tersebut. Tujuan dari POS Tagging ini sendiri untuk menentukan imbuhan apa saja yang mungkin ditambahkan atau juga menentukan kata apa saja yang biasa muncul di sekitar suatu kata.

2.3 Collocation Finding

Collocation merupakan ungkapan yang terdiri dari 2 atau lebih kata yang digunakan untuk mengungkapkan sesuatu (Manning & Schutze, 1999). *Collocation* bisa

terdiri dari pasangan kata benda seperti *strong tea*, frase kata kerja seperti *to make up*, atau frase kata lain seperti *the rich and powerful*. Hal ini sangat banyak digunakan dalam berbagai macam aplikasi yaitu *natural language generation, parsing, computational lexicography*, dan lain-lain. Proses untuk mendapatkan pasangan kata ini sering disebut sebagai *collocation finding*. Pasangan kata yang terdiri dari dua kata disebut sebagai *-bigram*. *Collocation* tidak selalu berasal dari kata yang berdampingan dalam kalimat, pasangan kata juga dapat dipisahkan oleh beberapa kata lain (Guzman & Maleej, 2014). Metode yang paling mudah untuk dilakukan adalah menggunakan perhitungan kemunculan pasangan kata. Metode ini sangat cocok digunakan untuk menemukan frase kata yang sudah pasti berdampingan. Akan tetapi, metode ini kurang cocok untuk menemukan pasangan kata yang tidak berdampingan secara langsung atau dipisahkan oleh kata lain. Metode lain yang dapat digunakan adalah perhitungan mean dan variance serta *hypothesis testing*.

Penelitian ini memanfaatkan *hypothesis testing* karena nilai frekuensi yang tinggi dan *variance* yang rendah dapat merupakan sebuah ketidaksengajaan. Frekuensi yang tinggi mungkin saja terjadi karena kedua kata tersebut banyak muncul secara bersamaan. Digunakan perhitungan statistik untuk mengetahui apakah pasangan kata yang sering muncul adalah *collocation*. Perhitungan yang digunakan adalah *likelihood ratio* (Manning & Schutze, 1999).

$$\begin{aligned}
 p &= \frac{C_2}{N} \\
 p_1 &= \frac{C_{12}}{C_1} \\
 p_2 &= \frac{C_2 - C_{12}}{N - C_1}
 \end{aligned} \tag{2.1}$$

$$LH_1 = b(C_{12}; C_1, p)b(C_2 - C_{12}; N - C_1, p)$$

$$LH_2 = b(C_{12}; C_1, p_1)b(C_2 - C_{12}; N - C_1, p_2)$$

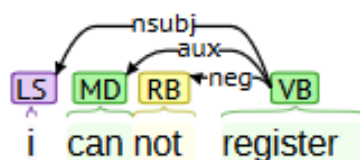
$$\log \lambda = \log \frac{LH_1}{LH_2}$$

Persamaan (2.1) merupakan langkah-langkah perhitungan nilai likelihood ratio λ . C_1, C_2, C_{12} adalah frekuensi kemunculan kata pertama, kata kedua, dan kemunculan keduanya bersamaan dalam data teks. N adalah jumlah kata. Likelihood ratio dihitung dari

dua hipotesis LH_1 dan LH_2 . Hipotesis pertama menunjukkan dimana kata kedua tidak bergantung pada kata pertama dan sebaliknya untuk hipotesis kedua. Untuk menghitung nilai hipotesis digunakan perhitungan distribusi binomial.

2.4 Stanford Dependency

Stanford dependency memberikan representasi grammar antar kata dalam sebuah kalimat yang dapat dengan mudah dipahami tanpa membutuhkan bantuan dari ahli ketika seseorang ingin mengetahui relasi yang ada dalam kalimat (Marneffe & Manning, 2008). Terdapat 50 jenis dependency yang telah direpresentasikan. Dependency antar kata digambarkan dalam bentuk relasi biner yaitu relasi antara *governor* atau juga biasa disebut sebagai *regent* atau *head* dengan sebuah *dependent*. Sebagai contoh terdapat kalimat “i cannot register” maka representasi *dependency*-nya seperti pada Gambar 2.1.



Gambar 2.1 Representasi Stanford Dependency untuk kalimat “i cannot register”

2.5 Apple App Store

Apple App Store adalah platform distribusi aplikasi untuk iOS yang dikembangkan dan dikelola Apple Inc. Layanan ini memungkinkan pengguna menjelajah dan mengunduh aplikasi yang dikembangkan dengan Apple iOS SDK. Aplikasi dapat diunduh langsung ke sebuah perangkat iOS atau komputer pribadi (Macintosh atau PC) melalui iTunes. Aplikasi di App Store umumnya ditargetkan untuk perangkat iOS seperti iPhone dan iPad dan dapat memanfaatkan fitur-fitur khusus pada perangkat seperti sensor gerak untuk kontrol permainan dan kamera untuk panggilan video daring. Aplikasi dapat diunduh gratis atau dengan harga yang ditetapkan. Selain itu bisa juga menggunakan cara monetisasi dalam aplikasi seperti iklan atau pembelian item. Apple mengambil 30 persen keuntungan yang didapat melalui aplikasi dan 70 persen sisanya dikembalikan ke produsen aplikasi (2015).

Saat ini sudah ada lebih dari 1,4 juta aplikasi yang tersedia di App Store dan lebih dari 100 milyar jumlah unduhan dari pengguna (Perez, 2015) dengan rata-rata unduhan per aplikasi mencapai 62.500. Selain dapat mengunduh aplikasi, pengguna juga dapat

memberikan review, kritik, maupun saran mengenai suatu aplikasi pada App Store. Sehingga App Store dapat menjadi media komunikasi antara pihak pengembang aplikasi dengan pengguna aplikasi. Dalam upaya untuk menjaga kualitas aplikasi yang ada pada App Store, pihak Apple Inc. memberlakukan proses approval yang cukup ketat. Proses approval ini terdiri dari serangkaian proses testing pada aplikasi yang akan dimasukan Store. Sejak tahun 2013, Apple memberlakukan static analysis dalam melakukan proses review aplikasi yang menyebabkan kebanyakan aplikasi yang menggunakan teknik dynamic code reassembly gagal lolos pada proses ini (Nathan, 2015).

2.6 Hierarchical Agglomerative Clustering

Hierarchical agglomerative clustering (HAC) biasa diimplementasikan pada pengelompokan teks. Gambar 2.2 menunjukkan *pseudocode* dari algoritma ini. Proses dimulai dengan tiap teks sebagai satu kelompok terpisah kemudian secara bertahap digabungkan sesuai dengan nilai kesamaan antar teks yang digunakan. Metode pengelompokan ini menerima masukan berupa nilai kesamaan antar object dan menghasilkan keluaran berupa *binary tree* atau yang biasa disebut *dendogram*. Pada dasarnya proses pengelompokan dihentikan ketika semua data telah dikelompokkan dalam satu kelompok seperti pada baris ke-7 dalam *pseudocode*. Akan tetapi, dalam penelitian ini digunakan nilai batas untuk menentukan jumlah kelompok yang dipilih. Dalam penelitian ini, nilai semantik antar fitur digunakan untuk melakukan pengelompokan. Perhitungan semantik dilakukan dengan bantuan WordNet.

Algorithm 1 Hierarchical Agglomerative Clustering *Note: written for clarity, not efficiency.*

```

1: Input: Data vectors  $\{x_n\}_{n=1}^N$ , group-wise distance  $\text{DIST}(\mathcal{G}, \mathcal{G}')$ 
2:  $\mathcal{A} \leftarrow \emptyset$  ▷ Active set starts out empty.
3: for  $n \leftarrow 1 \dots N$  do ▷ Loop over the data.
4:    $\mathcal{A} \leftarrow \mathcal{A} \cup \{\{x_n\}\}$  ▷ Add each datum as its own cluster.
5: end for
6:  $\mathcal{T} \leftarrow \mathcal{A}$  ▷ Store the tree as a sequence of merges. In practice, pointers.
7: while  $|\mathcal{A}| > 1$  do ▷ Loop until the active set only has one item.
8:    $\mathcal{G}_1^*, \mathcal{G}_2^* \leftarrow \arg \min_{\mathcal{G}_1, \mathcal{G}_2 \in \mathcal{A}; \mathcal{G}_1, \mathcal{G}_2 \in \mathcal{A}} \text{DIST}(\mathcal{G}_1, \mathcal{G}_2)$  ▷ Choose pair in  $\mathcal{A}$  with best distance.
9:    $\mathcal{A} \leftarrow (\mathcal{A} \setminus \{\mathcal{G}_1^*\}) \setminus \{\mathcal{G}_2^*\}$  ▷ Remove each from active set.
10:   $\mathcal{A} \leftarrow \mathcal{A} \cup \{\mathcal{G}_1^* \cup \mathcal{G}_2^*\}$  ▷ Add union to active set.
11:   $\mathcal{T} \leftarrow \mathcal{T} \cup \{\mathcal{G}_1^* \cup \mathcal{G}_2^*\}$  ▷ Add union to tree.
12: end while
13: Return: Tree  $\mathcal{T}$ .
```

Gambar 2.2 Algoritma HAC

2.7 Wu-Palmer Similarity

Tidak seperti Resnik atau Jnc yang memanfaatkan *information-content*, metode ini memanfaatkan *path length*. Metode ini memanfaatkan *Lowest Common Subsume* (LCS) untuk mendapatkan nilainya. LCS merepresentasikan node terendah yang menghubungkan kedua kata. *Length* adalah jumlah *node* antar 2 konsep. Persamaan 2.2 adalah perhitungan nilai kesamaan *Wu-Palmer*.

$$Sim_{wup} = \max \left[\frac{2 \times \text{depth}(LCS(a, b))}{\text{length}(a, b) + 2 \times \text{depth}(LCS(a, b))} \right] \quad (2.2)$$

2.8 Presisi dan Recall

Untuk menghitung tingkat performansi suatu sistem yang memiliki kemampuan untuk me-*retrieve* informasi-informasi tertentu dapat digunakan perhitungan presisi dan *recall*. Presisi adalah probabilitas informasi yang relevan dari semua informasi yang di-*retrieve* sistem. Dilakukan dengan membandingkan nilai *true positive* dan jumlah antara nilai *true positive* dan *false positive*. Sebagai contoh dari hasil dari proses *retrieval* menghasilkan 5 nilai yang positif dan dideteksi positif serta 3 nilai negatif yang dideteksi positif. Maka nilai presisi dari kasus ini adalah $\frac{5}{8}$ atau 0,625. Secara matematis, rumus untuk menghitung presisi dan *recall* dapat dilihat pada Persamaan (2.3) dan Persamaan (2.4).

$$precision = \frac{\text{relevant items retrieved}}{\text{retrieved items}} \quad (2.3)$$

Recall adalah probabilitas informasi relevan yang di-*retrieve* dibandingkan jumlah informasi-informasi yang relevan. Secara matematis *recall* dituliskan sebagai:

$$recall = \frac{\text{relevant items retrieved}}{\text{relevant items}} \quad (2.4)$$

Recall merupakan ukuran sensitivitas suatu *information retriever* dalam menemukan informasi-informasi yang sebenarnya relevan dengan permintaan (Raghavan, Manning, & Schutze, 2008). Sebagai contoh dari hasil dari proses *retrieval* menghasilkan 3 nilai yang positif dan dideteksi positif serta 5 nilai positif yang tidak dapat dideteksi positif. Maka nilai *recall* dari kasus ini adalah $\frac{3}{8}$ atau 0,375.

2.9 Timeline Penelitian Ekstraksi Fitur

Banyak penelitian telah dilakukan sehubungan dengan ekstraksi fitur dari dokumen opinin pengguna. Tabel 2.1 menunjukkan beberapa penelitian terbaru mengenai ekstraksi fitur.

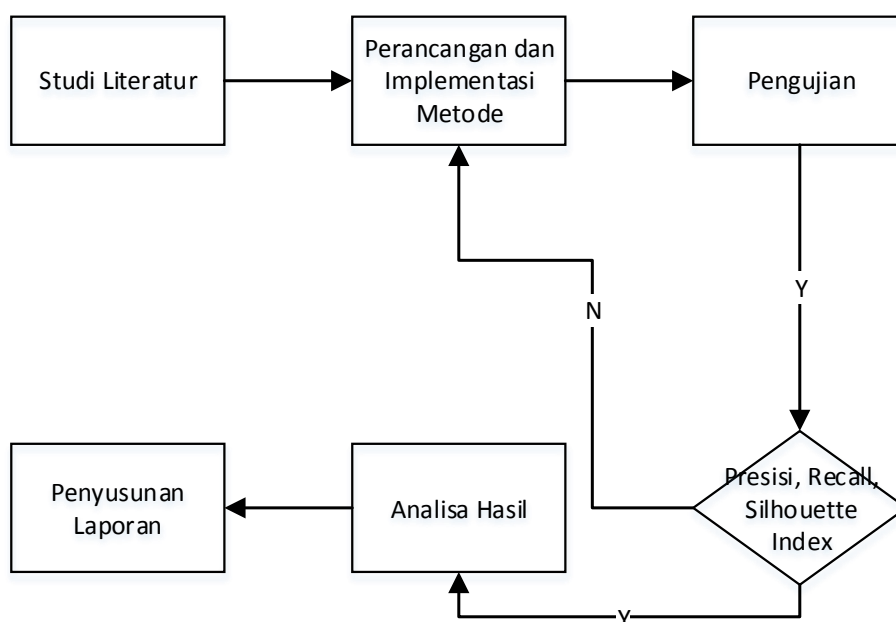
Tabel 2.1 Timeline penelitian ekstraksi fitur pada opini pengguna

Judul	Extracting and Ranking Product Features in Opinion Document	Mining Product Features from Online Reviews	Retrieving and Analyzing Mobile Apps Feature from Online Reviews	How Do Users Like This Feature A Fine Grained Sentiment Analysis of App Reviews
Tahun	2010	2010	2013	2014
Metode	Menggunakan algoritma double propagation yang dikembangkan.	Menggunakan kata opini untuk mengekstraksi fitur yang dijelaskan oleh kata opini tersebut.	Menggunakan linguistic rule untuk mengekstraksi permintaan fitur baru.	Menggunakan collocation finding untuk mengekstraksi fitur.
Data Uji	Opini pengguna 4 produk non-software dari perusahaan.	Opini pengguna 5 produk elektronik dari amazon dan C-Net	Opini pengguna pada app store	Opini pengguna pada app store
Hasil	Rata-rata nilai presisi = 0.72 dan <i>recall</i> = 0.54	Rata-rata nilai presisi = 0.79 dan <i>recall</i> = 0.90	Rata-rata nilai presisi = 0.85 dan <i>recall</i> = 0.87	Rata-rata nilai presisi = 0.6 dan <i>recall</i> = 0.5
Kelebihan	Dapat menghitung relevansi dari fitur yang diekstraksi.	Dapat mendeteksi fitur-fitur yang implisit pada kalimat.	Tidak membutuhkan data yang banyak untuk dapat mengekstraksi fitur.	Tidak bergantung pada struktur kalimat.
Kekurangan	Membutuhkan seed fitur dan kata opini untuk dapat mengekstraksi fitur.	Sangat tergantung pada kata opini yang menjelaskan fitur. Data review 3-4x lebih panjang dari data review pada app store.	Hanya dapat digunakan untuk mengekstraksi fitur pada opini yang tergolong permintaan fitur baru, sangat tergantung pada aturan yang ditetapkan.	Belum dapat mengekstraksi fitur-fitur yang jarang disebutkan.

BAB 3

METODOLOGI PENELITIAN

Bab ini akan memaparkan tentang metodologi penelitian yang digunakan pada penelitian ini, yang terdiri dari (1) studi literatur, (2) pembangunan model, (3) analisis pengujian, dan (4) dokumentasi sistem dan jadwal kegiatan. Ilustrasi alur metodologi penelitian dapat dilihat pada Gambar 3.1.



Gambar 3.1 Alur metodologi penelitian

Penjelasan dari tahapan metode penelitian pada Gambar 3.1 akan diterangkan secara terperinci pada sub bab 3.1.

3.1 Studi Literatur

Penelitian diawali dengan proses pengkajian yang berkaitan dengan topik penelitian yang diambil. Pada penelitian ini, referensi yang digunakan adalah jurnal-jurnal yang berkaitan dengan penggalan fitur produk, pengolahan opini pengguna, algoritma *collocation*, klasifikasi jenis opini. Dari studi literatur yang telah dilakukan maka diperoleh informasi yang berkaitan dengan penelitian yang dilakukan ini, seperti berikut:

- 1 Saat ini *application distribution platform* merupakan sumber yang sangat penting bagi pengembang untuk mengumpulkan informasi mengenai aplikasi.

- 2 Review atau opini dari pengguna merupakan salah satu informasi penting dimana pengembang dapat memperoleh banyak masukan untuk mengembangkan aplikasi.
- 3 Proses ekstraksi fitur produk atau *feature mining* dari data opini pengguna merupakan proses yang sulit dilakukan dikarenakan struktur kalimat yang tidak baku dan jumlah opini yang sangat banyak.
- 4 Dari data opini juga dapat diperoleh informasi mengenai adanya *bug* atau permintaan fitur baru oleh pengguna.
- 5 Collocation finding dengan memanfaatkan perhitungan likelihood ratio merupakan salah satu algoritma yang bisa digunakan untuk mengekstraksi fitur, akan tetapi algoritma ini belum dapat menangani fitur-fitur yang jarang disebutkan dalam opini seperti pada data opini yang tergolong permintaan fitur baru.
- 6 Metode lain yang dapat digunakan untuk menganalisa data opini adalah dengan memanfaatkan aturan bahasa atau dengan memanfaatkan relasi antar kata dalam kalimat.

Dari studi literatur, dapat disimpulkan juga mengenai kondisi saat ini bahwa:

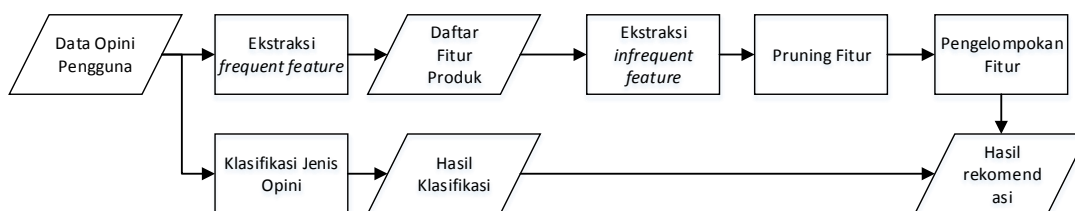
- Sebagai rekomendasi bagi pengembang perangkat lunak, data opini pengguna dapat digunakan untuk menggali informasi mengenai fitur apa saja yang dilaporkan mengandung *bug* dan fitur apa saja yang diinginkan oleh pengguna.
- Dalam melakukan ekstraksi fitur menggunakan *collocation finding*, perlu ditambahkan proses untuk menggali fitur yang frekuensi kemunculannya rendah dalam data opini.

Kedua hasil observasi diatas yang akan dijadikan kontribusi utama dalam penelitian kali ini.

3.2 Pembangunan Model Rekomendasi

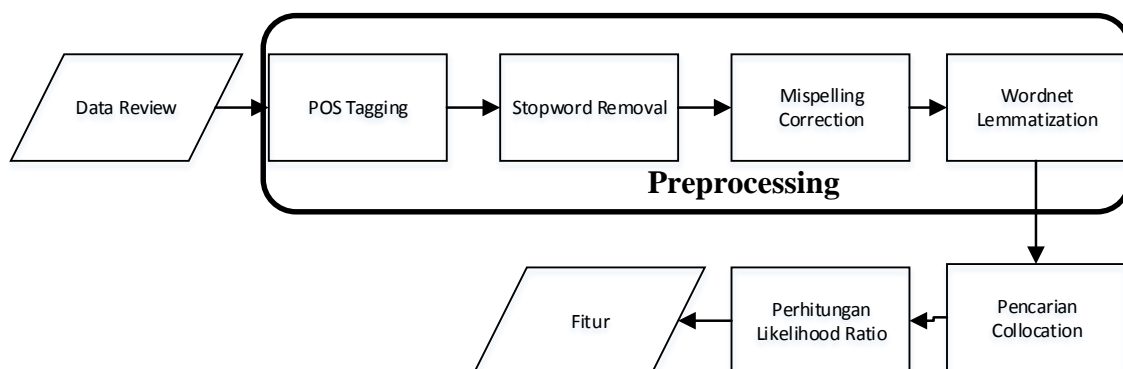
Penelitian ini memanfaatkan beberapa proses dalam menunjang penyusunan rekomendasi fitur dari data opini. Data yang diolah dalam penelitian ini adalah opini masyarakat mengenai sebuah perangkat lunak. Dari data tersebut diekstraksi fitur-fitur yang disebutkan dalam opini. Selain itu, data opini juga akan melalui proses klasifikasi jenis opini untuk mengetahui jenisnya. Hasil dari proses ini akan menunjukkan opini-opini yang tergolong pelaporan kerusakan dan saran fitur. Daftar fitur dan klasifikasinya kemudian akan dipetakan untuk menunjukkan secara lebih jelas fitur mana yang dilaporkan mengandung kerusakan dan fitur mana yang disarankan oleh pengguna.

Dalam proses ini, dimungkinkan muncul opini yang tergolong saran akan tetapi fiturnya belum terdapat dalam daftar. Untuk itu ditambahkan sebuah proses yang secara khusus mengekstraksi fitur dari opini-opini tersebut dan kemudian ditambahkan kedalam daftar hasil pemetaan. Proses selanjutnya adalah pengelompokan fitur-fitur yang sama. Hasil akhir dari keseluruhan proses dapat digunakan sebagai rekomendasi kepada pengembang perangkat lunak dalam mengalokasikan usaha pengembangan dan pemeliharaan perangkat lunak. Alur proses secara keseluruhan dapat kita lihat pada Gambar 3.2.



Gambar 3.2. Alur sistem pembentukan rekomendasi

3.2.1 Ekstraksi Fitur



Gambar 3.3 Alur proses ekstraksi fitur

Pada bagian ini akan dilakukan serangkaian proses untuk memperoleh fitur yang terdapat pada setiap opini pengguna. Fitur-fitur hasil dari proses inilah yang nantinya akan digunakan sebagai dasar penyusunan rekomendasi bagi pengembang. Data opini pengguna didapatkan melalui *application distribution platform* atau *app store*. Data yang digunakan merupakan data dari beberapa aplikasi dalam satu domain. Gambar 3.3

menunjukkan alur proses untuk mengekstraksi fitur dari opini. Sebelum dapat menjalankan algoritma *collocation finding* pada opini, perlu dilakukan beberapa proses awal.

Tahapan preprocessing yang perlu dilakukan antara lain:

1. POS Tagging

Proses pertama adalah penandaan kata dalam kalimat sesuai dengan perannya dalam kalimat. Akan tetapi, dari proses ini hanya diambil kata-kata yang termasuk kata benda, kata kerja, dan kata sifat. Ketiga tipe inilah yang paling sering menyusun fitur produk.

2. Stopword Removal

Proses ini ditujukan untuk menghilangkan kata-kata yang sering muncul dan sangat umum digunakan seperti “the”, “of”, “this”, dan kata-kata lain. Selain kata-kata umum, pada proses ini juga akan dihilangkan kata-kata yang menunjukkan sentiment. Penghilangan kata-kata yang berhubungan dengan sentiment dalam opini dapat membantu proses ekstraksi fitur.

3. Spelling Correction

Pada proses ini setiap kata dikoreksi apakah kata tersebut telah ditulis dengan ejaan yang benar. Dalam melakukan proses ini digunakan Enchant API. Setiap kata dicocokkan dengan kata yang terdapat pada kamus Enchant. Apabila tidak terdapat kata yang cocok, Enchant mengembalikan daftar saran kata. Kata pertama yang memiliki *edit distance* kurang dari *max_dist* diambil sebagai kata yang benar.

4. WordNet Lemmatization

Pada proses ini dilakukan pengelompokan untuk semua kata-kata yang sama secara semantik dengan memanfaatkan WordNet.

Algoritma *collocation finding* digunakan untuk mendapatkan fitur dari sebuah opini. Fitur yang diambil terdiri dari 2 kata (*bigram*) dan memanfaatkan perhitungan *likelihood ratio*. Penelitian ini menggunakan 3 *word window* dalam menentukan pasangan kata, yaitu pasangan kata hanya boleh dipisahkan oleh kurang dari 3 kata. Setelah didapatkan semua pasangan *collocation*, dilakukan perhitungan *likelihood ratio* untuk mendapatkan fitur. Sebagai contoh terdapat 7 opini pelanggan yang diambil dari salah satu aplikasi *messenger* pada Tabel 3.1.

Tabel 3.1 Contoh opini

I have latest update and I still have problem with messages and call notifications! Come on ! FIX THAT!
Notification Error Every message that my friends send I miss until I open the app. The notification should be improved too
Notification problem!!! Almost every Line user talking about problem with notification and you dont give a F..k!!! Very unprofesional!!
No notification. There are no notification if any messages comes, not event call notification pop up if i dont open the application was good, now it's the worse (notifications) Notification problem getting worse every day now.... Line almost doesn't exist on phone until I check it out.. don't receive a single notification without activating the app manually while there is no killing apps or anything shut it down from the first place.. I love it before no I don't like it at all
Was a great app, stopped getting notifications of messages. Uninstalling, won't be coming back nor recommending to friends.
It doesn't give me notification that someone messaged me, if I'm not on the app. I went to send I have notifications turned on but it still doesn't give me a notification. My rating won't go up until you fix it
When my nexus5 update lollipop. Line don't message notification on notification bar. please! fix it. Thank you.

Preprocessing dilakukan pada semua opini diatas sehingga didapatkan hasil pada Tabel 3.2. Setelah itu, proses pencarian *collocation* dijalankan dan dihitung jumlah kemunculannya. Urutan kata tidak dipermasalahkan dan dihitung sama. Hasilnya dapat dilihat pada Tabel 3.3.

Tabel 3.2 Hasil *preprocessing*

late update problem message call notification . Come . FIX . Notification Error. message friend send miss open .notification improve. Notification problem . Line user talk problem notification give F..k. unprofesional . Notification problem get day . Line exist phone check . receive single notification activate kill anything shut first place . stop get notification message. Uninstall, be come recommend friend .give notification someone message . went send notification turn give notification . rating go fix. nexus update lollipop. Line message notification notification bar. Please. Fix. Thank.

Tabel 3.3 Hasil proses pencarian *collocation*

No	Pasangan Kata		Jumlah kemunculan		Total	Likelihood Ratio
1	give notification	notification give	2	2	4	-
2	line notification	-	2		2	1,71
3	message notification	notification message	3	2	5	8,61
4	notification problem	problem notification	2	2	4	6,73

Tabel 3.3 berisi pasangan kata yang memiliki frekuensi kemunculan lebih dari 1 kali. Langkah selanjutnya adalah melakukan perhitungan likelihood ratio seperti yang telah dijelaskan pada bab sebelumnya. Hasilnya dapat dilihat pada tabel tersebut bahwa pasangan kata nomor 3 memiliki hasil paling tinggi. Oleh karena itu, pasangan kata “message notification” dipilih sebagai fitur.

3.2.2 Klasifikasi Jenis Opini

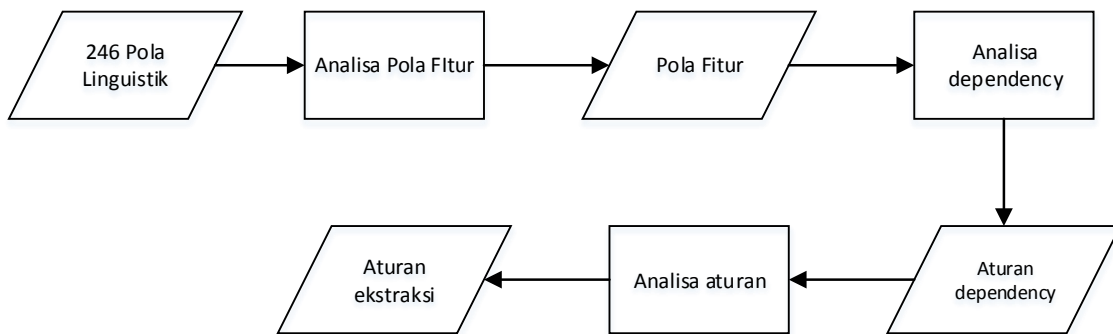
Opini diklasifikasikan dalam 2 jenis yaitu *bug report* dan *future feature*. Algoritma naive bayes digunakan dalam proses klasifikasi karena algoritma ini terbukti mampu memberikan hasil yang lebih baik dibandingkan algoritma MaxEnt dan Decision Tree (Maleej & Nabil, 2015). Dalam melakukan klasifikasi digunakan beberapa data antara lain data *rating* opini, nilai sentimen, dan *tense* kalimat. Sebelum diolah menggunakan model klasifikasi bayes, kalimat opini diproses menggunakan lemmatization seperti pada proses ekstraksi fitur. Nilai sentimen dari kalimat opini didapatkan dengan bantuan SentiStrength (Thelwall, Buckley, & Paltoglou, 2010). Metode ini memanfaatkan rumus dari teorema bayes untuk memperhitungkan probabilitas sebuah data. Data pelatihan yang akan digunakan dalam proses ini diambil dari penelitian terdahulu (Maleej & Nabil, 2015).

3.2.3 Ekstraksi *Infrequent Feature*

Proses ini dilakukan untuk data-data opini yang tidak berhasil diekstraksi fiturnya karena tidak banyak disebutkan dalam keseluruhan opini pengguna. Ekstraksi fitur yang tergolong *infrequent* ini menggunakan aturan yang memanfaatkan hubungan antar kata dalam kalimat atau biasa disebut *dependency*. Untuk mendapatkan hubungan anatar kata ini digunakan Stanford Universal Dependency. Dalam penelitian ini terdapat

dua metode yang dianalisa. Berdasarkan hasil pengujian terhadap metode pertama, metode ini dinilai kurang sesuai digunakan untuk mengekstraksi fitur produk perangkat lunak. Oleh karena itu, dikembangkan metode kedua dalam upaya meningkatkan kemampuan ekstraksi fitur perangkat lunak.

