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E-Account APP

**A MOBILE AND WEB APPLICATION
FOR CUSTOMERS RELATIONSHIP MANAGEMENT**

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2016-2017

ACKNOWLEDGEMENT

We express our special and sincere respect, gratitude and appreciation to our supervisor Eng. Eman Al-Ajrmi for her invaluable supervision, great efforts and encouragement throughout the project work.

We are always and forever indebted to our beloved families (fathers, mothers, sisters and brothers) for their endless encouragement and valuable supports throughout our entire life. We also express our special thanks to our dearest friends for their great help and encouragement. Finally, we thank and appreciate Information Technology faculty staff as well the university team for their valuable assistance and guidance.

Thank you all,

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LIST OF ABBREVIATIONS

Abbreviation	Full State
E-Account	Electronic Account
IT	Information Technology
IS	Information System
SQL	Structured Query Language (for databases)
TR	Transition phase
ASP	Active Server Pages
UML	Unified Modeling Language
XP	Extreme Programming methodology
OS	Operating System
MAC	Media Access Control
App	Application
ERP	Enterprise Resource Planning
RP	Requirements Planning
UD	User Design
RC	Rapid Construction
PHP	Hypertext Preprocessor
HTML	Hypertext Markup Language
API	Application Programming Interface
XML	Extendable Markup Language
ADT	Android Development tools
CRC	Class Responsibility Collaborator
CSS	Cascading Style Sheets
SDK	Software Development Kit
AJAX	asynchronous Java Script
HTTP	Hyper Text Transfer Protocol
OS	Operating System

VM	Virtual Machine
AV D	Android Virtual Device
AD	Application Development
DVM	Dalvik Virtual Machine
ADCL	Asymmetric Digital Subscriber Line
ERD	Entity Relationship Diagram
UI	User Interfaces
GUI	Graphical Users Interfaces
IDE	Integrated Development Environment
JVM	Java Virtual Machine
GPS	Global Positioning System
AC	Activity
U	Use Case
SQ	Sequence
DB	Database
OOP	Object Oriented Programming
INT	Integer
SFTP	Secure File Transfer Protocol
D	Double
DT	Date Time
FK	Foreign Key
PK	Primary Key
S	String

ABSTRACT

We live in technology and speed age, people depend on Internet ,smart phones and smart devices to request services from Internet by using certain applications in smart phones to shorten and save time instead of visiting the field.

Users of Internet service from Internet Service Providers (ISP) suffering from limited access to their account, subscription and packages services. In addition, they face difficulties from ISP in response to their queries and questions and/or not being updated with the services provided. This problem is mostly experienced by most of the Gazan customer.

Our project intended to solve this problem, by a predesigned application that supports Android operating system, which facilitate access to user's account at easiest and comfortable manners.

E-Account payment history that include payment date, package, and subscription period. The application enables company to send messages to customer about location of distributors. Moreover, it has the facilities of providing advertising and information about company as needed.

The mobile application is solely designed to support the users, while a web page designed for the admin to control the mobile application, and more store the user's data, and display the information for users in E-Account app. The main goal of the mobile application is to enhance the customer relationship and services with internet services providers. However, the application development follows the Extreme Programming (XP) methodology that helped to solve and modify each step separately.

Furthermore, the application will enhance the marketing activities and services for those who will implement the E-Account system. The developed system will reduce many level of efforts at minimum ratio .Much easier for the customer to use and more will fulfills the customers' needs to make them more satisfied.

In conclusion, the application project, designed to be improved, developed with any new possible features such as supporting other mobile operating systems and speed testing for uploading and downloading.

CHAPTER1
INTRODUCTION

1.1 Introduction

This chapter aims to introduce an overview of the project title, background and motivation of the project. Moreover, this chapter clearly shows the problem statement, project objectives, significance of the project, scope & limitation and summary.

1.2 Background

The Internet is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and peer-to-peer networks for file sharing. The web is an information space where Uniform Resource Locators (URLs) identify documents and other web resources, interlinked by hypertext links, and can be accessed via the Internet [1].

Web application is an application program that is stored on a remote server and delivered over the Internet through a browser interface.

Internet Companies (Internet Services Providers ISP) are organizations that provide services for accessing and using the Internet. Internet services typically provided by Internet access, Internet transit, domain name registration, web hosting, Usenet service, and colocation. Internet companies (ISP) in Gaza are leading to developed Web sites for its customers and provide the companies to its customers all they need from online services, web and hosting under one roof. In this regard we would like to point out that the company has provided solutions to major Palestinian companies such as PAL Palestine Telecommunications Company Tel Inc. mobile communications cellular and numerous non-governmental organizations through the crucible of services distinctive to Web design and hosting and other services through programmers and Flash designers and advertising campaigns via the internet in Gaza.

A Smartphone is a mobile phone (also known as a cell phone or a cell mobiles) with an advanced mobile operating system that combines features of a personal computer operating system with other useful features for mobile or handheld use.

A mobile application, most commonly referred as an app, is a type of application software designed to run on a mobile device, such as a Smartphone or tablet computer. Mobile

applications frequently serve to provide users with similar services to those accessed on PCs. Apps are generally small, individual software units with limited function. Apple Inc. and its App Store, which sells thousands of applications for the iPhone, iPad and iPod Touch, have popularized this use of software. Customer service is the provision of service to customers before, during and after a purchase. The perception of success of such interactions is dependent on employees "who can adjust themselves to the personality of the guest". Customer service concerns the priority an organization assigns to customer service relative to components such as product innovation and pricing. In this sense, an organization that values good customer services may spend more money in training employees than the average organization or may proactively interview customers for feedback. Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving business relationships with customers, assisting in customer retention and driving sales growth. CRM systems are designed to compile information on customers across different channels or points of contact between the customer and the company, which could include the company's website, telephone, live chat, direct mail, marketing materials and social media. CRM systems can also give customer-facing staff detailed information on customers' personal information, purchase history, buying preferences and concerns. CRM software consolidates customer information and documents into a single CRM database so business users can more easily access and manage it. The other main functions of this software include recording various customer interactions (over email, phone calls, social media or other channels, depending on system capabilities), automating various workflow processes such as tasks, calendars and alerts, and giving managers the ability to track performance and productivity are based on information logged within the system[2].

1.3 Motivation of the project

smartphones has facilitated access to many applications that people needs in their daily life. But what came obvious is lack of customers relationship and services in Internet Services Providers(ISP) companies, the customers relationship management part is taken away from the equation and customers are left to face the struggle increasing more with time to access to their information, their accounts details and the ISP company services that they joint in it.

1.4 Problem Statement

Customers have difficulties with getting information about advertising and new services.

The customers have lack of information about the daily amount of uploading and downloading. Moreover, at the end of the daily downloading there are no notifications to warn the customer that he will turn to the black list for this day. In addition to the customers, they do not know the location of the nearest distributor for the company that joint in it, and they do not know about the updates that get in advertisements and services offered by the company.

1.5 Project Objective

Build mobile and web application to enhance the relationship between ISP company and its customers. The mobile application (E-Account App) provides the communication between the customers and the internet service providers company. The customers have knowledge about personal details, support, payment history and store location in local areas. Moreover, this application fulfills the customers' needs not like the other applications that build for customer services.

1.6 Significance of the Project

Identify a deeper knowledge of services, advertisements, and store location about internet a companies. Create new channel of communication between technology and users. Receive feedback that leads to new and improved services. Receive notifications about the upload and download quantity and the daily and monthly expiration date of upload.

The company can let the customer to know about offers and services by using a gate called store location and advertisements in the mobile application or in the web application.

Company employees answer the complaints and location of distributors that asked about.

1.7 Scope & limitation of the project

The project include mobile application and web application.

The mobile application consists of Graphic User Interfaces (GUIs),They are my personal details, payment history and my supporting. In addition, it does not include speed test and E-payment. The application is local to be use in Gaza Strip. The mobile application supports android operating system and supports Arabic language and English language if the mobile language is Arabic, the application automatically switches to Arabic language and if the Mobile language is English, the language of the application automatically

switches to English. The mobile application is free and everyone can install it from play store.

Web application for admin to control the mobile application, store the user's data, and display the information for users in E-Account app. The limitations are the mobile app. They don't support other operating system like IOS, windows and BlackBerry. It is not for global use it does not supports other languages.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This chapter reviews and identifies the technologies systems which are were used to build the E-Account system, and some basic definitions and concepts related to our project. Also clear up related work in internet companies in Gaza city and compare between them and E-Account.

2.2 Technology Used

2.2.1 ASP.NET

The Development Language and Framework used in E-Account system.



ASP.NET is a free web framework for building great web sites and web applications using HTML, CSS, and JavaScript. You can also create Web APIs and mobile sites, and you can use real-time technologies like Web Sockets and more.

ASP.NET Web Pages and the Razor syntax provide a fast, approachable, and lightweight way to combine server code with HTML to create dynamic web content. Connect to databases, add video, link to social networking sites, and include many more features that help you create beautiful sites that conform to the latest web standards.

ASP.NET MVC gives you a powerful, patterns-based way to build dynamic websites that enables a clean separation of concerns and that gives you full control over markup for enjoyable, agile development. ASP.NET MVC includes many features that enable fast, TDD-friendly development for creating sophisticated applications that use the latest web standards [3].

2.2.1.1 Advantages of an MVC-Based Web Application

The ASP.NET MVC framework offers the following advantages:

1. It makes it easier to manage complexity by dividing an application into the model, the view, and the controller.

2. It does not use view state or server-based forms. This makes the MVC framework ideal for developers who want full control over the behavior of an application.
3. It uses a Front Controller pattern that processes Web application requests through a single controller. This enables you to design an application that supports a rich routing infrastructure. For more information, see Front Controller.
4. It provides better support for test-driven development (TDD).
5. It works well for Web applications that are supported by large teams of developers and for Web designers who need a high degree of control over the application behavior.

2.2.1.2 Features of the ASP.NET MVC Framework

1. Separation of application tasks (input logic, business logic, and UI logic), testability, and test-driven development (TDD). All core contracts in the MVC framework are interface-based and can be tested by using mock objects, which are simulated objects that imitate the behavior of actual objects in the application. You can unit-test the application without having to run the controllers in an ASP.NET process, which makes unit testing fast and flexible. You can use any unit-testing framework that is compatible with the .NET Framework.
2. An extensible and pluggable framework. The components of the ASP.NET MVC framework are designed so that they can be easily replaced or customized. You can plug in your own view engine, URL routing policy, action-method parameter serialization, and other components. The ASP.NET MVC framework also supports the use of Dependency Injection (DI) and Inversion of Control (IOC) container models. DI enables you to inject objects into a class, instead of relying on the class to create the object itself. IOC specifies that if an object requires another object, the first objects should get the second object from an outside source such as a configuration file. This makes testing easier.
3. Extensive support for ASP.NET routing, which is a powerful URL-mapping component that lets you build applications that have comprehensible and searchable URLs. URLs do not have to include file-name extensions, and are designed to support URL naming patterns that work well for search engine optimization (SEO) and representational state transfer (REST) addressing.
4. Support for using the markup in existing ASP.NET page (.aspx files), user control (.ascx files), and master page (.master files) markup files as view templates. You can

use existing ASP.NET features with the ASP.NET MVC framework, such as nested master pages, in-line expressions (<%= %>), declarative server controls, templates, data-binding, localization, and so on.

5. Support for existing ASP.NET features. ASP.NET MVC lets you use features such as forms authentication and Windows authentication, URL authorization, membership and roles, output and data caching, session and profile state management, health monitoring, the configuration system, and the provider architecture [4].

#Why asp.net MVC in this project?

It is easier more than PHP and takes less time. MVC used to connect E-Account mobile application with database.

2.2.2 ADO.NET

The Choice of Database Management System (DBMS) used for E-Account System.



Figure 2.1 : ADO.NET Logo

The technology, which was used to connect to a relational database in ASP.NET code that runs on a server, is ADO.NET. ADO.NET communicates with a database management system (DBMS) such as SQL Server.

ADO.NET is a set of classes that expose data access services for .NET Framework programmers. ADO.NET provides a rich set of components for creating distributed, data-sharing applications. It is an integral part of the .NET Framework, providing access to relational, XML, and application data. ADO.NET supports a variety of development needs, including the creation of front-end database clients and middle-tier business objects used by applications, tools, languages, or Internet browsers.

The ADO.NET Entity Framework is the main ORM that Microsoft provides for the .NET Framework

To read or update data, you can use ADO.NET directly by using classes such as SqlCommand, SqlDataReader, SqlDataAdapter, and DataSet. The recommended alternative is to let an object-relational mapper (ORM) framework such as the Entity

Framework handle the low-level code that interfaces with an ADO.NET data provider. If you use ADO.NET directly, you have to manually write and execute SQL queries. You also have to write code that converts data from the database's format into objects, properties, and collections that you can work with in code [5].

2.2.3 SQL Server

Some reasons for choosing SQL Server as a relational database for an ASP.NET web application:



Figure 2.2: SQL Server Logo

1. SQL Server is supported by Microsoft.
2. SQL Server is integrated with other Microsoft data access technologies such as the Entity Framework. See Object-Relational Mappers later in this topic.
3. Visual Studio provides built-in tools for working with SQL Server. SQL Server Data Tools (SSDT), enables you to create databases, manipulate schema and data, generate and run scripts, debug, and deploy databases and database updates.
4. Visual Studio includes web deployment features that are designed to facilitate deploying SQL Server databases along with web projects
5. The Visual Studio web project templates use SQL Server for the ASP.NET membership database by default.

6. Nearly all ASP.NET documentation on the MSDN web site, ASP.NET web sites, and in blog posts uses SQL Server. Relatively little documentation that would help you get started and resolve difficulties is available for other databases.

2.2.4 Choice of Web Design Technologies



Figure 2.3 : Front End Technologies





Figure 2.4 : Ajax Technology


1. HTML5: is a markup language used for structuring and presenting content on the World Wide Web. It is the fifth and current version of the HTML standard [6]. JavaScript is the programming language of HTML and the Web.
2. CSS is a style sheet language that describes the presentation of an HTML (or XML) document also describes how elements must be rendered on screen, on paper, or in other media [7].
3. JQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript [8].
4. AJAX stands for Asynchronous JavaScript and XML. In a nutshell, it is the use of the XMLHttpRequest object to communicate with server-side scripts. It can send as well as receive information in a variety of formats, including JSON, XML, HTML, and even text files [9].

2.5 Development Tools


The Choice of Software Development Tools and Computer-Aided Software Engineering (CASE) that are used to build the E-Account system:

Visual Studio  : A free, fully-featured, and extensible IDE for creating modern applications for Windows, Android, and iOS, as well as web applications and cloud services [10].

SQL Server 2014:  As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications which may run either on the same computer or on another computer across a network (including the Internet) [11].

IIS  : Internet Information Server is an extensible web server created by Microsoft for use with Windows NT family. IIS supports HTTP, HTTPS, FTP, FTPS, SMTP and NNTP [12].

Notepad++: is a free source code editor and Notepad replacement that supports several languages. Running in the MS Windows environment, its use is governed by GPL License. [13].

Adobe Photoshop CS6  : Software redefines digital imaging with powerful new photography tools, breakthrough capabilities for complex image selections, realistic painting, and intelligent retouching and design website [14].

2.6 Android System Architecture

A stack of software components, which is roughly divided into five sections and four main layers as shown below in the architecture diagram. include :application (written in java, executing in Dalvik), framework services and libraries (written mostly in java) applications and most framework code executes in a virtual machine - native libraries, daemons and services (written in C or C++) the Linux kernel, which includes and drivers for hardware, networking, file system access and inter-process-communication [15].

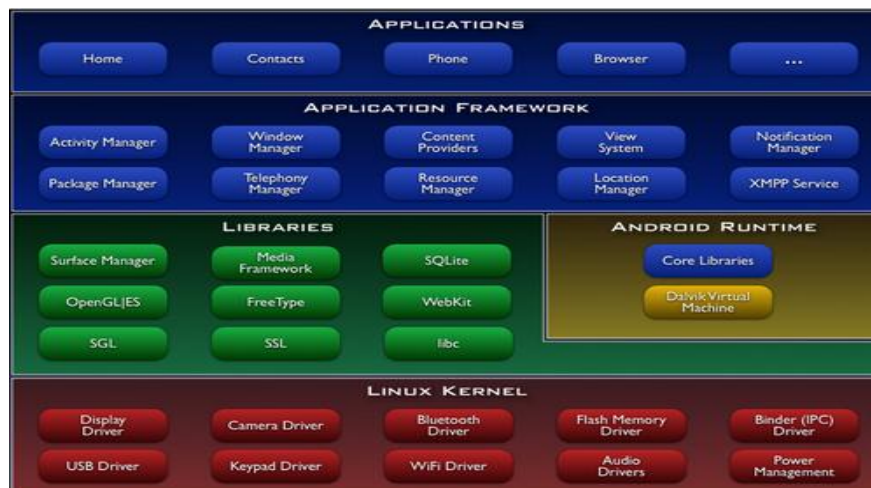


Figure 2.5: Android System Architecture

2.7 Definitions and Concepts

Company Internet service provider (ISP): It is an organization that provides services Internet access, Internet transit, domain name registration, web hosting, Usenet service, and collocation. For accessing and using the Internet. Internet services typically provided by.

E-account application: this application serves the customers and easily manage their account. Monitor their usage. It Provides customers with the latest offers and promotions and enables to locate the nearest store to their area.

2.8 Related work

In this section, we briefly present some similar or related work to application's E-Account”.

According to the assessment and evaluation that we collect from our university and other universities students, *The rest of estimates will be explained in the first appendix A.