Metode pertama yang digunakan adalah dengan mengadaptasi aturan ekstraksi fitur produk non perangkat lunak (Poria, Cambria, Gui, Gelbukh, & Ku, 2014). Dalam metode ini terdapat dua macam fitur yang dianalisa yaitu fitur eksplisit dan implisit. Akan tetapi dalam penelitian ini hanya diambil rule yang digunakan untuk mengekstraksi fitur eksplisit karena ekstraksi fitur implisit membutuhkan jenis kategori yang telah dianalisa sebelumnya.



Gambar 3.4 Metode pembentukan aturan

Metode kedua dibentuk dikarenakan adanya kekurangan pada metode pertama. Pengembangan pertama adalah dengan menambahkan proses pruning dan yang kedua dengan memanfaatkan pola linguistik berulang pada data opini bersumber *app store* untuk membentuk aturan ekstraksi. Proses ekstraksi fitur dimulai dengan menganalisa 246 pola linguistik (Panichella, Sorbo, Vissagio, Canfora, & Gall, 2015). Pola-pola ini didapatkan pada penelitian tersebut dengan menganalisa pola yang berulang pada 500 review dari berbagai macam kategori aplikasi. Hasil dari analisa ini berupa NLP Heuristic yang memungkinkan deteksi terhadap kalimat dengan struktur yang spesifik.

Tabel 3.4 Pola linguistik

Pola linguistik yang digunakan	Pola linguistik yang tidak digunakan
Could we add [something]?	There may be a problem
[someone] request [something]	Problem / issue occurs
[something]should/could include [something]	Any help would be [verb]
All that i need is [something]	Any suggestion ?

Akan tetapi dari 246 aturan yang ada hanya diambil aturan-aturan yang membahas mengenai sebuah fitur. Sebagai contoh pola “problem/issue occur” tidak diambil karena tidak menjelaskan sebuah fitur. Sedangkan pola “[something] should be fixed” dianalisa lebih lanjut karena membahas mengenai pelaporan *bug* pada sebuah fitur. Beberapa contoh pola linguistik yang digunakan dan tidak digunakan dapat dilihat pada Tabel 3.4

Untuk dapat mendeteksi aturan-aturan tersebut secara otomatis, digunakan aturan dependency antar kata dalam kalimat. Aturan dependency yang didapatkan kemudian dianalisa kembali secara manual pada 250 review, aturan yang lebih banyak memberikan hasil yang kurang relevan dari pada hasil yang relevan dihilangkan dari daftar aturan. Dari hasil analisa tersebut didapatkan aturan dependency sebagai berikut:

1. Apabila dalam kalimat terdapat sebuah kata h memiliki hubungan *subject noun* dengan kata t . ($nsubj(t, h)$)
 - a. Apabila t memiliki hubungan *direct object* dengan kata n ($dobj(t, n)$), n dan t merupakan kata benda atau kata kerja. Maka n dan t diekstraksi sebagai fitur. Sebagai contoh pada kalimat “i need register button”, “register” adalah t dan kata tersebut memiliki hubungan *direct object* dengan kata “button”. Oleh karena itu “register button diambil sebagai fitur”. Representasi kalimat tersebut dalam stanford dependency dapat dilihat pada Gambar 3.5

Gambar 3.5 Representasi stanford dependency untuk kalimat “i need register

```
nsubj(register-3, i-1)
aux(register-3, need-2)
root(ROOT-0, register-3)
dobj(register-3, button-4)
```

button”

- b. Apabila t memiliki hubungan *auxiliary* dan *negation*, $aux(t, n_1)$ dan $neg(t, n_2)$. Maka fitur pada kalimat ini adalah t . Sebagai contoh kalimat “i can’t register”. Pada kalimat ini, kata “register” merupakan t dan memiliki hubungan *aux* serta *neg*. Sehingga kata “register” diekstraksi sebagai fitur. Representasi dependency untuk contoh tersebut terdapat pada Gambar 3.6.

```

nsubj(register-4, i-1)
aux(register-4, ca-2)
neg(register-4, n't-3)
root(ROOT-0, register-4)

```

Gambar 3.6 Representasi stanford dependency untuk kalimat “i can’t register”

2. Apabila dalam kalimat terdapat hubungan subjek dari sebuah kalimat pasif ($nsubjpass(t, h)$). t memiliki hubungan *auxiliary* atau *negation*, $aux(t, n_1)$ atau $neg(t, n_2)$. Maka h diekstraksi sebagai fitur. Sebagai contoh pada kalimat “video should be added”. Pada kalimat tersebut kata “added” adalah t , dan t memiliki hubungan *auxiliary*. Sehingga “video” diekstraksi sebagai fitur. Representasi dependency dari contoh tersebut dapat dilihat pada Gambar 3.7.

```

nsubjpass(added-4, video-1)
aux(added-4, should-2)
auxpass(added-4, be-3)
root(ROOT-0, added-4)

```

Gambar 3.7 Representasi stanford dependency untuk kalimat “video should be added

3. Apabila tidak terdapat subjek dalam kalimat.
 - a. Apabila terdapat hubungan *direct object* ($dobj(t, h)$), dan t dimodifikasi oleh kata sifat atau kata keterangan, $amod(t, n_1)$ atau $advmod(t, n_2)$. Maka t dan h adalah fitur. Sebagai contoh kalimat “can’t create account either”. Dalam kalimat ini tidak terdapat hubungan *noun subject* dan terdapat hubungan *direct object* antara kata “create” dan “account”. Kata “create” juga memiliki hubungan *adverbial modifier* terhadap kata “either”. Sehingga “create account” diekstraksi sebagai fitur. Representasi dependency untuk contoh tersebut terdapat pada Gambar 3.8

```

aux(create-3, ca-1)
neg(create-3, n't-2)
root(ROOT-0, create-3)
dobj(create-3, account-4)
advmod(create-3, either-5)

```

Gambar 3.8 Representasi stanford dependency untuk kalimat “can’t create account either”

- b. Apabila terdapat hubungan *auxiliary* $aux(t, n_1)$ dan t memiliki dependency *negation* atau *adjective modifier*, $neg(t, n_2)$ atau *advmod*(t, n_2). Maka fitur pada kalimat ini adalah t . Sebagai contoh pada kalimat “can’t register”. Pada kalimat tersebut kata “register” adalah t dan memiliki dependency aux serta neg . Sehingga fitur pada kalimat ini adalah “register”. Representasi dependency untuk contoh tersebut terdapat pada Gambar 3.9.

```
aux(register-3, ca-1)
neg(register-3, n't-2)
root(ROOT-0, register-3)
```

Gambar 3.9 Representasi stanford dependency untuk kalimat “can’t register”

Selain itu digunakan juga pola *no pattern* yang merupakan pola yang juga dapat mengindikasikan sebuah fitur (Zhang & Bing, 2010). Aturan ini memanfaatkan kata *no* yang diikuti oleh *noun* atau *noun phrase*. Contohnya pada kalimat “no sticker support” atau “there is no timeline”. Pola ini juga diubah dalam bentuk aturan dependency antar kata untuk memudahkan ekstraksi secara otomatis. Sehingga dari pola tersebut didapatkan aturan dependency sebagai berikut:

1. Apabila didalam kalimat terdapat kata “no”, untuk setiap hubungan dependency *negation modifier* $neg(t, h)$,
 - a. Apabila n memiliki hubungan dependency *marker* dengan m , n merupakan fitur. Sebagai contoh, terdapat kalimat “no way to register”. Di dalam kalimat tersebut terdapat kata “no”, hubungan *negation modifier*, dan hubungan *marker*. Hubungan *marker* terdapat pada kata “register” dan “to” sehingga “register” adalah fitur pada kalimat ini. Daftar dependency pada contoh ini dapat dilihat pada Gambar 3.10. $mark(n, m)$

```
neg(way-2, no-1)
root(ROOT-0, way-2)
mark(register-4, to-3)
acl(way-2, register-4)
```

Gambar 3.10 Representasi stanford dependency untuk kalimat “no way to register”

- b. Apabila tidak terdapat hubungan *marker*, maka t adalah fitur. Sebagai contoh pada kalimat “there is no timeline” hubungan negasi terdapat antara kata “timeline” dan

“no”. Sehingga “timeline” adalah fitur pada kalimat ini. Daftar dependency untuk contoh ini terdapat pada Gambar 3.11.

```
expl(is-2, there-1)
root(ROOT-0, is-2)
neg(timeline-4, no-3)
xcomp(is-2, timeline-4)
```

Gambar 3.11 Representasi stanford dependency untuk kalimat “there is no timeline”

Untuk setiap fitur yang diekstraksi, dicek kembali apakah fitur f memiliki relasi *conjunction*, $conj(f, c)$. Apabila terdapat relasi tersebut, maka c juga diekstraksi sebagai fitur.

3.2.4 Pruning Fitur

Pada metode pertama, proses pruning tidak diimplementasikan. Hasilnya menunjukkan bahwa banyak fitur yang terekstraksi merupakan fitur yang kurang relevan. Oleh karena itu, pada metode yang kedua ditambahkan proses pruning fitur. Proses pruning dilakukan dengan tujuan untuk menghilangkan kandidat fitur hasil dari proses ekstraksi yang kurang relevan dan redundan. Terdapat 2 tipe pruning yang dilakukan yaitu *compactness* dan *redundancy pruning* (Hu & Liu, 2004).

3.2.4.1 Compactness Pruning

Fitur-fitur yang terdiri dari 2 kata tetapi kurang relevan sebagai sebuah fitur dihilangkan dalam proses ini. Pada kalimat yang menggunakan bahasa natural, kata-kata yang sering muncul bersamaan dan dalam urutan tertentu dianggap sebagai pasangan kata yang memiliki hubungan dan makna. Ketika sebuah fitur f terdiri dari pasangan kata $(w1, w2)$ terdapat pada sebuah kalimat s . f dikatakan *compact* ketika jarak antara $w1$ dan $w2$ pada s tidak lebih dari 3. *Compactness pruning* hanya diterapkan pada fitur yang tergolong *infrequent feature*, karena pada metode *collocation* jarak pada pasangan kata yang diekstraksi sudah dibatasi 3 kata.

3.2.4.2 Redundancy Pruning

Fitur-fitur hasil *infrequent feature* yang terdiri dari satu kata di-*pruning* menggunakan *redundancy pruning*. Nilai *p-support* dari sebuah fitur dihitung untuk mengetahui apakah sebuah fitur dikatakan redundan. *p-support* adalah jumlah kalimat

dimana sebuah fitur f muncul pada sebuah *noun* atau *noun phrase* dan kalimat tersebut tidak berisi fitur lain yang merupakan *superset* dari f . Fitur yang memiliki nilai *p-support* kurang dari 3 dianggap sebagai fitur yang tidak relevan. Sebagai contoh terdapat fitur “manual” yang memiliki support pada 10 kalimat. Fitur tersebut merupakan *subset* dari fitur “manual mode” dan “manual setting” yang memiliki support masing-masing 3 dan 4. Oleh karena itu, didapatkan support untuk fitur “manual” sebesar 3 dan tetap digunakan sebagai fitur.

3.2.5 Pengelompokan Fitur

Proses ini ditujukan untuk mengelompokkan fitur-fitur sejenis, termasuk fitur-fitur yang sama secara semantik. Algoritma yang digunakan dalam proses ini adalah aglomerative hierarchical clustering. Setiap fitur akan dianggap sebagai kelompok terpisah dan dihitung kesamaannya dengan fitur-fitur lain menggunakan perhitungan *Wu-Palmer*. Fitur yang memiliki nilai kesamaan tinggi dijadikan satu kelompok fitur. Proses pengelompokan akan berhenti ketika nilai kesamaan antar kelompok telah mencapai batas tertentu. Nilai batas atau *threshold* yang terbaik akan dipilih dari beberapa kali percobaan. Pemilihan dilakukan dengan menghitung nilai konsistensi data tiap kluster menggunakan *silhouette index*. Perhitungan *Wu-Palmer* digunakan karena dari hasil percobaan memiliki nilai yang paling baik. Perhitungannya seperti telah diterangkan pada bab sebelumnya. Nilai kesamaan *Wu-Palmer* menunjukkan kesamaan antar dua kata, nilai ini digunakan untuk melakukan perhitungan kesamaan antar dua fitur. Perhitungan kesamaan antar dua fitur mengadaptasi perhitungan kesamaan semantik antar dua label (Dijkman & Dumas, 2011). Nilai *similarity* antar label dihitung dengan menghitung jumlah kata yang identik dan menambahkan nilai kesamaan antar kata untuk kata yang tidak identik. Kemudian total nilai tersebut dibagi dengan jumlah kata dari kedua label tersebut.

Sebagai contoh terdapat perhitungan kesamaan antara dua fitur yang sama secara semantik pada Tabel 3.5 dan Tabel 3.6. Dari kedua tabel tersebut dapat dilihat bahwa fitur “message notification” dan “chat notification” dinilai lebih mirip. Oleh karena itu, kedua fitur ini dapat dikelompokkan.

Tabel 3.5 Hasil perhitungan kesamaan antara fitur “message notification” dan “chat notification”

	Message	Notification
Chat	0.6145	0.3750
Notification	0.4615	1
Similarity	0.80725	

Tabel 3.6 Hasil perhitungan kesamaan antara fitur “message notification” dan “group chat”

	Message	Notification
Group	0.6667	0.5000
Chat	0.6154	0.3750
Similarity	0.64105	

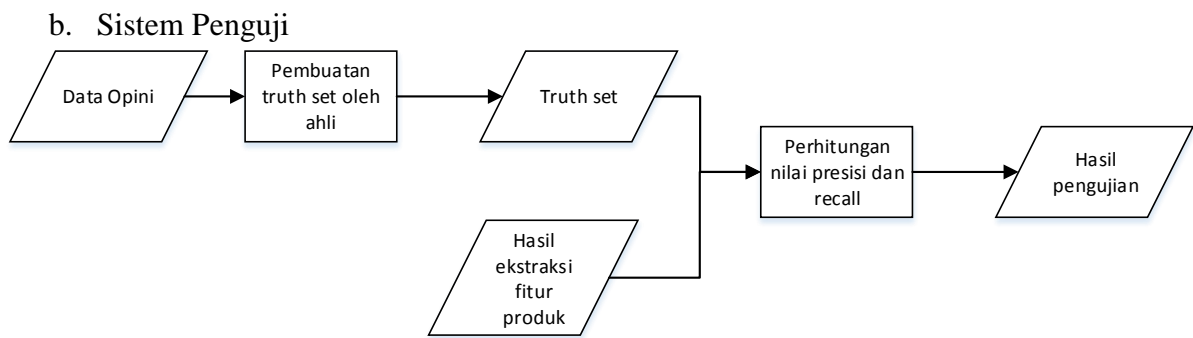
3.2.6 Hasil Rekomendasi

Keluaran dari model yang dibangun adalah rekomendasi untuk pengembang. Rekomendasi ini berisi fitur-fitur yang telah diekstraksi dan dikelompokkan serta keterangan jenis dari fitur tersebut. Sehingga diharapkan dari rekomendasi tersebut dapat memberikan informasi bagi pengembang dalam mengembangkan versi baru dari produk.

3.3 Skenario Pengujian

a. Dataset

Dalam melakukan penelitian ini digunakan dataset berupa opini pengguna pada 3 aplikasi dengan domain yang berbeda. Dari setiap aplikasi diambil kurang lebih 250 data opini. Dataset diambil dari Apple store, yaitu *app store* khusus untuk aplikasi perangkat iOS. Pengambilan data dilakukan menggunakan *library* yang memanfaatkan teknologi *screen scrapping* (<https://github.com/oklahomaok/AppStoreReview>). Data yang diambil disimpan dalam database untuk diproses. Selain itu, data pelatihan untuk digunakan pada proses klasifikasi diperoleh melalui penelitian sejenis (Maleej & Nabil, 2015).



Gambar 3.12 Sistem pengujian

Dalam melakukan pengujian, penelitian ini mengadaptasi metode pengujian yang telah dilakukan penelitian sebelumnya (Guzman & Maleej, 2014) yaitu dengan membangun sebuah *truth set* dengan bantuan ahli. Sistem pengujian secara keseluruhan dapat dilihat pada Gambar 3.12. Ahli-ahli akan melakukan penilaian terhadap data opini sesuai dengan panduan yang telah diberikan. Ahli akan diminta untuk menganalisa beberapa data opini dan menyimpulkan beberapa data yaitu fitur yang disebutkan dalam opini dan jenis opini tersebut. Sebelum melakukan penilaian, ahli akan diberikan panduan mengenai definisi dari fitur produk dan jenis-jenis opini. *Truth set* yang telah dibangun kemudian dibandingkan dengan hasil rekomendasi baik dari fitur maupun jenis opininya. Penilaian akan dilakukan dengan memanfaatkan perhitungan presisi dan *recall* seperti yang telah diterangkan pada bab sebelumnya.

BAB 4

HASIL PENELITIAN DAN PEMBAHASAN

Untuk mengetahui hasil penelitian dilakukan dua pengujian yaitu pengujian hasil ekstraksi fitur dan pengujian proses pengelompokan fitur. Metode yang dibangun diimplementasikan menggunakan bahasa pemrograman Java dan Python. *Preprocessing* data dan metode *collocation* diimplementasikan menggunakan NLTK. POS Tagger dan *dependency* yang digunakan adalah Stanford postagger dan parser.

4.1 Pengujian Metode Ekstraksi Fitur

Pengujian dilakukan dengan membuat *truth set* dari 250 data review untuk aplikasi dengan domain *messenger*. *Truth set* dibuat oleh 3 mahasiswa pasca sarjana dengan kemampuan bahasa inggris yang cukup, minimal skor TOEFL ITP 500. Panduan yang diberikan mengenai penjelasan definisi fitur perangkat lunak, jenis-jenis opini dan sentimen. Untuk setiap data opini, ditentukan:

1. Fitur aplikasi yang disebutkan didalam data opini.
2. Apakah opini tersebut merupakan pelaporan *bug*, permintaan fitur baru atau *improvement*, atau lainnya.

Truth set yang dibentuk kemudian dibandingkan dengan hasil ekstraksi fitur untuk setiap data opini menggunakan metode yang diusulkan. Contoh *truth set* yang dibentuk dapat dilihat pada LAMPIRAN A. TRUTH SET. Untuk menilai performa dari metode yang diusulkan digunakan perhitungan *recall* dan presisi. Nilai True Positive (TP) diberikan untuk fitur yang berhasil diekstraksi dari data opini dan juga diidentifikasi dalam *truth set*. False Positive (FP) terjadi ketika sebuah fitur diekstraksi akan tetapi tidak ada dalam *truth set*. Sedangkan nilai False Negative (FN) diberikan pada fitur yang diidentifikasi manual dalam *truth set* akan tetapi tidak berhasil diekstrak. Penilaian ini diberikan untuk setiap fitur dalam tiap data opini. Setiap data opini dapat berisi lebih dari satu fitur. Nilai presisi dan *recall* dari metode yang diusulkan kemudian dibandingkan dengan nilai presisi dan *recall* dari metode *collocation* yang digunakan pada penelitian sebelumnya. Metode *collocation* yang digunakan diimplementasikan sendiri dalam penelitian ini sehingga dimungkinkan adanya sedikit perbedaan hasil implementasi. Akan

tetapi hasil penilaian nilai presisi dan *recall*nya menunjukkan kisaran nilai yang sama dengan penelitian yang diacu.

4.1.1 Pengujian Metode 1

Tabel 4.1 Hasil pengujian metode 1

Aplikasi	Kategori	Collocation		Metode Usulan	
		presisi	<i>recall</i>	presisi	<i>recall</i>
line	Communication	0,43	0,52	0,213	0,61
ibooks	Books	0,44	0,51	0,22	0,82
evernote	Productivity	0,46	0,43	0,18	0,54
Rata-Rata		0,443	0,487	0,204	0,656

Tabel 4.1 menunjukkan hasil pengujian untuk metode pertama. Hasil pengujian dibandingkan dengan pengujian untuk metode *collocation*. Hasilnya menunjukkan bahwa terjadi peningkatan nilai *recall* dan penurunan pada nilai presisi. Hal ini menunjukkan bahwa hasil ekstraksi *infrequent feature* banyak menghasilkan fitur yang kurang relevan. Seperti contohnya pada aturan dependency ke-4, adanya relasi copula dengan *copula verb*. Aturan ini dapat mengekstraksi fitur yang relevan seperti “album”, tetapi juga mengekstraksi kata-kata yang kurang relevan sebagai fitur seperti “point”, “version”, dan “play”. Banyaknya fitur yang kurang relevan mempengaruhi presisi dari metode yang diajukan. Oleh karena itu ditambahkan proses pruning pada metode yang kedua untuk mengurangi hasil-hasil yang kurang relevan.

Dari hasil analisa banyak juga fitur-fitur yang tidak dapat diakomodasi oleh aturan yang ada seperti pada kalimat “*you can’t register*” atau kalimat “*No timeline*”. Pada kalimat tersebut terdapat fitur aplikasi yaitu “register” dan “timeline”. Akan tetapi, pada metode ini tidak ada aturan yang dapat mengekstraksi fitur dari kalimat tersebut. Oleh karena itu pada metode kedua, aturan yang digunakan untuk melakukan proses ekstraksi dianalisa kembali dari pola linguistik berulang yang sering muncul pada data opini bersumber *app store*. Metode selengkapnya dapat dilihat pada sub bab 3.2.3.

4.1.2 Pengujian Metode 2

Dari hasil pengujian metode 1 disimpulkan bahwa metode tersebut kurang cocok digunakan untuk mengekstraksi *infrequent feature* pada data opini khususnya untuk perangkat lunak. Oleh karena itu diusulkan metode baru yang memanfaatkan pola

linguistik yang sering muncul pada review *app store* dan metode untuk melakukan pruning pada hasil ekstraksi fitur. Hasil pengujian untuk metode 2 dapat dilihat pada Tabel 4.2. Tabel 4.2 menunjukkan adanya peningkatan nilai *recall* pada metode yang diusulkan dibandingkan dengan metode *collocation* saja. Nilai *recall* meningkat pada tiap aplikasi dengan rata-rata nilai 0.77. Peningkatan terbesar ada pada aplikasi line dengan nilai *recall* 0.88 dari nilai *recall* sebesar 0.52 ketika menggunakan algoritma *collocation* saja. Hal ini menunjukkan bahwa metode yang diusulkan mampu mengidentifikasi lebih banyak fitur yang dari data opini yang tergolong *infrequent*. Metode ini juga mampu menghasilkan nilai *recall* yang lebih baik dibandingkan dengan metode yang pertama. Seperti contohnya pada kalimat “*you can’t register*” dan “*No timeline*”. Pada metode yang kedua ini, fitur dari kedua kalimat tersebut dapat diekstraksi dengan baik. Kalimat pertama dapat diekstraksi dengan memanfaatkan aturan 1-a dan menghasilkan fitur “register”. Sedangkan kalimat “*no timeline*” dapat diekstraksi dengan menggunakan aturan *no pattern*. Penambahan metode *spelling correction* pada langkah *pre-processing* juga dinilai meningkatkan hasil ekstraksi fitur aplikasi.

Nilai presisi tidak mengalami peningkatan maupun penurunan yang berarti dengan rata-rata nilai sebesar 0.54. Peningkatan nilai presisi terbesar terdapat pada aplikasi line dengan nilai 0.60 dari nilai presisi sebesar 0.43 ketika menggunakan algoritma *collocation* saja. Hal ini menunjukkan bahwa metode yang diusulkan tidak terlalu banyak menghasilkan *noise* atau nilai FP. Peningkatan yang tidak terlalu significant ini dikarenakan metode yang diusulkan tidak dapat mengatasi kondisi FP pada metode *collocation*. Metode pruning yang digunakan hanya dapat diimplementasikan pada ekstraksi *infrequent feature*. Hal ini dikarenakan algoritma *collocation* sendiri telah mencakup *compactness pruning* dengan hanya mengambil pasangan kata yang dipisahkan oleh maksimal 3 kata lain.

Tabel 4.2 Hasil pengujian ekstraksi fitur

Aplikasi	Kategori	Collocation		Metode Usulan	
		presisi	<i>recall</i>	presisi	<i>recall</i>
line	Communication	0,43	0,52	0,6	0,88
ibooks	Books	0,44	0,51	0,56	0,72
evernote	Productivity	0,46	0,43	0,48	0,71
Rata-Rata		0,443	0,487	0,547	0,77

Akan tetapi dari metode yang diusulkan masih belum bisa mengekstraksi beberapa *infrequent feature*. Hal ini salah satunya dikarenakan penulisan yang kurang baik sehingga aturan yang diterapkan tidak bisa mengekstraksi fitur. Salah satu contohnya pada opini “*this app is not supported chat*”, “*chat*” merupakan fitur yang seharusnya diekstraksi. Fitur ini seharusnya dapat diekstraksi menggunakan aturan 1-b atau aturan 2 apabila tata bahasanya diperbaiki. Representasi dependency untuk kalimat ini dapat dilihat pada Gambar 4.1. Tata bahasa yang kurang baik mengakibatkan fitur tidak dapat terekstraksi. Namun, apabila kalimat tersebut diubah tata bahasanya menjadi lebih baik yaitu “*this app is not supporting chat*” atau “*chat is not supported by this app*”, aturan yang ada mampu mengekstraksi fitur dari kalimat tersebut. Representasi dependency untuk kedua kalimat tersebut dapat dilihat pada Gambar 4.2 dan Gambar 4.3.

```
det(app-2, this-1)
nsubjpass(supported-5, app-2)
auxpass(supported-5, is-3)
neg(supported-5, not-4)
root(ROOT-0, supported-5)
dobj(supported-5, chat-6)
```

Gambar 4.1 Representasi dependency untuk kalimat “*this app is not supported chat*”

```
det(app-2, this-1)
nsubj(supporting-5, app-2)
aux(supporting-5, is-3)
neg(supporting-5, not-4)
root(ROOT-0, supporting-5)
dobj(supporting-5, chat-6)
```

Gambar 4.2 Representasi dependency untuk kalimat “*this app is not supporting chat*”

```
nsubjpass(supported-4, chat-1)
auxpass(supported-4, is-2)
neg(supported-4, not-3)
root(ROOT-0, supported-4)
case(app-7, by-5)
det(app-7, this-6)
nmod:by(supported-4, app-7)
```

Gambar 4.3 Representasi dependency untuk kalimat “*chat is not supported by this app*”

Adanya salah penulisan ini mengakibatkan munculnya nilai FP karena fitur yang diekstraksi tidak relevan dan mempengaruhi nilai *recall* dari metode yang diusulkan. Selain itu, kondisi ini juga meningkatkan nilai FN karena fitur yang terdapat didalam

kalimat tersebut tidak dapat terekstraksi sehingga mempengaruhi nilai presisi dari metode yang diusulkan.

Nilai FP muncul karena aturan yang ditetapkan masih belum mampu membedakan antara kata kerja dan kata benda yang memang merupakan fitur dan yang bukan menunjukkan fitur. Pada aturan ke-1a, beberapa objek yang terekstraksi bukan merupakan fitur seperti “*see complaint*” dan “*give star*”. Tetapi, aturan ini mampu mengekstraksi 70% dari fitur yang benar dan lebih dari 50% hasil ekstraksi menggunakan aturan ini merupakan fitur dari perangkat lunak. FP juga disebabkan oleh hasil metode *collocation*. Banyak *bigram* yang muncul lebih dari 3 kali pada data opini akan tetapi pasangan kata tersebut bukan merupakan fitur. Pasangan kata tersebut hanya merupakan pasangan kata yang sering digunakan bersamaan dalam satu kalimat seperti pada pasangan kata “*email address*” dan “*waste time*”.

Analisa *infrequent feature* hanya dilakukan pada data opini yang tidak terpetakan dengan fitur hasil metode *collocation*. Akan tetapi, dimungkinkan terdapat data opini yang membahas lebih dari satu fitur dan tidak semua fiturnya terpetakan dengan hasil metode *collocation*. Data opini tersebut tidak diolah kembali dalam analisa *infrequent feature* sehingga memungkinkan munculnya fitur yang tidak berhasil diekstraksi dan menambah nilai FN.

4.2 Pengujian Proses Pengelompokan Fitur

Proses pengujian ini dilakukan untuk mengetahui ambang batas nilai yang mampu menghasilkan kelompok data yang baik. Proses pengelompokan memanfaatkan metode Hierarchical Agglomerative Clustering (HAC) dan *sentence similarity* dari WordNet untuk mengetahui jarak antar fitur. Untuk memvalidasi hasil pengelompokan digunakan perhitungan Silhouette Index. Semakin mendekati 1 maka *cluster* yang terbentuk semakin baik. Kelompok yang terbentuk untuk masing-masing *threshold* untuk fitur pada aplikasi Line dapat dilihat pada LAMPIRAN B. HASIL PENGELOMPOKAN. Hasil pengelompokan fitur dengan *threshold* 0.6 membentuk 42 kelompok, *threshold* 0.7 sebanyak 61 kelompok, dan *threshold* 0.8 sebanyak 80 kelompok. Banyak sedikitnya kelompok yang terbentuk tidak menunjukkan seberapa baik kelompok yang dibentuk. Pada Lampiran 4 dapat dilihat pada kelompok ke-3 bahwa masih terdapat banyak fitur yang seharusnya tidak dikelompokkan dalam satu kelompok. Sedangkan pada Lampiran 5 dan Lampiran 6 sudah banyak fitur yang dipisah ke dalam kelompok yang berbeda.