- 1. Paltel Company (16):** The fastest way to benefit from the most Paltel services and manage your account on the move.

"Ana Paltel" is an application which gives you the ability to control and access your own Homophone by providing a lot of services and features that will make your experience with Paltel services easier, You can also apply a problem or apply ticket, Get a new offer or choose one of our packages and programs, Monitor your Wi-Fi usage, View Negate points and redeem them with gifts, and locate our showrooms in Palestine and more features that you will enjoy using Ana Paltel.

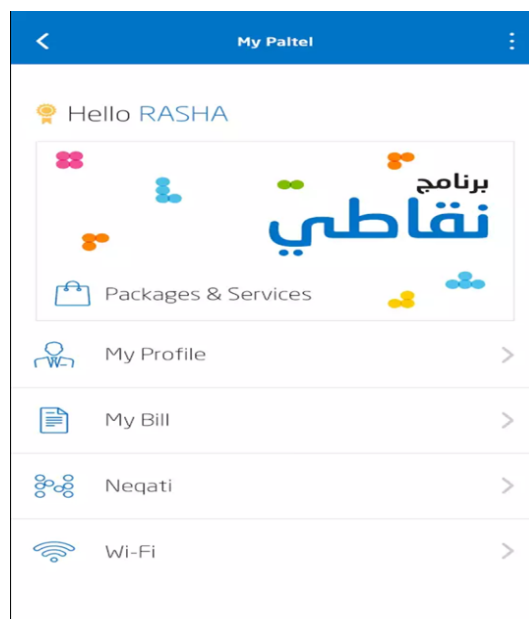


Figure 2 .6 :Paltel activity

Advantages:

1. View user data.
2. Easy to use help to access information from the phone book.
3. Facilitate the inquiry operations and reduce contact to services.

Disadvantages:

1. It does not offer technical support.
2. It requires the power to read contacts.
3. The Lack of access letters and bills on the application [17].

2. Jawwal Company (18): Jawwal implementation of a mobile app, this a free application Account Management Tools which Projects your own ease and flexibility. Icon user enters his mobile number and password "My Account".

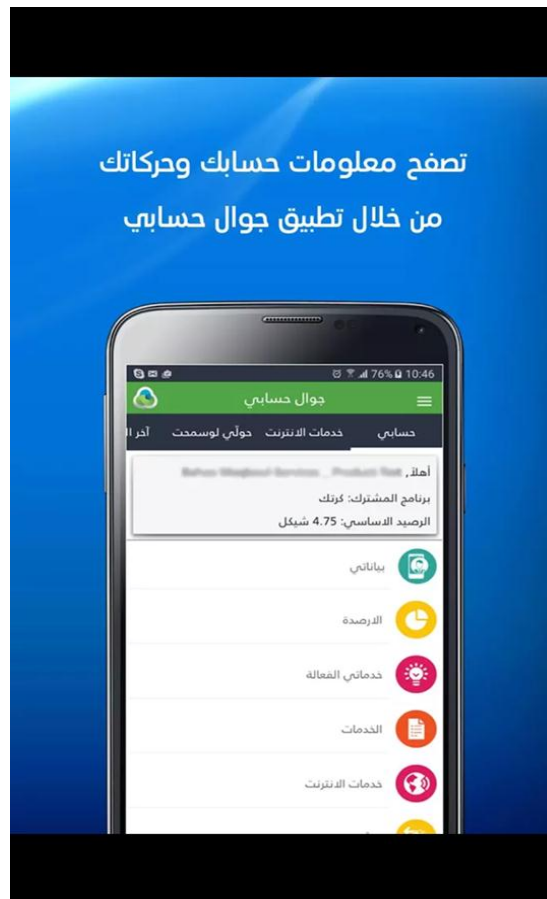


Figure 2. 7: Jawwal activities

Advantages:

1. SMS and internet packages.
2. Local and international calling packages.
3. value added services.
4. call barring services.
5. International dialing and roaming .
6. Get invoices details for postpaid & MIX subscribers. _points services.
7. keep posted by Jawwal latest campaigns.

Disadvantages:

1. Some services do not exist.
2. The last offers and do not expose campaigns.
3. It takes a long time to fetch data from the server.
4. When you log it does not accept the password [19].

3. Speedclick Company (20): It is the second largest Internet Service Provider in the Gaza Strip, as it's the fastest-growing Internet company and it was the nucleus of the work in the field of WI FI in 2005 and officially founded in 2010 and obtained a license for the system BSA from the Palestinian Ministry of Communications in 2011.

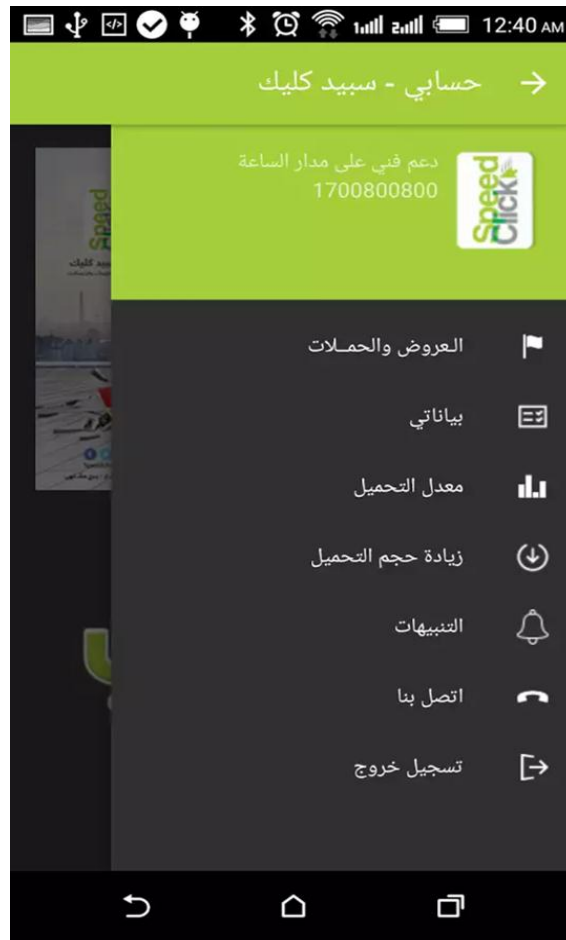


Figure 2.8 : speedclick activities

Advantages:

1. Displays user data.
2. I increase the download size of the application.

Disadvantages:

1. Lack of notifications.
2. Loading rate displays.
3. Offers and campaigns do not show consistently [21].

4. Orange Company (22): Orange has provided the application of Orange Palestine which comes to you has several advantages as easy to use in terms of the joint display the user's own choice or view A free additional services for each of the site Kaspersky choices, my films Location 4 Kids, and Orange fulfilled In addition to this, its information in terms of loading and options for technical support, campaigns and presentations.



Figure 2.9 : orange activities

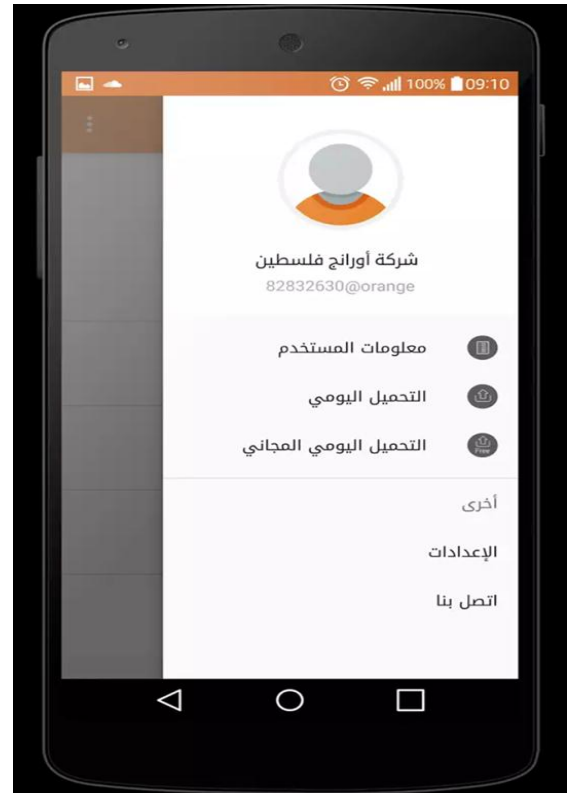


Figure 2.10 : orange activities

Advantages:

1. View user data.
2. Daily Download.
3. Other applications linking it.

Disadvantages:

1. Alerts are absent.
2. Lack of places distributors.
3. Lack of offers and services are constantly [23].

2.9 E-Account VS Applications of other companies in the Gaza Strip

A comparison between our applications “E-Account” with other similar applications in Table2.1 E-Account application provide a lot of benefits that business need and citizens look for, These benefits will be more attractive to our target area in business market They also ensure popularity and success of our system.

comparison	Ana Paltel	Ana jawwal	Speedclick Company	Orange Palestine	E-Account Application
Support	-	-	-	-	✓
Send Messages	-	✓	-	-	-
Notifications	-	-	-	-	✓
Speed Test	-	-	-	✓	-
Distributors Locations	✓	-	-	-	✓

Table 2.1 : E-Account VS Application companies in the Gaza Strip

This table of comparison shows some elements that used to compare E-Account App with some applications. The element support is particular about the complaint, select and write about it, it exists in E-Account App but not in the others.

Ana jawwal app can send messages to the customers but the other apps can't. E-Account app can send notifications when the customer uploading more than the limit but other apps don't send that. Orange Palestine app has speed test service to test uploading and downloading amount of internet but the others apps don't have that service. Distributors' locations enable to the customers to know the location of distributors this service it's existent only in Ana Paltel and E-Account app.

CHAPTER 3
METHODOLOGY

3.1 Introduction:

In this chapter will be discuss main points which are: Extreme Programming Methodology, Analysis and Modeling, explain why the use of Extreme Programming, explaining each stage of the work is done and the advantages

3.2 Extreme Programming Methodology:

eXtreme Programming (XP) is a software development process as well as a methodology. A (software development) process defines who, what and when a person is doing what when and how. This means, it provides principles, techniques and practices for the efficient, predictable and repeatable production of software systems. Therefore, the process serves as a template for creating projects.

XP is also framework a process because it can be (and most likely will be) tailored to the specific needs of teams, projects, companies etc.

XP is also a lightweight methodology or what Alistair Cockburn calls a “Crystal Methodology”. In short, methodologies of this family have high productivity and high tolerance. Communication is usually strong with short paths, especially informal paths (not documented). There is only a small range of deliverables (artifacts), but these are delivered frequently (releases). Processes of the Crystal family identify only a few roles and activities. For more information on the methodology space see. To date, XP has been applied to business problems only, E.g. projects with an external customer that wants a specific product. The projects usually ranged from 6 to 15 months. XP was used by small teams ranging from two to twelve members (and it is likely to be limited to teams of this size). The text is organized in three sections. The first part presents the basic concepts of XP are presented. The second part discusses the process structure of XP. Finally, in the last section the practices and rules of the methodology eXtreme Programming are introduced. Note that there isn’t much available information about the usage of XP. Although one an introduction ary book about XP has been published in 1999 ([Be99-1]) and others several are in the making, and the web sites give a good introduction, especially information about the pros and cons of XP is still missing. However; some possible problems are noted where applicable.[24]

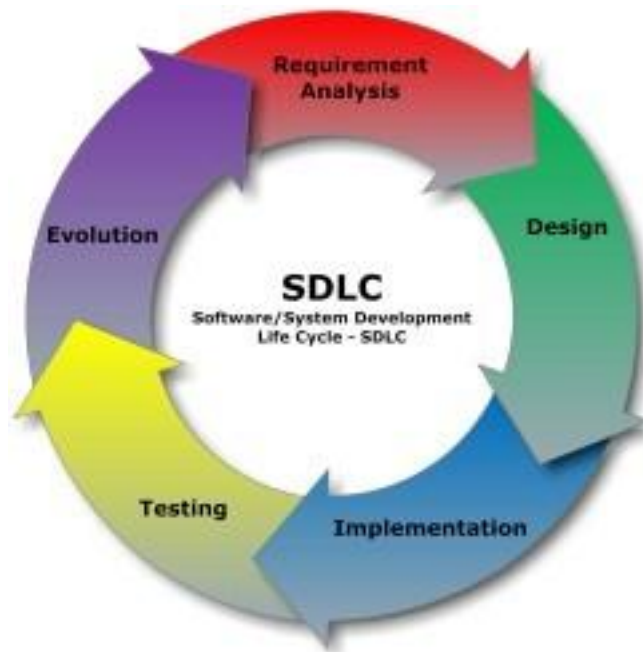


Figure 3.1 :XP Methodology

3.3 why XP:

Extreme Programming (XP) Define a clear and simple path to develop and deliver software services according to customer requirements. The methodology used in the E-Account for the construction of each step separately, and to enable any changes to be incorporated in the system at any stage to reduce costs, errors and risks that could developers located. So the emphasis is on accuracy and speed instead of paperwork and meetings to have no need. It also ensures XP full communication and documentation at each level or stage of the software development life cycle.

3.4 XP phases:

1-Requirement analysis phase: This phase describes the analysis and modeling activities such as: software requirements (functional and non-functional requirements), After the analysis and modeling of each stage is designed and the use of the program MS project design planning modeling ,The program creatly online to draw UML .It will be explained in chapter 4.

2- Design phase: This phases concerned with design stage activities like: CRC design, System architecture, entity relationship diagram, and user's interfaces. After all design stages are complete. It will be explained in chapter5.

3- Implementation phase: this phase is implemented Web and Android programming Code and database programming to implement application E-Account. It will be explained in chapter5.

4- Testing phase: This phase describes the test result for the web and mobile application process to allow the customer see Internet companies in the Gaza. It will be explained in chapter6.

5- Evolution: this phase describes a software evaluation checklist which shows whether or not E-Account system meets the predefined requirements. With questions from how well the software operates for customers and companies, to the overall care accuracy of the content itself. It will be explained in chapter6.

3.5 Advantages of XP

- 1- Cost Reduction: is code centric and trims some activities to reduce costs and developers.
- 2- Better Risk Management: XP reduces the risks related to programming.
- 3- Robustness: In software simplicity always brings quality and contributes the robustness.
- 4- Resilience: Continuously changing requirements makes the software development but XP with its accommodation using user stories at the start and through feedback during the course of iterations.

3.6 Summary

Software development methodology, where methodology is analyzed, designed, tested, and implemented incrementally. We also address the advantage of using it and clarify the reasons for choosing the methodology. The chapter provides an overview of the phases to develop E-Account system, that it designed a Gantt chart which was an effective method for managing and task in a time basis.

CHAPTER 4
Analysis and Modeling

4.1 Introduction:

This part is concerned with the analysis and modeling phase activities such as: software requirements (functional and non-functional requirements), Gantt chart, UML modeling. After the analysis and modeling of each stage is designed.

4.2 Software Requirements Specification:

In this Section, all users and system requirements are gathered from user stories through subscription and requirements specified based on listening to their needs, These requirements include functional, nonfunctional and system requirements. After all requirements, gathering development requirements are identified for later design and implementation.

4.2.1 Functional Requirement

The goal of functional requirement is to determine the behavior of users for “E-Account” in terms of functionality. After login, the application moves the user to the home screen and there they have many options.

- 1- Show feeds:** system must be able to show last feed become from another user
- 2- Show Advertising:** Show ads and choose the appropriate packages
- 3- Write posts:** user must be able to write posts
- 4- Write replies:** user must be able to write replies on specific problem
- 5- User Management:** system must allow users to manage user profile and other associated users
- 6- Users profile:** users can manage profile add information, mobile number and other details
- 7- Follow up:** users can follow up any Ads
- 8- Management:** system must allow users to login in the system
- 9- Login:** system can only be accessed by the user to record the user name and password to log in to the system. Validation on username and password that input is required to deny the invalid user login to the system.
- 10- Management Search:** This system allows users to search for distributors using the city name, street name and shop.
- 11- Personal details:** is the user that is placed by the administration, where all details of user account like: name, phone number, the download package, the amount of downloads, subscription date, end date, the quality of downloading data

12- My support: is a service provided for the user to make a complaint to the company either by contact or send a message. It writes the detail and type of complaint is sent.

13-Payment history: the property that is backed by the company's rapid users to pay, The company creates a log and put it all payment data such as: data payment, transaction and subscription period.

4.2.2 Non-Functional Requirement

1- Performance Requirement:

E-Account must be on very high standard servers to accommodate the huge amount of data and requests for access to the server from a large number of users at the same time.

2- Safety Requirement:

The database of "E-Account" must be located in a special secure server and must be directly backups to other servers directly at specific times to avoid loss and damage of data.

3- Flexibility requirements:

The system must be able to find or see the necessary details, written complaints and subscription campaigns.

4- Availability Requirements:

E-Account should be available at all times, It means users can access it using any device and platform.

5- Reliability Requirements:

You must apply the EA-Account to provide accurate information and reliable services to all users, to ensure the success and adoption of the system as a source of reliable information.

4.3 Operation Requirements:

Customer using Smartphone to use Mobile App (Android OS).

4.4 Software Requirements:

1. Visual Studio 2013 to develop the system with programming ASP.net .
2. Microsoft SQL server 2014 management studio to develop the database for the system.
3. Greatly online app drawing the diagram such as ERD diagram, Activity Diagram and etc.