Tabel 4.3 Rata-rata nilai silhouette index

<i>Threshold</i>	Average Silhouette Index		
	Line	iBooks	Evernote
0.6	0.158	0.035	0.06
0.7	0.245	0.127	0.16
0.8	0.248	0.115	0.154

Hasil pengujian dapat dilihat pada Tabel 4.3. *Threshold* yang digunakan dalam penelitian ini adalah nilai *similarity* antar fitur. Dari tabel tersebut dapat dilihat bahwa nilai yang paling tinggi untuk aplikasi Evernote dan iBooks terdapat pada *threshold* 0.7. *Threshold* 0.6 menghasilkan nilai yang lebih rendah karena pada model yang dibentuk banyak terdapat *outlier*. Dimana fitur yang menjadi *outlier* sebenarnya tidak masuk pada kelompok tersebut. Sehingga ketika dilakukan perhitungan nilai silhouette index, fitur tersebut memiliki nilai *similarity* yang tinggi atau jarak yang dekat dengan fitur lain diluar kelompok. *Threshold* 0.8 menghasilkan nilai yang lebih rendah karena terdapat fitur yang seharusnya terdapat pada satu kelompok yang sama akan tetapi memiliki nilai *similarity* dibawah 0.8. Sedangkan untuk aplikasi Line, nilai tertinggi didapatkan dengan *threshold* 0.8, akan tetapi nilainya tidak berbeda jauh dengan nilai *threshold* 0.7 yang hanya berbeda 0.003.

Ancaman keabsahan pada penelitian ini mungkin terjadi ketika data opini diambil dari sumber yang berbeda. Hal ini disebabkan aturan yang digunakan dianalisa dari pola linguistik data opini bersumber *app store* sehingga dimungkinkan terdapat pola yang berbeda pada data opini dengan sumber lain.

BAB 5

KESIMPULAN DAN SARAN

Bab ini memaparkan kesimpulan yang dapat diambil berdasarkan pada penelitian yang telah dilakukan. Dalam Bab 5 ini diuraikan juga tentang hal-hal yang perlu dipertimbangkan untuk pengembangan penelitian lebih lanjut. Penjelasan yang lebih terperinci tentang hal-hal tersebut diuraikan pada sub-bab berikut.

5.1 Kesimpulan

Dari hasil pengamatan yang dilakukan selama proses perancangan, implementasi, serta pengujian terhadap perangkat lunak, dapat diambil kesimpulan diantaranya adalah sebagai berikut.

1. Metode pertama yang memanfaatkan aturan ekstraksi aspek produk non-perangkat lunak dinilai mampu mengekstraksi lebih banyak fitur dilihat dari peningkatan nilai *recall*. Akan tetapi, prosesnya banyak menghasilkan hasil yang kurang relevan dilihat dari nilai presisinya yang rendah.
2. Metode kedua yang memanfaatkan aturan hasil analisa pola linguistik mampu mengekstraksi fitur perangkat lunak dari data opini pengguna dengan lebih baik. Hal ini ditunjukkan dengan meningkatnya nilai presisi dan *recall*. Peningkatan nilai presisi menunjukkan bahwa metode pruning fitur yang ditambahkan pada metode 2 mampu mengurangi hasil ekstraksi fitur produk yang kurang relevan. Peningkatan nilai *recall* menunjukkan bahwa aturan yang disusun berdasarkan analisa pola linguistik data opini pengguna dapat mengekstraksi lebih banyak fitur dibandingkan dengan metode *collocation* dan metode yang pertama.
3. Metode kedua yang diusulkan untuk mengekstraksi *infrequent feature* belum mampu mengekstraksi fitur dari data yang kurang terstruktur, data yang mengandung fitur implisit, dan belum mampu mengidentifikasi kata benda atau kata kerja yang bukan merupakan fitur. Hal ini ditunjukkan dengan adanya nilai *false positive* serta *false negative* pada hasil pengujian.

5.2 Saran

Berikut merupakan beberapa saran yang dapat digunakan sebagai acuan untuk pengembangan penelitian lebih lanjut di masa yang akan datang. Saran-saran ini

didasarkan pada hasil perancangan, implementasi, dan juga pengujian yang telah dilakukan.

1. Perlu ditambahkan sebuah metode yang dapat mengatasi kalimat yang kurang terstruktur.
2. Perlu ditambahkan metode pruning yang lebih baik, karena metode pruning yang digunakan masih belum mampu mengatasi *false positive* dari hasil metode *collocation*. Sehingga diharapkan dapat meningkatkan hasil ekstraksi fitur perangkat lunak.

LAMPIRAN A. TRUTH SET

Lampiran 1. Truth set untuk aplikasi Line

No	AppID	Review	Fitur	Klasifikasi Review	Sentiment
1	913855602	Got the app for my iPad. Do not have an iPhone. So now it seems my app is useless. Is there no one who can fix this? Maybe you need to hire someone who can. PLEASE		Other	Negative
2	913855602	I think this is a good app, but I want to see the timeline. It's so boring without the timeline, and the i phone version one is so laggy. What happened to you, LINE?	timeline	Future Feature	Negative
				Bug	
3	913855602	This iPad version line only allow me to chat with text only. It does not allow me to add pics when I chat with Friends.	chat, add pics	Future Feature	Negative
4	913855602	No way to create an account on iPad. Useless to me.	create an account	Bug	Negative
5	913855602	It's a great app on iPhone works perfectly with calls & video calls On iPad it's only texting that's it ?????????? I hope they update / upgrade this issue	calls, video calls, texting	Future Feature	Negative
6	913855602	Line for iPad app is just for chat, the stickers don't work, call videos don't work too ! And my suggestion is put touch ID !!!	chat, stickers, call video, touch ID	Future Feature	Negative
				Bug	
7	913855602	When I first got the original Line app for iPad it was a nice little app, good for chat and albums and a variety of other functions. When I found Line for iPad I assumed that the developers would take advantage of the iPad's natural advantages over the iPhone, especially size, writing and photography. Instead, the Line for iPad app is simply a truncated version of Line, one without access to many features in the original Line. The fact that this app hasn't been updated in over a year while the original Line app is updated every month or two says to me that the dev team does not care about iPad users. If you have original Line, don't bother getting Line for iPad.	chat, albums, writing and photography	Other	Negative

8	9138556 02	i wish i can use timeline function in ipad version....PLEASE	timeline	Future Feature	Neutral
9	9138556 02	It is nice to have the Ipad app, but it needs updating. From my opinion of LINE corporation, it is obviously a one time deal, and they do not listen to their fans. The apps for the phones gets updating all the time. When I am at home, it is easier and saves the battery of my phone to use this app. LINE could at least fix the functions so they would work again. A complete redesign would be cool; however, I would think they would mentioned that already. I am not spending any more money on your app until the Ipad version gets fixed or replaced with a better version. Already paid for stickers which do not work with this app now with IOS 9.	sticker	Bug	Neutral
10	9138556 02	This app developer doesn't care about the consumers at all. They don't regularly update this app for the iPad version, and there is NOWHERE for us to go to let the developers know that something is wrong. The iPad version can't use stickers, see animated stickers, look at members in chat rooms, look at posts or albums, etc. The list goes on and on.	stickers, animated stickes, chat rooms, look at post or album	Future Feature	Negative
11	9138556 02	1 year is passed, IOS is 9.1 now; however, there is NO ANY update. Anybody in line corporation is checking customer's opinion?			Negative
12	9138556 02	App stinks! Won't set up an account, acts like one already exists. Advice to correct, doesn't work either.	set up an account	Bug	Negative
13	9138556 02	I know you guys are busy but there has to be some small time all you guys got to do is allow us to do the exact same things from iPhone on iPad so that when my phones charging it don't matter lol instead of calling from the iPad since it's not a phone just give us video chats	calling, video chats	Bug	Negative
14	9138556 02	Esto no se puede no es fÃ¡cil	-		
15	9138556 02	???????????????????? ???? ??????!!!	-		

16	913855602	<p>Poor experience and a waste of time trying to get this app to work. This app is essentially non-functional.</p> <p>Unable to log in. Incorrect error message. - My email address and password are entered correctly. - There is no such thing as General &gt; Accounts &gt; Allow Login.</p> <p>Needed to download the iPhone app in order to create an account.</p>	log in, create an account	Bug	Negative
17	913855602	<p>Don't download the app for iPad unless you already have an account I guess. There is no way to make a new account on an iPad. Wow.</p>	make a new account	Bug	Negative
18	913855602	<p>I use LINE lot and it is a great communication tool. But there are some problems with the new updates to iOS from Apple. 1. The stickers are not able to be seen without moving the keyboard. 2. It no longer is loading any messages or sending messages. Please update soon.</p>	stickers, message, sending message	Future Feature	Negative
				Bug	
19	913855602	<p>Please update the app!</p>			
20	913855602	<p>I love Line, but the iPad app has always been an afterthought. It was tolerable until the last update. The iPad app never had the sticker store, however it allowed you to use stickers already purchased. Latest update has a glitch where stickers simply can't be used, which makes the app completely useless.</p>	sticker store, stickers	Bug	Negative
21	913855602	<p>This app need an update seriously, the new iOS 9 keyboard block the stickers, now I can't able to see it. Please fix this.</p>	keyboard, stickers	Bug	Negative
22	913855602	<p>Chat function is OK, but after updating to iOS9, sticker panel doesn't show. What's a point to have Line on iPad if you cannot send sticker!!</p>	chat, sticker panel, stickers	Bug	Negative
23	913855602	<p>Please fix, many things are messed up. I used to be able to send my stickers from the iPad version. Now that is no lore possible. Every Time I try the keyboard appears and disappears rather than the sticker options showing up.</p>	stickers, keyboards	Bug	Negative
24	913855602	<p>When i update iOS 9 on iPad mini after this Update i Can't use sticker line on iPad mini because with hillside keyboard in App LINE Please Check now</p>	stickers, keyboards	Bug	Negative
25	913855602	<p>Please update this app to support ios9. It's been around 2 months since Ios9 release. I cannot</p>	stickers	Bug	Negative

		send any sticker with my line on ipad. It's very annoying. Please fix it quick.			
26	9138556 02	Terrible version. No support on iPad for Line emoji. Can't create Albums either. Completely useless from r anything other than text or adding photos.	LINE Emoji, create Albums, text, adding Photo	Bug	Negative
				Future Featur e	
27	9138556 02	Woke up to message from Line that sorry looks like you accessed your account on another device,therefore all information will be deleted. Same thing happened to my friend at 246am. Lost all my friends contacts,chats,photos,it is like someone robbed me. Line servers must of been hacked beware trusting Line	contacts, chat, photo	Bug	Negative
28	9138556 02	Are there any plans to update this app or is it dead? LINE should provide informational update on what their plans are for this version of LINE. No updates since October 2014. Come on LINE and save people a lot of headache. Either update it or take it down!!! TELL US WHAT YOU PLAN TO DO!!!!			Negative
29	9138556 02	shutdown right after open	open		
30	9138556 02	Not working. Can't send sticker. No call option and never never update.	send stickers, call option	Bug	Negative
				Future Featur e	
31	9138556 02	Love this app on my phone, but the stickers don't work at all on the ipad! Very frustrating.	stickers	Bug	Negative
32	9138556 02	Not support sticker	stickers	Future Featur e	Negative
33	9138556 02	iOS 9 has screwed up my stickers. It was a good app and all the bugs were fixed, however, ever since the new upgrade to the new iOS I am unable to access my stickers because once I press it, my keyboard automatically comes up and I can't view the stickers. Please fix this app!!!! It's really annoying!!!	stickers, access stickers, keyboard	Bug	Negative
34	9138556 02	U made a useless app....rly....no sign up	sign up	Bug	Negative

35	9138556 02	Please!! Update Version			
36	9138556 02	I've been unable to use the stickers I've purchased on the iPad ever since the latest update. The sticker drawer is covered up by the iPad's on-screen keyboard.	stickers, on-screen keyboard	Bug	Negative
37	9138556 02	This app desperately needs an update. I'm tired of using iPhone line on iPad, and i may be moving to other platforms is this app doesn't get better.		Bug	Negative
38	9138556 02	I just cant simply find where to sign up on my Ipad Mini... Simple as that ..	sign up	Bug	Negative
39	9138556 02	There have been zero updates for iPad version since app was released in October 2014. I now refuse to use this version and it's unfortunate since I enjoyed using line app on my iPhone. Not worth the time of installing if they don't plan on having support and updates for it.			Negative
40	9138556 02	I can't create an account on my iPad. It's ridiculous. Totally useless app that doesn't work!!!	create an account	Bug	Negative
41	9138556 02	If you can't download it for the ipad version. On the top it should say Ipad only, click that and below ipad only it should say Iphone only. Tap Iphone only then download that line app. Then when you go on the App you should be able to register on it. This worked for me so I hope it works for you, best of luck ??????	register		Neutral
42	9138556 02	It's wonderful now I can link my A/C to iPad . I use Line everyday, I really would like the app's font can go bigger in both iPhone and iPad ,that will help us 50+ age group. Thanks. The app need an update, now with ios9 , sticker function is been disable. Please update soon.	stickers function, stickers	Future Featur e	Positive
43	9138556 02	Serious lag on the iPad 3 running iOS 8.4. When I open the app to see the message it takes a few minutes for the message to actually appear.	message	Bug	Negative
44	9138556 02	I only get a green screen with NO options to set up an account. Someone needs to fix this asap.	set up an account	Bug	Negative
45	9138556 02	Love the iPhone app. The iPad app is beyond terrible. At first it was merely annoying because you can't read posts in your groups. Now I've been logged out and cannot log back in despite using the correct credentials and making sure that Logins are allowed.	read post, logged out, logins	Bug	Negative

		Utterly useless.			
46	9138556 02	You can't sign in at all or register.	sign in, register	Bug	Negative
47	9138556 02	This is great for all the purpose this was designed for but sadly you can't use the stickers or even purchase them since the last iOS updates. Please update this app for those of us that like to be serious and play also.	stickers	Bug	Negative
48	9138556 02	Line is a great app for communication and the stickers are really neat. BUT!!! Lack of updates, no support on iPad version is very frustrating. Now you can't use your stickers even! Line needs to seriously update to current version of iOS ASAP!!! They haven't updated since 2014 this is pathetic. Not only does it need an update, it needs to be exactly like the iPhone version. Where you are able to use stickers, post notes, post SS and etc... I will no longer use this version until they update, give support and even purchase anything in the iPhone version as a boycott!!! I and many of my friends use Line but if I have to boycott Line and go with a different msg app I will!!!	use stickers, post note, post SS	Bug	Negative
				Future Featur e	
49	9138556 02	I'm in the same boat as others, I can't log in and don't care enough to try hard to make it work. The marketplace is too full with working apps to make it worth the time necessary to get this one working. One word: DELETE.	log in	Bug	Negative
50	9138556 02	I want timeline I want sent stikker	timeline, sent sticker	Future Featur e	Neutral
51	9138556 02	This app is broken. Like many I relied on having both the iPad version (never updated; no Store to buy new stickers, no albums/notes view in group chat) and the iPhone app since the iPad app was so incomplete. Now the iPhone app is no longer "universal" and doesn't work on the iPad anymore. So things I used to be able to do like buy stickers on the Line iPhone app and then use those stickers on the iPad app (on the same device) I can no longer do, as the Line iPhone app crashes on my iPad. I do not have an iPhone.	store, bu new stickers, albums, notes view, group chat		
				Future Featur e	Negative

		There is literally NO customer support, technical support or contact info available for LINE. If you have a problem with LINE there is no way to tell anyone about it except here. Good luck using this app. The devs are way overdue to fix this piece of junk.			
52	913855602	I can't use voice message, stickers or anything. Only can send a text.	voice message, stickers, sent a text	Bug	Negative
53	913855602	What point for created this app? No timeline? Isn't that easier when u type something in tablet? I just want to msg with phone and blogging with tablet. No update for long? Meh	timeline	Future Feature	Negative
54	913855602	For those who can't use the stickers in ios9 for the iPad, here's a work around. The keyboard is blocking your view of your stickers, so use "split mode" and move your entire keyboard to the middle of the screen or to the top. Now you'll see your stickers.	stickers, keyboards	Bug	Neutral
55	913855602	Updated my iPad to iOS 9. I can't see my stickers and emoticons list.	stickers and emoticons	Bug	Negative
56	913855602	You have made LINE so hard to use for the iPad that I may never use again. I rarely rate apps, but this needs to be exposed. One simple "register" button is all that is missing. Wow! I can't even play Tsum Tsum so I just deleted it.	register button	Future Feature	Negative
57	913855602	This app need to update soon have to many bugs		Bug	Negative
58	913855602	Line for iPad can not send the sticker when update iOS9.	send the stickers	Bug	Negative
59	913855602	??iPad??iOS9??,Line????????,????????,????????????,??			
60	913855602	Since I upgraded to iOS9, stickers and sound recording just won't work. I tried to uninstall the app and reinstall it, still nothing. Please fix this.	stickers, sound recording	Bug	Negative
61	913855602	Since the release of ios9 all ability to use stickers, even those you have paid for, has gone. Contact line and you get no help. Can you give half a star?	use stickers	Future Feature	Negative
62	913855602	???????????? ??????			

63	9138556 02	Line for ipad not fullcontrol same as Line App for iphone -cannot use sticker purchased ? Why ??? - timeline on Line for ipad app on feature this! - not support ios release ios9 or higher We give to 1 star Thank	use sticker, timeline	Bug	Negative
64	9138556 02	Needs a major release update. Boring and lame version compared to smartphone and desktop. Stickers doesn't even work and messages don't sync at all. What's the deal line? Do you not have a budget to further develop the iPad version?	stickers, messages	Bug	Negative
65	9138556 02	It's basically only good for chatting, but nothing more. I get notifications for posts on timelines since I have the LINE app on my phone, but you can't see it with the iPad app.	chatting, notification , post on timeline	Future Featur e	Negative
66	9138556 02	Sticker window disappeared when clicked on the icon	sticker window	Bug	Negative
67	9138556 02	Need update			
68	9138556 02	This is a decent app if you just want to text some friends, but it's missing so many features that that could make it so much better! Please add Timeline to the iPad app. It's a wonderful feature, and I wish I could access it on my iPad. I think it would also be an improvement if we'd be able to search for pictures and videos on the web directly from the app.	text some friends, timeline, search for picture and video	Future Featur e	Positive
69	9138556 02	Unable to send stickers in ios 9.	send stickers	Bug	Negative
70	9138556 02	it's a good application . I use it everyday but I just upgrade my ipad to ios9 i can not send a sticker , the application dosen't support on ios9 could you please develop your application for ios9 . So i hope you will developed it as soon as possible !!	send a sticker	Bug	Negative
71	9138556 02	I can't voice messages on my iPad:((	voice messages	Bug	Negative
72	9138556 02	Ok so I download the app and now its saying log in so i put in as if i were creating an account and nothing i cant sign up	creating an account, sign up	Bug	Negative
73	9138556 02	ios9????????? ????????			

74	9138556 02	I was using LINE with my overseas family and friends but after I updated Apple iOS 9.0 new software start acting weird. Please fix it. Thanks!			Neutral
75	9138556 02	The stickers don't show up, the key board with the stickers don't show up after I touch the smiley face. They are not there, they are downloaded I can see they are downloaded on settings but they are not there. Please help this only started with iOS 9. Just updated my iPad to iOS 9 and can't see the stickers!	stickers, keyboard	Bug	Negative
76	9138556 02	I am unable to create a voice message using iOS 9. On iPad mini 3. The microphone button does not active the function. None of my stickers are available either. No way I can see to download them either. These are the current issues I am having with maybe more to come.	voice message, sticker download	Bug	Negative
77	9138556 02	Liars there isn't any Line for iPad, only the smartphone. And no support options for help			Negative
78	9138556 02	I think you forgot that you have an app for iPad !!			Negative
79	9138556 02	After updating stickers will not show up please fix, it was perfectly fine before updating. Very disappointed in this app.	update sticker	Bug	Negative
80	9138556 02	Not sure what's wrong with this app. Not practical at all. Can only chat and that's it. Also, I have some problem with stickers. I downloaded my purchased stickers but when I click on sticker tab in the chatrooms there's no downloaded stickers show... This is disappointing.	send sticker/stic ker problem	Bug	Negative
81	9138556 02	I was originally using this for an alternate if my phone was charging and stuff, and it was ok, but the minute I updated my iPad to iOS 9, the stickers that I want to send when I click the sticker button doesn't show up and I can't see some of my messages or stickers other sent. Please fix this soon!	send sticker/stic ker problem	Bug	Negative
82	9138556 02	Very very hilarious line app ever with no update. Cannot even use stickers anymore in ios9	use sticker	Bug	Negative
83	9138556 02	This was a big disappointment. The only reason I use it is because I have no phone right now. You can't do anything on here but message. No sticker store. And the animated stickers if you have them don't even work. I would not recommend this app to anyone. Unfortunately I can't give it zero stars or I would. And now with ios update the stickers don't work at all.	sticker problem/sti cker store/ update sticker	Bug	Negative

84	9138556 02	I don't know whether it's just me, but the stickers don't seem to work on my iPad. What's the point of having this app if nothing on this app is working properly?	sticker problem	Bug	Negative
85	9138556 02	whenever i try to send the link with ipad, normally it would just go to safari and go to line. But after i downloaded ios 9, it would go to safari and go to app store right away. I really want this problem to get fixed quickly.	send link	Bug	Negative
86	9138556 02	I can't send sticker in iPad after I update my iPad to iOS 9.... Please fix it cuz the reason that I use this program be cuz you guys have a lot sticker in store	send sticker/sticker problem	Bug	Negative
87	9138556 02	Why cant I signup in app and what settings to turn on it says I cant even use this why?...Help	signupp app	Bug	Negative
88	9138556 02	Now i can't use my sticker ?? Pleaasee... fix it.	use sticker	Bug	Negative
89	9138556 02	App needs to be updated to work better under iOS 9.	app update	Future Feature	Neutral
90	9138556 02	Can't use stickers in iOS 9	use sticker	Bug	Neutral
91	9138556 02	I love this app, but since iOS 9 came out it s baaad	app update	Future Feature	Neutral
92	9138556 02	This app is pretty much broken for iOS 9. Update already!!	app update	Bug	
93	9138556 02	I like the app in general. I do use an iPad have stickers that do come open but my issue with it is the chats do not show up unless the app is open. I can see what people are saying in my notifications but when I open the app the comments are not there...and I can find no where in the app itself to contact support for this issue. Please get this fixed. I see there have not been any updates in a very long time.. Sad...as I use this mainly for group chats..	show chat	Bug	Positive
94	9138556 02	#NAME?			
95	9138556 02	It won't send or receive messages half of the time and it's ridiculous you can't edit your account or change your email or anything like that on the iPad. Only mobile. That's hard especially when my phone is broke...	send message, receive message, edit account	Bug	Negative

96	9138556 02	Can not even create an account. Tells me go to settings blah blah... Tried and did not get any closer to opening or creating an account. What a joke. Went to online to create a new account...WHERE ON YOUR PAGE DOES IT GIVE YOU A CHANCE TO CREATE AN ACCOUNT...IT DOES NOT. I DONT AND WILL NOT PUT THIS ON MY PHONE. I WANT FOR MY TABLET ONLY.	create account	Bug	Negative
97	9138556 02	I'm trying to get a LINE so I can keep in touch with my friends but I can't sign up because it keeps saying things like GO TO YOUR SETTINGS AND DO SOME ACCESS CRAP FIRST!! And when I go to my settings so I can do that, I can't even find the dang account settings thing!! Tell me I'm not the only one who can't do find this!!	sign up, account setting	Bug	Negative
98	9138556 02	Would give 0 stars if I could. App is absolutely JUNK and USELESS for iPad. No support and is a waste of time to download!		Other	Negative
99	9138556 02	It would be nice to be able to create an account from the iPad. I don't use a smart phone.	create account	Future Featur e	Neutral
100	9138556 02	I can't start chatting with anyone. Please fix it.	chat	Bug	Negative
101	9138556 02	Good...!		Other	Positive
102	9138556 02	Love LINE for iPhone but the iPad version is crap. You would think that it has all the same features as the iPhone version...but you would be wrong. What would make it better? Here is a clue: make the iPad version work exactly like the iPhone version! It's the same OS for Christ's sake! How hard can it be? Update: it's been a year and no update/fix for the crippled iPad version. I got so frustrated with iPad version that I deleted it. Still love the iPhone version though.	app update	Future Featur e	Positive
103	9138556 02	This app is only good for messaging. You can't even download stickers unless it's from an account on a phone. There's no way to make blog updates. Nothing you can do on this app.	download sticker	Bug	Negative

10 4	9138556 02	I know that there are no sticker shop on the ipad version, what about changing it with gif? Since there are gif keyboard made for apple. Give it a try, it might work people might like it. Remember, every end is always a new beginning. There is always another option. Goodluck :D	sticker shop	Bug	Positive
10 5	9138556 02	Wast of time doesn't have a creat account after download just a login don't know why.	create account	Bug	Negative
10 6	9138556 02	Have an iPad mini that I game on and my guild uses this app. They requested that we all get it, which I did, and it asks for logon info. There is no option to create an account which makes the app useless. Looks like I'm not alone with this issue.	create account	Bug	Negative
10 7	9138556 02	I use this app on my Samsung and my galaxy tablet and works great, but I'm not happy that this app doesn't let u create an account on iPad or doesn't even let me sing in w my account I already have . I can't believe this can happen to iTunes apps , when supously iTunes have better quality , I'm sorry iTunes but on this one Samsung score another extra point .	create account, sign in	Bug	Negative
10 8	9138556 02	maybe add a account sign up link on your log in page?	sign up	Future Feature	Neutral
10 9	9138556 02	Please, please, please add video chat and free calling capabilities on the next update. The line app for the phone is amazing and the inability to call and video chat is the only thing, in my opinion, that makes the iPad version not as good. Thank you!!!	video chat, free calling	Future Feature	Neutral
11 0	9138556 02	Can't create an account on the IPad version. Thanks a lot geniuses.	create account	Bug	Negative
11 1	9138556 02	sorry i can't give you 5 star, because... 1. can't sign up 2. can't see timeline	sign up, see timeline	Bug	Negative
11 2	9138556 02	The prior app version allowed you to access albums and other postings in that particular group chat. That feature is nonexistent in this iPad version. The limited functionality of this iPad app makes this app essentially worthless. If you have older versions of the line app, keep them and avoid this one until the programmers realize what they have done, or more specifically failed to do.	access album, group chat	Bug	Negative
11 3	9138556 02	couldnt even create an account	create account	Bug	Negative

114	913855602	Fix it alright?		Bug	Negative
115	913855602	Unless you already had this app on your mobile device you can't register or create an account to use the app. This is terrible for those who don't have smart phones or use their phones for apps.	register, create account	Bug	Negative
116	913855602	I downloaded this app on my iPad hoping to use it to communicate with a group of gamers. There is no way to create an account in this app. No details of where else I can go to create an account either. Stupid message says something about going to settings and changing password. There is no such option available on iPad version of this software. This is a total disappointment. I recommend finding an app that allows actual setup in the app itself.	create account	Bug	Negative
117	913855602	Still need a little improvement. Animated sticker support will be a great start.	animated sticker	Future Feature	Neutral
118	913855602	great app		Other	Positive
119	913855602	You cannot register on the site or through this app. It's completely useless!!	register	Bug	Negative
120	913855602	I like this app. No doubt about it. I have this app on my iPod and it's my favorite texting app. I like how you can use stamps and I think it's cute. But, I can't log in from my iPad. It's a useless app if you can't even log in... Please fix this.	texting, log in	Bug	Negative
121	913855602	I downloaded this app, opening screen asked for e-mail and password and gave me no way to create either one. Absolutely lame & a total waste of time.	create account	Bug	Negative
122	913855602	Doesn't allow you to make account with iPad. There is also no account settings or anything to mess with. Only thing you can do is type email, password and log in. No button to create account.	make account, send message, send sticker	Bug	Negative
123	913855602	I can see stickers sent to me, I can see messages sent to me, I can send messages, but for some reason it won't let me send stickers. I've paid for some of the stickers, so it's infuriating if I can't use them.	see sticker, see message, send message	Bug	Negative
124	913855602	I don't get it, the phone app can make voice and video calls so why not the tablet app. Yeah, messaging from the iPad is convenient but clearly this some incomplete version of what the app could be. Please allow the ability to make calls, then it'll get 5 stars.	voice, video call	Future Feature	Negative

125	913855602	Oiga.. Tengo un problema, yo y mi mejor amiga no sabes muy bien como se usa esto. Mire mÃ¡ndeme un guasap y me pasa el instructivo, para evitar problemas, asÃ se ahorra una aventada de madres y una collega en to la cara. KAVROHN! -atte: un wey que anda por ahÃ Pd: le doy 5 estrellas :3			
126	913855602	Line is a great app on iPhone, but it's kind of spartan on iPad. I was expecting the same amount of functionality like sticker suggestions on the iPad version, but it appears it's not. Hey Line developers, can we get some parity here?	sticker suggestion	Future Feature	Negative
127	913855602	Trying to set up my Line account but it doesn't give me an option to do so. It only allows me to log in but I'm new. I looked online for a resolution and Line mentions a fandom More button!?!?! User friendly?!?!? Are you kidding me? Also, why am I bothering with a Line account for this game????? Disney? Helloooo?	set account, log in	bug	Negative
128	913855602	Nickname was taken, so my review disappeared. LINE (and Apple equally) should employ some students to finish their work, before distributing unfinished applications!		Other	Negative
129	913855602	I don't understand why you guys can't make this app with all the full functions. Can you please fix this to mirror the phone app, the iPad version is really quite pathetic. Thanks		Bug	Negative
130	913855602	You can only use this version for iPad after having an account in smartphone. That's silly!		Bug	Negative
131	913855602	To sign up on iPad just download the iPhone version on the iPad sign up and delete it and sign in on iPad version simple as that!!!!!!!!!! MAKE THIS ONE OF THE TYPE REVIEWS SO EVERYONE SEES THIS!!!!!	sign up	Bug	Negative
132	913855602	To get an account download app for iPhone. This app doesn't give you a way to sign up for an account if you use an iPad. The iPhone app works on iPad ok. So get the other app and go play your games.	sign up	Bug	Negative
133	913855602	Does not work on iPad.		Bug	Negative

13 4	9138556 02	<p>The Line app for iPhone works just fine, but they completely messed up the iPad version to the point where it is unusable.</p> <p>Issue #1: this app has only a small percentage of the functionality of the iPhone app, so expect most of the settings/options to be missing.</p> <p>Issue #2: app IGNORES alerts / notifications / sounds being set to off, even in the settings of my iPad I have disabled all notifications for Line, AND muted my iPad, and it still somehow overrides this to make that irritating "bing-bong" noise nonstop for messages loading in the background.</p> <p>Issue #3: probably a side-effect of issue 1, messages that show up on my computer/phone sometimes won't show up on the iPad app at all, that chat window will just remain blank, reloading app doesn't update the chat, it'll just "miss" messages</p>	setting, notification, message loading	Bug	Negative
13 5	9138556 02	On iPad ????????		Other	Neutral
13 6	9138556 02	What? Download app 'LINE for iPad' and can't even set up an account!?!? Only option on iPad app is to log in...how can I log in without options to set up an account first?? Poor advertising for sure...definitely not geared for an iPad!!	set account, log in	Bug	Negative
13 7	9138556 02	<ol style="list-style-type: none"> 1. Can't see notes people have created. You have to go to your smartphone to see them. 2. It doesn't load new messages. I see the number of new messages, but when I open it, the messages don't load. 3. Sometimes It takes a while for the messages to be received by the other person or people in the chat. <p>It's frustrating...at best!!</p>	see notes, load message, receive message	Bug	Negative
13 8	9138556 02	This iPad app is useless if you don't have an existing account. To create an account you must download the iPhone version. Even then the only way to create an account on iPhone is verifying with a valid phone number or with Facebook login. We'll neither is OK with me. Should have a choice for account creation with email. One advise if you want more people to use your app then give us more option.	create account, facebook log in	Bug	Negative
13 9	9138556 02	with the new OS update I can't log in to Line at all. It used to work fine now it won't let me log in	log in	Bug	Negative

		at all. can u fix it asap im getting tired of waiting.			
140	913855602	I'm rating the line app 0 star because I can not use it because I can not make an account with iPad I need a smartphone to use it (I don't have a smartphone)	make account	Bug	Negative
141	913855602	When I get the app it just says for me to log in it just asks for a account their is no option to sign up ????????????	log in, sign up	Bug	Negative
142	913855602	like title states, its unreal how Bad this app is! Doesnt refresh if youre in a busy chat like iphone/mac versions do. Sometimes will just Hang there & do nothing when you click on stickers in setting. Cant check new postings by chat mods easily & forget searching for people, even when u Know their Line Id it takes forever to load new search screens!	sticker, check posting, search people, load screen	Bug	Negative
143	913855602	The next update please add on the sticker shop. Hope next version come soon.	sticker shop	Future Feature	Neutral
144	913855602	App doesn't work for the iPad. You can download it but not create an account and thus cannot log in nor use it. Frustrating because my guild uses it in a game	create account, login	Bug	Negative
145	913855602	I was trying it out to see if it would work for Line Play which is a line game and it only let me sign in but how am I supposed to do that if I don't have an account!	sign in	Bug	Negative
146	913855602	I need notes and sticker animation !!! Nerver update!	note, sticker animtion	Future Feature	Neutral
147	913855602	Blank app, beware.		Bug	Negative
148	913855602	Can't start an account from my iPad, deleting the app.	start account	Bug	Negative
149	913855602	What morons would create an app for the iPad that does not work at all? Were they so sure it would work that they did not even test it? And it is obvious they do not care because I see all the same complaints proceeding me, and the app is still not functional. I would be embarrassed and have a functional update available, like yesterday!		Bug	Negative
150	913855602	Horrible. Most things don't work and things that work don't work right. "Incompatible" with groups made with newer versions of LINE.		Bug	Negative

15 1	9138556 02	Very unwieldy a sad old school chat room clone really not all that good user interface not all that good not really wanting to have to learn how this works not to clear on how to use should not need a manual to use would have given a lower rating if possible.	chat room, user interface	Bug	Negative
15 2	9138556 02	This needs an update ASAP. You line corp. pays no attention to any details in iPad app ignoring an important customer base of yours. Please, I really depend on this iPad version much more than on my old slaggy phone.		Bug	Negative
15 3	9138556 02	PLEASE ADD A WAY TO MAKE AN ACCOUNT FOR THE IPAD. THANK YOU.	make account	Bug	Negative
15 4	9138556 02	Ineed albums to be availableeeeeee	album	Future Featur e	Neutral
15 5	9138556 02	Okay so I have two problems with this app I think the first is HOW DO YOU ACUALLY MAKE AN ACCOUNT?!?!?! It's just telling me to log in and when I used my Facebook and stuff it still didn't log in I used my line play and it still didn't work.the second problem is why do I have to make a new line and a new line play account? Because I wanted to make a line for line play but it said first make a line then make a line play BUT WHY CANT YOU MAKE LIKE A TRANSFER THING OR SOMETHING?!? LIKE TRANSFER MY LINE O,AY ACCOUNT TO MY LINE ACCOUNT?!?!	make account, log in	Bug	Negative
15 6	9138556 02	It's very glitchy and people keep popping up like all the line people and it's really annoying!		Bug	Negative
15 7	9138556 02	We need to be able to create an account with Line so we can use this app.	create account	Future Featur e	Neutral
15 8	9138556 02	My id - charizzadianne .. Add me i need friends there i always send clover thank you		Other	Neutral
15 9	9138556 02	You can't register rofl	register	Bug	Negative
16 0	9138556 02	No option to add friend when using ipad. Samsung tablet is a better choice for this app than ipad. Very disappointing. Also the method for even posting reviews leaves much to be desired - if you enter a title or nickname already in use, you wont know until you enter, and then rather than allow you to edit the review, you have to retype the whole thing. Just a Line problem? Whatever. Please just add function to add friends on ipad version.	add friend	Bug	Negative

16 1	9138556 02	Like everyone else says, there is no way to create an account with the app. Log in only.	create account, log in	Bug	Negative
16 2	9138556 02	Forces you to add to phone even if you only use it on your iPad. Then boots you out of iPad version randomly and have to log back in. Help section online is another joke. Plus there is no log off option. It is either on or you have to delete the account. What a pain!	log in, log off	Bug	Negative
16 3	9138556 02	I wasted two hours of my life trying to figure out how to make an account on my iPad mini. There are two buttons: "Forgot Password?" and "login". There is no way to create an account. It loaded perfectly and I was really excited about being able to message my friends who didn't have Apple products. Looks like it isn't going to happen.	Make account	Bug	Negative
16 4	9138556 02	I also can't get it to allow me to set up an account on my iPad. It tells me to change account settings which I can't access. Their home page is no help. Someone at line needs to be fired!	set account, account setting	Bug	Negative
16 5	9138556 02	):		Other	Negative
16 6	9138556 02	Can't create I'd on ipad	ID	Bug	Negative
16 7	9138556 02	Can't sign up..this is dumb and needs to be fixed asap. I'd like to make an account so fix it? Thank you.	sign up, make account	Bug	Negative
16 8	9138556 02	Can I make calls using iPad? Or it's not yet allowed? Thankyou. ??	call	other	Neutral
16 9	9138556 02	<p>It's quite sad, the app is good but I alongside many assumed it would get updated and support features as time went by. This isn't the case though, this app just feels like a sorry excuse to shut us up.</p> <p>The animated stickers don't work, sticker shop doesn't exist, timeline doesn't exist, calling doesn't exist, video calls would be awesome but don't exist, like playing other line apps? Well you can't sign in to them with this app.</p> <p>It makes me sad, Line honestly has so much potential to surpass many of the leading social networks and has a well established brand. A app like this is a sorry excuse, and it really says something when the blackberry app has more features than this iPad version. I only use if my phone is not near me but aside from that this</p>	animated sticker, sticker shop, timeline, call, sign in	Bug	Negative

		app is total garbage, the windows application for windows 7 is tons better.....			
170	913855602	THIS APP HAS A CRAPPY RESTRICTION IF YOU FORGET YOUR PASSWORD TOO MANY TIMES. PATHETIC.	restriction password	Bug	Negative
171	913855602	This app will not let me create a account. So I can't invite friends to play with me.	create account,	Bug	Negative
172	913855602	I've been using this app since 2012 and I am disappointed in the iPad version. It doesn't allow me to view my timeline or others, it doesn't allow me to preview my own profile, it hardly ever lets me receive any of my messages and often at times will send them a day late. This is terrible. 2/5	timeline, preview profile, receive message, send	Bug	Negative
173	913855602	Doesn't have block/ignore button, no where to add new people and u can't even view bulletins ur groups make.	block button, add people, view bulletin	Bug	Negative
174	913855602	Please, look at the phone version and add the same features in this one such as timeline and sticker shop. Its nice to have the high quality app	timeline, sticker shop	Bug	Neutral
175	913855602	I'm going to give this a 5 star rating if there's Timeline, Home, Notes, Album. This is the worst.	timeline. Home, note, album	Future Feature	Negative
176	913855602	I can't believe anyone would release an app for another mobile device and doesn't make it the same one? I'd get a few features not being available on the iPad, but are on the iPhone, but not even being able to register? Seems a little ludicrous to me, honestly. Please add a register button into the app, I need this for a guild I'm in on dragon wars and I do not own an iPhone.	register	Future Feature	Negative
177	913855602	App is very basic compared to the mobile/desktop app. There's no sticker preview,	sticker preview,	Future Feature	Negative

		no animated stickers. Needs to catch up to the mobile, at the very least the Desktop.	animated sticker		
178	913855602	This app will not allow you to create a line account to use a line app...it makes no sence Love,morgan	create account	Bug	Negative
179	913855602	Okay so honestly I've never had this app before. My friends told me to get it on my iPad since I don't have a phone. All my other friends have phones. I downloaded this app thinking now I can text my friends. Nope I can't because there's no where to create an account. Please update or something so that people can create a new account.	create account	Bug	Negative
180	913855602	Crap		Other	Negative
181	913855602	It is hard to know how good or bad this app is when there is no option to create an account in the first place!	create account	Bug	Negative
182	913855602	A phone number or Facebook account is need to create an account. Had to download the iPhone version first to creat an account then was able to log in on my iPad. Development team you can add a few lines that say "first time users please download the iPhone version to create an account" this would solve a lot of problems and if done before release saved you a lot of bad reviews.	create account, log in,	Bug	Neutral
183	913855602	Why offer an app that is useless? You should elete it till you get it to function on iPad before offering it again!		Other	Negative
184	913855602	I hate this app		Other	Negative
185	913855602	Can not get this work on my ipad. Please fix. Everybody does not own a smart phone.		Bug	Negative
186	913855602	HOW TO SIGN UP PLS? I WANT TO MAKE AN ACCOUNT	sign up, make account	Other	Neutral
187	913855602	I can't even log in and when they say to go on the account settings, I can't even find it!! What the heck is this piece of trash?!	log in, account setting	Bug	Negative
188	913855602	No way to register for I pad	register	Bug	Negative
189	913855602	App will not even download from the APP store!	download	Bug	Negative

190	913855602	The iPad app is horrible! I cannot register an account and have to go through my iPhone to do it. I don't use these apps on my phone. Really need to fix this app so it is user friendly on the iPad. No excuse for this poor design. It is quite pathetic that you are unable to do this right. This has been a long term problem that you still haven't fixed. Don't waste time getting this app	register	Bug	Negative
191	913855602	Can you make it so you can create an acc not just log on to iPhone acc plz	create account	Future Feature	Neutral
192	913855602	It's been months since I last tried LINE on my iPad... last time it didn't work... and it still doesn't... You don't need me to tell you it doesn't work... Just read the 1000 other reviews from everyone... I understand that you don't know how to program or you would have fixed it already... my problem is the same as others... You can't get past the password...		Bug	Negative
193	913855602	Why would you release a chat app where you can't register or add friends? Who authorized this lack of functionality and why? This app is way more difficult to use than it should be. If you can, avoid this app and use other options.	register, add friend	Bug	Negative
194	913855602	Totally worthless! You can't even create an account. Ask for you mail and password to tell you you are wrong before you even create your account. I don't have an iPhone just iPad.	create account	Bug	Negative
195	913855602	Why would you create an ipad version that needs another gadget for it to be completely functional??		Other	Neutral
196	913855602	The ONLY thing this app does is download. After that, it just sits there. . .doing nothing. You can't log into it, because it won't let you! If you're crazy enough to try, it tells you to change the settings on your mobile account. It doesn't matter if you don't have a mobile account. That's it. . .that's all it does.	log in	Bug	Negative
197	913855602	Had to create on smartphone but will not allow me to login. Says I have to go to settings, account but iPad does not have account option. I even set up different email accounts on iPad but still same issue.	log in, account option	Bug	Negative
198	913855602	It'd be nice to have an account, but it won't allow me to make one. The sooner you can fix this, the better.	Make account	Future Feature	Neutral
199	913855602	why can't i make an account on ipad.	Make account	Other	Neutral

200	913855602	I have other friends and family playing the Disney Tsum tsum game and wanted to join them so we could challenge each others scores. Sad to find out there is no way to make an account on an ipad. I do not have a smart phone.	make account	Bug	Negative
201	913855602	Everyone need timeline and mute feature in every chat threat. Please update and thank you.	timeline, mute	Future Feature	Neutral
202	913855602	Catch up on the technology Line people. Your app is a big waste of time for us iPad users. Only way to set up account is to load it on my phone also? You should STATE THAT IN THE DOWNLOAD PAGE. Looks like you are losing users left and right and I would never recommend to anyone. Makes me wonder if u r hacking into phone accounts. I will b inviting my fellow gamers to look elsewhere for a service that includes everyone and their various kinds of devises. Waste. Deleting it. Wish I could give it negative stars.	phone account	Other	Negative
203	913855602	I can't create account!	create account	Bug	Negative
204	913855602	What a piece of asdfasdggaasdfg I enter my password and user name, confirmed on my iPhone the pin code, after confirmation the iPad app just sits there not logged in... Over and over and over.... I would give this app -5 stars if I could.	Log in	Bug	Negative
205	913855602	Pointless, can't sign up to use the app.....	sign up	Bug	Negative
206	913855602	this app is not supported video chat	video chat	Future Feature	Neutral
207	913855602	Seriously this is stupid. What the heck that you can download the app, but can't create a new account? I can't believe Disney is associated with a developer that's so shortsighted.	new account	Bug	Negative
208	913855602	????? ???? ????? ?? ?? ????? ?? ????? ????? ??? ???? ??? ???? ??? ??? ???? ????? ??? ?????? ?? ?? ?????? ????? ??? ??? ????? ?? ???????!			
209	913855602	It is just STUPID that they do not have any way to create an account on an iPad landscape and have no instructions on how to do so... Piss poor product management.... I haven't logged on yet (can't) but I don't expect much given how poorly it is designed so far..... Just stupid	crete account, log on	Bug	Negative

210	913855602	Sooooo.....I can't create an account and therefore I can't use the app...not impressed.	create account	Bug	Negative
211	913855602	It won't work		Other	Negative
212	913855602	Don't waste your time on this app if you use it on an iPad. The developers are idiots who don't make the same version available on all devices. Searching for better option for our GoW group because of this. Sadly they've had the issue for almost a year and have yet to fix the problem. If you do the iPad version, you won't get call feature, search, stickers, and numerous other features iPhone users enjoy. This app the way it is is CRAP and not worth downloading. Find a better more uniform app to use.		Other	Negative
213	913855602	Please for the love of god add the option to turn off the new message sounds.	turn off message sound	Future Feature	Neutral
214	913855602	There's really no reason for this app to exist, all it does is send and receive messages. I want it to be more in par with the mobile version and to have all or most of the features it has. I mean this app is meant for a tablet, why is it so stripped of features? It's basically an iMessage with stickers.	send, receive message	Bug	Negative
215	913855602	I use an iPad and I can't create an account, it only takes you to the sign on page. This is worthless, so I am deleting it now.	create account	Bug	Negative
216	913855602	Ok so I have this line app on my phone and u get video calls and I would like for line for I pad to have video calls too because video chatting is more doe tablets and etc.	video call, video chat	Other	Neutral
217	913855602	Cannot make an account on ipad! It only shows the sign in menu, how i am supposed to use line if i cannot make an account?	make account	Bug	Negative
218	913855602	At least it works... If your trying line for gaming try kakao instead. It may require a cell phone number but use a friends number if you have too, it's better than being sharked by this app.		Other	Negative
219	913855602	This has a great chat interface, but doesn't allow calls or video chatting, which makes it useless. I can do it all with Skype on my iPad. Also, you can't obtain any sticker sets offered by Line chat because the iPad version cannot connect to the URLs provided.	chat interface, call, video, sticer	Bug	Negative

22 0	9138556 02	<p>Naver employees are lazy.</p> <p>This app has no cross device syncing which makes it useless.</p> <p>You also can't call or video chat either.</p> <p>Telegram is 10X better than this.</p> <p>This is the worst iPad messenger on the App Store.</p>	device sync, call video chat	Bug	Negative
22 1	9138556 02	Since the last update, there are times when the app cuts off costing me a life. FIX IT		Other	Negative
22 2	9138556 02	I was worried i gave my emails and every password I know trying to login to a phishing app! when you click forgot password it tells u to access the app to reset the password.. ok I can't log in...	log in	Bug	Negative
22 3	9138556 02	As the title says		Other	Neutral
22 4	9138556 02	<p>Please add a Timeline function to it. PLEASE</p> <p>Thanks. 09/05/2014</p> <p>Really happy that Line for iPad had launch now, after I thought for it over a year!!!</p> <p>But however there are some bugs that made me annoying; some group doesn't show in iPad version, camera always error while shooting and i have a little suggestions; it would be good if contact can be list like a mobile version and video call or calling can be use within an iPad.</p> <p>Thanks/ happy to use your program and give 5 stars already :)</p> <p>Hope it will better and better...</p>	timeline, show group, camera, video call, call	Bug	Negative
22 5	9138556 02	Useless. No sign up option. Only log in. Can't log in without signing up	sign up, log in	Bug	Negative
22 6	9138556 02	I can't sign up at all!! There is no option to sign up or get started when you download the app!! It's just a green screen with a way to login! It's really sad because I have lots of friends who use this app and I can't even join them!! Who ever made this app needs to fix this issue!! There needs to be a sign up option on the main screen when you login rather you have an account or not! I don't know who else is have this issue but Iv been trying to use this app for weeks now	sign up	Bug	Negative

		and still no luck with a way to sign up or get started! Right now I would rate this app not even a star!!!			
22 7	9138556 02	You ruined the ipad app. Everything is gone. Can't even answer the questions for the Tsum Tsum game. Bring back the old version. I stopped playing all Line apps.	answer question	Bug	Negative
22 8	9138556 02	Please fix this app. I play Tsum Tsum and you need Line to connect. I can't create an account, log on with FB, or anything. Please fix.	create account, log on	Bug	Negative
22 9	9138556 02	I downloaded it and can't even create an account.	create account	Bug	Negative
23 0	9138556 02	:(plz fix it		Bug	Negative
23 1	9138556 02	There is no way to set up your account whatsoever from the iPad. There is no basic way to register on their website as well. If you are a first time user of this app and are trying to get it for the iPad, you are out of luck. Also, getting it to work on your iPad even with an existing account requires a verification process that doesn't work too. FURTHERMORE, they need your Facebook account or a working phone number to start an account anyway, in addition to your email address. Do not add to their download numbers and just save yourself the headache.	set account, register	Bug	Negative
23 2	9138556 02	I loaded the app for ipad and there was no way to create a new account. When I tried "forgot password" it told me I had to log in and change my password in my account settings. When I tried to log in using an email address. It said wasnt valid and to change settings in my account to turn on.	create account, log in	Bug	Negative
23 3	9138556 02	iPad app does not include notes feature of group chat that iPhone version does. Immediate delete and reinstall of iPhone version	note, group chat	Other	Negative
23 4	9138556 02	The way of using this app to connect what i want and share the information is good and cool. I like it so much		Other	Positive

235	913855602	I only have an ipad. I cant create an account. I requested help from their customer support and I get an automatic reply that says they might not be able to answer my question. Supercell and SpaceApe are examples of company's with excellent customer support. It's obvious there is a lot broken with this group. Related line apps crash frequently - line blames it on the server - yet none of my other apps have same problem. FIX THIS PROBLEM	create account	Bug	Negative
236	913855602	Loved the old version, DO NOT UPDATE . This has no notes, no timeline, small fonts even set to large. The sticker collection is gone now only 10 basic sets. Deleting this app and looking for another group chat app. What a shame, we used this for such a long time.	note, timeline, font	Bug	Negative
237	913855602	So I want to talk to my friends on here but I cant create a account on Ipad so yeah help??	create account	Bug	Negative
238	913855602	I wish this had more functionality. I could care less about the stickers and stuff. But it would be nice to be able to search for friends to chat with.	search friend	Future Feature	Neutral
239	913855602	Why can you not create an account through this app? Serious flaw, not sure how they could overlook that. Their website doesn't help at all. There's plenty of other chat apps that are much simpler to get started on.	create account	Other	Negative
240	913855602	No "Home"? If it's not going to be fully-featured, why bother having it? Can't search for friends by user ID, can't see my timeline. Useless.	Home, search friend, timeline	Bug	Negative
241	913855602	The app has a lot to offer but the ipad limited control of major functions is a big problem. I can't turn messages of in groups on my ipad so must turn off all message. I play games were a few hunderd people use the app. And a suggestion to developer(i cant find a place to contact you on website) let use click the person name in a group conversation and have the option of saying this message is for them(puts there name followed by a colon).	turn of message	Bug	Negative
242	913855602	iPad functionality is horrible, can't create a new account from iPad.... Been trying for a week to create a new account via PC or iPad. DO NOT RECOMMEND .	create account	Bug	Negative
243	913855602	I don't know if this is good or not because it only has the option to log in. No account can be created.	create account, log in	Bug	Neutral
244	913855602	Doesn't work. Broken. Allows you to do nothing.		Other	Negative

245	913855602	i cannot create a new account or register a new email. i am using an ipad. please help. thanks!	create account, register	Bug	Neutral
246	913855602	The app loads fine on my iPad. However, I can't create an account. Kinda lame.	create account	Bug	Negative
247	913855602	When they finish this, it may be cool. But for now, use the iphone version on your ipad.		Other	Neutral
248	913855602	There's no way to log in with your Facebook account so I can't even use it.	log in	Bug	Neutral
249	913855602	What's up with Line not working on my iPad? It tells me to put a number code into my smartphone, I don't have Line on my phone and don't want it on my phone. Please correct the problem.		Other	Negative
250	913855602	I can't even make an account, I'm so confused and when I went to their help page it didn't help at all it just made me more confused. Trust me this is a burden you do not want!	make account	Bug	Negative

Lampiran 2. Truth Set untuk aplikasi iBook

No	AppID	Review	Fitur	Klasifikasi Review	Sentiment
1	364709193	This app is useless for audiobooks. The iTunes Store told me I HAD to download this app to download my audiobook. (I listen to audiobooks in the car on trips). So I bought the audiobook, and could not download it. I got this app and then somehow was lead to purchase and download the iBook version. So I now have paid for an iBook that I don't want and have paid for an audiobook I can't download. I am SO MAD!! What a waste of time and money. How the heck can I get a refund? What a mess!	audiobook	Bug	Negative
2	364709193	It's an amazing app. I just wish it could read the books too you or with out have to have an account on Amazon or something like that.	read book	Future Feature	Positive
3	364709193	I dont even know where to start with this app! I can't even transfer my epub books from my iphone to pc! I cant read any epub files with my language (amharic)! I don't know why i am still using iphone either! I am switching to samsung as soon as i can! Iphone should be the most hated phone in africa right now! I am NOT using this phone ever again!	transfer book, language	Future Feature	Negative

4	36470 9193	I recently updated to iOS 7.1 a couple months ago and iBooks update is horrible most importantly they took out the rotating feature. And I've had to re download some of my PDFs because some of them just disappeared one day. I can't stand that I have to go to iBooks to download files online if I leave while it's downloading it won't work. Please fix these problems.	rotate, download file	Bug	Negative
5	36470 9193	This app is horrendous. If it has the ability to save books via iCloud, then why will it not do the same for PDFs? Horrible. During the ios8 update, my iPad randomly disabled itself and then the only option left was to system restore. Crappy update made me lose almost everything. Lost plenty of important documents. -5 stars. Sorry but this app is only if you want books, clearly the developers of this app should have eliminated the PDF section ENTIRELY or provide more insight on it. Horrible!	save book, save pdf,	Bug	Negative
6	36470 9193	The ibooks store isn't working! How am I supposed to get new books? Whenever I click on the store it's just blank white. Fix it please!	iBook store, get book	Bug	Negative
7	36470 9193	I love iBooks but hate the white. Needs to be back the way it was. Y'all making it where no one likes it anymore	Design	Other	Negative
8	36470 9193	Apple let people who prefer the look and feel of reading a book have the Classic look back. I would pay to have it restored. The current look is ugly, cold, sterile, but most of all just not fun to read. The new version is just a sad Kindle knock-off. Now there really isn't any difference between the reading experience on the IBOOKS and that on any of the other tablet ereaders. Too bad. I used to enjoy buying and reading books exclusively on the IPAD. Now, I will look at Kindle books, which offers a much wider inventory of books. dd	classic look, book inventory	Other	Negative
9	36470 9193	Return the old, not ordinary book design, please! The design we have now is too plain. I could browse documents in such a design on PC. Its boring. I mean its a BOOK app, so it must look like book!	book design	Other	Negative

1 0	36470 9193	I absolutely hate this app. I have a lot of books, but the little circle is always spinning, so I can't even get to the edit button to delete them. It takes at least 30 minutes to download my books. They always show up on my phone, but it takes forever on my iPad. The little cloud button with the arrow always shows up, and it have to constantly press it before the book will download. I've had to resort to using the Nook and Kindle apps, because this has so many problems. I wish they would fix it, because I really like the setup of iBooks.	edit button	Bug	Negative
1 1	36470 9193	Can you plz make a screen recorder so we can make cool videos for YouTube	Screen recorder	Future Feature	Neutral
1 2	36470 9193	The app will not let me download and I have tried multiple times. This it terrible.?????????????	download	Bug	Negative
1 3	36470 9193	I really LOVE the app itself, but it makes my phone run slower and it freezes and shuts off while I'm reading a book, and won't let me on other books.	read book	bug	Negative
1 4	36470 9193	Love it????		Other	Positive
1 5	36470 9193	My install collected 250 MB of "nothing" despite all media deleted. Allows renaming of PDF with slash in name, then may delete document if you try to email. Loss of files inexplicably. "Design" ala Johnny Ives a barren wasteland as bleak as 1984. Use Kindle instead.	rename pdf, email document	Bug	Negative
1 6	36470 9193	I always look at the reviews before I get an app, so, as I always do I decided to check them and well, they litterally said the app went from great to TERRIBLE and this is horrible because I'm really looking for a book app, any suggestions?		Other	Negative
1 7	36470 9193	Disappointed that IBook has not been updated. The app is lame, with it's generic look. I'd much rather pay a few extra dollars to own a book that welcomes you to read, rather than IBook, which keeps me away from reading an already purchased book,	look, purchase book	Bug	Negative
1 8	36470 9193	Perfect way to organize your pdfs. Highly recommend!	organize pdf	Other	Positive
1 9	36470 9193	iBooks is a huge disappointment after using audiobooks. I have to flip through chapters to start the book. I listening during my commute, so when I have to manually forward to the next chapter, it becomes more trouble than it's worth. Boo!	audiobook	Bug	Negative
2 0	36470 9193	I think iBooks is a great app if you like to read you can download books them easily. It is easy and simple to read the books you love when you want to.?????????????	download book, read book	Other	Positive

2 1	36470 9193	I really like this app. It is very easy to use and useful. It is convenient too. Love this app!		Other	Positive
2 2	36470 9193	It is the best thing I have ever saw????????????????????????????????lol????????????????????????????????this is the and reading is awesome		Other	Positive
2 3	36470 9193	Refer to title. Not sure what all of the complaints are for. It's especially good for iPad or maybe iPhone 6/ iPhone 6 Plus.		Other	Positive
2 4	36470 9193	Love this new design.	design	Other	Positive
2 5	36470 9193	The iOS 8.3 for my iPad mini 2 screwed up my iBooks bookcase. My books are out of order & some books looks distorted. I just wanted the Spock's Vulcan salute emoji icon & the update ruined my reading order (pain to move books around, makes me dizzy). Also, hate that iBooks doesn't automatically update books. To manually update each book is tedious. KINDLE RULES!!!!	update book	Future Featur e	Negative
2 6	36470 9193	Hate the new look. Bring back the bookshelf. Some things just need to be left alone. Seems like you are copying off of kindle. The bookshelf felt cozy, as though you were actually pulling a book off the shelf. I don't know what this is. Who ever thought of this needs to be fired! Booooo! I'm done with Apple.	bookshelf	Other	Negative
2 7	36470 9193	Terrible design after last update	design	Other	Negative

28	364709193	<p>I still like iBooks but the older version was more pleasing to the eye in landscape/book mode on the iPad. Now it looks just like the Kindle app, and that is not a good thing.</p> <p>Note to designers: Dark room. Reading a book using Night (black) theme. Going back to the Library is very jarring with its bright white background...</p> <p>I went back to the old version.</p> <p>Update - 09/23/2014: And now this "beautiful new design" (boring!) version is forced with iOS 8. By being part of the operating system, it is no longer a separate "app" on upgraded devices that we can remove (and reinstall the old version). Sad. ??</p> <p>This app has not been updated since Nov 2013. I really hope Apple has read these reviews, before they no longer exist under an "app", and update it soon - with some more UI options to make the program more personal to individual likes. Reading is very personal.</p> <p>10/15/14: I'm missing out on the new iOS 8 features on my main device because I'm holding out on upgrading. All to keep the old iBooks version a little while longer...</p> <p>04/09/15: I'm finally updating my iPad to 8.x. Bye-bye bookshelf. Bye-bye 'book edges'.?? I'll have to visit you on my older iGadgets that can't be upgraded to the latest iOS.</p> <p>When the Night theme is used on a book, sometimes the background switches to a darkish blue after a few seconds, and sometimes it stays bright white - either way, I have squint. Apple, please add more background options to iBooks. Please.</p>	bookshelf, background option	Other	Negative
29	364709193	Lately, I have to wait a long time for the app or a book		Bug	Negative
30	364709193	I think everyone would benefit if the next update or so had the feature of being able to listen to the pronouncement of the word you are defining. Please do this feature!	listen pronouncement	Future Feature	Neutral
31	364709193	This the best pdf viewer app that I've ever used, but if you add visible bookmarks that you can see before entering the book it will be awesome.	add visible bookmark, arabic book	Future Feature	Positive