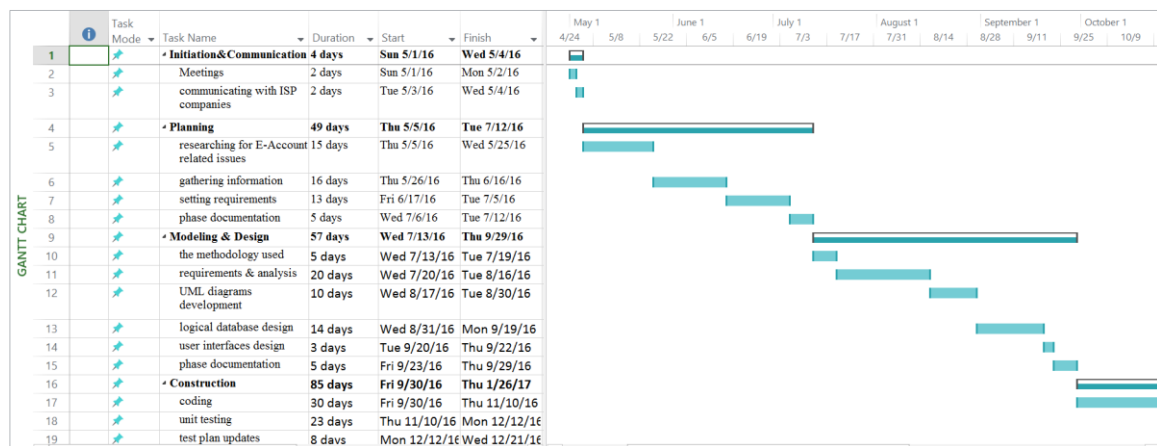
4. Adobe Photoshop CC for designing the graphic that applies in the system interface.
5. Internet Access for Microsoft browsing web application.
6. Android platforms for run mobile application.
7. MS project 2016 for draw Gantt chart for planning.

4.5 Hardware Requirements:

- 1- Notebook for develop the system and to connecting to internet.
- 2- Basic input devices for writing code, input documentation, and testing system.
- 3- Computer server: for web application and database.
- 4- Mobiles or any device support Android operating system.

4.6 Planning:

A Gantt chart provides the illustration of a schedule that helps to plan, coordinate, and track specific tasks in a project. It usually consists of two parts: the project tasks on the left and the time allocation for each task on the right. Gantt charts are helpful in many aspects but essentially, they can deal with scheduling tasks, understanding critical paths of a project, and planning of resources. [25]



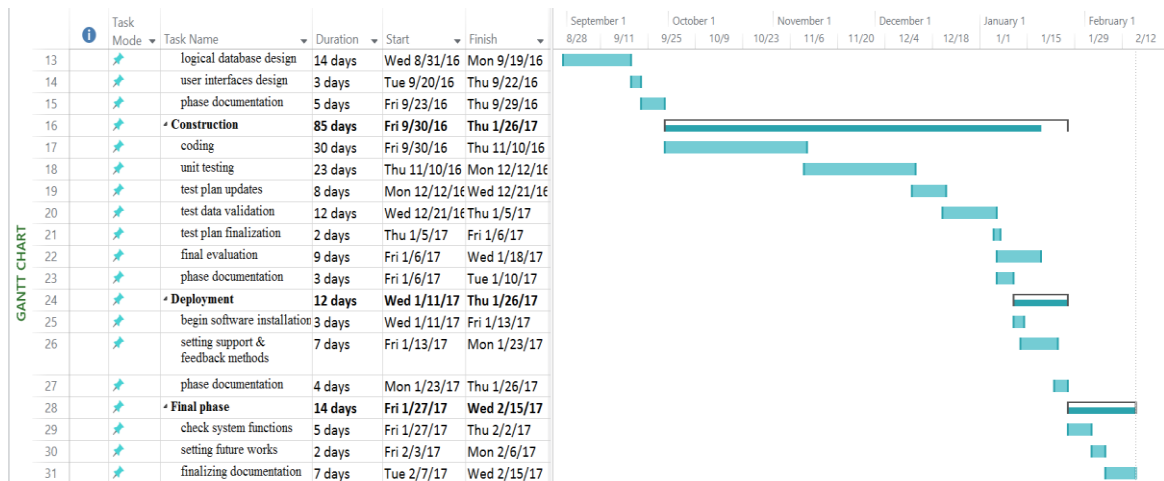


Figure 4.1: Gant chart

4.7 System analysis Modeling

In this section, we use modeling system “UML diagrams” based on requirements analysis through meetings and user stories to describe the functions and processes that system shall do.

4.8 System Modeling Description

E-Account System is an Object-Oriented based system uses UML 2.1 modeling language to develop model-based system in order to obtain a better understanding of the system being developed.

The modeling will address the nine UML diagrams (use case diagram, class diagram, sequence diagram, activity diagram and object diagram).

4.8.1 UML Diagrams List

Table 4.1 shows UML diagrams that are in modeling process and the descriptions of each diagram.

Table 4.2: UML Diagram

Diagram Name	Description
Use Case Diagram	Use case diagram model system functions (i.e. goals) as well as the actors that interact with those functions.
Activity Diagram	Activity diagram is a flowchart-based diagram showing flow of control from activity to activity.
Sequence Diagram	A sequence diagram is used primarily to show the interactions between objects that are represented as lifelines in a sequential order.

4.8.1.1 Use Case diagram

Use Cases are an effective requirements capture technique that makes requirements available for review by avoiding any implementation bias in the requirements. [26]

A use case diagram is a static description of some way in which the application is used. This diagram shows how the application uses cases, which are related to each other, and how the users can get at them. Each bubble represents a use case and each stick person represents a user.

A use case is a list of steps, typically defining interactions between a role (known in Unified Modeling Language (UML) as an "actor") and a system, to achieve a goal. The actor can be a human, an external system, or time.

Use Case List

U1	Choose Company	U9	View Personal Details
U2	login	U10	View Payment History
U3	Logout	U11	View Support Option
U4	View company Homepage	U12	Submit A complaints
U5	View About	U13	Call Customer service
U6	Open Navigation Menu	U14	Select issue Type
U7	Get Distributors	U15	View Dialer
U8	Select Location		

Table 4.3: Description of App & web

Actors and their Roles

Actor	Description	Goals
Admin	Who is the member and responsible for monitoring managing the users and maintaining processes of the system	Manage website content by adding, editing and removing content . Send direct messages to user accounts for help and support
User	Every member who has account or want to register on internet company	Add new user Edit userName or password
Web Site (Control panel)	External entity that creates a connection between user and application	Change name and password Delete or edit data of user

4.8.1.2 Main Use Case Diagram for E-Account Mobile App

This use case explain the main process login then describes customer's choices.

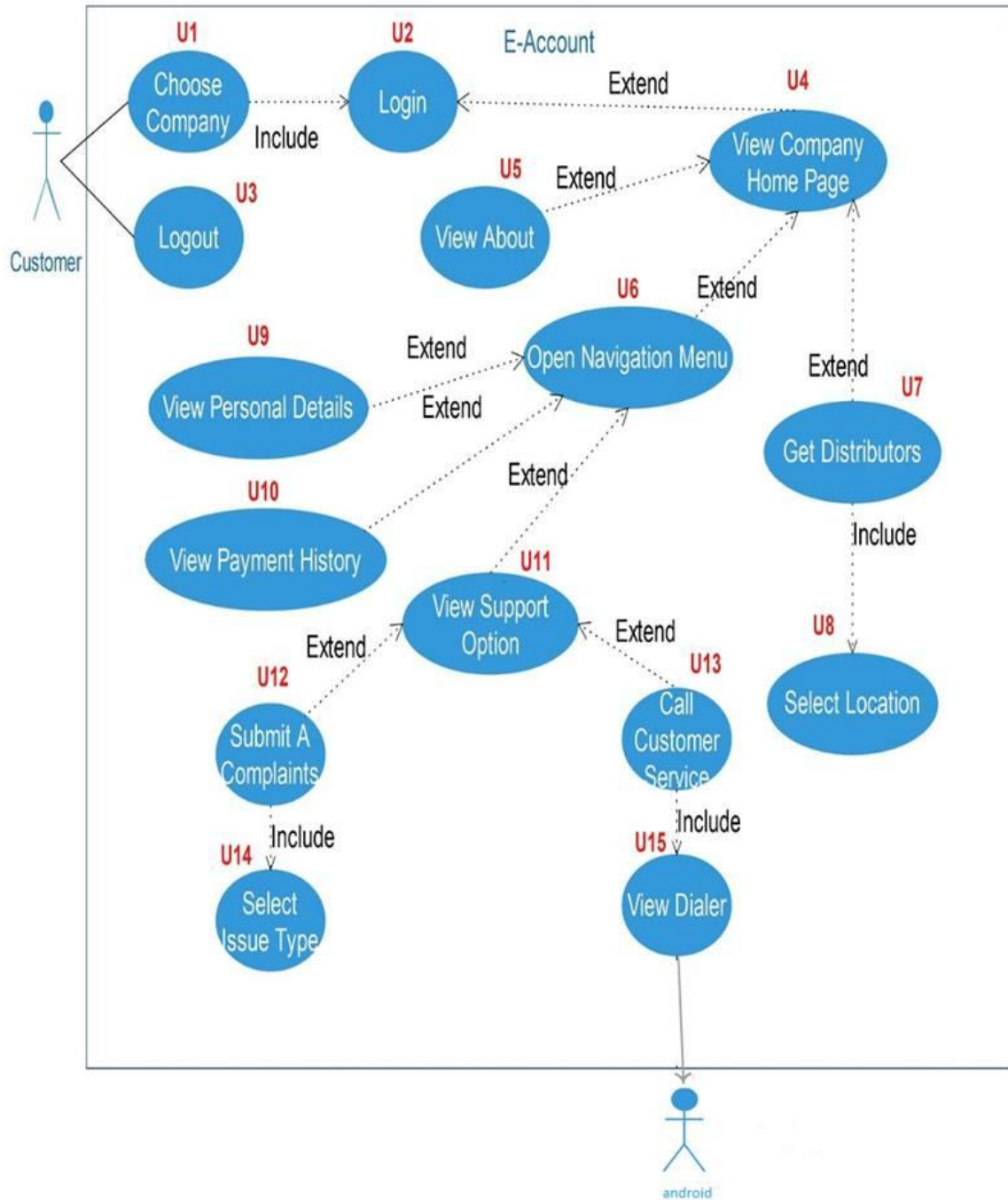


Figure 4.2: Main Use Case

4.8.1.2 Main Use Case Diagram for Web App

This use case describes Admin choice.

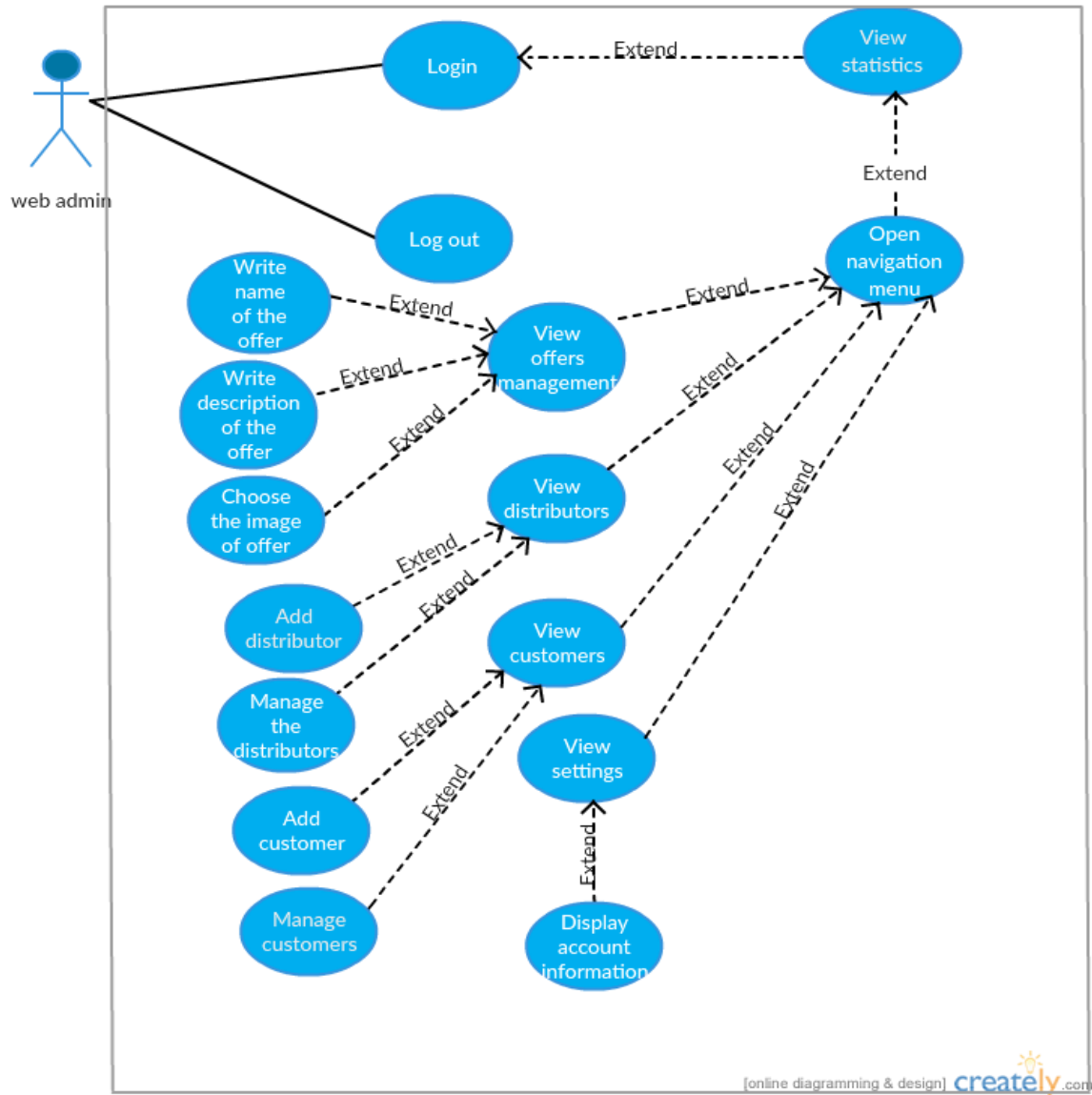


Figure 4.3: Main Use Case for web app

4.8.1.3 Use Case Details

Table 4.6: Use Case description

Use case ID : 2	Case Name : Login
Relation	Include U1, Extend U4
Actor	User
Description	User choose kind of company after that Logging into the system by required data(Name – Phone Number)
Pre-Condition	Valid registered account data
Post-Condition	User successfully logged in to system
Normal Path	√ User enters name & phone Number √ User click login button √ System validates user input and displays E- Account page
Abnormal Path	Error message shown and login failed

*The rest of use cases details tables are addressed in the appendices.

4.8.1.2 Activity Diagram

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. Activity diagrams are often used in business process modeling. They can also describe the steps in a use case diagram. Activities modeled can be sequential and concurrent. In both cases an activity diagram will have a beginning and an end. [27]

Drawing an activity diagram can help you to improve a process. If the diagram of an existing process proves to be very complex, you can consider how the process could be simplified.

*The rest of activity diagram details are addressed in the appendices B.

4.8.1.3 Activity Diagram: Login

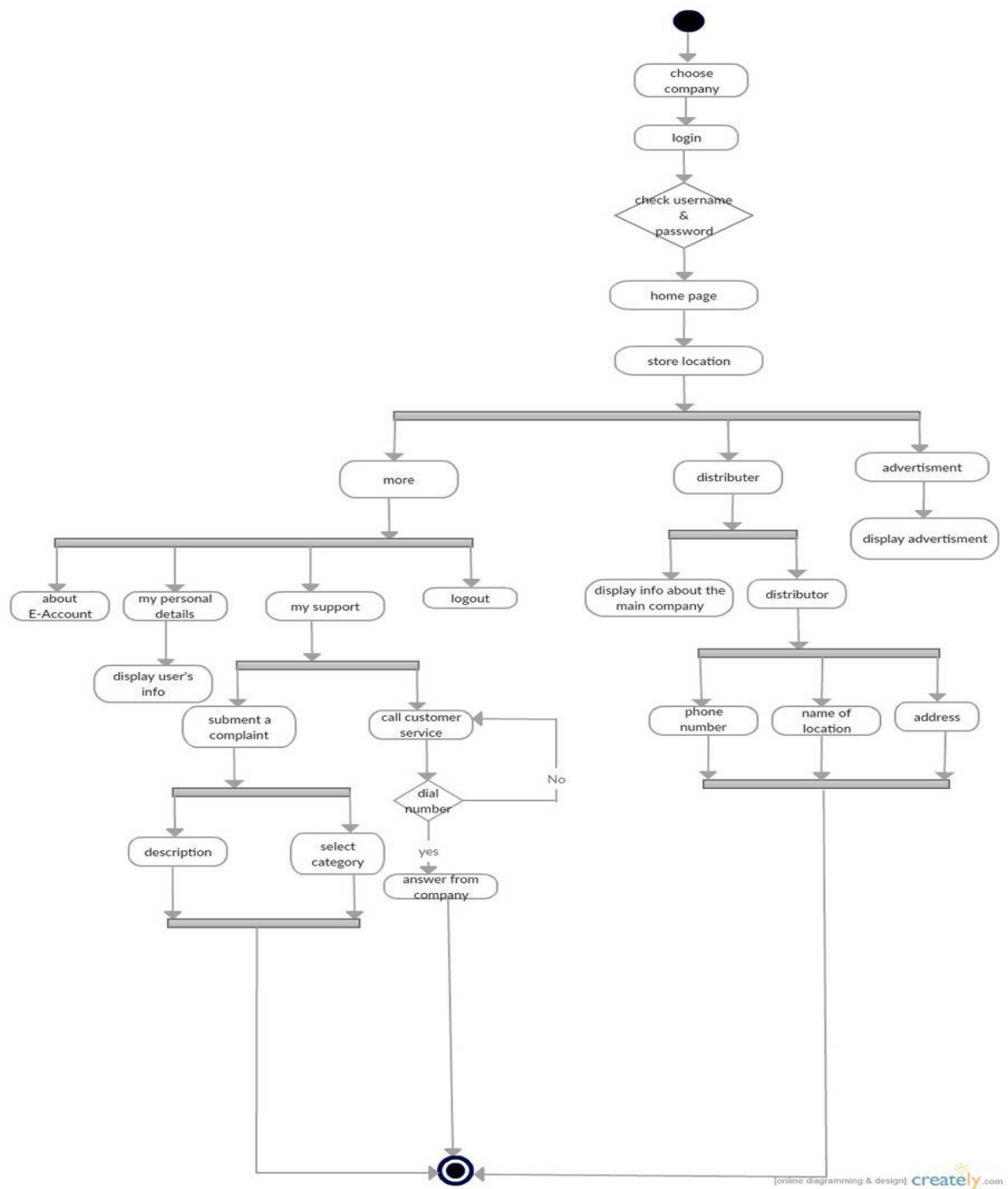


Figure 4.4: Main Activity Diagram (Login)