		Another thing, if you could add the arabic books to your library that would be good			
3 2	36470 9193	<p>This is the main reason I have not updated to iOS 8. You expect us to adapt and, use a app that is slower, dummied down, ugly and unable to delete it and downgrade? I swear this app has gone from looking and acting like a Lamborghini to acting and preforming like a Yugo!</p> <p>Is it asking too much to bring back the old wooden bookshelf and, let us delete this junk off of iOS 8 or, are you guys too lazy. Since being bundled with iOS 8, the ratings for this app have plummeted. (due to criticism of being bundled)</p> <p>Overall fix this app and, allow customization to make it look like the good old days. Jailbreaking to avoid, delete, and reinstall the old version (3.1.2?) of this app is unacceptable!</p> <p>Even if there is another version released called iBooks Classic with the wooden bookshelf UI, we will be thankful!</p>	bookshelf	Other	Negative
3 3	36470 9193	I absolutely hate this app now. It's completely white and sterile and not the cozy wooden bookshelf it used to be. The books take forever to load. The app just crashes after idling for five minutes. It deletes my book marks. I hate it,it's soo crappy now what the hell been trying to download a new book for an hour... waste of time. FIX IT.??	bookshelf, download book	Bug	Negative
3 4	36470 9193	Love it!!!! But every time I get on it it LOSES MY PLACE IN THE BOOK!!!! It's VERY FRUSTRATING	bookmark	Bug	Negative
3 5	36470 9193	I even use it in school		other	Positive
3 6	36470 9193	This app is amazing app I love it how's ever looking on the review's get this app		other	Positive
3 7	36470 9193	It doesn't download!!!!!!!	download	bug	Negative
3 8	36470 9193	It won't even let me download a book without saying their is a mismatch error and I can not download a book	download book	Bug	Negative
3 9	36470 9193	We are not children without any kind of decision. We don't need Apple decides for us in terms of design. Give us the opportunity to choose what bookshelves background we want. In the new update, please include in the options the previous features.	bookshelf	Future Featur e	Negative

4 0	36470 9193	I don't understand the bad reviews. I have never had any issues with iBooks whatsoever. I can easily find the book I'm looking for, download it easily, and it always retains my spot with no problem. Even if I am reading a book on my phone, then switch to my tablet and it automatically updates I where I was on my phone. I love it and have no bad things to say about it at all :)	find book, download, update	other	Positive
4 1	36470 9193	I have loved the look of the original design with the wood and have avoided updated for the new design for over a year because of its cold look and lack of realism. I accidentally clicked it and now it's so B-B-Bad!!!! ?????. I am actually crying over the look. Does anyone know how to reverse an update? I am devastated and can't read my book like this. I want to slapp whomever made the new design in the face and make them fix it. PLEEASSSSEEEEE!!!!!!!!!!!!!!!!!!!!!!!!!!!!????	design	other	Negative
4 2	36470 9193	I enjoy this app, but I preferred the previous version. The wood shelves were classy. One could delete books. The "edit" button is missing, so books cannot be deleted. There is no info on how to put books into categories, which would be nice. The weekly free book has vanished. I still look for books, but I'm not as pleased with this app as I was.	bookshelf, delete book, edit button, book category	other	Negative
4 3	36470 9193	I love reading on my phone. I'm not even kidding when I say I stay up all night reading.	read book	other	Neutral
4 4	36470 9193	I think I books is THE DUMBEST APP EVER. It is stupid. I can't even figure out how to use it! Anna giving birth goober		other	Negative
4 5	36470 9193	Sooooo stupid I got this app and it's free but you have to pay for the books you can't just make the app cost money and pay once instead of making the books cost for every book on there you read it makes you pay money ????	pay book	other	Negative
4 6	36470 9193	I love iBooks :)! I suggest fixing the app so it saves your spot in the book across all devices . I am gonna go read now :) thank you!	save book	Future Featur e	Positive
4 7	36470 9193	I'd like to be able to highlight and make little side notes but I don't know how??	highlight, note	Future Featur e	Neutral
4 8	36470 9193	I bought American sniper and it won't download but it took the money off of the account! FIX	download	bug	Negative
4 9	36470 9193	you people need to chill out because u guys are making a stupid choice.		other	Negative

5 0	36470 9193	Downloaded app, then paid for a book to read. Book downloaded ok, but app wont allow me to access it. Don't waste your time or \$ with this. Apple really screwed this up.	download book, access book	bug	Negative
5 1	36470 9193	I highly suggest kindle app in place of iBooks. Purchased school book through here and it glitches and freezes constantly. Just an awful app. Not to mention, you buy it and your stuck with the book that's doesn't even load!	load book	bug	negative
5 2	36470 9193	It is good to use but I like my kindle better.		other	negative
5 3	36470 9193	I really enjoy the hyperlink feature in iBooks. This allows room for eliminating other publications . . . "Everything in one" app. On the next upgrade can you include a variety of bookshelf colors? The pale gray is unattractive and hard on my eyes. Any wood stain color would suffice. Also, can you add a variety of colors to the 'underlying' feature, and a 'text' box feature? Thank you.	hyperlink, bookshelf color, underlying color, textbox color	future feature	positive
5 4	36470 9193	I recommend you read 'The Help' amazing book! just finished it and it's heart touching		other	positive
5 5	36470 9193	What i most loved about this app is now gone...the wooden bookshelf...a bookshelf like that in real life and a whole room/personal library like that look has been my dream of the life...so it felt so good to have that look at your fingertips and browse n read books from that...the new updated look is a total crap ...like frozen american junk food..i hardly visit the app any more...please provide those old look atleast as themes guys..damm	bookshelf	other	negative
5 6	36470 9193	In recent weeks this app has become difficult to open. Sometimes if you wait a while the list of books comes up. Sometimes it than crashes. Often I try to access either my library or the store and get nothing but a blank page. Fiddling with the settings doesn't seem to help. I've 100s of \$\$\$\$ of books on there so it's a bit frustrating.	open app, list book, access library	bug	negative
5 7	36470 9193	I miss the nice bookshelves of the old design â€“ the white bars with gradients don't match up in terms of quality. Even if you're not a fan of skeuomorphism, there's got to be something better than this "flat design" with gradients. It's even hard to use when I downloaded a free comic book - it usually turns the page when I just want to zoom in and explore the page. Disappointing.	bookshelf, turn page	bug	negative

5 8	36470 9193	Dear apple, please open flip it (by Anthony Romrell (i Think)) back up. I enjoyed it so much but it's off the App Store. If you can't, at least try to open an app that you can draw pictures then make the pictures move. Also if you do make one, I recommend that you make a lite so people can test it and then if they like it they'll buy it. (Usually people won't buy it if they don't know what it's like.)	draw picture, lite version	other	neutral
5 9	36470 9193	One word ... Horrible Bring back the previous version's aesthetics along with new functionality ... New functionality doesn't mean you have to sacrifice aesthetics or visual design. Disappointing	design	other	negative
6 0	36470 9193	I recommend you don't get this app		other	negative
6 1	36470 9193	I didnt ask to add this app on my iphone or ipad. Its annoying me. I couldnt remove it.. I want it to be gone.. Didnt have our permission to add this app. REMOVE IT!!!!		other	negative
6 2	36470 9193	I wonder what kind of logic developers behind this product have... What planet do they come from? Whom would it occur to delete files of books already opened, read, and bookmarked added not via iTunes upon the next best launch of application? Never using this cr*p anymore. No wonder why Apple makes some of their apps stock apps... Then you cannot state in reviews how terrible their products are Shame on you	delete book	bug	negative
6 3	36470 9193	It won't even download onto my iPod anymore :(not from my computer anyway! If I do it wifi it will download! But if I try & put a book on it from my computer it will take iBooks off my iPod :(	download	bug	negative
6 4	36470 9193	I love this app it great for finding to good books I like to read.	find book, read	other	positive
6 5	36470 9193	9 + 10 = ? Well 10 + 9 = 21 so what's 9 + 10?		other	neutral
6 6	36470 9193	I love reading and for the most part I love this. I'm frustrated, however because I have bought books and though I can open them on apple device in which they were purchased, I can't find them on my other apple devices. I really DO NOT want to pay for them again!!! They don't even show up as being able to download them. I'm not very happy with only being able to read some of them on just one device. I have multiple devices and just figured I be able to switch between them to read.	bought book, open book, multiple device	other	positive

6 7	36470 9193	I had no problems at first--but now trying to read a book takes twice as long because it freezes up all the time. And takes forever to load the next chapter--while I sit, staring at a blank screen and waiting... Use Kindle instead!!!	read book, load chapter	bug	negative
6 8	36470 9193	This is the best app for reading books, but adding more fonts would make it even better. Helvetica would be an awesome addition.	font	future feature	positive
6 9	36470 9193	I <3 it!! So awesome!!!!		other	positive
7 0	36470 9193	I got this app thinking I could finally have time to read in between my busy schedule. I paid around 5 dollars for a book only to have pages misses (unintentional cliffhangers) and typos galore. I'll pay for a paper copy next time, thanks.	read	other	positive
7 1	36470 9193	Sometimes, the book won't download, so I can't download it. It also crashes when I flip through too many pages. Also, can you please bring the old design back? My eyes hurt from the white bookshelf. An update is needed.	download, flip page, bookshelf	bug	negative
7 2	36470 9193	Doesn't work and all my documents are gone. I will never use it again. So much for Apple quality.		bug	negative
7 3	36470 9193	Spent 3 weeks reading a book only to have this app continue to crash every time I open it for the past week while I try to read the last 30 pages. Whoever I open the app the screen goes blank. I've uninstalled, reinstalled, turned off/on the ipad and nothing will work. So disappointed. Next will give kindle a try	open app	bug	negative
7 4	36470 9193	This app takes forever to download anything, won't let you open what you have downloaded half the time, then when you're halfway through a book and turn the page they're all blank. Overall just really poor quality!	download, turn page	bug	negative
7 5	36470 9193	Can't believe they ditched the wooden shelf.	wooden shelf	other	negative
7 6	36470 9193	I hate this app!!! I love that you can read on the go because of it, but because Christmas is coming up I don't want to waste my money on iTunes gift cards. Well you are probably thinking were my money goes I will give you a hint NOT music because I tried to buy at least two book and they DIDNT down load, so no I have NO money and NO books??	read, buy book	bug	negative
7 7	36470 9193	Not sure what happened but I went to continue reading a book and it shut down then proceeded to start loading 3, 6, & 8 copies of the same books. It isn't out of date on updates.	read book	bug	negative

7 8	36470 9193	I love that you can sample every book before you buy (or don't buy) & that you can sort books that are in your library into different groups & create/name each group. *I'd like to see some sorting options when doing a search & show how many books are listed in the search result.	sample book, sort book, group book	Bug	positive
7 9			sorting, searching	future feature	
8 0	36470 9193	I got lost when I could not see the app on my phone		other	neutral
8 1	36470 9193	I would have never downloaded new update. New design? No design. Please change back.	desing	other	negative
8 2	36470 9193	Like everyone I don't like the new design the old one was better but i don't agree with it shutting down or crashing it works fine the only problem is if you don't have wifi and u go to the store it freezes it on that screen but it does go away ;)	design, store	bug	negative
8 3	36470 9193	iBooks is a great app and the thing good about iBooks is that you get the book right away If you don't preorder. There are lots of different books for kids and adults.		other	positive
8 4	36470 9193	â€¢ Can't Sync from iBooks to iTunes !!! â€¢ Can't Sync using iCloud to my other devices !!! - I have 1.9 GB pdf files that I can't sync to my new iPad mini3 !!!	sync	bug	negative
8 5	36470 9193	Trying to read a book and the book stuff is act weird.	read book	bug	negative
8 6	36470 9193	This app is so frustrating. It could be so much better. I use my kindle app more often because it has features I use and want. I want a screen lock, so I can lay in bed and not have it constantly changing me to a different view. Also, where is a good sync? It's like it tries, but it's not close enough. I don't understand why an actual apple product is worse than another app. I've spent a lot of money on apple products, but kinda wishing I'd just bought a kindle.	screen lock	future feature	negative
8 7			sync	bug	
8 8	36470 9193	On the "purchased" icon for this app I have a little red circle with a number in it. Still haven't figured out what thats for. Can't find anything that explains it either,	purchased icon	bug	negative
8 9	36470 9193	I'm a huge fan of sci-fi and fantasy books. Opening the app, I see that the recent releases section is now gone, replaced with popular sci-fi or fantasy. Thanks for that option, but I'm more	recent release section	future feature	neutral

		interested in what's being released than what other people are reading. Any chance of having the recent release section placed back???			
9 0	36470 9193	I got the app rather recently, so I can't compare the current background to anything else. I personally think the back is okay, if a little dull.	background	other	neutral
9 1	36470 9193	It's very useful. Let's you highlight in multiplier colors and lets you make mini notes :)	highlight, mini note	other	positive
9 2	36470 9193	Using an ipad2, ios7 and can no longer access any of the books I have purchased over the past. Tried deleting and reinstalling app. All the books showed up in library on 1st run after reload, but could not open any book. After closing and reopening app, could not even get books to show in library. So I have wasted all that money on books I can no longer read. Would give no stars if possible.....	access book, library, show bool	bug	negative
9 3	36470 9193	Seriously, I never leave bad reviews but I am absolutely fed up with this iBooks app! The bookstore takes forever to load; I have 2 books in limbo that won't finish downloading and aren't able to be deleted; purchases "available to download" that are already freakin downloaded on my iPad! Ughhh more problems than worth it. Apple please get you stuff together.. We pay WAY too much money for this crap!	bookstore, download	bug	negative
9 4	36470 9193	App crashes every 30 secs to 1 min without fail. Very frustrating!!!		bug	negative
9 5	36470 9193	WATTPAD IS SOOOO MUCH BETTER		other	negative
9 6	36470 9193	I read quite a few books on my iPhone, and, beginning several months ago, I began to have issues downloading books. Now anytime I buy a new book on my iPhone, I have to delete the app and redownload it- very frustrating. I have an iPhone 5s and will not download the iOS 8.0.2 update as when I updated to iOS 6 in my 4s two years ago(?), I had such a terrible experience that I swore not to update to new iOS versions (7 to 8). Maybe this is fixed within iOS 8 but since I'm not willing to risk my phone's functionality/speed/etc, I guess I'm stuck in constantly deleting and downloading this app. I used to love iBooks, but not anymore.	download book	bug	negative
9 7	36470 9193	Review review review review		other	neutral

9 8	36470 9193	<p>This proposal is most important for educational books.</p> <p>I love the highlight and note features, as I refer to almost every inspirational read.</p> <p>I'd like you to consider the following for a future update:</p> <p>1. Many authors refer to other books and authors that compliment their styles, or inspired their philosophies. These references should be hyperlinked to the book store. Would save time and possibly generate higher sales because consumers will use the link immediately. Instead we have to copy and paste in store. Too much work.</p> <p>2. Allow for multiple selected text to be shared in one instance. I don't want to have to highlight the entire page in order to take a few key points out of the text.</p> <p>Please consider and I look forward to these issues being addressed.</p>	highlight, note, hyperlink, select text	future feature	positive
9 9	36470 9193	THE APP DOESNT EVEN OPEN. I CANT READ ANY OF MY BOOKS AND I AM FURIOUS PLEASE FIX.	open, read	bug	negative
1 0 0	36470 9193	Terrible! Books take forever to download, if they download at all. Even opening a book takes too long. Please fix this	download book, open book	bug	negative
1 0 1	36470 9193	Awesome but every time I open this one book it seems to crash.	open book	bug	negative
1 0 2	36470 9193	I love using apps by Apple, but when it comes to PDF reader app, I use Adobe Reader instead because iBooks does not have the view mode Continuous. And I recommend the Autoscroller Mode, too.	pdf read, autoscroll	future feature	positive
1 0 3	36470 9193	Do you have to buy the books?	buy book	other	neutral
1 0 4	36470 9193	I'm amazed about all of the complaints. I've had no problems. I'm only asking that you put an undo in, for when I'm working on something in Books and somehow everything gets highlighted. Then all the work I did has to be put in the trash.	undo, highlight	future feature	positive

1 0 5	36470 9193	This ereader is easy to use and downloads quick and easy. As other reviewers stated the look has been changed and is boring. Would like to see different colors for highlighting. There are only 5 colors and four of them are too dark & bright. Other ereader apps have a larger selection of highlighting colors that are more opaque so the the highlighted text is easy to read.	download, highlight color	future feature	positive
1 0 6	36470 9193	I searched up "free blood of Olympus" and it came up. I downloaded it for free but when I searched up the book it said "10.99" not free. I am disappointed because if it says it's free it should be,	download book	other	negative
1 0 7	36470 9193	I know I shouldn't expect much from a free app but this is the worst reading app I have ever used. Cannot even expand a page without turning the page. Kindle has nothing to worry about from this app.	expand page, turning page	bug	negative
1 0 8	36470 9193	Bookmarks no longer work.	bookmark	bug	negative
1 0 9	36470 9193	chvcg			
1 1 0	36470 9193	What have you done?! The layout is simply horrendous and I'd sincerely like the wooden bookcase design back, it's a classic. My books won't even load now and for the first time ever, it appeared as if I had double-clicked the home button and I had screen slides, but I didn't and I could still "search," but it wouldn't even let me do anything else. You guys seriously need to fix ASAP or you're going to lose a lot of customers, as if there weren't enough complaints already and you know it. Also, it would be really nice if you could redeem books with a code or scan number, like you did with the movies. It's not fair that you have a series of books that you love and have purchased in the past, yet you have to pay again just to read it in iBooks? That's extremely unfair! Don't you agree?	bookcase, search, home button	bug	negative
1 1 1	36470 9193	Please fix it.		other	neutral
1 1 2	36470 9193	Tomas Enrique Sanchez Sanchez is glad to include on my iPhone 5S this excellent application . I'll give 5 Stars for the excellent service.		other	positive

1 1 3	36470 9193	I love reading books on here, my fav 2 features are the built in dictionary for words you don't know and the word search for looking up character names or anything really in the book. I liked the old design a bit better, but change is usually for the better.	dictionary, search, design	other	positive
1 1 4	36470 9193	Love it!!!!!!		other	positive
1 1 5	36470 9193	Used to be good, now it loses files during sync, and locks up when you attempt to save a .pdf from Safari into iBooks. Cold boot sometimes helps. If you, in edit mode, reorder a file and rename it in the same session (without going to "done" in between), it confuses the file names, usually giving two different files the same name.	sync, save pdf, edit mode	bug	negative
1 1 6	36470 9193	The new look is ok, but the old look of a wooden bookshelf was so much nicer. I don't like the new look and have downgraded to version 3.1.3, and still use that. Even if the new look isn't removed, PLEASE PLEASE PLEASE PLEASE PLEASE allow us to change/personalize the look and have the old theme if we want. Not only so for the background, but for the books themselves. This could receive five stars if it was so, but I will only give it one for now. Please consider this, Apple. Please.	bookshelf	other	negative
1 1 7	36470 9193	Good app		other	positive
1 1 8	36470 9193	Overall I like ibooks a lot, but, recently, I have been reading a book I got as an ePub file download and have been wanting to read it on multiple apple devices. The problem is, iCloud does not sync it with my other devices. So, now I have to download the book on each one, find my place, and none of my highlights or bookmarks sync. This is very frustrating. Please allow us to use our icloud storage to sync books not purchased through iBooks and PDF's to our different devices!	read book, sync, highlight, bookmark	bug	negative
1 1 9	36470 9193	Opening a book should be as simple as clicking on it.. Did that---I get a description of the book. I don't want a description, I want to read it. Please, what is the secret to opening a book?	open book, book description	other	neutral
1 2 0	36470 9193	The app is amazing the only thing is you have to pay for the books and I have no money I'm only 13 ????????	pay book	other	negative

1 2 1	36470 9193	Where is the much needed update for this thing that I thought would come with iOS 8? And why does an e-book need one inch margins? Make use of the screen space on the iPad please! The text goes from edge to edge in the Safari reader. Why not here?	margin	other	negative
1 2 2	36470 9193	Super slow, super buggy. Books turn up missing, refuse to show up even after being downloaded, updates don't register, and when they do they don't disappear after downloading the update. Been getting steadily worse per update with no new features that bring back any worth.	download book	bug	negative
1 2 3	36470 9193	Always loved ibooks.. One of my favorite apps.. Now ever since the update there is a horrible lag.. It takes about 45 seconds for the page to turn or bookmark a page, rather than it being automatic!! Not to mention it gets stuck sideways (and page is blank) Takes 1-2 mins to get it straightened out! PLEASE FIX!!!	turn page	bug	negative
1 2 4	36470 9193	New version presents me with a blank white and grey page, none of my previous documents, which I put in there SO I WOULD HAVE THEM are there. Also a few books. If they are hidden in there somewhere I cannot find them with the usual tapping and swiping gestures.		bug	negative
1 2 5	36470 9193	I would love it if it would just function smoothly! Gahh always freezing up, not completing downloads & as of late the store just won't even load...	download, load	bug	negative
1 2 6	36470 9193	I have an iPad mainly for reading, and I picked iBooks over other options like Kindle and Nook. I like that it still had the feel of a traditional bookshelf and of actual page turning and so forth. Many people would still prefer using real books, but the readers are simply too convenient for traveling and so forth. So anything that still has the cozy feel of a library and books surrounding us really does make a difference. I feel like Apple has simply lost its creativity in rolling out the new designs for the latest iOS update. I understand being minimalist and all that, but you've also lost your uniqueness in that. Humble yourselves and be willing to make a change to at least turn the iBooks app back to its old design.	bookshelf, turn page, design	other	positive
1 2 7	36470 9193	For all those who are crying about the new design, please note that this is the flat style design principle introduced by Microsoft which focuses more on content rather than on the chrome. Apple has just copied it. You appreciate it more after	design	other	neutral

		using it for a while and take a look back at the old UI. Until then, use with patience.			
1 2 8	36470 9193	true or false?			neutral
1 2 9	36470 9193	Me gusta mucho leer , pero no encuentro muchos libros en espaÃ±ol, gracias por poner los libros mÃ¡s recientes			
1 3 0	36470 9193	What gives? "Cannot download the resource", response on all books. Just a few days ago was fine. FIX IT, FOOZE	download	bug	negative
1 3 1	36470 9193	Never had a problem with it		other	positive
1 3 2	36470 9193	Just great (and free ????)		other	positive
1 3 3	36470 9193	After being a flawless reader, this App is freezing & shutting down time after time on my iPad Air, Not on my phone. What's going on here and is there an update to fix? I have not gone to iOS 8.2 yet, but have rebooted and reinstalled several times. Explanation please.		bug	negative
1 3 4	36470 9193	I love iBooks, especially as an avid reader, but ever since I replaced my iPad, any time I try to download a book, it says "cannot connect to iTunes Store" and stops downloading my book about 3/4 of the way done. If I close the app and reopen it, the book shows up as waiting to download entirely. I can't access it unless I uninstall the app and reinstall it, at which point, the book shows up just fine. This is incredibly irritating and time-consuming, and is an issue that really needs to be addressed. If this can be fixed, I would have no complaints.	download book	bug	negative
1 3 5	36470 9193	This app is used to be good but is terrible now. It becomes so unreliable that shuts me down all the time. App developers need to do a better job to be at least the same good as in the last not worse	shut down	bug	negative
1 3 6	36470 9193	This app works fine for me, thankfully, since I bought 4 books already. But I'm giving 1 star for your customer service/attention. This app doesn't work for some people but you haven't done anything about it. I'm disappointed.	bought book	other	negative
1 3 7	36470 9193	Update to clear history please , acc hacked into and unspeakable books downloaded ... Plz update for ios 7	clear history	Future Feature	negative

1 3 8			download book	bug	
1 3 9	36470 9193	So brutal. Unresponsive buggy, glitchy awful. You move the phone to landscape and for about a minute it stays vertical. The. You go back to it takes another minute. Books take forever to load as well. Apple is awful	load book	bug	negative
1 4 0	36470 9193	I used to love iBooks because of the realistic design. The realism made me feel like I was reading an actual book. The previous design was so beautiful and just felt a lot better. The new design is just boring and terrible. It actually negatively impacts my reading experience.	design, read book	other	negative
1 4 1	36470 9193	This soft ware really needs some updates, i just cannot download the book, every time i click the cloud icon to download, it just died there, i signed out my Apple ID and reboot the machine, it doesn't work. i already purchase it, it is awful, i need algebra 2 common core for maths class, i went to the apple store for help, they said that i need to sync the ipad with computer on my own, the only thing they can do is to erase my ipad data which is bad, just please update this soft ware and fix the downloading problem.	download book, sync	bug	negative
1 4 2	36470 9193	SerÃa bueno que la comunidad hispano parlante tuviera mÃ;s variedad de libros clÃ;sicos gratis... Y asÃ motivar la lectura en la juventud... Gracias!!			
1 4 3	36470 9193	This is a good app for read		other	positive
1 4 4	36470 9193	This app takes my money but will not download the books that I paid for. I really don't like the Kindle format, but at least I can download books on my Kindle app. iBooks doesn't work, at all.	download book	bug	negative
1 4 5	36470 9193	Purchased and downloaded Sisters of Destiny... Heroine - Kate. Book one in series... By Dwight W. Hunter.....When downloaded shows on cover and title ... Heroine - Kate, the story that downloaded was for book seven - Rita..... Right title wrong story. I cannot find how to correct. Paid for one book received another. Was wanting story for Kate, not Rita.	download	bug	negative

1 4 6	36470 9193	Can we have a choice of skins? I still miss the wooden bookshelf. Can you make it so we can write on PDFs? It would be wonderful if PDFs were as useful as ePUBs, but I doubt you can do that. It would be nice, though, to at least be able to circle things with my stylus. Can you make more underline styles? Just plain red isn't enough, can we have a few more colors, a double underline, a wavy one, and a strike through? A few more highlight colors would be nice too. Some other language dictionaries would be fabulous. Most of my studying is in Italian, and it keeps autocorrecting my correctly spelled Italian words to something English. Thanks..	bookshelf, write pdf, underline style, highlite color, dictionary	Future Featur e	neutral
1 4 7	36470 9193	I can't seem to send the books that I've read to the Cloud. Is there some secret out there that I am missing?	send book	bug	neutral
1 4 8	36470 9193	When will this work with the iOS 8 update? I got a new iPad and cannot open the app. Since this is an Apple app, I feel it should be a priority to update the app to work with the latest system update. I was a fan until now... Warning to others, if you are in the middle of a book, don't update iOS system...	open app	bug	negative
1 4 9	36470 9193	It makes no sense. You can't search properly, oh and thanks so much, I really need to sort by best sellers. Perhaps price might be a helpful sort, or I don't know, ratings? Free books link from bottom is now gone. See you ibooks, I'm with my kindle full time now.	search, sort, rating book, free book link	bug	negative
1 5 0	36470 9193	I enjoy this reader overall but I can't understand why it needs to close my book, refresh and reopen my book every time I multitask. I do this a lot because the dictionary is only available in like 4 languages. Very frustrating and wastes a lot of time.	close book, open book, multitask	bug	negative
1 5 1	36470 9193	Update: no way to delete the new iBooks app on iOS 8 and add back the old attractive app. Goodbye 8. I don't need your new features on my old device enough to keep this eyesore app. Let us continue to use the old app with the more pleasant user experience if you'd like us all to adopt the new iOS. Also, Marvin does minimal much better. If I do adopt iOS 8 again, I still won't suffer this ugly iBooks. It doesn't have the features of Marvin nor the pleasant user experience of the old iBooks app. There is literally no reason to use iBooks as a reader, which means no reason to use the iBookstore to purchase content. See ya, iBooks 3.	delete book	bug	negative

1 5 2	36470 9193	The last 3 iBooks I have read, which all happen to be Stephen King novels, have been inundated with errors and typos to the point where entire passages are unintelligible. I have never had a problem with the app otherwise, but I refuse to pay money for a piece of literature that reads as though it was written by an elementary school student. The print versions of the books do not contain these errors, so why do the electronic copies? I can live with a mistake here and there, we are all human, but to have them occur with such frequency is unprofessional and shameful. If I was the author of said works and saw those errors I would be embarrassed for whomever is responsible, as I do not know exactly who is to blame: Apple, the publisher, etc., but it needs to be significantly improved at a minimum.	error, typo	bug	negative
1 5 3	36470 9193	If you haven't updated, DON'T! Because this used to be so much better...! Now it's white & lifeless. The app used to be beautiful, the way the pages looked like pages, the shelf, all of it. As an update, there really ought to be accessibility settings for the bookshelf. I display my books in list and the font for the authors' names is so gray and small that it is unreadable. Even with accessibility settings set to reduce contrast, darken text, etc., there's no way I've found to enlarge the tiny gray type when I'm trying to move my books into folders.	bookshelf	other	negative
1 5 4	36470 9193	I think the older version is bugged. I own a 4g ipod and when i'm opening my pdf files they don't open (they stay loading but never nothing happens) and is really frustrating.	open pdf	bug	negative
1 5 5	36470 9193	When I updated to the most recent version of iBooks, it deleted all of my PDFs and ePubs - anything not purchased from Apple, in other words. This is unacceptable behavior for any app, but it's especially galling coming from an app made by Apple itself. I'm switching over to Marvin completely for now, at least that app allows you to make backups of your library and connects with Calibre!	delete pdf, sync	bug	negative
1 5 6	36470 9193	I just wanted to send a book as a gift. Apparently, there is no way to do that via iPhone, so a book that I already read was downloaded to my phone (I thought the "send as gift" prompt would come up. And then, no way to contact help. I'll never trust buying from iTunes again.	send book	bug	negative

1 5 7	36470 9193	Please change back to the more vibrant colors for highlighting. The colors are dull now!! Also, if you want to make a note, it is on the left hand side. Please put back on the right hand side of the page. Why, do you have to mess with a good thing?! It was perfect just the way it was!!	highlight, right hand side	Future Featur e	negative
1 5 8	36470 9193	This could easily be 4-5 stars with a few minor tweaks. Not sure if this was an intended use for this app, but I save a LOT of PDF's for work. The iPhone is a HUGE part of how I do business. I like that I can email a PDF with 1 click, but would LOVE if I could email multiple PDF's at once. I may send a product catalog and a quote, but have to do 2 separate emails currently. Finally, please make it so I can attach a PDF from iBooks in the body of an email I am drafting the same way you can attach a pix from the library. There may be legal reasons why you can't, but if not PLEASE, PLEASE put these on your list. Hopefully several others are requesting these same 2 upgrades. Besides this, I really enjoy using the app!! :-)	email pdf, attach pdf	bug	negative
1 5 9	36470 9193	Having an almost tactile sense was a huge draw to previous Apple products. Today, however, it seems that "less is more". Less work and more profit. Apple, you need to understand that this minimalist concept is adding nothing. All this white takes away from the user experience.		other	negative
1 6 0	36470 9193	This newest update continues to frustrate. The minimalist design could be nice, yet it just comes off cheap and hard to look at. Give us an option to chose our theme, background, color of highlights. I also miss the option to have the screen look 'bookish'. It made for an enjoyable reading experience.	design,back ground	other	negative
1 6 1	36470 9193	Whoever is bagging on this app is weird because u try to make a better app. It just has a few kinks but they'll fix it apple always does!		other	negative
1 6 2	36470 9193	I stopped liking this app after it updated to ios7 and now it is being pushed on me after updating to ios8! forget it! Apple is really trying to piss me off!		other	negative
1 6 3	36470 9193	I really Love this the app but can't delete books I have read. They remain on the bookshelf even after deleting. However the most disheartening is the look. I hate the that the wooden bookcase look is gone which is the reason I was drawn to the app, this look. Please put it back , it felt like I was in my	delete book, bookshelf	bug	negative

		own private library picking out a book to curl up and read.			
1 6 4	36470 9193	Make the app so we can use morÃ© colors to highlite And to change the background of the things	highlite, background	Future Featur e	neutral
1 6 5	36470 9193	This app usually works really well for me but for almost a week it has been refusing to let me download a book. It asks me over and over to either type in my password or scan my finger but after a few tries it just quits. I'm becoming very frustrated with it. So before this problem it would've been full stars, but now I might as well give it none because it's not accomplishing what it's meant to do.	download book	bug	negative
1 6 6	36470 9193	I absolutely loved the bookshelf design and how it made your books look like ACTUAL books when you were reading them. I don't know if you're trying to look cool with this new design or what but we HATE this new look and we all loved the bookshelf look. PLEASE bring back the old design or I will delete this app and find a new book program. If there was a rating lower than 1 star I would've given this app that rating, but had you kept that old design I would've given you a full 5 stars.	bookshelf	other	negative
1 6 7	36470 9193	I have been using iBooks Gia a very long time but just found out I can not keep the PDF documents I downloaded when I redownload the app. So disappointing. I hope the tech support for this app can do something for this purpose. This would be a 6-star by then.	download pdf document	bug	negative
1 6 8	36470 9193	This aplicacion needs improvement and to add highlighters, text options and drawings as other new applications as UPAD.	highlite, text option, drawing	Future Featur e	neutral
1 6 9	36470 9193	So im using my grandfathers account and buying books, and it isnt working. He types in his password and then it asks for security questions. I cant download books because my grandfather doesnt remember his "favorite teacher" and his "least favorite teacher" he claims he never even answered those questions. So i cant download books for my school work. Please fix this. Thanks.	buy book	bug	neutral
1 7 0	36470 9193	Please remove the huge side margins. iPhone is already cramped enough.	side margin	other	neutral

1 7 1	36470 9193	I just felt like it to put a 1 star.		other	negative
1 7 2	36470 9193	They do not have "autobiography of a band obsessed teenager ~ the quest for more food and albums". This is an outrage		other	negative
1 7 3	36470 9193	I love iBooks but, since apple got rid of the pastel colors for highlighting I can only use maybe two of the colors and still have it be legible.... Please give us the pastel colors back or a least an option that we can choose if we want to use the pastel colors or the bright colors... Thank you	highlight color	other	negative
1 7 4	36470 9193	One thing I find frustrating is the inability to label files. They are too small to read unless opened. So why not allow a label so you know one from the other?	label file	bug	negative
1 7 5	36470 9193	I cannot highlight books using this app (iPad mini). Is there a solution for this issue? Thanks	highlight	Bug	negative
1 7 6	36470 9193	Needs fixed I hate that I have books that I either read or books that I downloaded and didn't like. I also can't update book changes on iPhone	read book, download book, update book change	bug	negative
1 7 7	36470 9193	Can't find a book unless I know exactly what book I'm looking for, usually by going to look it up on Amazon or Google. Then once I DL said book, if it's even on here, iBook is slow to respond and I'm repeatedly asked for my password simply to open the app. It's ridiculous. Especially for books that cost upwards of \$2.00 more than Amazon. May as well stick with the Kindle app, cut out the middle man and save time, aggro and \$\$.	find book	bug	negative
1 7 8	36470 9193	Please add the book Soldier X by Don Wulffson.		other	neutral
1 7 9	36470 9193	It's been almost a year since the last update. Please listen to your customers complaints, etc. and update. Would greatly appreciate being able to sync PDFs, no matter from where they are purchased or downloaded, between devices, especially between my MacBook and iPad. Thanks in advance!	sync pdf	Future Featur e	neutral
1 8 0	36470 9193	i just love this app!! this is awesome ??????		other	positive

1 8 1	36470 9193	App works great but over the last year the requirement to sign in every time I want to read a book is driving me absolutely crazy. I will change rating to 5 stars if an automatic sign in setting is enacted.	sign in, read book	bug	negative
1 8 2	36470 9193	The iBooks app is one of the main reasons I like having an iPhone, but here lately it's terrible. It freezes, books take forever or just don't download, and if I try to download more than one, it can take days before they even show up in my library. I have also noticed it won't let me edit my list very easily because it constantly looks like it's refreshing and it randomly shuts down and I can't bookmark my page. I really expect better Apple!!	download, library, bookmark	bug	negative
1 8 3	36470 9193	Such a life saver		other	positive
1 8 4	36470 9193	I couldn't even open the app. I tried downloading it but the icon disappeared from my home screen. When I went back to the App Store to get it, my only option was to "open" iBooks but the button didn't do anything. Very strange. Very strange indeed.	download, open app	bug	negative
1 8 5	36470 9193	Great app! BUT I WOULD LOVE NIGHT MODE! Much needed feature! I would like a couple of new colors for highlighting!	night mode, highlighte color	Future Featur e	positive
1 8 6	36470 9193	My app WILL NOT OPEN it won't open like what the heck	open app	bug	negative
1 8 7	36470 9193	App keeps shutting down while I am reading. I have turned off iPad to reboot, but still happens. Really annoying because when I reopen, I need to figure out where I was last reading. This is not the first time this app did this to me. Stopped for a while, but has restarted again.	read book	bug	negative
1 8 8	36470 9193	Please make the pageview bigger by getting rid of border space. My iPad has already wide bezels.	pageview	Future Featur e	neutral
1 8 9	36470 9193	I got this app, and the text is way too small. I noticed when I googled it that there should be the option to change the text size where it says "Aa", but it's not there?? Why is this? It's so hard to read, and when I zoom in I have to constantly scroll back and forth, which hurts my eyes. Please fix this!	text size	Future Featur e	negative
1 9 0	36470 9193	Please go back to skeuomorphic look. Flat is a personal preference of jonnie iviee.... 1 trick pony only good at hardware. Can't believe everyone is brainwashed that this looks good and is user friendly, because it is not.		other	negative

1 9 1	36470 9193	I love the iBooks. Use it on both iPad and iPhone. Used to love how I could pick up either device and it would be exactly where I left off on the other device. Now it never stays in sync. I can read multiple chapters on my iPad and then decide to pass some time when it's slow at work and read on my iPhone. I will have to scroll through multiple chapters to try and figure out where I left off. Very annoying. Please fix this!!	sync, multiple chapter	bug	negative
1 9 2	36470 9193	Why there is not a pdf continuous and night mode..?	pdf continuous, night mode	Future Feature	neutral
1 9 3	36470 9193	I tried to reread one of my purchased books and when I went to my library, it said some of my books were downloading. Why would it do that? I specifically had these books and I didn't delete them. I've never had this problem before and it's not acceptable.	purchase book, library	bug	negative
1 9 4	36470 9193	This app is absolutely amazing ! It allows me to easily read great books ! I really like it ! But anyway its not perfect you could improve a few things such as 1) get some background on this i mean it doesn't have to be so plain and boring . 2) umm !!! You need to just give the books for free nobody wants to have to pay for words to pop up on a screen ! Yeah i realize you have to make money but at least lower the dang prices ! Js . 3) Whenever it has a series of books dont make the first one (that has , to be continued...) free then the others like 3\$ like Fr ! Thats not right . Well other than that this app is super ! ???? ~ You'll Never No	read book, background , pop up screen, free book	future Feature	positive
1 9 5	36470 9193	I finally had to cave and update to this crappy white boring OS version, and you've completely ruined my fave app! It's a book app, why would u take the bookshelf off, the pages, the feel of a BOOK! Plain white..Really? Work hard on it?	bookshelf	bug	negative
1 9 6	36470 9193	I like iBooks. Not sure why people hate it. Adding speech, pdf and import features would make it excellent.	speech, pdf, import	Future Feature	positive
1 9 7	36470 9193	The absolute worst looking app I've ever seen. Since when is glaring white a design improvement? Bring back the old bookshelf and the page look! I used to read with iBooks a lot. Now I use the Kindle app, which, of course, means no book sales for Apple. And I can no longer delete books? You have to be kidding.	design, bookshelf, delete book	bug	negative
1 9 8	36470 9193	Great app. It's great of children and adults. I love it. It has all my favorite books. Great job. I have to give it 5 stars		other	positive

1 9 9	36470 9193	Overall, a great app. A few problems I have personally with it though. One being that there is not an "audiobook" option where I can do what I need to do in life like cleaning the house, AND getting a good book in at the same time. Please PLEASE Apple, make an audiobook option. PLEASE!! Ten stars would be coming your way if this was done.	audiobook	Future Feature	neutral
2 0 0	36470 9193	I'm giving it only 1 star because, i feel the last update was stupid!!! I think there need to be a way you can pick different backgrounds in the bookshelf department, instead of boring white!!!!!! And there NEEDS.....TO.....BE.....MORE.....HIGHLIGHT COLORS!!! Now I don't won't to sound mean,or anything, but I would love it If you would put,at least some of those thing i mentioned in your next update!!!!!!!!!!!!!! (I hope someone is reading this) ????????????????	background bookshelf, highlight	bug	negative
2 0 1	36470 9193	Its broken. :/ Its my first time using this app but nothing on it seems to work, the store isn't even scaled properly, and nothing happens when i do press a button. Its just a bad app.	store scale	bug	negative
2 0 2	36470 9193	The store takes forever to load!!	load store	bug	negative
2 0 3	36470 9193	Why can't I find the books I have purchased? I literally have to look through all of the books I have downloaded to get to the ones I haven't read. Horrible.	find book, download book	bug	negative
2 0 4	36470 9193	Everything is ios 7. I cant refund the books i bought because i cant get. One of many reasons why am i switching to samsung	refund book	bug	negative
2 0 5	36470 9193	My husband is very glad that he did NOT upgrade this app! I'm so sorry I did! Mention one thing, hate the highlighting colors now provided! All are too dark! Much prefer my husband's, my old NOT upgraded app! as they are lighter! prettier, so much easier to read through! I want to revert back, but not an option! BOO!	highlight color	other	negative
2 0 6	36470 9193	I loaded iBooks app on my phone with a bunch of books.loaded up iBooks on iPad and boom, no books show up. Went back to my iBooks on iPhone and it deleted all books because it synced with iPad. Wth happened to Apple? After Steve jobs, this company is rapidly on the decline!	load, show book, delete book	bug	negative

2 0 7	36470 9193	Listen, Apple: What is it with the whiteness and brightness of everything? You know it's hard on the eyes. Cut it out, okay? Also, I liked the faux bookshelves. Thanks -- NOT -- for eliminating them. I have deleted the new app and re-installed the old one which I fortunately still have. I know what you're going to do, though: Make the old one impossible to use in future devices and iOS updates. *Why* can't you give your users a *choice*? Do we really mean nothing to you?	bookshelve	other	negative
2 0 8	36470 9193	I have iBooks, Nook and Kindle. iBooks used to be my favorite, but now there are too many issues with downloading books. Sometimes it takes several days. May have to start using the others more.	download book	bug	negative
2 0 9	36470 9193	Keeps telling me that it doesn't exist anymore???		other	neutral
2 1 0	36470 9193	Quiero bajar la app y me indica que no está disponible... Ayuda! Fue que la borre del iPad, la quiero volver a bajar y no me lo permite...			
2 1 1	36470 9193	I cant get it i Wish i could i need it put it back		other	negative
2 1 2	36470 9193	Why does it say it's no longer available? It's broke?? I can't even download it I used to have I books but then I delete it for more room n now I try to get it again n now I can't...	download book	bug	negative
2 1 3	36470 9193	Why is it still listed. If I can not purchase, then delist it. (Bujold books are the culprits this time.) It is annoying to go through the purchase process including entering password and then find out it is unavailable.	purchase book	bug	negative
2 1 4	36470 9193	Easy to use and super convenient for reading. Love the selection on the iBook store, too!	iBook store	other	positive
2 1 5	36470 9193	I like the new updates. Gives you a lot more control when reading books, specially for someone with such bad eye sight as myself. Its great to be able to adjust the font size and the background, as sometimes it was too small an the white background would hurt my eyes, even with low light. It has been crashing on me lately though. Not all the time, but now and again it just turns off. It might be because I have a lot lot of books though :/ I do wish there was an easier way to arrange books, like the way they show up in iTunes. As it is I keep having to arrange manually all the series with multiple books...	read book, font size, background , arrange book	other	positive

2 1 6	36470 9193	This used to be a very beautiful and elegant looking app. Now it's just a plain, blasÁ© bore to look at.		other	negative
2 1 7	36470 9193	Overall, I'm not a big fan of iBook. It is cumbersome, very un-Apple like. I cannot change authors and have to create a work around. I cannot create a "playlist" of pdf files. Now, deleting files is a major pain in the butt. Everything is kept in "the cloud". I just want to be rid of them. I do like the way it syncs with iPad, but so does dropbox.	playlist pdf, delete file, sync	bug	negative
2 1 8	36470 9193	This app probably looks better the first time you use it but it gets pretty ugly . Even if you have fast internet , it takes a while for it to download a book , and a huge problem I had , is that I can't download the books I bought before .	download book	bug	negative
2 1 9	36470 9193	i really enjoy reading my school textbooks on iBook, so i don't have to carry around huge ones. however, i think iBook should have in-app dictionary and digital highlighter and pen to take notes. This way, it would help me and various other readers to efficiently learn.	dictionary, highlighter, pen note	future feature	positive
2 2 0	36470 9193	Amazing reading app, get it		other	positive
2 2 1	36470 9193	Very bad		other	negative
2 2 2	36470 9193	I preordered a book and it's here now and it doesn't even download!!!!	download book	bug	negative
2 2 3	36470 9193	Loved the app before, but there is a bug when you try to change font size. Either bigger or smaller, it doesn't do anything and it crashes the app. Please fix apple!!!	font size	bug	negative
2 2 4	36470 9193	Who cares about a bookshelf background? A Kindle doesn't have a bookshelf background, so just use it for the books!	bookshelf background	other	neutral
2 2 5	36470 9193	Good app...but need a function to be able to highlight PDF's.	highlight pdf	future feature	positive
2 2 6	36470 9193	Nothing but a white screen. Cannot access my purchases nor can I search the library. It opens up to nothing and if I try to exit the app it pops right back up again. I deleted the app and re-downloaded it again to find still just a white screen.	access purchases, search library	bug	negative
2 2 7	36470 9193	iBooks store reeeeeeaaal slow to open, sometimes Store not connected or server not available, get this,often.	open store	bug	negative

2 2 8	36470 9193	Fortunately, I still hasn't updated my iBooks because I love its current design. I've been thinking for about some time to finally update my iBooks because I really do update all of my apps but of course, I'll make sure first that the new look of my app is better. For now, I guess I won't update my iBooks. It's a great app though.	design	other	positive
2 2 9	36470 9193	Do yourself a favor: download the Kindle app and purchase your books from Amazon. Maybe, just maybe, if more iPad users would follow that advise, Apple might seriously create an app where people can read and enjoy books. This is by far, one of the worst apps that Apple has created. Several books that I've purchased on here, I've had to repurchase via Amazon. When using iBooks, the app freezes up consistently(you can rely on it freezing up on you). When attempting to highlight point and/or create noted, again, iBooks is reliable in that it freezes.	highlight, create note	bug	negative
2 3 0	36470 9193	Love it for reading books. Prefer it to Kindle anyway		other	positive
2 3 1	36470 9193	Can't believe this is an Apple product.		other	negative
2 3 2	36470 9193	Try to download the book and it won't download it also keeps blacking out when I try to read the reviews of the books	download book	bug	negative
2 3 3	36470 9193	It would be great if we had more choices in the colors for the highlighters and underline features of the app. I really hate that I can only underline in red. It feels very restrictive.	highlight color, underline feature	future feature	neutral
2 3 4	36470 9193	I do NOT like the new layout. Like someone else posted on here, we should be able to revert back to the original background/layout. Also for some reason half of my books wont load on the Home page, ive restarted my phone etc but doesnt help. The books app store also freezes like CRAZY! Pleaseeee fix this. I cant download books, or it takes a century to go the books page to read the synopsis etc. Ive had this issues with the iBooks book store before, but it seems to have gotten worse. Either fix this or im going back to the kindle app. Smh	layout, load book, book store, download book	bug	negative

2 3 5	36470 9193	The margin is not adjustable which makes a huge waste of the iPhone's screen. This is why I never read a book with my iPhone. The UI is terrible, ugly, and unbearable. Besides, iBooks supports very few dictionary. It's sad because you cannot expect to use it as a tool for learning a second language, say, French or German, while my Kindle Paperwhite can do everything I want it to do except it is a little bit slow.	margin, read book, ui,	other	negative
2 3 6	36470 9193	I was very happy using the kindle app until I found you couldn't purchase books off the iOS device, so I decided to try iBooks. On my iphone when I enlarge my font, the paragraph spaces also get enlarged plus the title sizes and it just looks the words have vomited on the page.	purchase book	bug	negative
2 3 7	36470 9193	Still having problems syncing across devices. Installed books using iPad; only to find them deleted days later when trying to sync with iTunes. What's up with that? And the app is very sluggish when updating.	sync device	bug	negative
2 3 8	36470 9193	I don't mind that there's an update, but when the update is worse than the previous version, that's when I have a problem. I don't like to keep my ebooks as I download frequently and need to always delete them when I finish reading them, but I can't delete them since the button for 'edit' always seems to be loading! And it just keeps showing up as loading no matter whether I've restarted my iPod or quit the app! I love the convenience of ebook, but if I can't delete them, my library gets quite messy	download ebook, detele, edit button	bug	negative
2 3 9	36470 9193	I love this app! It allows you to read books for really cheap prices. I don't understand why people are hating on it. And to those haters, in IOS 8 it will be a built in app		other	positive
2 4 0	36470 9193	I love iBooks! Before I got my iPad I could only use on my phone which was fine. I was also using an older version which I liked wayyyyyyy better!!! I'm not too crazy about this version, because even though I can delete books I don't want anymore or just don't want stored on the program, it seems as though you can't PERMANENTLY delete them from iBooks anymore. If there's a way please let me know! If you hate the book why should it still be on your book shelf??	delete book, book shelf	bug	negative

		Apple it would be nice to have this feature back again.			
2 4 1	36470 9193	Hardly ever use this app.		other	neutral
2 4 2	36470 9193	This app is great! If you don't have room in your place to shelve all the books you get the iBook is perfect. It downloads the books fast and are displayed nicely on your bookshelf. Also it saves the page you left on. My only issue is that you can't share the books you purchased with other iBook app users which makes me at times purchase the actual book so I can lend it to others:(.	shelve, download book, share book	future feature	positive
2 4 3	36470 9193	It loads painfully slowly on the iPad, for no discernible reason. Books are priced higher than other apps, again, why? It's not a bad platform, if you don't mind waiting, and waiting, for it to load. It is ridiculously convenient, at least as an idea. I love having so much literature at my fingertips. Why, then, make it so incredibly hard to actually use? The fact that you are actually paying for the privilege is adding insult to injury. I really wish I could recommend this app more highly. But the time I spend waiting for it to load the books I've already purchased, let alone trying to buy anything else makes me reluctant to put anyone else through the frustration I am put through every time I open the app. There are other places to go, unfortunately (for apple). I hope they work out the kinks soon for my sake, if not for anyone else's.		other	negative
2 4 4	36470 9193	I use to LOVE iBooks, now it won't let me organize my books. Most of the books are in the purchased folder and it won't let me move them to another folder (or if I can move them, I moves them back). Very frustrating!	organize book, purchase book, move book	bug	negative

2 4 5	36470 9193	<p>They fixed the app crashing issue when I try to buy books. For the most part.</p> <p>Additionally, whenever I start the app, it goes into a holding mode and I can't delete or move books for a good 5 minutes.</p> <p>When I do get the chance to edit my books, I can do one change then it's back to the holding pattern of 3-5 mins.</p> <p>I don't know why, but I really tend to expect more from the company that developed the hardware and the SDK all apps are baed on.</p>	buy book, holding mode, delete book, move book, edit book	bug	negative
2 4 6	36470 9193	I love the app but it keeps messing up and glitching. The words are bigger and every time I try to make them smaller it shuts down. Then when I try to get back on the words don't show up. I need to finish reading a book for school so please help.		bug	negative
2 4 7	36470 9193	Title says it		other	neutral
2 4 8	36470 9193	Well, I finally got forced to upgrade during a recent synchronization mess. Pretty much as I was expecting, the new version has sucked all of the pleasure out of using the app itself. Yes, you can still read the text of your books, but removal of the book trim and restyling of the elements leaves you cold otherwise. And meanwhile no enhancements to actual functionality, like being able to, you know, *search* for books, have come along in *years*. Whoever is making the decisions driving this product within Apple should be fired for having no sense, no imagination, and no vision.	sync, read text, search book	bug	negative
2 4 9	36470 9193	I used to love it, but now...whenever I get to a certain part of the store and see a book I actually like, I tap on it. It crashes. Fix your app iBooks! >:(	book store	bug	negative
2 5 0	36470 9193	Going down hill fast. Lost all my books and apple support says o well.		other	negative
2 5 1	36470 9193	It was so bad I pressed to sample a book and it charged me 10.00 dollars it was so bad.	sample book	other	negative
2 5 2	36470 9193	Another Basic Ap with no local sync option. Like Contacts & Calanders you can no longer sync Books from an iOS device to your own Mac 1' away. The two local devices can only sync through iCloud - an Omininous Sign!!	sync	future feature	negative

2 5 3	36470 9193	I'm surprised by the number of negative reviews. iBooks has worked without a hitch for me and I love how I can go from my iPad to iPhone to a Mac, seamlessly picking up where I left off on my last device, using iCloud bookmarks. I use it daily on my commute and before I go to bed and it's been a pleasure to use. I'll never go back to paper books, that's for sure.		other	positive
-------------	---------------	---	--	-------	----------

Lampiran 3. Truth set untuk aplikasi evernote

No	appId	Review	Fitur	Klasifikasi review	Sentimen
1	281796108	I love this app! I use it for keeping track of lists, different stories, ideas, workouts, just about everything. I love that it keeps photos with texts and I just discovered the drawing feature where you can draw on your notes.	photo, draw, note	other	positive
2	281796108	<p>I've used Evernote for several years. It's definitely useful. But I've finally gotten frustrated enough with the kludgy user experience that I'm ditching it for somethings simpler.</p> <p>99.9% of the time when I open the app, I want to create a new text note. But this takes between three and seven clicks to begin doing -- I either need to back out of a search view I opened days ago, or I need to press plus, then choose text, then click inside the note area to begin typing.</p> <p>For some reason, the highlighting and cutting me pasting experience in this app is buggy and unresponsive. I don't know why it doesn't offer the exact same highlighting experience as all other iOS apps.</p> <p>Searching is also a confusing experience. It shows faceted search terms as you type, but if you select these you often get a weird subset of potential results. I often spend a frustrating amount of time digging around for a note I know I created just recently, only to find I'm</p>	create note, highlight, cut paste, search	Bug	negative

		accidentally filtering on the wrong notebook or something.			
3	281796108	I am a huge fan of Evernote, but adding text to a note using my iPhone app is becoming a major hassle characterized by many freezes and jumping around when I try to type in a note. Several minutes of work, and multiple attempts, are required for what use to take a few seconds.	add note	Bug	negative
4	281796108	I love Evernote and use it for everything from taking notes for online classes to saving recipes, PDF files, and emails. Learn to leverage the power of Evernote and simplify your life!! Best productivity tool I have ever seen.	take note, pdf file, email	Other	Positive
5	281796108	I see that Evernote took away the typing part of Evernote and introduce writing for Evernote. I tried the writing part and hate it. Please bring back the typing component for typing up notes for Evernote.	write note, typing note	other	negative
6	281796108	Use it all the time. BUT... a couple big problems: First, when I open the app on my phone, if I haven't opened it in a while, say 10 minutes, I want to see the home screen, not the deep location I was in last. Sometimes I just want to open Evernote and take a picture, but it takes me 4 clicks to get back to the home page first. At least make this an option in settings to default to the home screen after some chosen amount of time. Secondly, I do not want untitled notes. I never want untitled notes. When I take a snapshot, and I click to finish it, I should be taken to the note's name field. I shouldn't have to click into my "untitled snapshot note"; to name it. Likewise when click to create a text note, it takes me to the body of the note. Then I click to finish and its untitled. It should default to take the first line of your text as the note. I	open, take picture, home screen, untitled note, create note	bug	negative

		can't imagine anyone ever wants an untitled note. Please fix.			
7	281796108	Let me organize my notes the way I want by drag and drop, with a real hierarchy.	organize note	other	neutral
8	281796108	<p>I've been a premium user for over a year and love Evernote! However, there needs to be an update to fix the glitchy select/select all/paste which doesn't always work thus not allowing me to copy/cut/etc. things.</p> <p>There not being a way to recover deleted stuff like with google/Microsoft which has devastated me some of my notes by deleting all the content with one mistake of the hand.</p> <p>Besides those things I very much enjoy the application (and a lower subscription cost for what you are getting would certainly be more worth the high fees).</p>	select, paste, copy, recover delete	bug	positive
9	281796108	<p>Their sync corrupted a 63 line note to 1200+ lines, with the updates hidden in the middle of the mess for me to dig out.</p> <p>Without getting too detailed... their code is sloppy. Lazy programming on their part. Pretty bad for having over 100mil users. Reminds me of MS in the 90's.</p> <p>update: they ask for in app rating I press no and the app crashes. LOL for the amount of income they take in for Evernote there is no quality control. I am officially done with Evernote.</p>	sync, app rating	bug	negative
10	281796108	<p>Please please please... We love everything about this app EXCEPT that it is useless if you want an outline or note-taking format. Bullet or simple numbered format is not enough.</p> <p>5 stars are worth this simple</p>	outline	future feature	neutral

		upgrade. Just do it!			
11	281796108	Works like A Charm !		other	neutral
12	281796108	Evernote enables me to run my life and my business with 6 employees no matter where I am. I tried many other things but EN is the best by far!		other	neutral
13	281796108	now its slow ugly and unusable go back to former ui and you'll win me back thanks evernote ui designers. you all should be fired.	ui	other	negative
14	281796108	I absolutely love this app!		other	positive
15	281796108	If you use it correctly, it increases your storage and recollection. And it keeps getting better and better. A no-brainer (??) at this stage.	storage, recollection	other	neutral
16	281796108	One of my best go to apps. It holds whatever i cut n paste, and lets you share as well.	cut paste	other	positive
17	281796108	overall great App I highly recommend it!!		other	positive
18	281796108	Great app. Very helpful		other	positive
19	281796108	Thanks for the update! The previous UI was too hard on the eyes. This is much better. Wish we could also change the color of the header. Good job otherwise.	ui, header color	other	positive
20	281796108	As a busy pastor, I find Evernote to be a great tool for organizing my work and life. I use it to keep up with tasks, organize writing projects, research and sermon material, keep up with the particulars of my counseling practice, and daily productivity lists. I also use it to track and plan household DIY projects and even shopping lists for my wife. It is a great tool.	organize, shopping list	other	positive