4.8.1.4 : Sequence Diagrams

Sequence diagrams are a kind of interaction diagram, because they describe how—and in what order—a group of objects works together. These diagrams are used by software developers and businesspeople like to understand requirements for a new system or to document an existing process. Sequence diagrams are sometimes known as event diagrams or event scenarios. The sequence diagram is used primarily to show the interactions between objects in the sequential order that those interactions occur. Typically they are associated with use case realizations in the Logical View of the system under development. [28]

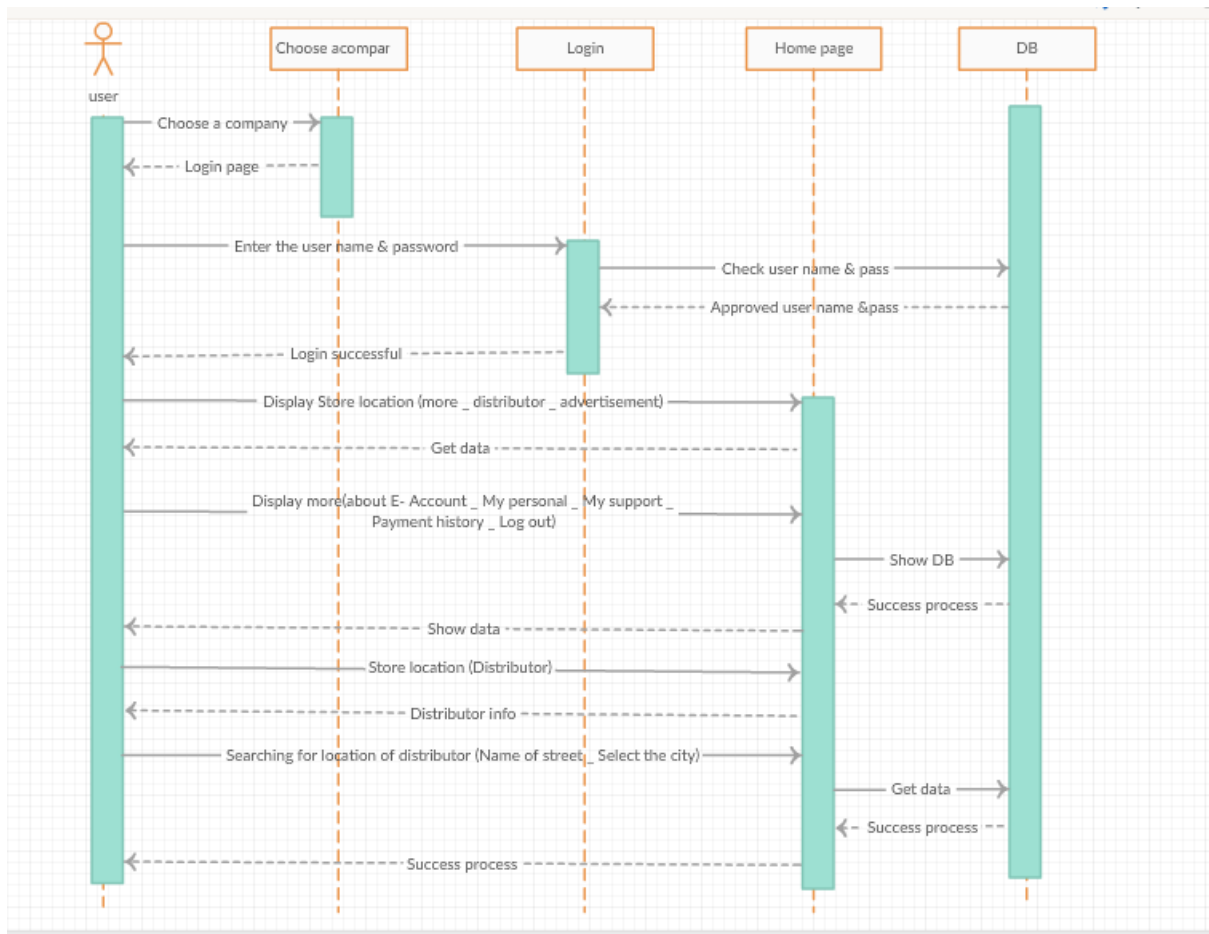


Figure 4.5 :show all function in Sequence diagram in general

*The rest of Sequence Diagrams details are addressed in the appendices B.

4.9 Summary

Functional and non-functional requirements of E-Account previously mentioned will be applied as much as possible to achieve the highest requirement qualities. The UML is a tool for specifying software systems and standardized diagrams types to help developers to describe and visually map a software system's design and structure. Using UML is possible to model just about any kind of application. Both are specifically and independently of a target platform.

CHAPTER 5
DESIGN AND IMPLEMENTATION

5.1 Introduction

This part is concerned with design stage activities like: CRC design, System architecture, entity relationship diagram, and user's interfaces. After all design stages complete, implementation phase extreme E-Account coding starts using development tools.

5.2 System Architecture Overview

Client/server architecture is a computing model in which the server hosts, delivers and manages most of resources and services to be consumed by the client. This type of architecture has one or more client computers that are connected to a central server over a network or Internet connection. This system shares computing resources. Client/server architecture may also be referred to as a networking computing model because all the requests and services are delivered over a network. [29].

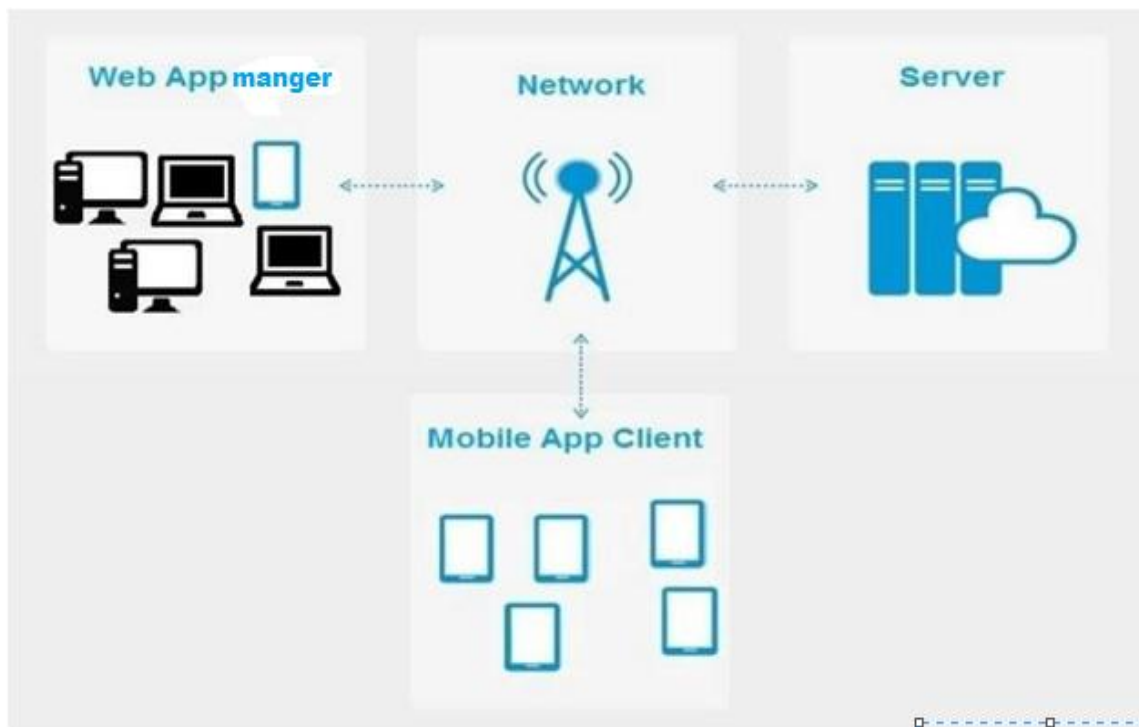


Figure 5. 1: E-Account Architecture

5.3 Schema Diagram

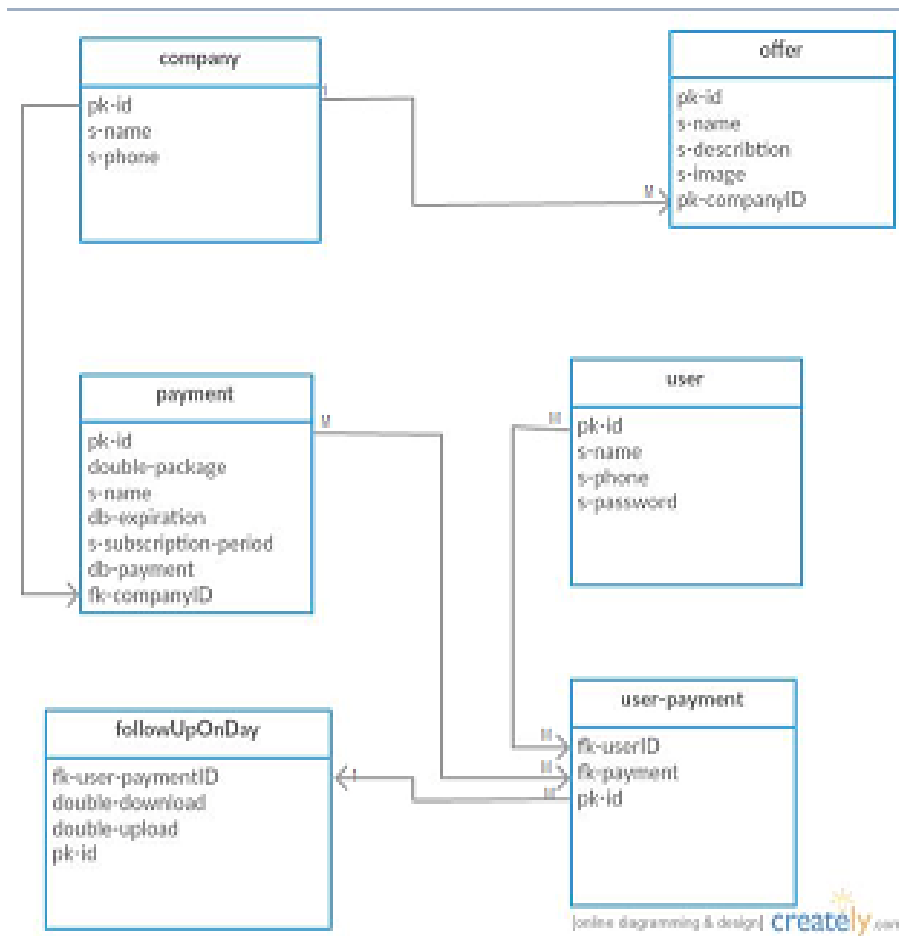


Figure 5.2 : Schema Diagram

5.4 Class Diagram

A class diagram is an illustration of the relationships and source code dependencies among classes in the Unified Modeling Language (UML). In this context, a class defines the methods and variables in an object, which is a specific entity in a program or the unit of code representing that entity. Class diagrams are useful in all forms of object-oriented programming (OOP). The concept is several years old but has been refined as OOP modeling paradigms have evolved. [30]

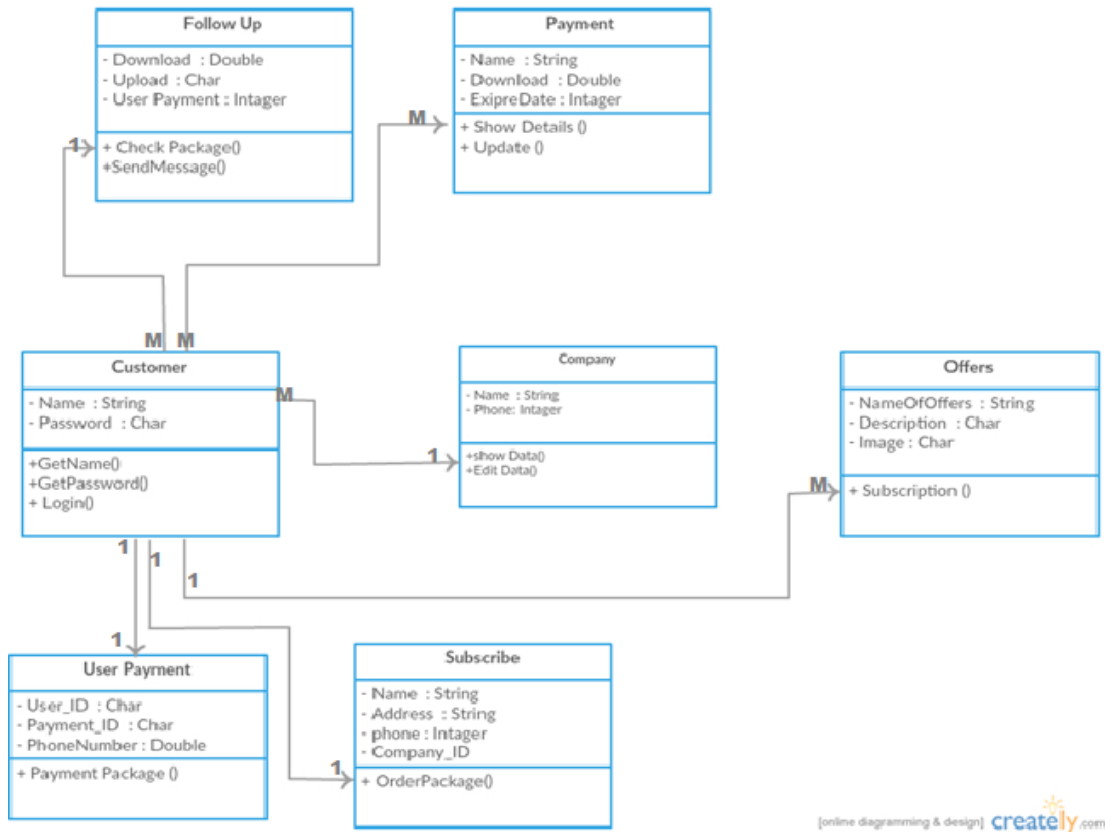


Figure 5.3: Class Diagram

5.5 CRC Design

Table 5.4 shows main class in E-Account web user with responsibilities and collaborators.

Class Name: Web Admin

Responsibilities	Collaborators
1. Registration	4. System owner
2. Manage user account	5. Employees Data
3. manage their information	

Table 5.4: Main Class

Table 5.5.2: shows Android user class in E-Account with its responsibilities and collaborators.

Responsibilities	Collaborators
1. Download application	6. Authorized Companies Data
2. View companies	7. Web admin
3. Register of company	
4. View companies information	
5. View personal information	

Table 5.5: Android user class

Table 5.5.3 shows Administration class in E-Account with responsibilities and collaborators.

Class Name: System Admin

Responsibilities	Collaborators
1. Manage Companies Registration	5. System owner
2. Availability at any time	6. Web admin
3. Add Companies and their contacts	7. System Database
4. Support and Maintenance	

Table 5.6: Administration class

5.6 Entity Relationship Diagram (ERD)

Entity Relationship Diagram (ERD) is very important. We design the (ERD) that leads to good mapping as the first step in designing database, after understanding the requirements well.