21	281796108	I use this app more than three years, is very good use, I like it. and I recommend to all my friends, thanks a lot!		other	positive
22	281796108	A must have for anyone who takes a lot of notes, or needs to store a myriad of information that is essentially categorized & structured as a mind map to your life. Cannot imagine having an iOS device and not using this everyday. Satisfied w/ Evernote Premium for past few years, and counting...	take note	other	positive
23	281796108	I have been using Evernote for over 2 years. Its one of my favorite apps of all time. I use it for my notes taking. Easy to use. I like my free version. I might upgrade to premium in the future	take note	other	positive
24	281796108	Use the free version and you will discover you need this. Then you'll upgrade. Nuff said.		other	positive
25	281796108	I quit before my premium term expired. Aggressive lack of support. Price may vary by location. WT*, O? Sounds like fine print. Evernote lost its roots. Went from Evernote Rocks to Evernote Socks. (The Evernote Way of Life Marketplace, emphatically NOT a noteworthy place.)		other	negative
26	281796108	I use Evernote for everything from taking notes in meetings, recording interviews (I'm a journalist), saving and tagging articles and PDFs, setting reminders, saving business cards and recipes and taking pictures of stuff to buy or remember later and tagging them... I could go on. It's basically replaced my operating system. Maybe every 2 months (I use it daily in desktop, iPhone and iPad) I'll have a sync problem; the app notifies me and it can be quickly resolved. Fantastic	take note, record, saving, tagging, save, take picture, sync,	other	positive

		app and totally worth the premium version. Read the article about it in Businessweek			
27	281796108	HorrÁvel. EstÁ sempre travando e fechando bruscamente tanto no iPad quanto no iPhone. No momento nem abrir o app eu estou conseguindo!			
28	281796108	Fantastic to have data shared throughout devices. Love it!	data share	other	positive
29	281796108	I have the free, basic service and find it really useful--use it everyday. The reserve the ability to access prior versions of the note for paying customers which is a major flaw if you--when you eventually accidentally erase something. Another big flaw is that you can't access some of the attachments without data available which is a reality from time to time	reserve, access attachment	bug	negative
30	281796108	Great app, improves work productivity. Great to sync across desktop, iPad, and iPhone apps. Seriously great app! I use it all the time, I store work meeting notes, news articles I read, graphics and pictures I want to save. This is one of the most valuable apps in the App Store.	sync, note, picture, save	other	positive
31	281796108	Having notes accessible all over the world is phenomenal. And the ability to note all ideas and realizations is invaluable. Thank you Evernote.	access note	other	positive
32	281796108	I first got Evernote for a little better note taking app. That's still my main use for it, but I love the organization features (tags, searches,etc.). I'm starting to tap into the other features also, but this is an incredible free app - I use it every day!	take note,organize	other	positive
33	281796108	I've been using Evernote for several years and find it to be excellent in sorting notes I have. It's wide range of features allow for extensive thought organization.	sort	other	positive

34	281796108	This doesn't allow for the seamless editing and marking up of pictures like Skitch did, therefore this is not a replacement; it's just another bloated app. A jack of all trades but master of none.	edit, mark up	future feature	negative
35	281796108	One of my two or three favorite apps. Outstanding for storing and organizing thoughts, ideas, lists.	store, organize	other	positive
36	281796108	The OS X app says I don't have enough storage only 6mb left . And wants me to get premium. The thing is I already paid 50\$. And it says I have premium, and when I check the iOS app it says I still have 10gb. Flawed sync for membership.	storage, sync	bug	negative
37	281796108	I love this app and have had it for a long time. It is very easy to use. But the last update will not fully install and i cant open it. I do not want to delete and reinstall because i have so many notes saved. Please fix ASAP. iPhone 4s	open, update	bug	negative
38	281796108	At first download I loved this app. However, after compiling a huge list of apartments I was searching for on my computer, the app would not sync with my iPhone through gmail to make it functional.	search, sync	bug	neutral
39	281796108	I use Evernote every single day across my iPhone, iPad, and PC. I use the iPhone version most often to take down notes/ideas while on my commute, using either the standard iOS dictation for short notes, or Evernote's voice note feature. There's one glitch I stumble across regularly on the iPhone version, where it doesn't like cutting/pasting text with bullet points--it will not paste the text in. Took me forever to figure out that if I take off the bullet point it will then allow we to proceed, but a definite pain when I'm trying to move stuff around on a list of ideas. Otherwise, it's 5 stars, completely perfect.	take note, voice note, cut paste text	Bug	negative

40	281796108	This is PERFECT implementation of 3D Touch!! Very well done!!	3D touch	other	positive
41	281796108	This app does everything It is intuitive and easy to use and the UI is fantastic So happy I have it	ui	other	positive
42	281796108	If you want to have a life with purpose and meaning, you must be intentional about it. And writing down goals and planning your life is part of being intentional. Evernote is a digital notebook that empowers user to take advantage of all social and digital actions; such as, capturing information, sharing and storing all in one place. This has become the most use app on my device. Learn it, use it, and go design your desired life.	notebook, share	other	positive
43	281796108	Does what I want and I've adapted to how it works. Meets my expectations as far as functionality is concern.		other	positive
44	281796108	Evernote is awesome. You'll love it. Two requests...hey Evernote, you should make your swanky new draw feature a home screen shortcut. Second, from the draw screen, there should be a "save this drawing and start a new drawing" button. Right now I have to close the drawing I'm in and open a new one if I run out of space.	home screen shortcut, draw screen, drawing	future feature	positive
45	281796108	Please updated.. When i wont open he crashed and out	open	bug	negative
46	281796108	Great application, but really slow.The various options it gives you is great. I wish to-do's didn't look like they were from Snow Leopard though. That's really annoying	to-do	other	positive
47	281796108	Fabulous tool, a few things could be easier to use, especially the word processor, but overall absolutely fabulous.	word processor	other	positive
48	281796108	Everything is great EXCEPT simple text editing is still very buggy and unreliable and difficult to do.	text editing	bug	negative

49	281796108	<p>I'm finally getting organized and getting rid of paper! I love that I can work across devices and it updates automatically. You can also pair it with ITTT (If This Then That) and email important information to your Evernote account. If you take the time to get to know how to use it and then spend a few minutes each week keeping things organized, it can be life changing.</p> <p>I wish there were more levels of notebooks, and that they could be color coded.</p>	<p>across device, update automatic, notebook level, color</p>	<p>future feature</p>	<p>positive</p>
50	281796108	<p>Evernote actually started becoming useful when iOS 8 came around, the extension is a God-send. Fast forward to now, and Evernote is simply stable as can be, and my go-to note taker for getting everything down in meetings, organizing and saving past homework assignments, and saving apps for a later purchase or download. Simply put, Evernote is a one of a kind note taker, it's the Swiss Army knife of notebooks!</p> <p>For once they listened, 3D Touch is actually useful! Thanks for listening guys, now go fix penultimate.</p>	<p>take note, organize, save, 3D touch, penultimate</p>	<p>other</p>	<p>positive</p>
51	281796108	<p>The notion of notes and notebooks does not make sense, if I create a note under a notebook I created it appears unorganized under &#34;Notes&#34; if I create a Note under &#34;Notes&#34; it automatically appears under the notebook I created, WTH!?!? This is useless and pointless.</p>	<p>notebook</p>	<p>other</p>	<p>negative</p>
52	281796108	<p>I am the type of person that likes to write everything out; from to-do lists, to my daily thoughts and dreams. Evernote has been very useful for collecting and organizing my notes, list, and even photos. I'm super pleased with the user friendliness of this App and would recommend Evernote for anyone like myself.</p>	<p>to-do list, organize, list, photo</p>	<p>other</p>	<p>Positive</p>

53	281796108	Don't know how I'd operate at work and outside of it without Evernote.		other	Positive
54	281796108	Life changing!		other	Positive
55	281796108	Allows me to be completely organized	organize	other	positive
56	281796108	So glad they FINALLY added an AUDIO recording button!!!! Evernote is so great but it needs to improve the flexibility with audio notes!!!! Also they forgot to add the audio button for the widgets view :(I will change to 5 stars if they had that but even more importantly, the option to PAUSE a recording!!! Love the app regardless	audio recording, audio note, pause recording	future feature	positive
57	281796108	There's a bug when you're holding down to select text to copy or paste, When the keyboard is up, the prompt disappears 2-3 TIMES. Evernote please fix this!	select text, copy paste	bug	negative
58	281796108	I have been using Evernote probably for over 6 years, maybe more than that. It's a great note taking app it's been doing what other note apps just starting trying to do it, only messes up every now and then but overall it kind it doesn't get better, be warned!! you will have a lot of notes.	take note	other	positive
59	281796108	I don't know what I would do without Evernote! This app has been a Godsend! It keeps me organized, and my life is simple now because I never lose passwords or important information. Whenever I need to look for information, I have it right there at my fingertips. Evernote, you people rock!	organize	other	positive
60	281796108	Works great.		other	positive
61	281796108	Can I say anything else?		other	neutral
62	281796108	This is an invaluable program that replaced Bento for me. It is far more powerful than other programs of it's type, but I'd love more support and manual style information. I'm notoriously underutilizing it's features and would love more info. Great service, but beware of the cost of the Premium Service.	manual style	future feature	positive

63	281796108	I use this app for all my tasks and todo lists. I love it.	todo list	other	positive
64	281796108	I think this is everything notes should have been! It syncs across everything regardless of what version OS you have and it easy to edit and share and categorize.	note, sync, edit, share, categorize	other	positive
65	281796108	<p>I love EN, and am a long time user. But I'm having issues using this version with the touch navigation on my iPad Air. Selecting a block of text doesn't reliably bring up the choice to copy the text. Holding my finger down in a block of text doesn't reliably move the cursor or bring up the paste option.</p> <p>Also, I tried following one of the recommended articles at the bottom of one of my notes. I was very happy with the relevance of the recommendation to the content in my note, but I don't like how the site with the article takes over my app, because I then can't toggle back and forth between the article and my notes in EN. Also, the interface froze up my app and the only way I could get back to my EN notes was to close and reopen EN.</p>	select text, copy paste, recommended article	bug	negative
66	281796108	I'm so thankful for the Evernote app. This is been a lifesaver in helping to keep things organized and being able to track information, websites, pictures, meeting notes etc. has been so much help. I love that they have grown in tech knowledge he and adaptability with so many other applications as well. There is no other app that crosses platforms and operating systems better than Evernote. Always recommending it to others.	organize, picture, note	other	positive
67	281796108	I use Evernote for EVERYTHING in my life. At work I use it to store ideas, take notes in meeting or according to projects, and create daily task lists. In my personal life in keep track of my family's doctors notes, house projects, ideas for gifts and activities, and so much more. I	take note, list, notebook	other	positive

		also share certain notebooks with my wife so that we can both access the notes about ideas for home improvement, baby names and more. Not sure what I'd do without Evernote at this point!			
68	281796108	Gracias			
69	281796108	I've been using Evernote across all my devices for a few months and have found it to be extremely helpful. It took me a bit to figure out how to use it properly to get the most functionality, but the effort revealed how well thought out the app is. Once I understood how it organizes and connects disparate pieces of information, I was hooked. I'm considering upgrading to the paid version as I see how it simplifies my time and data management functions. Simply, I LOVE this app!	organize	other	positive
70	281796108	I have been using Evernote before it was "cool" around 2008. I have personal notes, pictures, documents, collaboration of files that I share with co-workers, that I am able to share across multiple platforms. I love the companion apps, such as Scannable (crystal clear scanning) and Penultimate (doodle, scribble, note-taking). The premium version is well worth the monthly subscription based on my upload amounts and the info I share.	personal note, picture, document, share, scan, penultimate	other	positive
71	281796108	I use this app multiple times a day. Don't know what I would do without it.		other	positive
72	281796108	I think this app is 95% there, except for the fact that it constantly acts like I'm making an undo gesture when I write 'm', 'o', 'a', 'n' or 'r'. This is ridiculous.	undo, write	bug	negative
73	281796108	I use this more than any other app.		other	neutral
74	281796108	I have been using DevonThink for several years and couldn't imagine how Evernote might fit into my work-flow or do something that DT	export, copy paste	future feature	neutral

		couldn't. However, I decided to try Evernote for use on my iPhone. I love it. But I wish it allowed for exports into Scrivener. Copy & paste is clumsy and out of the past.			
75	281796108	But this is the single most used app for me besides gmail and Googlemaps when I'm in a new city. I use it multiple times a day to make to do lists, journal, even take lecture notes when wifi is spotty. Thanks Evernote, for making me a more effective person!	to do list, note	other	positive
76	281796108	I'm still new at this but have found so many uses. I'm jotting down just about everything and learning how easy it is to use across multiple platforms.	multiple platform	other	positive
77	281796108	I love the way this app keeps improving. Use it for notes, records, reference, etc. Never crashes, simple yet powerful, great search capability, seamless connection between my PC and Iphone and Ipad. Highly recommended. My most often used app, years after starting up on PC.	note, record, search, connect	other	positive
78	281796108	I would just rather purchase the app outright. It is not overprice for a subscription, but it is only a note take application for crying out loud. Subscriptions for such simple apps is just plain greedy.	subscription, take note	other	negative
79	281796108	I've made over 400 notes	note	other	neutral
80	281796108	Great app. I operate one of the largest entrepreneurs growth and educational programs worldwide. We now also are launching the online version as well as startup accelerators. With that in mind, Evernote is my app of choice to recommend over all others to help with the organization of personal, business, and community aspects of each members life. This app rocks, great job in the design.	organize	other	positive

81	281796108	I have used Evernote app since its launch and before that as a web app. Simply a perfectly thought out product for organizing information. Taking over many of the functions formerly provided by Dropbox. Update: Still very satisfied. Sometimes Google Drive is easier to use for retrieving a simple file recently used. However Evernote remains the major archive for all my teaching, book writing and other meaningful pursuits.	organize	other	positive
82	281796108	It's fairly easy to create new notes and sort through old ones. I use it for pretty much everything that runs across my mind which I might need for later.	create note,sort	other	positive
83	281796108	Very useful,I love this app		other	positive
84	281796108	I really like Evernote. I use it everyday because overall is the note-keeping app I like the most. However, i think it can still improve on many fronts.	note, font	future feature	positive
85	281796108	Great app, with one flaw: it won't stop asking me to rate it. And when I've said no, the app crashes. I'm writing this review in hopes that doing so fixes the problem.	rate	bug	negative
86	281796108	Easy way to cut down on paper, and make information easy to find through OCR search.	ocr search	other	positive
87	281796108	I use Evernote Premium each day. It's great and getting better. Keep it up! ??		other	neutral
88	281796108	And getting better all the time.		other	positive
89	281796108	Been using it for about 6 months as a replacement for iPhone notes. I really like it.		other	positive
90	281796108	I use Evernote the paid version and it's worth every dime. My second brain.		other	positive
91	281796108	I've been looking for a good memo app, and Evernote is that and so much more. The seedless syncing between computer and device makes	memo, sync	other	positive

		this the best note/memo app out there.			
92	281796108	...and those years of Evernote organization have been blissful. I love the responsiveness on my iPhone 6S. The OCR feature of the paid version is well worth it.	ocr feature	other	positive
93	281796108	Great tool!		other	positive
94	281796108	Evernote is the best productivity app. Period. Just get it. I love taking snapshots of notes, business cards, menus, wine labels, whatever, and cataloging. Can even search text on scanned pictures.	note, business card, scan text	other	positive
95	281796108	Love this for recipes!		other	positive
96	281796108	The Evernote app is pretty good, but I feel like it overcomplicates things and intimidates the average user. It seems simple at the beginning, but soon, I felt like I was drowning. I'm not an avid user of Evernote, I just use it for groceries, chores, and the like, so if you're going to use it a lot, then this might be the app for you. But, as for me, I', looking elsewhere for a to-do list app.	to-do list	other	negative
97	281796108	I really like this app. It asked me if I wanted to leave a review and I was going to give it 5 stars. So I clicked "sure, I'll leave a review" and then it crashed. So I'll give it 4 stars.	review	bug	negative
98	281796108	Evernote is helping me go paperless - Awesome too that allows me to set up Stacks for organizations, notebooks within the stacks for clarification. I have not found any information I have not been able to get into Evernote, either through the web clipper, email option or Scannable. This is your best option	organization, notebook, web clipper, scannable	other	positive
99	281796108	I was recently promoted to supervisor, and was suddenly bombarded with a thousand things I had to remember. Passwords, policies, et cetera. Every day I was hit with ten new things I had to remember, such as notes from weekly supervisor meetings, and would often have to recall these	note	other	positive

		details for staff who would call me needing information. Evernote was a life-saver. I've since had time to commit the frequently-referred to information to memory, so I don't refer to Evernote as often as I used to, but I still go to it at least a few times a week. Great app!			
100	281796108	<p>I've been using Evernote Premium since I started my business in 2009 and it is an invaluable tool for every aspect of my business... notes and how-tos, &#34;Big Picture&#34; planning, &#34;read later&#34; articles, tons of checklists, as well as a repository for every idea that comes to mind.</p> <p>The fact that it works so seamlessly with my tablet, phone and laptop makes it my go-to app for collecting every little tidbit that I don't want to forget. (Everything goes to my &#34;New Items&#34; folder as an inbox for taking action later.)</p> <p>I recommend this app to anyone who is trying to run a business and keep track of everything in a single place.</p>	note, picture, checklist	other	positive
101	281796108	I manage my life with Evernote!		other	Positive
102	281796108	Heard Tim Ferris mention this app, been using it ever since. Very useful.		other	Positive
103	281796108	Nuff said!		other	neutral
104	281796108	I have everything searchable at my fingerprints...with Premium, even scans are OCR'd and searchable. Good stuff!	search, scan	other	Positive
105	281796108	No app updates in almost 3 weeks. Desperately needed improvements long overdue. Even basic text editing is a mediocre experience. Odd formatting quirks frustrating to cleanup. Utilizing checkboxes is a headache and has been for a long time. Discovered a notebook titled "Evernote" had been created at some point recently where new notes had been going. Found	text editing, checkbox, notebook title	bug	negative

		out when called to present in a meeting and necessary note with points appeared to be missing. And it didn't show up in search using obvious/unique terms.			
106	281796108	This is one of the most amazing apps/programs I've ever had. It really makes staying on top of things and keeping organized quite easy for me. I love it!!! I give it 4 stars only because when you use it on the iPhone or iPad, there's no spellchecker. I think that should be pretty easy add from the developers. However, I love that it works across all of my apple devices.	organize, sync	other	positive
107	281796108	I like its setup, flow and usefulness!		other	positive
108	281796108	By inclination I'm a random abstract thinker not a concrete sequential and I find that this app and its companion desktop application provide a truly empowering set of tools. I throw stuff into it all the time, so I can return later, in order to avoid becoming sidetracked. I recently purchased their somewhat overpriced scanner, but I have to say that despite the price tag that device has me well on the way to a totally paperless office. I just discovered that their standalone scanning app using the iPhone camera is now fully integrated and a couple of quick tests reveals that it captures clear, unskewed images and runs full OCR in the background, so my phone is now a stand in for the scanner when I'm on the road. All-in-all I can't say enough good things about their overall solution package.	scan	other	positive
109	281796108	Awesome app! I have become completely dependent on it. I would like to see the formatting options on the mobile version improved so that	formatting option, checklist	future feature	positive

		it is similar to the desktop version. I also think the checklist/to-do list function could be improved. Other than that, this is a wonderful tool. Thank you!			
110	281796108	This app is great for me and my husband we run our own construction company and it's easy for us to tie in our information and manage our daily communications		other	positive
111	281796108	Evernote was useful when it first appeared. Now it's become indispensable.		other	positive
112	281796108	I have enjoyed getting all my notes into one location but REALLY need spell check or auto correct on the app!! I feel this would be the perfect program if it had that added feature!!	note, spell check	future feature	positive
113	281796108	I love Evernote!		other	positive
114	281796108	This app is so helpful. I love the real time syncing and how it integrates with other programs I use. I can get ideas out quickly and transfer he information where I need it. The reminders keep me on track with articles I need to write.	sync	other	positive
115	281796108	It's easy to use and understand. It has a lot of options		other	positive
116	281796108	Don't take it for granted.		other	neutral
117	281796108	Yet, whenever I try to move the curser with magnification, it rarely detect my finger being held on the text. On the occasion that it does detect it, and allows me to select text, the box including copy, paste, etc. immediately disappears, rendering any actions other than plain typing or backspacing impossible. Additionally, notes from penultimate don't show up in any of my notebooks, nor do any notes within this app appear in penultimate. I'd rather use multiple apps for note taking and productivity than continue attempting to put up with this sad excuse for a note taking app.	hold text, select text, copy paste, penultimate, take note	bug	positive

118	281796108	I use this a couple of times a week. I am still learning other features about it but very impressed!!		other	positive
119	281796108	At the beginning I really did not think it was so useful. I have been using it now for a month and a half and I use it everyday. As an entrepreneur notes, lists, business cards are your life. This tool makes it really easy and accessible.	note, list, business card	other	positive
120	281796108	Evernote's cloud based notes app is without a doubt one of the best most productive applications for smartphone users. The app is extremely versatile, and with the beautiful design on both laptop and phone it'll quickly become your default app for note taking. I hope the organization will continue to update and issue out new features to keep the app on top. Thanks Evernote for being the best!	cloud note	other	positive
121	281796108	This is my most used app, second only to a browser. I have been able to get articles that I want to keep from various sources and place them on my computer , iPhone and/or iPad. The program gets better with each update and now allows me to keep pictures with the articles. Thank you for listening to your customers on issues that we have with the product. This is a 5 star product. There is no other application that I use for so many purposes. I hope that you develop database tools to interface with this app.	picture, database tools	future feature	positive
122	281796108	Great customer service. They tweet any updates in advance. With most updates, the app improves. I just didn't like the change in color but that doesn't effect efficiency of the app. Save anything: pictures, Penultimate, internet clips, most apps will allow you to save anything in Evernote.	color, picture, penultimate, internet clip	other	positive
123	281796108	This app is like a second brain!		other	neutral
124	281796108	Been using this app for about four years now. They just keep making improvements.... Awesome app!		other	positive

125	281796108	This is the most important and most used app that I have. I was turned on to Evernote in December 2012 and have been happy with it since. There are periodic updates that rattle my comfort zone for a day or so but I get over them and quickly appreciate them. It is the only app that has never let me down. I have a premium account and believe it is money well spent.		other	positive
126	281796108	This is such an awesome app. I use it daily for both business and journalling!		other	positive
127	281796108	Evernote is my go-to for saving just about anything. I love how it works seamlessly between all my devices and updates them instantly. I can write a memo to myself on my phone when away from the desk, and then pull it up on my laptop. It helped that I read two short books about how to use Evernote before getting started, because that way I learned how to use tags to organize everything. I am very thankful for this app!!!	tag, organize, sync	other	positive
128	281796108	Why have task app, project management app, notes app etc. Just use Evernote it literally does what 10 of my other applications do and at little to no cost. I love it, thank you evernote		other	positive
129	281796108	I've been using Evernote for about a year. I do so much on it. I love that it syncs between my phone, iPad and laptop. I love how easy it is to add to a file on the fly from my phone. I also love that I can share files. It's simple, elegant. Every so often I wish there were a few more formatting options.	sync, share, formatting option	future feature	positive
130	281796108	It has done everything I have used it for ok. I have a hard time learning about and then implementing other available features. If it was more user friendly that way, I would have given 5 stars. I know it can do a lot more than I use it for.		other	positive

131	281796108	<p>More bugs happening....conflicting notifications keep coming up, copying and pasting not always work.Great but here's a few things to fix....love that you can now easily forward things from the net, but would like the ability to add notes to recipes forwarded from the net. It's hard to add comments at top of page because when you start typing it layers onto webpage. Also the ability to add colored fonts.</p> <p>There are some bugs... Recipes I did not tag, keep coming up in ones I did</p>	notification, copy paste, email, colored font, tag	bug	negative
132	281796108	As a consummate note taker and article hoarder, this App (Desk and Mobile version) has worked wonderfully for my needs. I have not mastered emailing items to the app yet, nut I am confident that is do to my operator error and not the programming. The sync capability is phenomenal and I only wish my government employer would allow the downloading of this app for use on our network. An easy 5 stars!	take note, email, sync	other	positive
133	281796108	<p>The more I use Evernote, the more I rely on it</p> <p>Don't know how I lived without it</p> <p>The new Scanable App that works with Evernote is an App the I have used daily since the day that I downloaded it</p> <p>Makes Evernote even more essential for me!</p>	scan	other	positive
134	281796108	What else could i add?		other	neutral
135	281796108	Evernote is one of those apps that just covers everything, it does what it promises and then some. It's free version works well but one graduates fairly soon to discover that their other options are well worth the price.		other	positive
136	281796108	Versatile, with a clean, simple interface. I appreciate the ability to create notebooks, to format text (bold, underline, italics), and also to insert photos.	create notebook, format text, insert photo	other	positive

137	281796108	I really enjoy Evernote as a one-stop app for organizing and note taking. I wish the free version had more storage space but other than that I recommend this app for everyone.	organize, take note, storage space	future feature	positive
138	281796108	I've been using Ever Note for about six months. Nearly everything I've done has been satisfactory. However, there is a continuing problem when I attempt to email a note. Probably 10 to 15 percent of the emails are not delivered. I'm notified of that. Thank you. But it does not solve the problem. I've contacted Ever Note several times about the problem. It still exists.	email note	bug	positive
139	281796108	Took a bit of time to get in the habit of using it. Now I use it all the time.		other	neutral
140	281796108	Would be a 5 if you could easily change font and text size.	font, text size	future feature	neutral
141	281796108	Great cloud storage, search and 3rd party app integrations	storage, search, integration	other	positive
142	281796108	Evernote helps me to organize all my notes and documents relating to all the committees that I serve on. Keeps everything in one place so everything is easy to find. Love it!	organize	other	positive
143	281796108	I've used Evernote for years now. I'm finding that Evernote has become indispensable for me. The more you use it, the more you'll wonder how you got by without it. I use the app to store manuals in PDF form for all my appliances and vehicles records. Basically, anything you want to remember can be stored here, pictures, receipts voice messages, etc.	store pdf, picture, voice message	other	positive

144	281796108	<p>I love the functionality of Evernote, but I'm really getting fed up with the poor performance of the iOS app.</p> <p>The iOS app crashes after 10 seconds EVERY SINGLE TIME I open the app. If I add to a note on my phone, it's very hit-or-miss on whether or not it gets synced to the desktop program. When it doesn't sync and I try to hit the sync button in the app to force it to sync, it tries, fails, and the app crashes. FYI, this all occurs when I have the desktop program closed and the app open, so there is only one instance of Evernote running.</p> <p>I've been using Evernote for a couple years now and have been anxiously waiting for the developers to clean up these issues. My frustration is growing to the point that I'm very close to turning my back on Evernote and going with a different product like OneNote.</p>	add note, sync	bug	positive
145	281796108	Excelent App! Really useful and easy to use.		other	positive
146	281796108	I don't know how anyone gets organized without it.	organize	other	positive
147	281796108	Usó com frequência e anoto tudo que preciso, super prático!			
148	281796108	<p>It works well with new iPad pro apple pencil</p> <p>Could not live without it</p>	apple pencil	other	positive
149	281796108	I have abandoned all other notetakers. Now using it with Penultimate to capture handwritten notes. I am paperless! Great way to do research, writing and daily journaling. I love the look and feel and the way it integrates with Penultimate automatically. Five stars!	handwritten note, penultimate	other	positive
150	281796108	I had no idea how much you could do with this app		other	positive
151	281796108	Best app I've found for organizing everything with access across devices.	organize, sync	other	Positive

152	281796108	This app works great as a place to store all your bits of info you want to remember! Powerful search function to look up later. I first got this as a backup for Awesome Notes app which since last update crashes. Thank goodness everything is in Evernote!!	store, search	other	Positive
153	281796108	excellent app, must for anyone.		other	Positive
154	281796108	Great app, love that it syncs with all of my devices. However, it will not update so I removed it to try and re-download it but now I can't even download it. Please fix this so I can have my saved notes on my iPhone again.	sync, download, save note	bug	Positive
155	281796108	Check out 'the secret weapon'. Evernote and this approach changed how I organize my life.	organize	other	positive
156	281796108	Use it all the time...would and do highly recommend!		other	positive
157	281796108	I have used Evernote for a while in several capacities, from note taking, to webpage retention during papers, and now for saving directions as I travel quite a bit. It works great with syncing. One thing I would like to see is the ability to share out entire workbooks. Currently, if I want to share info, I have to share them one note at a time.	take note, sync, share	other	positive
158	281796108	A little confusing at first but like it now that got the hang of it. Like how I can link my iPhone app with my windows app on my laptop which makes it a big plus... Just wish it would load faster sometimes..		other	positive
159	281796108	Evernote is the best organizing app I've ever tried. I love the email feature.	organize, email	other	positive
160	281796108	Finally a place to put ideas, recipes, recommended doctors, handymen, places to eat, etc. so thankful my daughter told me about this app. Love it.		other	positive
161	281796108	This app is invaluable, all my lyrics and voice notes, and pictures for taking notes of recording consoles for mixes. This app is a rockstar.	voice note, picture, take note	other	positive

162	281796108	I've sunk a ton of money into this app and I just tried to save a 2 min video and a pop up said the file was too big and I needed to upgrade-again. I'm not a daily user of this app at all, and the small amount of stuff I've saved isn't worth the hefty price tag. Now I need to upgrade my subscription for an app I've hardly even used. Won't be renewing, I've wasted enough money already.	save video, subscription	bug	negative
163	281796108	Saves time and reduces headaches.		other	positive
164	281796108	I had begun to lose my patience with Evernote. Updates were adding nothing and the focus of the product was falling apart. It was a slow but sure path. Then the last couple months happened. Split screen, 3D Touch, and drawing support. That all happened in a short time frame and the focus of the product was immediately brought back. I was delighted as I already have so much kept here. The ease of getting things into Evernote, finding them within, and sharing them when necessary is fast and as simple as can be. It's an ideal note taking, collection, and sharing platform. Hell yes.	split screen, 3d touch, drawing support, take note, share	other	positive
165	281796108	Not updated for IPAD Pro? smh		other	neutral
166	281796108	Premium user. Syncs between OS X and IOS devices. Usually recognizes text in images, a very valuable feature. Annoying bugs persist, sometimes for years. You just live with them. UI reworked with major releases, often not for the better. Feature bloat.	sync, recognize text, UI	other	negative
167	281796108	I use it to organize anything and everything. I couldn't imagine being without it anymore.	organize	other	positive
168	281796108	I love this app!		other	positive