Figure 5.4: E-Account System Entity Relationship Diagram (ERD)

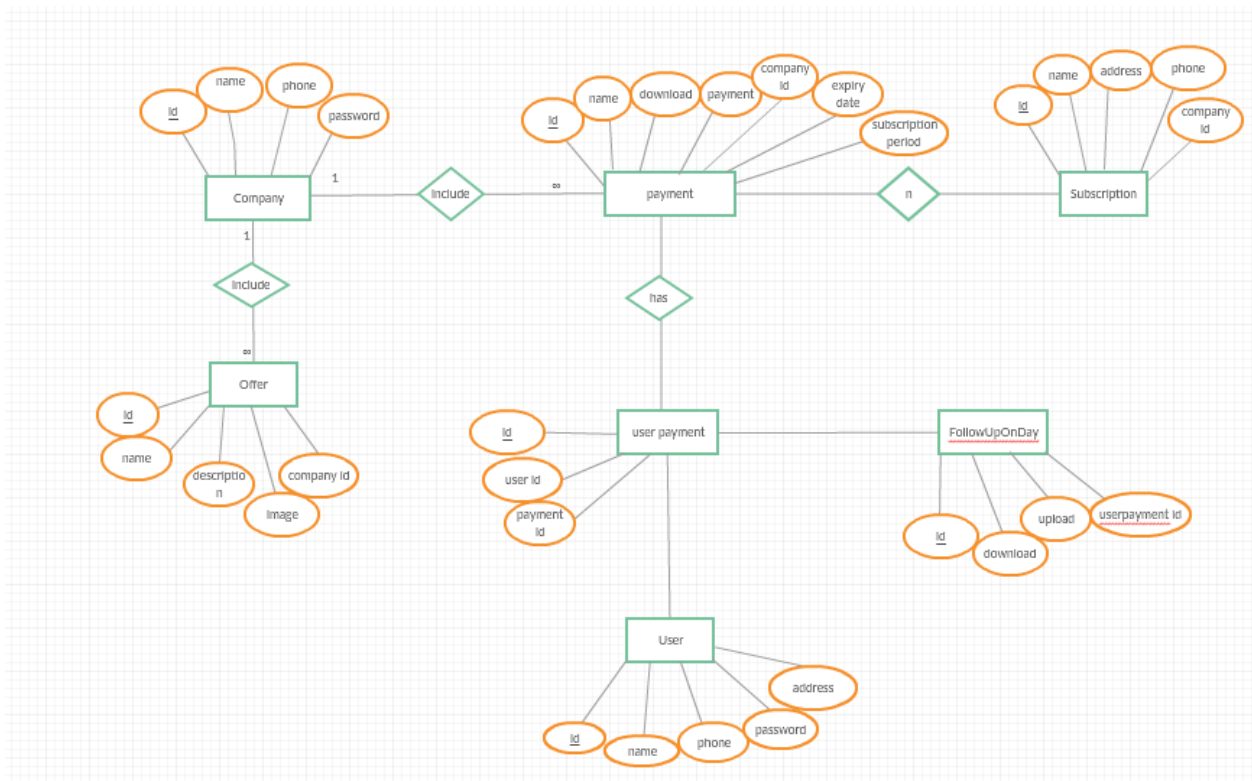


Table 5.8: shows system company database table attributes their types and attributes size.

Pk-i-id	Int
s-name	Nvarchar(500)
s-phone	Nvarchar(500)
s-password	Nvarchar(500)

Table 5.8: Company Table in Database

Table 5.9: shows payment history database table attributes, their types and attributes size.

Pk-i-id	Int
s-name	Nvarchar(500)
d-download	Float
Dt-expiredate	Date
s-subscription-period	Nvarchar(500)
Dt-payment	Date
Fk-company-id	int

Table 5.9: payment history Table in Database

Table 5.10: shows offer database table attributes their types and attributes size.

Pk-i-id	Int
s-name	Nvarchar(500)
s-description	Text
s-image	Nvarchar(500)
Fk-company-id	int

Table 5.10: Offer Table in Database

Table 5.11: shows subscribe database table attributes, their types and attributes size.

Pk-i-id	Int
s-name	Nvarchar(500)
s-address	Nvarchar(500)
s-phone	Nvarchar(500)
Fk-company-id	int

Table 5.11: Subscribe Table in Database

Table 5.12: shows user database table attributes, their types, and attributes size.

Pk-i-id	Int
s-name	Nvarchar(500)
s-phone	Nvarchar(500)
s-password	Nvarchar(500)
s-address	Nvarchar(500)

Table 5.12: User Table in Database

5.7 Graphical User Interfaces (GUI)

This section shows graphical users interfaces (GUI) of E-Account system which we much care to be in designing web and mobile applications there Good interfaces , allows the user to carry out their intended actions efficiently and effectively without causing too much distractions.

5.7.1 E-Account Web Application GUI

This part shows graphical interfaces to E-Account web application which include Admin user interfaces as the following.

5.7.1.1 Login Page

Figure 5.5 shows Login page of E-Account website that enable the web admin to login by enter user name and password.

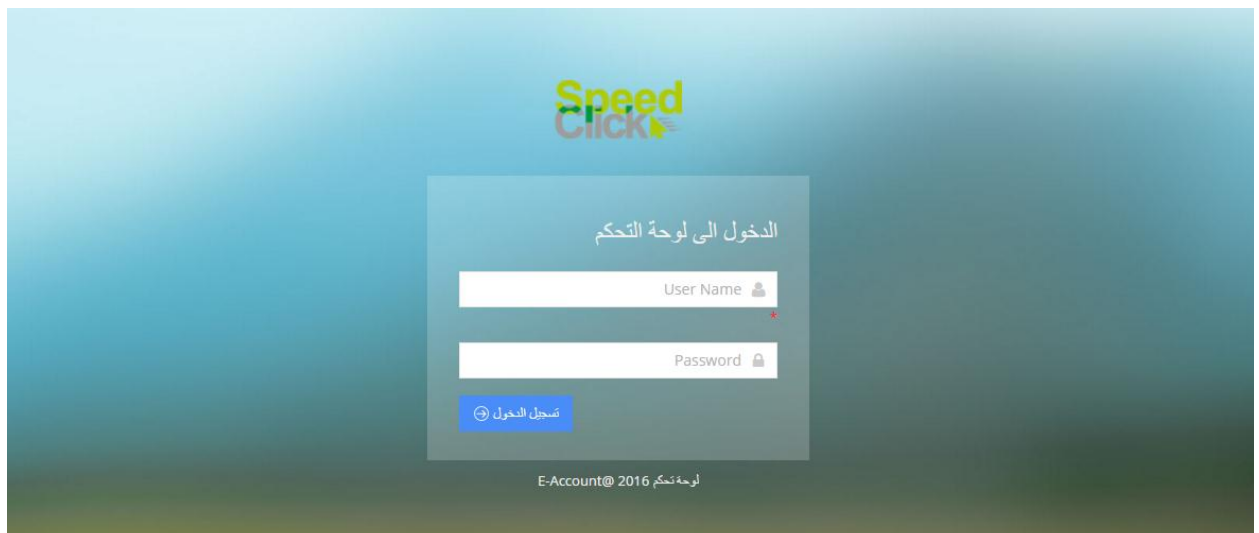


Figure 5.5 : shows Login of E-Account web app

5.7.1.2 Statistics

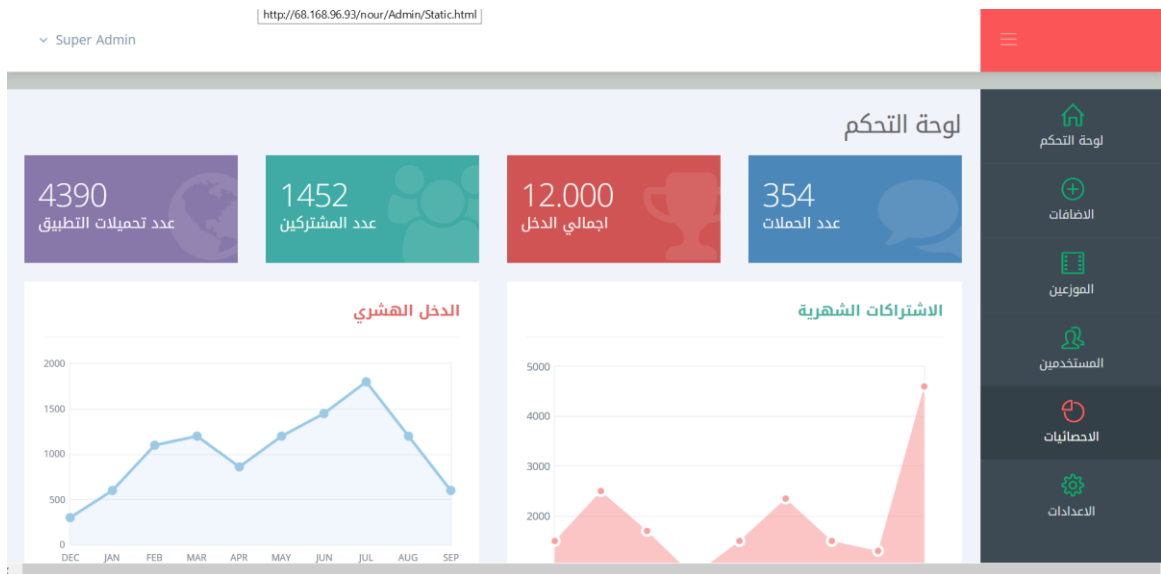


Figure 5.6: shows Statistics of E-Account website

5.7.1.3 Offers Management

Figure 5.7: shows offers management that describe the offers managements and added the new offer by entering offer name, description and image about this offer. This figure also displays the control at the offer.

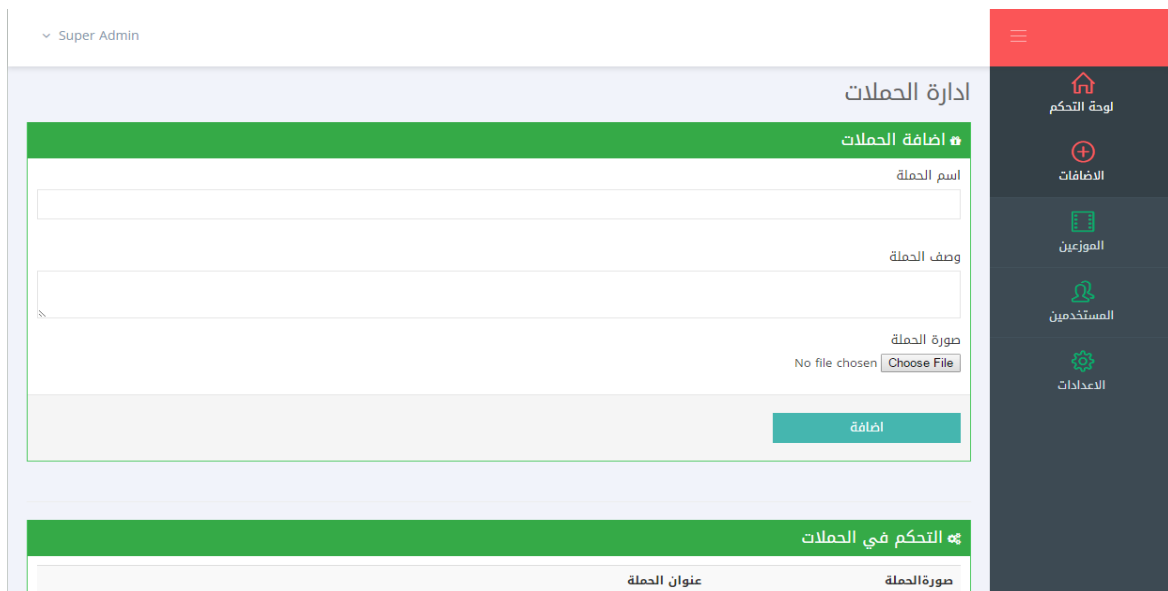


Figure 5.7: admin view profile

Figure 5.8: shows distributors' page, show add distributor by entering the full name, phone number, and address about the distributor.

Super Admin

اضافة موزع

اضافة موزع

الاسم كاملا

رقم الهاتف

العنوان

حفظ المعلومات

لوحة التحكم

الاضافات

الموزعين

المستخدمين

الاعدادات

Figure 5.8 : shows Add distributors

Figure 5.9: shows Management Distributors, the admin company can control, manage and display all distributors in own company.

Super Admin

ادارة الموزعين

الموزعين

اسم الموزع	رقم الهاتف	العنوان
المقر الرئيسي	1700800800	غزة - دوار أنصار
مركز ستار لينك للكمبيوتر	82562086	أبراج عين جالوت - برج 7 النصيرات
مركز المغاري لصيانة الجوالا	0599064343	المغاري - شمال دوار المغازي العام
مركز الرائد للصيانة العامة	82569256	النصيرات - اول شارع العشرين
مركز النادر للاتصالات	2559383	الزوايدة - قرب البلدية القديمة
مركز سما للكمبيوتر	82557359	بجوار صيدلية الزهور
مركز ديل للكمبيوتر	0592170616	بالقرب من دوار دعابيس
مركز بال جول للجوالا	82552086	منطقة الدحوح مقابل مركز ابو عريان
مركز الملوك للجوالا	82559621	منطقة الدحوح مقابل مركز ابو عريان

لوحة التحكم

الاضافات

الموزعين

المستخدمين

الاعدادات

Figure 5.9 : shows Management Distributors

Figure 5.10: shows customer Information, Admin company can add the new user in own company by adding the full name, password, phone number, and address of users.

Super Admin

معلومات المستخدمين

إضافة المستخدمين

الاسم كاملا
speedclick

الباسورد
.....

رقم الهاتف

العنوان

حفظ المعلومات

لوحة التحكم
الإضافات
الموزعين
المستخدمين
الاعدادات

Figure 5.10: customers Information

Figure 5.11: shows customers Management, Admin manages and displays the users.

Super Admin

إدارة المستخدمين

المستخدمين

الاسم كاملا	رقم الهاتف	العنوان	
نور محمد احمد علي	0828597792	غزة - الرمال - برج الظافر	✖
محمد حسن علي محمود	082559400	رفح - مقابل الكراج الشرقي	✖
اسيل احمد رمضان	082530681	غزة - تل الهوى - برج الالماني 3	✖
ايداد محمد علي	082687123	غزة - برج الشفاء - شارع رقم 8	✖

لوحة التحكم
الإضافات
الموزعين
المستخدمين
الاعدادات

Figure 5. 11: Customers Management

Figure 5.12: shows Account Information, Admin can change his password.

Super Admin

معلومات الحساب

معلومات الحساب

تغيير كلمة المرور

تأكيد كلمة المرور

تعديل كلمة المرور

لوحة التحكم
الإضافات
الموزعين
المستخدمين
الاعدادات

Figure 5.12: Account Information

Figure 5.13: shows Interfaces of mobile application.

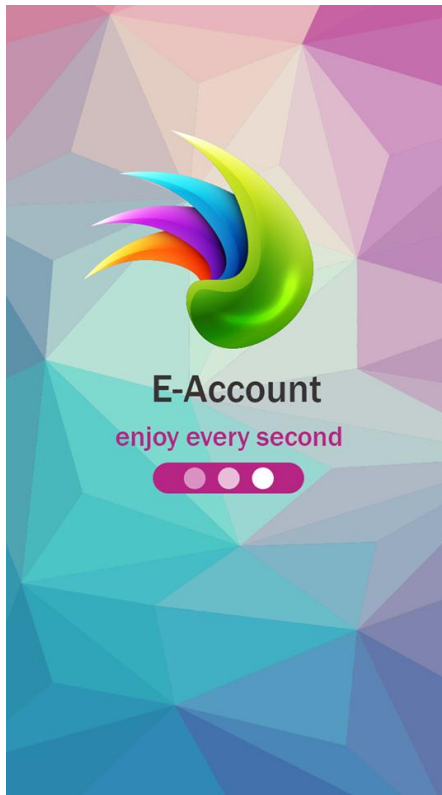


Figure 5. 13 E-Account Mobile App interface

Figure 5.14: choose Company shows choose company from E-Account mobile application.



Figure 5.14: E-Account Mobile App choose company

Figure 5.15: Login shows login into E-Account mobile application, by entering the user name and password for user.

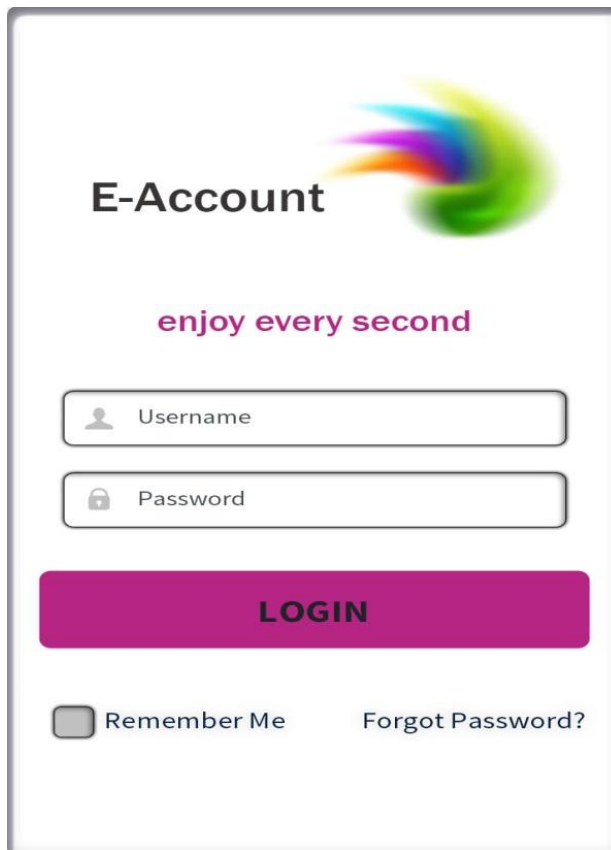


Figure 5.15: E-Account Mobile App login

Figure 5.16: home page shows home page into E-Account mobile application. This page display the advertisements about the company and information about the company's subscription. Also, display the distributor's button.



Figure 5.16 : E-Account Mobile App home page

Figure 5.17: Distributors page shows distributor page this page display the information distributor by describing location, name, address, phone number of distributor.

Name	Address	Phone Number
مركز ديل للكمبيوتر	بالقرب من دوار دعايس	0592170616
مركز سما للكمبيوتر	بجوار صيدلية الزهور	825517359
مركز النادر للاتصالات	الزوايدة - قرب البلدية القديمة	2559383
مركز الرائد للصيانة العامة	النصيرات - اول شارع العشرين	82569256
مركز المغاري لصيانة الجوالا	المغازي - شمال دوار المغازي العام	0599064343

Figure 5.17: Distributors page

Figure 5.18: shows My personal details page shows my personal details page this page displays information for users by describing name, phone number, package, subscription date, expiration data, download and upload.



Figure 5.18: My personal details

Figure 5.19: shows Payment history shows payment history page This page display the information for user's payment describe payment date, name, package, and subscription period by month.

Payment Date	Name	Package	Sub-cription Period
2016-03-03 T00:00:00	حملة السرعة على كيفك	1024 MB	1 MONTH
2016-02-14 T00:00:00	حملة السرعة على كيفك	100 MB	1 MONTH
2016-12-06 T00:00:00	حملة السرعة على كيفك	200 MB	2 MONTH
2016-03-03 T00:00:00	حملة السرعة على كيفك	1024 MB	1 MONTH
2016-02-14 T00:00:00	حملة السرعة على كيفك	100 MB	1 MONTH

Figure 5.19 : payment history

Figure 5.20: shows My support shows my support page this page display complaints and customer services. Also this complaint delivery on the company directly and the company answer by messages to users or phone them.



Figure 5.20: My support

Figure 5.21: shows My support shows my complaints type page this page displays type of complaints like adding or deleting service issue, unavailable bill detail, missing account details, registration issue, and other App-related issues.

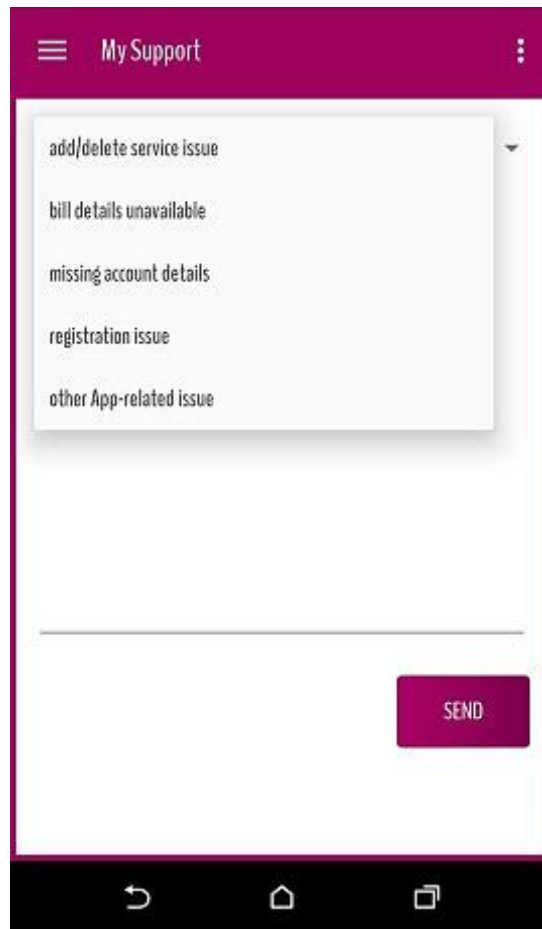


Figure 5.21: My Support

5.8 Implementation

5.8.1 Introduction

This chapter focuses on the construction and implementation of E-Account system and it begins upon approval of the designs. This process includes configuring the software and implementing any customized functionality per design documentation. After refining the business processes, development of the first release begins. This is where the business requirements are considered by the team and start the work of programming and on figuring the meet, the business needs. There are series of steps considered while the development stage started especially after modeling and designing the database, these steps respectively ordered as the following:

1. Wireframes of initial and main user interfaces (UI) of the system for both the website and the mobile application.
2. Constructing and implementing the wire-frames into the final design of user interfaces (UI), and for the structure of the web pages and the cascading styles.
3. Coding with the goal to translate the design of the system into code in a given programming language to implement the design in the best possible manner in order to produce a working software application.
4. Testing the application with different types and approaches will be performed in the system. User acceptance testing is the last part of testing and is performed by the end users to ensure the system meets their expectations.

*More details about this phase will be discussed in the next chapter.

5.8.2 Implementation Plan

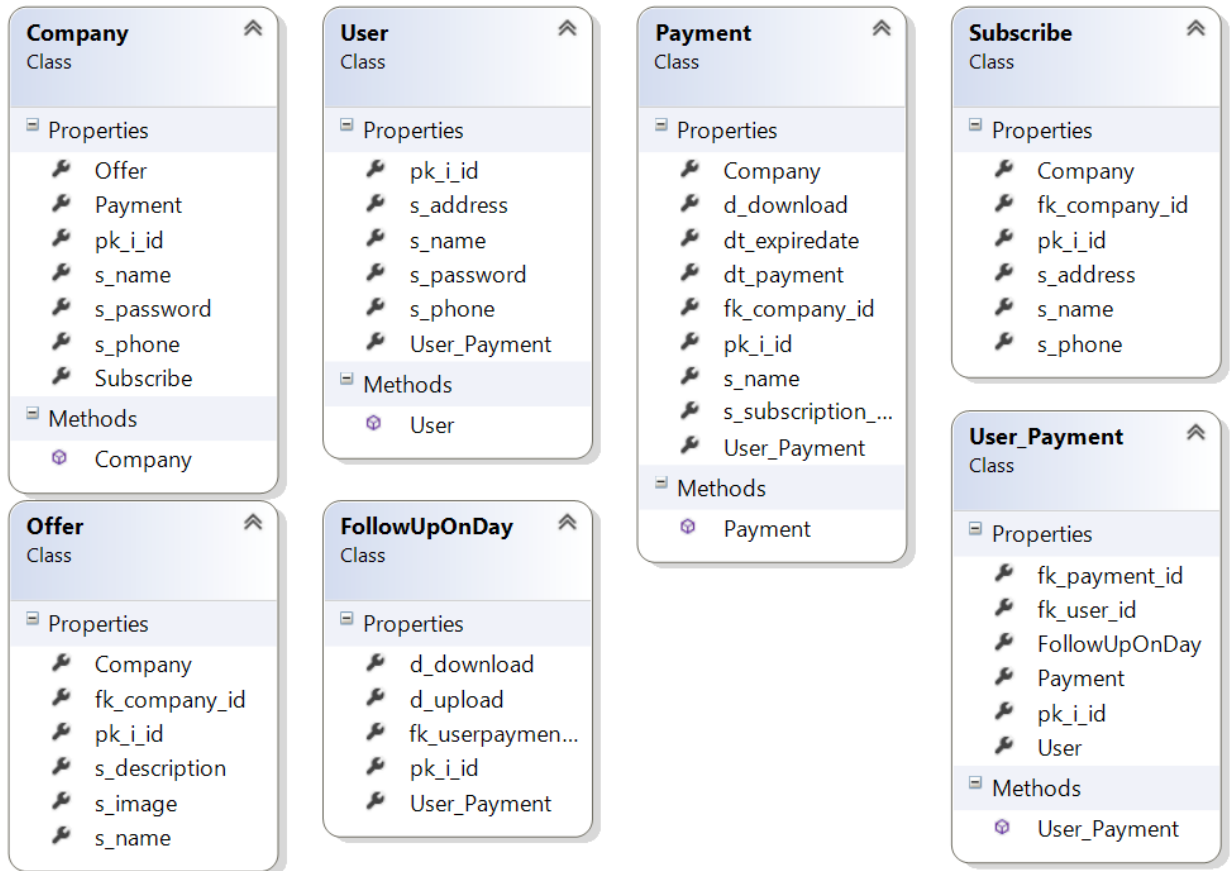
E-Account system goes through a specific and organized Implementation plan which concise into two essential points, the implementation of:

5.8.2.1 The web application (Control Panel)

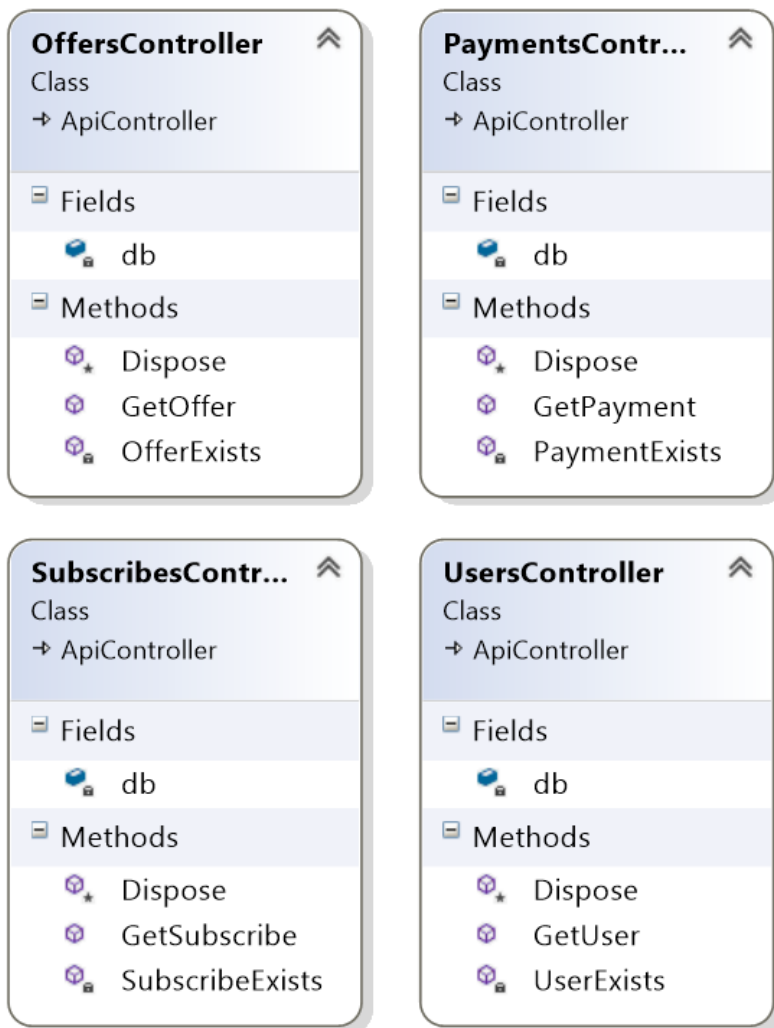
As what introduced in technology choices MVC pattern is the used pattern for developing the web application.

The main phases that used to achieve that was:

5.8.2.1.1 Developing models using Asp Identity (Database First Approach)



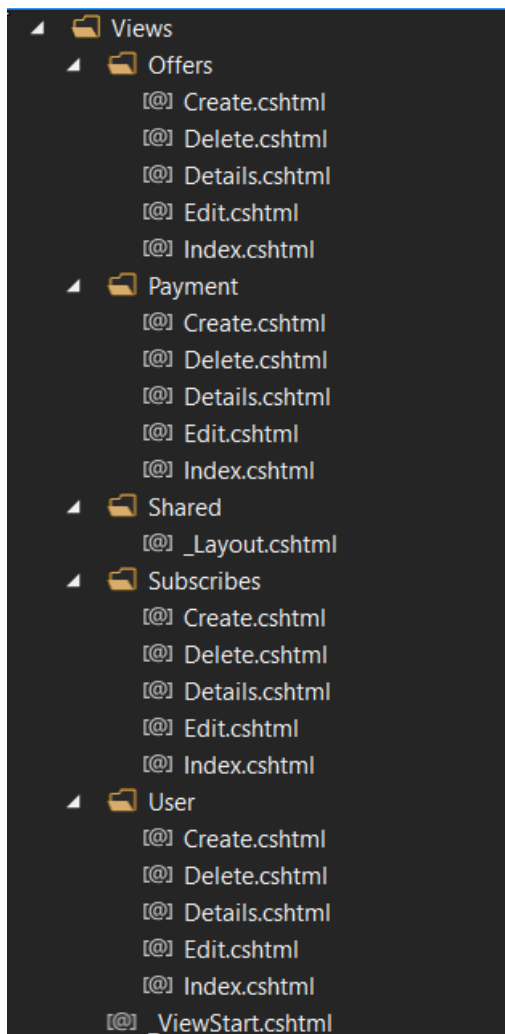
5.8.2.1.2 Developing ASP.NET MVC Controllers



The image displays four screenshots of ASP.NET MVC Controller classes, arranged in a 2x2 grid. Each screenshot shows the class name, its inheritance (ApiController), and its fields and methods.

- OffersController**: Class, ApiController. Fields: db. Methods: Dispose, GetOffer, OfferExists.
- PaymentsController**: Class, ApiController. Fields: db. Methods: Dispose, GetPayment, PaymentExists.
- SubscribesController**: Class, ApiController. Fields: db. Methods: Dispose, GetSubscribe, SubscribeExists.
- UserController**: Class, ApiController. Fields: db. Methods: Dispose, GetUser, UserExists.

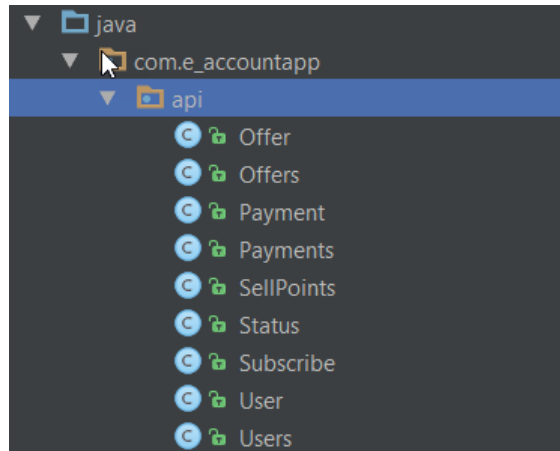
5.8.2.1.3 Developing views using MVC scaffolding to generate CRUD views



5.8.3 The mobile application

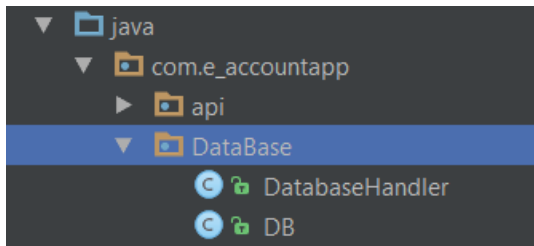
As what introduced in technology choices java 7 what used to develop android app and the main phase to achieve that was:

5.8.3.1 Developing API class



<pre> + Subscribe + fields + constructors + methods + getPkId(): Integer + setPkId(pkId: Integer): void + getSName(): String + setSName(sName: String): void + getSAddress(): String + setAddress(sAddress: String): void + getSPhone(): String + setSPhone(sPhone: String): void + getFkCompan...(): Integer + setFkCompanyId(fkCompany... Integer): void + getCompa...(): Obj... + setCompany(Compa... Obj...): void </pre>	<pre> + Offer + fields + constructors + methods + getPkId(): Integer + setPkId(pkId: Integer): void + getSName(): Obj... + setSName(sName: Obj...): void + getSDescripti...(): String + setSDescripti...(sDescripti... String): void + getSIma...(): String + setSIma...(sImage: String): void + getFkCompan...(): Integer + setFkCompanyId(fkCompany... Integer): void + getCompa...(): Obj... + setCompany(Compa... Obj...): void </pre>	<pre> + SellPoints + fields + constructors + methods + getSubscri...(): List<Subscri... + setSubscri...(Subscri... List<Subscri...): void + getStatus(): Status + setStatus(status: Status): void </pre>
<pre> + Payment + fields + constructors + methods + getPackag...(): int + setPackag...(packag... int): void + getPkId(): Integer + setPkId(pkId: Integer): void + getSName(): String + setSName(sName: String): void + getDDownlo...(): Integer + setDDownload(dDownlo... Integer): void + getDtExpired...(): String + setDtExpired...(dtExpired... String): void + getSSubscriptionPer...(): String + setSSubscriptionPer...(sSubscriptionPeri... String): void + getDtPaym...(): String + setDtPaym...(dtPayme... String): void + getFkCompan...(): Integer + setFkCompanyId(fkCompany... Integer): void + getCompa...(): Obj... + setCompany(Compa... Obj...): void + getUserPaym...(): List<Obj... + setUserPayment(UserPayment: List<Obj...): void </pre>	<pre> + Offers + fields + constructors + methods + getOffer(): List<Offer> + setOffer(offer: List<Offer>): void + getStatus(): Status + setStatus(status: Status): void + Users + fields + constructors + methods + getUser(): List<User> + setUser(User: List<User>): void + getStatus(): Status + setStatus(status: Status): void + Status + fields + constructors + methods + getSucc...(): Boole... + setSuccess(success: Boole...): void + getMessage(): String + setMessage(message: String): void </pre>	<pre> + Payments + fields + constructors + methods + getPaym...(): List<Payme... + setPaym...(Payme... List<Payme...): void + getStatus(): Status + setStatus(status: Status): void </pre>
		<pre> + User + fields + constructors + methods + getPkId(): Integer + setPkId(pkId: Integer): void + getSName(): String + setSName(sName: String): void + getSPhone(): String + setSPhone(sPhone: String): void + setSPassword(sPassword: String): void + getPassword(): String + setAddress(sAddress: String): void + getUserPaym...(): List<Obj... + setUserPayment(UserPayment: List<Obj...): void </pre>

5.8.3.2 Developing DatabaseHandler



```

+ DatabaseHandler extends SQLiteOpenHelper...
  fields
  + fin... DATABASE_VERSI... :int
  + fin... DATABASE_NA... :String
  + fin... TABLE_OFFE... :String
  + fin... TABLE_COMPA... :String
  + fin... TABLE_SELL_POIN... :String
  + fin... TABLE_PAYME... :String
  + fin... TABLE_US... :String
  + fin... TABLE_USER_PAYME... :String
  + fin... TABLE_FOLLOW_UP_ON_D... :String
  ~ cont... :Context
  constructors
  + DatabaseHand... (conte... Context, na... String, cursor:CursorFactory, version:int)
  methods
  + onCreate (db:SQLiteDatab... ):void
  + onUpgra... (db:SQLiteDatab... , oldVersi... int, newVersion:int):void
  
```

```

+ DB extends DatabaseHand...
  fields
  ~ db:SQLiteDatab...
  constructors
  + DB (c:Context)
  methods
  + open():DB
  + close():void
  + getAllOFFE... ():Cursor
  + getOFFERS():List<Offer>
  + getOFFERS(id:int):List<Offer>
  + insertOFFERS(na... String, i... String, describti... String, compony... int):Long
  + deleteOFFE... (id:int):boole...
  + updateOFFE... (id:int, na... String):boole...
  + getAllCOMPO... ():Cursor
  + getCOMPO... (id:int):List<Compon...
  + insertCOMPONY(na... String, pho... String):Long
  + deleteCOMPO... (id:int):boole...
  + updateCOMPO... (id:int, na... String):boole...
  + getAllSELL_POIN... ():Cursor
  + getSELL_POIN... ():List<Subscrib...
  + insertSELL_POIN... (na... String, address:String, pho... String, company... int):Long
  + deleteSELL_POIN... (id:int):boole...
  + updateSELL_POIN... (id:int, na... String):boole...
  + getAllPAYME... ():Cursor
  + getPAYME... ():List<Payme...
  + getPAYME... (id:int):Paym...
  + insertPAYME... (na... String, downlo... int, subscription_peri... String, payme... String, expirati... String):Long
  + deletePAYME... (id:int):boole...
  + updatePAYME... (id:int, na... String):boole...
  + getAllIUS... ():Cursor
  + getUser():List<MyAccou...
  + insertUSER(na... String, pho... String, password:String):Long
  + deleteUS... (id:int):boole...
  + updateUS... (id:int, na... String):boole...
  + getAllUSER_PAYME... ():Cursor
  + getUser_PAYME... (id:int):List<Integ...
  + insertUSER_PAYME... (userId:int, payment... int):Long
  + deleteUSER_PAYME... (id:int):boole...
  + updateUSER_PAYME... (id:int, paymentl... int):boole...
  + getAllFOLLOW_UP_ON_D... ():Cursor
  + getFOLLOW_UP_ON_D... (id:int):List<FollowUpOnDa...
  + insertFOLLOW_UP_ON_D... (user_payment... int, downlo... dou... , uplo... dou... ):Long
  + deleteFOLLOW_UP_ON_D... (id:int):boole...
  + updateFOLLOW_UP_ON_D... (id:int, downlo... dou... ):boole...
  + co... ():lo...
  