169	281796108	<p>Aaarrgh!! Boo Evernote a shame on you!</p> <p>Go read my last review. It's been well over a year and you haven't fixed basic I usability problems!!!!</p> <p>SO disappointed. I upgraded to the Basic plan. No improvements whatsoever. Boo!</p> <p>Fix your usability!</p> <p>Who is your product manager? S/he should be fired.</p>		other	negative
170	281796108	<p>I've used Evernote for four years. Love it!</p>		other	positive
171	281796108	<p>I use this app almost daily for my grocery list or to do lists. I can also send it to my husband if he is grabbing groceries. Love that I can use it on my computer or phone. Only issue I noticed is sometimes I have trouble getting it to update on my phone after I make changes on my computer. Still love the app and highly recommend.</p>	to do list	other	positive
172	281796108	<p>Love the format. Love the operation. Love the style. Easy. Accessible. Diverse. Highly recommend</p>		other	positive
173	281796108	<p>I am a long-time user of evernote, but the system has become more convoluted, instead of becoming more streamlined. They have taken the visual and organizational appeal out of the app, and replaced it with a text based system that looks like something from a text editor. I guess they focused more on merchandising with T-shirts and trinkets. Why would I want to buy the evernote smart pen when they can't make their own app right?</p> <p>They keep asking me for another review. Here's another review: I would give you .5 if I could. You keep getting worse. You listen to none of my suggestions you make the app worse and it's not even a</p>	text editor, undo button, voice interpreter, add picture, notebook	bug	negative

		<p>note-keeping app anymore it's a goddamn chore in-and-of itself. I'm moving to Google I hate to say.</p> <p>Where is the undo button?</p> <p>Don't you jerks ever ask me for review again, until you put a freaking undo button on there. I don't know how many notes I've lost because you guys don't have an undo button.</p> <p>And the entire text-keeping system glitches : it's glitching right now ;I can't even see what I'm saying into the Voice interpreter. The screen jumps up and down so much as to give a person a seizure. Are you telling me you can't make a streamlined way to put down some text without a glitching like it's goddamned 1996?!</p> <p>You could have us pay for fun features, such as adding pictures to our notebook icons, but instead you try to charge just for the purpose of having off-line access. i'm here to let you new users know: that's what this product was originally built on! Off-line access! It used to be a notebook for crying out loud! You don't even show notebooks the way the old program used to. It used to look like a set of notebooks. You made it look like Windows 98. Why would you do what you did?</p> <p>And, again, due to the continuing complication that this program has become, I forgot what I was going to note in the first place before I was prompted to write another review. Complete fail.</p> <p>There's your review.</p>			
174	281796108	Best App 2015!		other	positive
175	281796108	Simple and yet so powerful!		other	positive

176	281796108	Evernote used to be a nice, simple notebook app. Now it's loaded with features I don't want. Furthermore, they limit basic functionality like passcode protecting the app to a \$3 monthly fee. I'll never subscribe to that.	notebook, passcode protection	future feature	positive
177	281796108	This is an excellent app! You can create different notebooks for passwords, credit card information, books, movies, restaurants, etc. I rely on it extensively. Even the basic, free version is great.	notebook	other	positive
178	281796108	Does a good job of keeping and organizing notes. Not quite as quick to create a new note as sometimes would be nice (too many back/done commands), but super handy anyway.	organize note, create note	other	positive
179	281796108	Have used for years and am still happy. I see reviews about problems, but they are minor. I used one note many years ago and was highly unimpressed, went to Evernote, and have not looked back. I am using the free version and am content.		other	positive
180	281796108	Evernote is one of three or four apps that are totally indispensable in this information/ communications intensive age. The ability to simply and inexpensively acquire, organize, recall & share information of many categories And formats is priceless. It is not totally intuitive and there is a learning curve, but that is well worth it!	organize, recall, share	other	positive
181	281796108	I remember everything now that I can search the pictures of whiteboards, signs, and my hand written notes	search, hand written	other	positive
182	281796108	Great for organizing and documenting all kinds of thoughts, articles, and ideas! I love the web version as well, and it's Chrome plugin. Only thing I could ask for might be text formatting bug fixes. Although, it's one of the most	organize, chrome plugin, text formatting	bug	positive

		powerful text formatting apps out there!			
183	281796108	Recipes, travel info, ideas, patterns -- everything I need to have handy in whatever format I want to use where I have quick easy access.		other	positive
184	281796108	This is a great app to store all kinds of documents and files. Very good and flexible filing and tagging system. Only issue is that is slow to upload / download for sync between devices (e.g. between 3 PCs, iPad, and iPhone). May take a few hours for premium service to sync.	tag,sync	bug	positive
185	281796108	Has changed the way I do business, and life. I've been using Evernote for more than a year now. I had been looking for a one-stop solution for filing and archiving and to say the least, Evernote has solved that quest. It is my number one, most-used application on a daily basis.		other	positive
186	281796108	This is my favorite app for notes. Incredible	note	other	positive
187	281796108	Sometimes there is a delay in the typing. Other than that works great to access stuff on the go and keep notes on the go.	type, note	bug	positive
188	281796108	I'm enjoying Evernote, there are lots of good features for free. There does seem to be a lack of common sense features that I'd like to see added like note links.	note link	future feature	positive
189	281796108	The best app I know of for synched note taking. And the updates are always feature rich. I'd like to see more simple formatting options like paragraph indents and double spacing; markdown support would be awesome.	sync, formatting option	future feature	positive
190	281796108	I have been using Evernote more more over the last five years, it is truly become my go to app for most everything. There are so many powerful features that the struggle for me is just learning how to do it all. I highly		other	positive

		recommend Evernote to anyone who's looking to organize their life!			
191	281796108	<p>Evernote has been my go-to storage place for anything not easily categorized. I use it routinely for capturing meeting notes, from where I can later copy them to work templates. And, because of its OCR, imaging, tagging, and search functions, I use it for web bookmarks, receipt filing, and scanned hand-written notes.</p> <p>I can see how some may not understand its usefulness immediately - and I agree that paying for Premium is a requirement, particularly for best integration with Penultimate, Skitch, and web-clipper - but it grows into your workflow organically and indelibly, and is well worth the expense.</p> <p>2015-12-05 update: still five-star.</p> <p>I read with interest a recent post about clumsy note taking features. While I would like some additional editing tools (or clearer consistency across desktop, iOS), I really don't expect this to have all the power of Word or Pages, and I've never had any problems with the standard italic, bold, bullet, and indent features. Where I think their developers could really add value is in addressing some of the table formatting functions within a note.</p> <p>Moreover, I have been using it as my TODO application, using reminders and check boxes, particularly because I can add rich text notes to my TODO items. Because those notes within my TODOs are searchable and are within the realm of all my Evernote notes, I don't have to remember</p>	<p>categorize, note, ocr, image, tag, search, scan, handwrite, penultimate, skitch, web-clipper integration, check box</p>	other	positive

		<p>which application I use for what. One must forgo certain features like built-in task dependency but, can link notes.</p> <p>OneNote/0365 is certainly an interesting comparison with a rapidly growing feature set but, Evernote is still my go to app.</p>			
192	281796108	Get it.		other	positive
193	281796108	<p>This app is the most important app I use every day. It's like a prosthetic memory for our overly taxed attentions - it does go a long way to helping me remember everything.</p> <p>I would like to see a slightly better interface for changing the order notes appear or can be checked or unchecked... There are many times I want to drag a note to the top of a list, or merge notes in a curated order. Also, would love to see increased functionality with the check boxes (checking in a note title for instance - and text strike through when checked so you can immediately see if a note has been checked ... Rather than having to filter or open the note).</p> <p>Lastly - I use a stylus all the time. I would love to be able to hand write in a note rather than have to exit Evernote to penultimate or similar. This would be game changing for many users I know.</p>	<p>interface, drag note, merge note, check boxes, hand write</p>	future feature	positive
194	281796108	It keep all my notes safe and I always can easily find what I need. I use it as my personal Wiki. Also good to share notes with friends and coworkers.	note, share	other	positive
195	281796108	<p>This app is nifty for the phone, but a lot of features are hard to find if you don't know about them. I had this app for a while but never started using it until I installed the computer app.</p> <p>The computer app allows me to take what I've input on the phone and</p>	<p>edit, format, organize</p>	other	positive

		edit and format it. Alone, this app is a decent note taking program... But with the computer app this program allows for a lot of great note taking and organizing.			
196	281796108	I've been using Evernote for years Pros: Unlike Dropbox, etc, you can create docs, (notes) and you can import (drag n drop) effortlessly. I also like the audio notes. I use it at band practice. Evernote is a terrific catch-all I like that I can take pix of business cards and use it as a scanner. It's a bit clumsier than "Scannable", but scannable has an Evernote icon. More to say, but that's enough. I have no intentions of deleting it. Cons: I wish it would save audio as .mp3's. Tagging stuff with the mobile app is cumbersome. Evernote on older macs (10.7.5) is rife with bugs. You can use the web version, but I prefer the desktop.	create note, importm adio note, scan, save audio, tag	future feature	positive
197	281796108	Like new simple design. My favorite one is dark theme	design	other	positive
198	281796108	I no longer lose a note or an idea to a lost scrap of paper, when I have to use paper, because evernote has helped me use paper less and less as well. I love all this app has to offer and the way it plays nice with so many other devices and apps.	note, sync	other	positive
199	281796108	Does everything I need it to download and does it well.	download	other	positive
200	281796108	I use this app to keep different documents in my personal life, my volunteer activities, and my job. It's always there for me & I feel very ready for any occasion because my documents are always with me.		other	positive
201	281796108	Search ability is on point. Wish you could do more with text editing. Works smoothly and is reliable.	search, text editing	future feature	positive

202	281796108	<p>This is my go to notes app. Works really well across multiple devices and also sharing pages with multiple people.</p> <p>Can also take quick photos of documents to archive.</p> <p>Works really well for personal project notes and also group note with sharing.</p> <p>Also quick to add web pages and emails to the archives.</p>	sync, share page, photo, group note, add web page, email	other	positive
203	281796108	Easy to use		other	positive
204	281796108	<p>Evernote is simple and fast. Everything you want in a note taking app. Archiving is great and the interface is slick. No other app can dominate this space.</p> <p>The reminders feature on the other hand is poor and under developed. Evernote has the potential to be the best all around productivity tool, but not without overhauling the reminder and notification system. A missed opportunity if you ask me.</p>	take note, reminder, notification	bug	neutral
205	281796108	Life changing		other	positive
206	281796108	I am contemplating moving to a new note storage program. I was unable to transition from the basic program to the premium platform. The support team has failed to respond to my queries. Apple refunded my subscription. I believe I am finished with Evernote.	subscription	bug	negative
207	281796108	I started using Evernote after falling in love with OneNote (way back in the day before OneNote had a proper app and the ability to sync seamlessly across devices) and I haven't looked back. Everything I need is at my fingertips in an instant, no matter where I am.	sync	other	positive
208	281796108	The best app for note taking list making and reminders. Works great on iPhone 6s and love the widget.	note take, reminder	other	positive
209	281796108	Whenever I have Internet connection (Wifi or cellular) after 1	camera, take note	bug	negative

		or 2 pages the camera crashes. This has been the most valuable note taking instrument, and since the last update it's broken.			
210	281796108	At first, I had trouble understanding what I would use it for. A year later and I'm on it a dozen times a day. I've integrated it with all aspects of my life. It's become my partner in all my pursuits. With a small amount of learning, you can tie together the loose ends of your interests.		other	positive
211	281796108	Bloody fantastic. What a great concept. I use it for almost all of my next book's research data.		other	positive
212	281796108	Evernote is my second brain that always knows where my notes are.	note	other	positive
213	281796108	If you need to find a note, a picture, a recipe, store it here. I love it.	note, picture,	other	positive
214	281796108	I am very pleased with Evernote. I use it everyday.		other	positive
215	281796108	This is very useful for personal data tracking. I really like being able to annotate photos and digitize business cards. I also have just started using the tags function and I think it helps me stay more organized and find things more easily within notes. The integration with swipes now makes it an incredibly powerful organizational tool Because you can create a note with checkboxes in it and then up and other material to the note it allows you to access action steps from swipes put them directly linked to deeper project information in Evernote.	photo, business card, tag, check box, create note	other	positive
216	281796108	There are some clunks, such as the inability to add web clippings to existing notes (mobile) and some quirks in the text editor. Overall I love it and use it daily.	add web clipping, text editor	bug	positive
217	281796108	I'm a plus subscriber. The ability to have all my content in one place is powerful. What concerns me about the company is how slow they move to improve their application. The task manager integration seriously	task manager, notebook cover,	future feature	neutral

		suffers from not having a calendar. Notebooks should allow book covers for those who thrive in a visual environment. The IOS app is too basic considering that consumers are moving to mobile and tablets. The text editor is near the bottom of the barrel and an embarrassment.			
218	281796108	Evernote allows me to easily clip websites, collaborate with colleagues, and keep track of everything. I don't know what I would do without it.	clip web, collaborate	other	positive
219	281796108	Great to keep notes across all devices	sync	other	positive
220	281796108	I tried it once - didn't get it. Tried it again a year later - still didn't get it. Made a commitment to figure it out - the world is a different place now. Oh man, I can't live without this app.		other	positive
221	281796108	I use Evernote for everything. It is my filing cabinet as I'm going paperless. With the Penultimate app, it syncs my hand written notes and journal entries and makes them searchable. There are really infinite uses and I love that I can access it from anywhere.	penultimate, sync, hand write, search	other	positive
222	281796108	Love Evernote!!! Now we need support to transpose hand written notes, using Apple Pencil, to digital text.	hand write	other	positive
223	281796108	Great for just starting out writing as a hobby.		other	neutral
224	281796108	I use it daily to save docs & photos, to keep a journal, and just about anything I can think of.	save doc, photo	other	positive
225	281796108	I tried this quite a while ago, didn't care for it. Just downloaded it again..... So not worth even being free! Can't email or copy a note to a word processor.... Nope you have to go back on their web site to e-mail it..... When you get to their web site and try to sign in, you can't do it on the iPad, you have to use a	email, copy, sign in	bug	negative

		computer... What a waste! Thank goodness I didn't buy it.			
226	281796108	incredible app!!		other	positive
227	281796108	I use EN constantly for many areas of work and personal life. No system or service is perfect (I would *love* to have quick launch for audio notes and also recurring reminders), but tweaks they've made over time like adjustable audio quality, page scanning, and the ability to mark up images continue to make it more and more indispensable. Having been a user for 5 years (premium for 2 of those years), EN continues to prove itself a vital tool in areas like study, teaching prep, songwriting, web design, and counseling.	audio note, recurring reminder, page scan, mark up image	future feature	positive
228	281796108	So great and easy to use even my mom loves it!		other	positive
229	281796108	It does almost everything and keeps me up to date on all platforms.	sync	other	positive
230	281796108	???			
231	281796108	In the vast sea of apps out there, Evernote is one of the few rare examples that are truly useful		other	positive

232	281796108	<p>I write a lot! I have the app on all my computers and mobile devices. I use it for note taking, URL storage, and PDF documents that I wish to organize and find anywhere. I also use it with Penultimate for hand written notes and sketches. This app is perfect for me!</p> <p>You have to be careful with synchronization. I try not to have the app open at the same time on my different devices. I have been ok as long as I am editing different notes, but otherwise, I have had to make sure I &#34;synchronize&#34; before I edit the same note on different devices ... As opposed to thinking it was automatically done.</p> <p>I also put a lot of images in my notes. This is vital for me because I am often preparing lesson plans, tutorials, and procedural documents. It is easy to import photos from your albums or even take the picture directly through the app.</p> <p>The annotate feature is OK. I have the Jot script pen and I can annotate free-hand ... This is where I may consider moving to One Note ... I want to be able to draw and type ... Yeah, that's asking a lot, but if you don't ask ... :-)</p> <p>I work in the software development field and in the craftsman arts field. This app is perfect for both. I use this app to journal everything in my spiritual and health related needs.</p> <p>This app is better than a paper journal because it never runs out of paper and I never grab the &#34;wrong&#34; notebook!</p>	take note, url storage, pdf doc, hhand write, sync,	other	positive
-----	-----------	---	---	-------	----------

233	281796108	<p>This is real productive tools i ever used. I always use this app while I have changed my iPhone 4 times.</p> <p>However it fails to sync sometimes. I lost data when I close evernote without checking upload is done. Sometimes the conflict is saved in conflicted notebook. However sometimes I lost data. It is really annoying that I cannot recover what I wrote down before.</p>	sync, notebook	bug	negative
234	281796108	<p>This version... Full of bugs! Garbage! If you want me to buy your business version you had better get this one I am already paying for to work part of the time!</p>		other	positive
235	281796108	Great usability!		other	positive
236	281796108	Very handy		other	positive
237	281796108	I love Evernote. I store everything I can hear. I'll take a picture of store hours, I keep my journals, and much more here.		other	positive
238	281796108	good!		other	positive
239	281796108	Great app! Love the check off box feature.		other	positive
240	281796108	Someone is taking their eyes off the ball. Bugs are not minor. Unable to close notes, app becomes totally unresponsive, frequent crashes when it is responsive. Come on folks, focus on quality not function growth. Getting worse not better.	close note	bug	negative

241	281796108	<p>Update: iPad pro pencil support with drawing is really well implemented. I've stopped using hand note taking apps and now everything can live in Evernote.</p> <p>Original review:</p> <p>There are many solutions out there to collect information and keep it in sync between devices, but at the end of the day, I think Evernote is it. They cover all the platforms I like with native apps and that makes all the difference.</p> <p>The iPad app is still a bit clunky when it comes to formatting your notes, but it's not that bad. I usually spend some time beautifying things on the computer, when I get the time, to make up for that.</p> <p>I do wish they made a bit more effort in designing the iPad version's look. Right now it's very utilitarian and not &#34;gorgeous&#34; - on the other hand, that's why I use this in the first place. Because it works and works very well. Capturing websites, images, audio notes, passing attachments I want to keep, collecting research, you name it ... it's a great way to keep organized.</p>	pencil support, sync, formatting, capture web, image, audio note, organize	other	positive
242	281796108	Wonderful, for me, so far. I like the ease of having my 'lists' constantly available. Beats paper notes.	list, note	other	positive
243	281796108	...I can't live without you.		other	positive
244	281796108	This is one of my best apps. but iOS version needs to be improved.		other	neutral
245	281796108	Great but no spreadsheets	spreadsheet	future feature	positive
246	281796108	Love it		other	positive
247	281796108	Evernote is my brain....without it I am the Scarecrow making his way to OZ! If you had one App, this should be it!!!		other	positive
248	281796108	I would rate it 5 stars if it Only had spreadsheet notes	spreadsheet	future feature	positive

249	281796108	Evernote is absolutely a great app! Great user friendliness and applicability.		other	positive
250	281796108	It's a good application but i have some dissapointed at transforming words For example, if I want written words boldic(more thick) sometimes it isn't working	transform word	bug	positive

LAMPIRAN B. HASIL PENGELOMPOKAN

Lampiran 4 Hasil *clustering* fitur aplikasi Line dengan *threshold* 0.6

Kelompok Ke-	Anggota Kelompok
1	able create -
2	able sticker -
3	access account - account download - account log - account need - account register - account setting - account use - add function - get call - get fix - get notification - get parity - get start - get work - give option - give rating - give star - give star - have account - make account - make account - make need - make version - make work - miss feature - need manual - read post - say log - see sticker - see timeline - take advantage - take message - tell change - time get - turn message - update sticker - update support - update version - use version - want timeline -
4	click button - click sticker - download sticker - download version - enter password - go account - password tell - phone number - phone version - phone want -
5	animated sticker -
6	cant account - good option - old version -
7	change account - chat version - create account - create version - delete account - expect amount - receive message - see download - see message - send message - send sticker - send sticker - send text - try work - use message - use phone - use purchase - use stamp - use sticker -
8	do nothing - phone get - put code -
9	add chat - add friend - employ student -
10	create acc -
11	play tsum - use able -
12	use make - use smart -
13	allow make - believe anyone -
14	change setting - go setting -
15	create new -
16	have update - last update - log back -
17	way make -
18	let create - make good -
19	make new -
20	make useless -
21	need create - need update - say go - see send - show up - sign up -
22	try get - use verson -
23	way create -
24	thank you -
25	email address - email password - group chat - load message - log in -
26	customer support - friend use - game try - has restriction -
27	log use - matter lol -
28	message sticker - new account -
29	new message -

30	option log - option set - option sign - page help - phone account - preview profile - register email - set account -
31	password log - pay sticker - plan update -
32	sign account - smart phone -
33	safari go -
34	someone need - sticker need - sticker preview - sticker purchase - sticker shop - sticker show - sticker store - support - work -
35	help -
36	register - timeline -
37	text friend - time user - timeline feature - use function - use work - version allow -
38	time try - version good - video call - view timeline - voice message - waste time - work call -
39	unable sticker -
40	any update -
41	new update -
42	understand -

Lampiran 5. Hasil *clustering* fitur aplikasi Line untuk *threshold* 0.7

Kelompok ke-	Anggota Kelompok
1	able create-
2	able sticker-
3	access account-account download-account register-account setting-account use-add function-get call-get fix-get notification-get start-get work-give option-give rating-give star-give star-have account-make account-make account-make need-make version-make work-miss feature-try work-use message-use phone-use purchase-use stamp-use sticker-use version-
4	click button-click sticker-go account-password tell-put code-say log-send sticker-send sticker-send text-tell change-time get-turn message-
5	create account-create version-enter password-take message-
6	want timeline-
7	get parity-phone get-receive message-see download-see message-see sticker-see timeline-
8	read post-take advantage-
9	update sticker-update support-update version-
10	send message-
11	expect amount-
12	add friend-
13	download version-
14	download sticker-
15	add chat-
16	employ student-

17	play tsum-use able-
18	use make-use smart-
19	allow make-believe anyone-
20	create acc-
21	create new-
22	do nothing-
23	have update-last update-
24	change setting-go setting-
25	let create-make good-
26	make new-
27	make useless-
28	need create-need manual-
29	need update-show up-sign up-
30	try get-use version-
31	say go-
32	see send-
33	way create-way make-
34	delete account-
35	account log-account need-cant account-good option-
36	change account-chat version-email password-load message-message sticker-new account-
37	animated sticker-
38	email address-friend use-game try-has restriction-
39	customer support-log use-old version-
40	option log-option set-option sign-password log-phone account-phone number-phone version-phone want-
41	log in-
42	register email-set account-
43	pay sticker-sign account-smart phone-
44	matter lol-
45	new message-
46	preview profile-sticker preview-sticker purchase-sticker shop-sticker show-sticker store-timeline feature-version allow-
47	version good-view timeline-voice message-work call-
48	someone need-sticker need-unable sticker-
49	use work-video call-
50	page help-text friend-time user-waste time-
51	use function-
52	plan update-
53	safari go-
54	time try-

55	group chat-
56	any update-
57	help-support-work-
58	register-timeline-
59	log back-
60	new update-
61	thank you-
62	understand-

Lampiran 6. Hasil *clustering* fitur aplikasi Line untuk *threshold* 0.8

Kelompok ke-	Anggota Kelompok
1	able create-
2	able sticker-
3	access account-account log-account need-account register-account setting-account use-add function-get work-go account-have account-make account-make account-make need-make version-put code-
4	create account-create version-use version-
5	get notification-get start-give option-give rating-make work-phone get-tell change-update support-
6	add friend-
7	give star-give star-
8	read post-say log-update version-
9	password tell-send message-send sticker-send sticker-update sticker-
10	download sticker-
11	send text-turn message-use message-use phone-use purchase-use stamp-use sticker-
12	click button-click sticker-
13	play tsum-use able-
14	use make-use smart-
15	allow make-let create-make good-
16	get call-get fix-get parity-take advantage-time get-
17	delete account-take message-
18	receive message-see message-see sticker-
19	have update-try get-use version-
20	go setting-
21	make new-
22	make useless-
23	say go-show up-sign up-
24	way make-
25	change setting-
26	create acc-

27	create new-
28	do nothing-
29	need create-
30	try work-
31	way create-
32	download version-
33	see download-
34	enter password-
35	see timeline-
36	account download-
37	cant account-
38	change account-chat version-phone version-register email-sticker show-timeline feature-version good-view timeline-
39	log use-new account-
40	customer support-friend use-game try-option set-option sign-sign account-sticker store-unable sticker-
41	animated sticker-
42	load message-message sticker-new message-
43	password log-phone account-phone number-phone want-
44	email password-set account-
45	email address-use function-use work-video call-work call-
46	option log-
47	smart phone-
48	good option-
49	has restriction-
50	miss feature-
51	need manual-
52	page help-someone need-time user-
53	text friend-voice message-
54	safari go-
55	sticker purchase-sticker shop-
56	pay sticker-sticker need-
57	time try-waste time-
58	log in-
59	old version-
60	version allow-
61	want timeline-
62	sticker preview-
63	preview profile-
64	add chat-
65	any update-

66	believe anyone-
67	employ student-
68	expect amount-
69	group chat-
70	help-support-work-
71	register-timeline-
72	last update-
73	log back-
74	matter lol-
75	need update-
76	new update-
77	plan update-
78	see send-
79	thank you-
80	understand-

DAFTAR PUSTAKA

- Apple's App Store: An economy for 1 percent of developers.* (2015, July 4).
- Benneth, K. H., & Rajlich, V. T. (2000). Software maintenance and evolution: a roadmap. *Proceedings of the Conference on the Future of Software Engineering* (pp. 73-87). ACM.
- Bing, L., & Zhang, L. (2012). A survey of opinion mining and sentiment analysis. *Mining text data. Springer US.*
- Dijkman, R., & Dumas, M. (2011). Similarity of business process models: Metrics and evaluation. *Information Systems 36*, 498–516.
- Guzman, E., & Maalej, W. (2015). *App Review Analysis*. Retrieved from Mobile Service and Software Engineering: <http://mobis.informatik.uni-hamburg.de/app-review-analysis/>
- Guzman, E., & Maleej, W. (2014). How Do Users Like This Feature? A Fine Grained Sentiment Analysis of App Reviews. *Requirements Engineering Conference (RE), 2014 IEEE 22nd International.*
- Hu, M., & Liu, B. (2004). Mining opinion features in customer reviews. *Proceedings of the International Conference on Knowledge Discovery.*
- Hu, W., & Gong, Z. (2010). Mining Product Features from Online Reviews. *IEEE International Conference on E-Business Engineering.*
- Iacob, C., & Harrison, R. (2013). Retrieving and analyzing mobile apps feature requests from online reviews. *Mining Software Repositories (MSR), 2013 10th IEEE Working Conference on. IEEE.*
- Maleej, W., & Nabil, H. (2015). Bug Report, Feature Request, or Simply Praise? On Automatically Classifying App Reviews. *Requirements Engineering (RE'15).*
- Manning, C., & Schütze, H. (1999). *Foundation of statistical natural language processing.* MIT Press.
- Marneffe, M.-C. d., & Manning, C. D. (2008). *Stanford dependency.* Retrieved from The Stanford Natural Language Processing Group: http://nlp.stanford.edu/software/dependencies_manual.pdf
- Nathan, I. (2015). *"Apple's App Store has passed 100 billion app downloads.*

- Pang, B., & Lee, L. (2008). Opinion mining and sentiment analysis. *Foundations and trends in information retrieval* 2.
- Panichella, S., Sorbo, A. D., Vissaggio, A., Canfora, G., & Gall, H. C. (2015). How can i improve my app? classifying user reviews for software maintenance and evolution. *Proceedings of the 31st International Conference on Software Maintenance and Evolution (ICSME 2015)*.
- Perez, S. (2015). *iTunes App Store Now Has 1.2 Million Apps, Has Seen 75 Billion Downloads To Date*.
- Poria, S., Cambria, E., Gui, C., Gelbukh, A., & Ku, L. W. (2014). A Rule-Based Approach to Aspect Extraction from Product Reviews. *Proceedings of the Second Workshop on Natural Language Processing for Social Media (SocialNLP)*, (pp. 28-37).
- Qiu, G., Bing, L., Bu, J., & Chen, C. (2009). Expanding Domain Sentiment Lexicon through Double Propagation. *IJCAI*, (pp. 1199-1204).
- Raghavan, P., Manning, C. D., & Schütze, H. (2008). Evaluation in Information Retrieval. *in Introduction to Information Retrieval*.
- Thelwall, M., Buckley, K., & Paltoglou, G. (2010). Sentiment strength detection in short informal tex. *Journal of the American Society for Information Science and Technology*,.
- Wei, C.-P., & Chen, Y.-M. (2010). Understanding what concerns consumers: a semantic approach to product feature extraction from consumer reviews . *Information Systems and E-Business Management*.
- Zhang, L., & Bing, L. (2010). Extracting and ranking product features in opinion documents. *Proceedings of the 23rd International Conference on Computational Linguistics: Posters*.

BIODATA PENULIS



Penulis, Divi Galih Prasetyo Putri, lahir di kota Malang pada tanggal 27 September 1992. Penulis adalah anak kedua dari dua bersaudara dan dibesarkan di kota Malang, Jawa Timur.

Penulis menempuh pendidikan formal di MIN Malang I (1998-2004), SMPN 3 Malang (2004-2007), SMAN 3 Malang (2007-2010). Pada tahun 2010, penulis memulai pendidikan S1 jurusan Teknik Informatika Fakultas Teknologi Informasi di Institut Teknologi Sepuluh Nopember Surabaya.

Pada pendidikan sarjana dan master penulis mengambil bidang minat Rekayasa Perangkat Lunak dan memiliki ketertarikan di bidang *software evolution*, *software maintenance*, SQA, dan *natural language processing*. Penulis juga beberapa kali menjadi asisten dosen, diantaranya Asisten Dosen mata kuliah Pemrograman Terstruktur, Asisten Dosen mata kuliah Basis Data, dan Asisten Praktikum mata kuliah Basis Data. Penulis dapat dihubungi melalui alamat email divi.galih@gmail.com