```

```

+ MainActivity extends AppCompatActivity
  implements NavigationView.OnNavigationItemSelectedListener
+ fields
- constructors
+ methods
# onDestroy():void
# onCreate(savedInstanceState: Bundle?):void
+ onCreateOptionsMenu(menu: Menu):boolean
+ onOptionsItemSelected(item: MenuItem):boolean
+ onNavigationItemSelectedListener(item: MenuItem):boolean
+ clearBackStack():void
+ onBackPressed():void
+ getFromAPI_SUBSCRIBED():void
+ getFromAPI_OFFER():void
- showDial():void
- hideDial():void
+ getFromA():void
+ getCurrentDate():String
- getDateFor(date: Date):String

```

```

+ AboutActivity extends AppCompatActivity
- fields
- constructors
+ methods

```

```

+ LoginActivity extends AppCompatActivity
  implements View.OnClickListener
+ fields
- constructors
+ methods

```

```

+ OfferDetailsActivity extends AppCompatActivity
+ fields
- constructors
+ methods

```

```

+ Splash extends FragmentActivity
+ fields
- constructors
+ methods

```

```

+ MainFragment extends Fragment
  implements BaseSliderView.OnSliderClickListener,
  ViewPagerEx.OnPageChangeListener
+ fields
- constructors
+ methods

```

```

+ SubscribesFragment extends Fragment
+ fields
- constructors
+ methods

```

```

+ PaymentHistoryFragment extends Fragment
+ fields
- constructors
+ methods

```

```

+ MySupportFragment extends Fragment
- fields
- constructors
+ methods

```

```

+ MyAccountFragment extends Fragment
+ fields
- constructors
+ methods

```

```

+ ComplaintsFragment extends Fragment
+ fields
- constructors
+ methods

```


5.8.3.3 Developing Activities and Fragments

The screenshot displays the following class declarations in an IDE:

- + MainActivity** extends AppCompatActivity, implements NavigationView.OnNavigationItemSelectedListener. Methods include onDestroy, onCreate, onCreateOptionsMenu, onOptionsItemSelected, onNavigationItemSelectedListener, clearBackStack, onBackPressed, getFromAPI_SUBSCRIBES, getFromAPI_OFFER_DETAILS, showpDialog, hidepDialog, getFromA, getCurrentD, getDateFor.
- + AboutActivity** extends AppCompatActivity.
- + LoginActivity** extends AppCompatActivity, implements View.OnClickListener.
- + OfferDetailsActivity** extends AppCompatActivity.
- + Splash** extends FragmentActivity.
- + MainFragment** extends Fragment, implements BaseSliderView.OnSliderClickListener, ViewPagerEx.OnPageChangeListener.
- + SubscribesFragment** extends Fragment.
- + PaymentHistoryFragment** extends Fragment.
- + MySupportFragment** extends Fragment.
- + MyAccountFragment** extends Fragment.
- + ComplaintsFragment** extends Fragment.

5.8.3.4 Developing XML layouts

The screenshot shows the following package structure:

- java
 - com.e.accountapp
 - api
 - DataBase
 - AboutActivity
 - AlarmReceiver
 - BootReceiver
 - ChooseCompany
 - ChooseLanguageDialogFragment
 - ComplaintsFragment
 - Compony
 - ComponyAdapter
 - FollowUpOnDay
 - GridAdapter
 - Location
 - LocationAdapter
 - LoginActivity
 - MainActivity
 - MainFragment
 - MyAccount
 - MyAccountFragment
 - MySingleton
 - MySupportFragment
 - OfferDetailsActivity
 - OnBootReceiver
 - PaymentAdapter
 - PaymentHistoryFragment
 - RoundedImageView
 - SchedulingService
 - Services
 - Splash
 - SubscribesFragment

The screenshot shows the following resource structure:

- res
 - drawable
 - layout
 - activity_about.xml
 - activity_complaints_and_suggestions.xml
 - activity_login.xml
 - activity_main.xml
 - activity_my_account.xml
 - activity_offer_details.xml
 - activity_payment_history.xml
 - activity_splash.xml
 - card_gridview.xml
 - card_spinner.xml
 - choose_company.xml
 - choose_language_dialogfragment.xml
 - content_main.xml
 - content_offer_details.xml
 - details.xml
 - fragment_complaints.xml
 - fragment_main.xml
 - fragment_my_account.xml
 - fragment_payment_history.xml
 - fragment_subscribe.xml
 - item.xml
 - item2.xml
 - list_compony_item.xml
 - main.xml
 - mysupport_fragment.xml

CHAPTER 6
TESTING AND EVALUATION

6.1 Introduction:

This chapter describes how they will implement and evaluate for the web and mobile application process to allow the user to see Internet companies in the Gaza Strip. Users can also see the activities with the company's subscription. As for the user, and customers can access their data. Only registered users have access to all functions in the system.

E-account system is divided into two types. First, the user part that can access his page, and choose a company on the internet, on to the system and go to the home page, about the system, support, and pay the distributor. Second, the official, who can control the system by adding users, advertising, distributors and managing it. The data is stored in the same database so that the information can remain so far between the two approaches. Management function adds, editing, and updating in this application. Using the above two parts, made stage testing system through the introduction of real information to the database in question. The aim of the system evaluation test feature and the ability by a system to make it easier for the company and the user deal together, and that it meets the necessary requirements.

6.2 Testing Methodologies

There are different methodologies that are can be used when implementing testing tools. The testing methodologies can be used together or individually. It all depends on what the testing is about by providing better resources for different tasks. Below are a few of the main different types that are used but there are other types of testing that can be used:

6.2.1Unit Testing

This is the software used for verification and validation. It's a method in which the programmer can test all the separate code and see if it is viable to use. This type of testing is based on a small scale and uses small units of the program. When looking at procedural programming the unit can be any individual function or a procedure which is written in the same language as the production code.

6.2.2 White Box Testing

This is also known as clear box testing, glass box testing, translucent box testing or structural testing. It uses the internal perspective of the system and then designs test cases based on this internal structure. Basically the code itself and all the conditions, statements and paths along with it are tested. Programming skills are required for noticing all the paths through the software. White box testing does many things such as analyzing the data flow, control flow, information flow and coding practices. There are many techniques available in white-box testing, because the problem of intractability is eased by specific knowledge and attention on the structure of the software under test. The intention of exhausting some aspect of the software is still strong in white-box testing, and some degree of exhaustion can be achieved, such as executing each line of code at least once (statement coverage), traverse every branch statements (branch coverage), or cover all the possible combinations of true and false condition predicates (Multiple condition coverage). [31]

6.2.3 Black Box Testing

The black-box approach is a testing method in which test data are derived from the specified functional requirements without regard to the final program structure. It is also termed data-driven, input/output driven, or requirements-based testing. In testing, various inputs are exercised and the outputs are compared against specification to validate the correctness. All test cases are derived from the specification. No implementation details of the code are considered. [32]

It is obvious that the more we have covered in the input space, the more problems we will find and therefore we will be more confident about the quality of the software. Ideally we would be tempted to exhaustively test the input space. But as stated above, exhaustively testing the combinations of valid inputs will be impossible for most of the programs, let alone considering invalid inputs, timing, sequence, and resource variables.


6.3 Test Implementation

6.3.1 Web application



6.3.1.1 Unit Test


Test Explorer in visual studio can run third party and open source unit test frameworks that have implemented add-on interfaces.

After creating Unit Test Project for E-Account System, the test framework we choose generated unit test classes for all the existing classes in the system project, so unit test methods can be implemented for any desired method inside any class.



PaymentsTests 
Class


Methods

-  GetPaymentTest
-  PaymentExistsTest


OffersTests 
Class


Methods

-  GetOfferTest
-  OfferExistsTest



SubscribesTests 
Class

Methods

-  GetSubscribeTest
-  SubscribeExistsTest

UsersTests 
Class

Methods

-  GetUserTest
-  UserExistsTest

```

namespace EAccount.Controllers.Tests
{
    [TestClass()]
    public class OffersTests
    {
        [TestMethod()]
        public void GetOfferTest()
        {
            var controller = new OffersController();
            var result = controller.GetOffer(5) as ViewResult;
            Assert.Equals("حملة السرعة على كيفك", result.ViewName);
        }

        [TestMethod()]
        public void OfferExistsTest()
        {
            var controller = new OffersController();
            var result = controller.GetOffer(5) as ViewResult;
            Assert.Equals(true, result.ViewName);
        }
    }
}

namespace EAccount.Controllers.Tests
{
    [TestClass()]
    public class SubscribesTests
    {
        [TestMethod()]
        public void GetSubscribeTest()
        {
            var controller = new SubscribesController();
            var result = controller.GetOffer(9) as ViewResult;
            Assert.Equals("مركز ديل للكمبيوتر", result.ViewName);
        }

        [TestMethod()]
        public void SubscribeExistsTest()
        {
            var controller = new SubscribesController();
            var result = controller.GetOffer(9) as ViewResult;
            Assert.Equals(true, result.ViewName);
        }
    }
}

```

6.3.2 Diagnostic Tools in Visual Studio 2015

The diagnostic tools in visual studio 2015 dramatically enhances the debugging experience and saves valuable debugging time by adding visual graphs and detailed information of the process occurs in the system. Diagnostic tools use graphs to surface at-a-glance information, and when you see something of interest we can select a range of time to filter the detailed information in the specific tabs.

In this release, there are three major tools in the Diagnostics Tools window:

1. **Events:** provides a visual history of events that stopped or resumed the execution of the application.
2. **Memory Usage tool:** allows monitoring memory usage and investigate memory issues while debugging.
3. **CPU Usage tool:** allows to see how much CPU resources are used by the code.

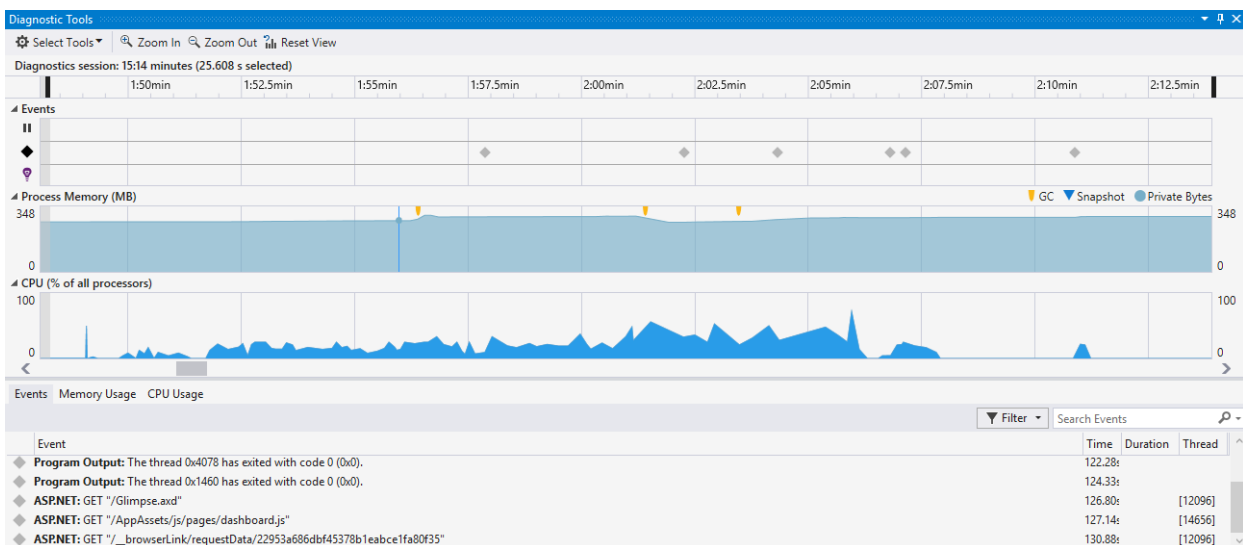
6.2 Test Environment

Mobile application first tested within the development environment using Android studio by run the codes and later subjected to physical device testing. The following tools that used for test environment our Android project.

6.3 Physical Devices:

We run project on physical devices like Samsung and HTC.

In addition, testing on real handsets gives reliable and accurate results, gives interoperability testing because performed on a live network and provide user experience (UX) by end users.

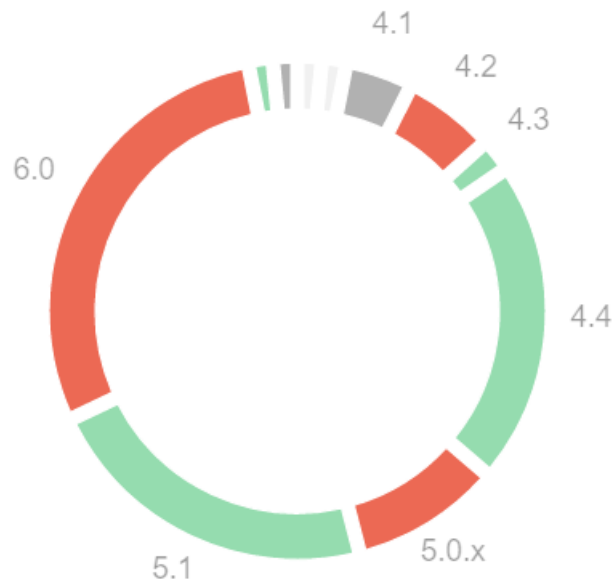


6.4 Mobile application Tests

6.4.1 MonkopRobo-Test

MonkopRobo is a cloud solution that helps mobile developers go live faster. Helping to look for crashes, layout problems, scanning performance and security over real devices.

Android Market (% API level)



Executions

Ride	Device	OS	Size/Density	Execution	Startup
●	Google Nexus 5	6.0 (API:23)	normal/xxhdpi	10m07s.805	01s.016
●	Google Nexus 5	5.1 (API:22)	normal/xxhdpi	10m02s.269	Unknown
●	Samsung Galaxy Note 3 (SM-N900V)	4.4 (API:19)	normal/xxhdpi	10m05s.607	.800
●	Samsung Galaxy S III (GT-I9300)	4.3 (API:18)	normal/xhdpi	10m01s.213	01s.025
●	Acer Iconia A1-830 (1837)	4.4 (API:19)	xlarge/mdpi	10m.258	.570
●	Google Nexus 9	6.0 (API:23)	xlarge/xhdpi	10m07s.542	01s.795
●	LG G2 (LS980)	5.0.x (API:21)	normal/xxhdpi	10m05s.292	01s.008
●	Google Nexus 10	5.1 (API:22)	xlarge/xhdpi	10m17s.801	.715
●	Moto G (XT1031)	5.1 (API:22)	normal/xhdpi	10m06s.247	01s.396
●	Acer Iconia A1-810 (1479)	4.2 (API:17)	xlarge/mdpi	10m03s.673	01s.633
●	Google Nexus 6	7.0 (API:24)	normal/560dpi	10m03s.463	.996

Test run

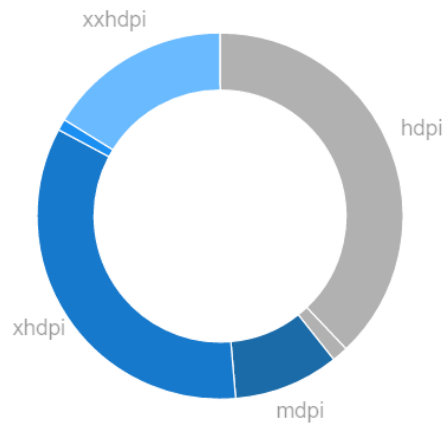
Devices:

11 of 11

Total time:

01h51m01s.170

Device selection (Screen Density DPI)



● Average CPU: 12%

Device	Value
Moto G (XT1031) (5.1):	12%
Google Nexus 5 (5.1.1):	8%
Google Nexus 10 (5.1.1):	10%
Google Nexus 6 (7.0):	3%
Samsung Galaxy S III (GT-I9300) (4.3):	4%

● Maximum CPU: 67%

Device	Value
Moto G (XT1031) (5.1):	20%
Google Nexus 5 (5.1.1):	21%
Google Nexus 10 (5.1.1):	25%
Google Nexus 6 (7.0):	11%
Samsung Galaxy S III (GT-I9300) (4.3):	13%

Memory usage

To maintain a functional multi-tasking environment, Android sets a fixed limit on the Dalvik heap size for each app. The exact Dalvik heap size limit varies across devices, based on how much RAM the device has available overall. If your app has reached the heap capacity and tries to allocate more memory, it will receive an `OutOfMemoryError`.

Android	API Level	Bitmap Pixel Data Alloc*	Default Heap Size Limit	Large Heap Size Limit**
Android 1.x - Alpha / Beta	1 to 7	Native Heap	16MB	NA
Android 2.2.x - Froyo	8	Native Heap	24MB	NA
Android 2.3.x - Gingerbread	9 to 10	Native Heap	32MB	NA
Android 3.x - Honeycomb	11 to 13	Dalvik Heap	48MB	128MB
Android 4.0.x - Ice Cream Sandwich	14 to 15	Dalvik Heap	64MB	128MB
Android 4.1.x/4.2.x - Jelly Bean	16 to 17	Dalvik Heap	128MB	128MB
Android 4.3.x/4.4.x- Jelly Bean/KitKat	18 to 19	Dalvik Heap	128MB	256MB
Android 5.x- Lollipop	20 to 22	Dalvik Heap	128MB	256MB
Android 6.x- Marshmallow	23 to 23	Dalvik Heap	128MB	256MB

6.5 Testing Checklist

This checklist is specifically designed to test the characteristics of our project. Obviously, it tests only generic project characteristics not the functionality of the project. For this, a separate test approach and test script must be created. Here we create two separated checklists for E-Account web application and E-Account mobile application.

6.5.1 E-Account Web Application Checklist Testing

1. Functionality Checks

#	Description	YES/ NO?
	Does any user can access the web application without login	Y
	Does the user can change his password if the password and its confirmation not equaled	Y
	Does the application accept empty passwords	Y
	Does the link takes you to the page it said it would?	Y
	Does the all display pages show the data correctly	Y
	Does the website contains optional and mandatory fields?	Y
	Does website fields allow input more than allowed?	Y
	Does the account page accept duplicated usernames	
	Does the system check the mandatory fields and prevent saving when no entry for this fields	Y

Table 6.5.1 Web App Functionality Checks

2. Data Fields Checks

#	Description	YES/ NO?
	All fields lengths truly as designed and no accepting of truncated characters?	Y
	Does entered data is saved to the database and value gets saved fully to the database without truncation	Y
	Does system handling correctly with invalid characters & symbols by error messaging?	Y
	Does the system check the correctness of the fields datatypes	Y
	Does the image upload in campaign page accept files others than images	Y

Table 6.5.2 Web App data fields Checks

3. Interface and Error Handling Checks

#	Description	YES/ NO?
	Verify that communication is done correctly, web server-application server, application server-database server and vice versa	Y
	Have all supported browsers been tested?	Y

	Is the application compatible?	Y
	Can users use copy/paste functionality?	Y
	Does the application work correctly if we use different database versions	Y
	Does the system end the session on the right time	Y
	If we lose our Internet connection does the transaction cancel?	Y
	Does our solution handle network failures between Web site and application servers?	Y
	Does the system have (page not found) if the user make a mistake in writing the URL	Y

Table 6.5.3 Web App interface and error handling Checks

4. Compatibility and User Interface Checks

#	Description	YES/ NO?
	Is the application compatible with all screens?	Y
	Do images display correctly with browsers under test?	Y
	Does the site load quickly enough?	Y
	Are the screen and field colors	Y

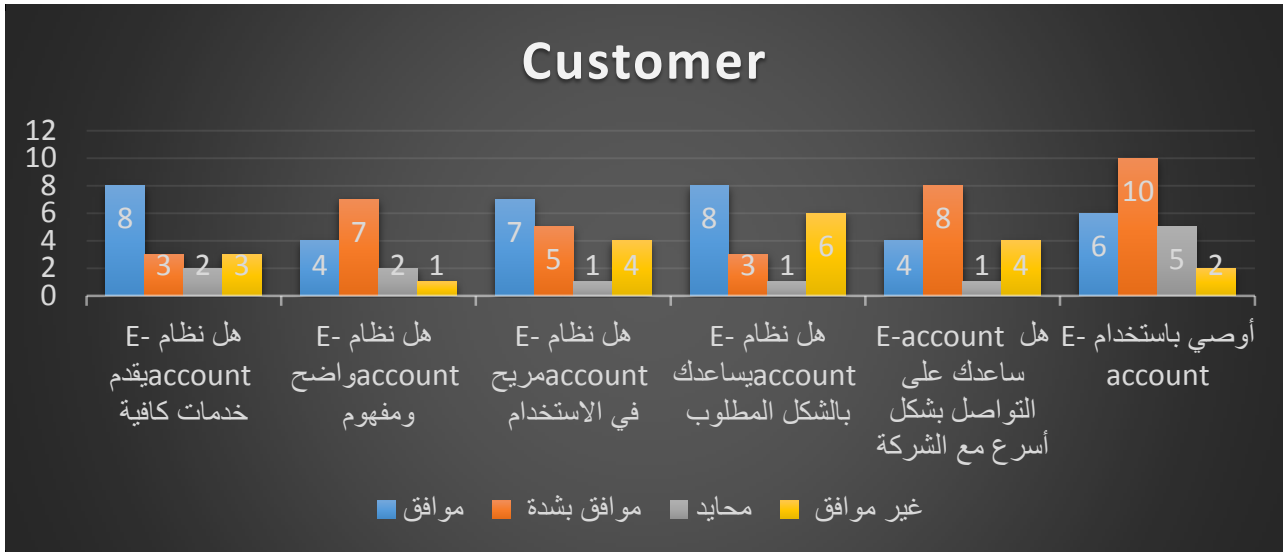
	adjusted correctly for non-editable mode?	
	Are all the buttons are in standard format and size?	Y
	Is all text properly aligned?	Y
	Does text wrap properly around pictures/graphics?	Y
	Does a scrollbar appear if required?	Y
	IS the Tab Order Correct?	Y
	Is there a link to home on every single page?	Y
	When an error message occurs does the focus return to the field in error when the user cancels it?	Y
	Are fonts clear to read?	Y
	Do pages print legibly without cutting off text?	Y

Table 6.5.4 Web App Compatibility And User Interface Checks

6.6 Evaluation

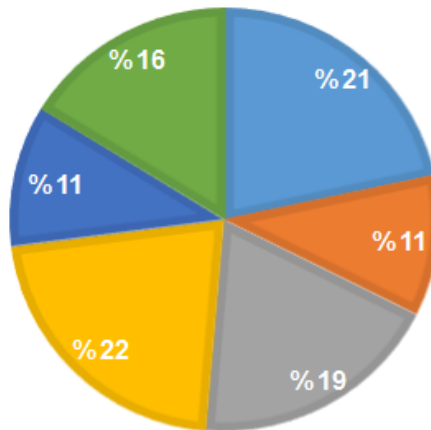
We represent the application assessed by a questionnaire filled out by the user, here are presented questions and assessments, also this will be explained in the questionnaire appendix C.

6.6.1 Results of the evaluation by the user

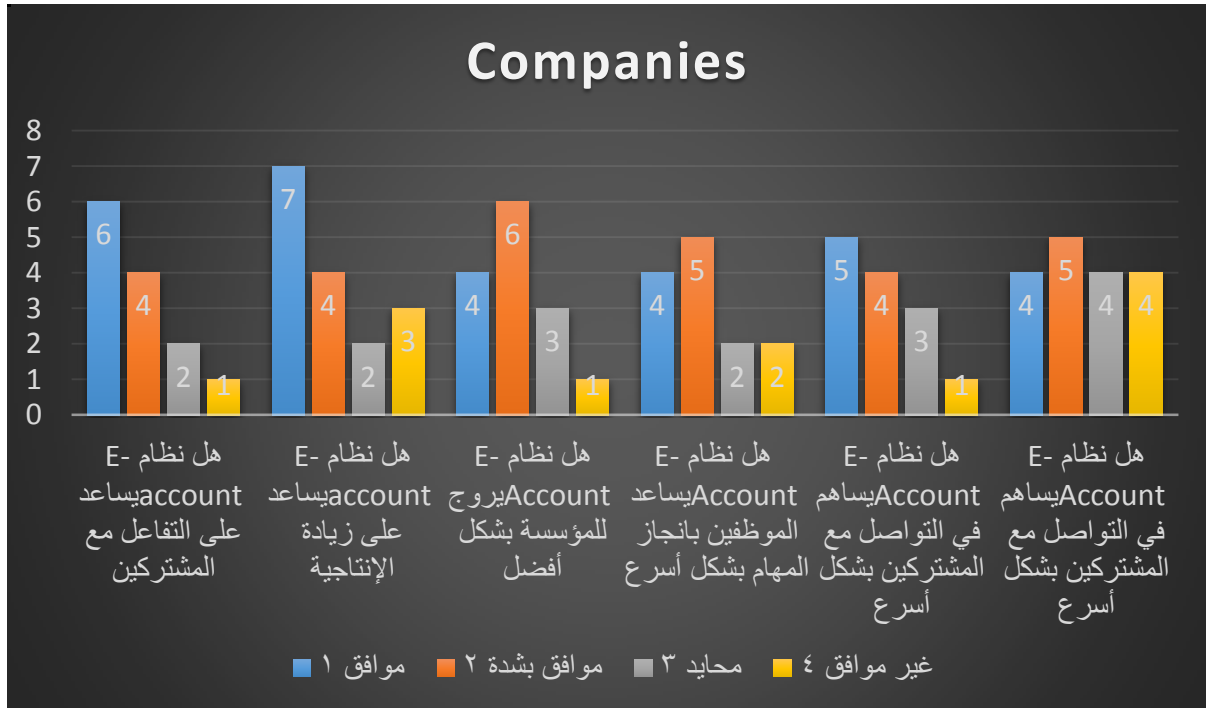


CUSTOMER

- هل نظام E-account يقدم خدمات كافية
- هل نظام E-account واضح ومفهوم
- هل نظام E-account مريح في الاستخدام
- هل نظام E-account يساعدك بالشكل المطلوب
- هل E-account يساعدك على التواصل بشكل أسرع مع الشركة
- أوصى باستخدام E-account

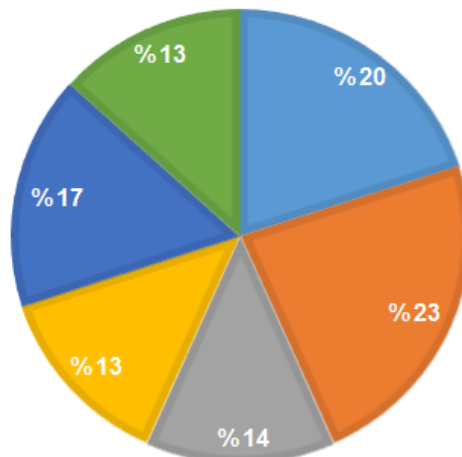


6.6.2 Results of the evaluation by ISPs experience



COMPANIES

- هل نظام E-account يساعد على التفاعل مع المشتركين
- هل نظام E-account يساعد على زيادة الإنتاجية
- هل نظام E-Account يروج للمؤسسة بشكل أفضل
- هل نظام E-Account يساعد الموظفين بانجاز المهام بشكل أسرع
- هل نظام E-Account يساهم في التواصل مع المشتركين بشكل أسرع
- هل نظام E-Account يساهم في التواصل مع المشتركين بشكل أسرع



6.7 Summary

This chapter summarizes the testing and evolution process for E-Account system along with shading some light upon the purpose of using software testing in general also it presented what are the testing methodologies that are commonly used when testing a software. Furthermore, it shows how we implemented the test units in our code followed with using some of the automated testing tools available with the results it produced. Finlay it introduces a formal and standard testing and evaluation which shows major testing and evaluation criteria that essential to our system and how it will operate in different levels and which will explain the main points that have been relied upon to evaluate the application, to include all aspects of the system in terms of performance, system interface, safety and compliance etc.

CHAPTER7
Conclusion and Future Works

7.1 Introduction

This chapter is recapitulation conclusion and future work for this project.

Finally, it gives conclusion and results has done and commend some developments on the system in the future.

7.2 Discussion

Help the customers in Gaza Strip to use mobile application, thus, to provide services to the customers through creating mobile application to let customers access to their accounts and to get information about them. Converting the website to a mobile application with android OS. We met some engineers working in Speed Click Company and Orange Company to inquire about information that we would use in the project. We identify the information and details that used in ISPs Company and identify all requirements to build the web application and mobile application. At the beginning we faced some difficulties in our interview, in terms of inquire about some of the things that support our project, but we were able to get some information, although the few that has a role in the incision road ahead to start fixed mistake forward and the success of the project.

7.3 Conclusion

In conclusion, it is recommended that implement E-Account system to enhance its marketing activities and services. The new application has been developed with so much care and at the same time efficient and less time consuming. In addition, provision is provided for future developments in the application. It will support more mobile OS, more languages and speed test. On other hand It is much easier for the customer and it fulfills all customers' needs to make them more satisfied.

7.4 Future Works

The E-Account will be able to develop in the future as requirements and the internet companies' needs also the customers' needs in the future.

1. Support other mobile operating systems.

2. Check of the speed uploading and downloading.
3. Add e-payment system by visa or master card.
4. Maintenance and technical support.
5. Make the distributors more specific (when the customer click on the distributors button to select the city he /she wants so all the stores in that city will display all stores with phone numbers , their locations and the map of that city shows where the store on the map).

7.5 Summary

We introduced the future work that can be done to enhance the mobile application.

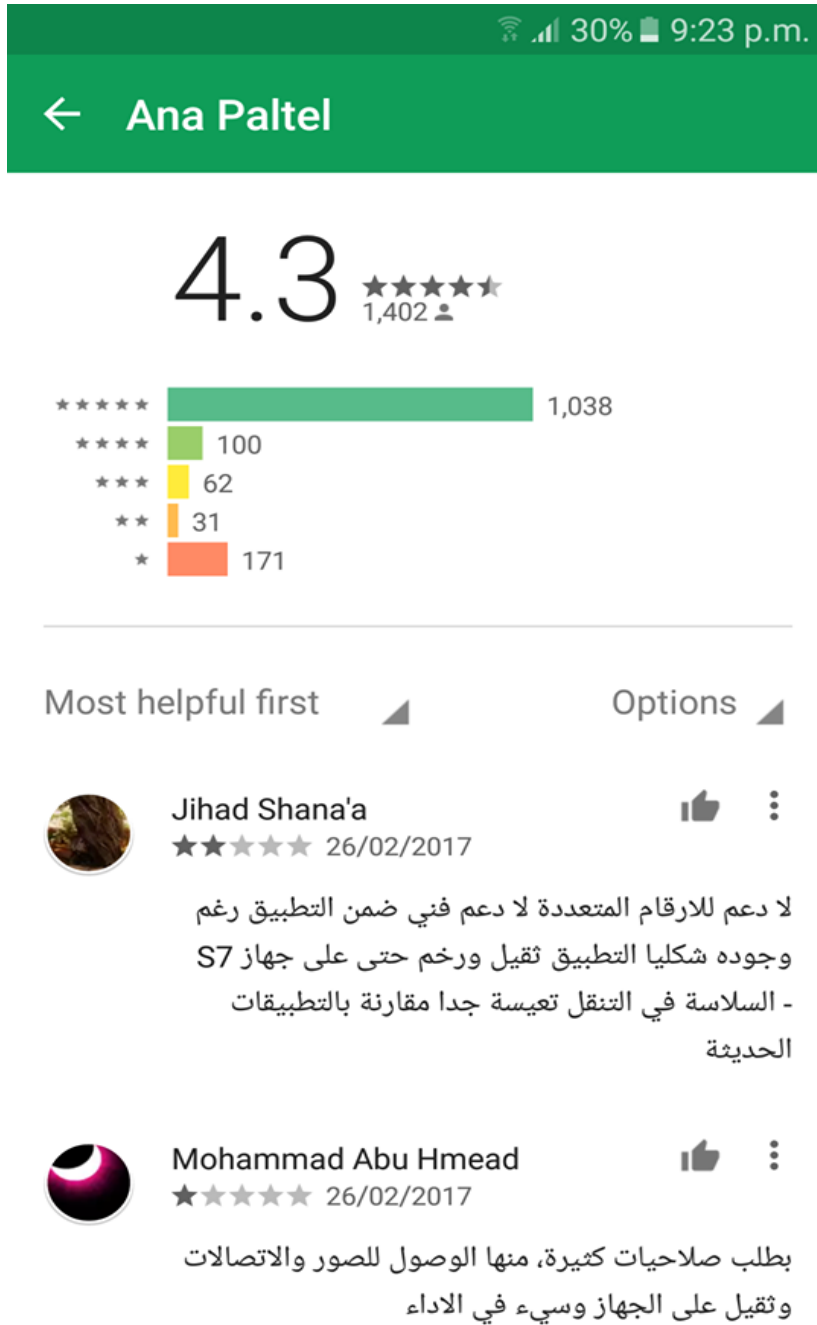
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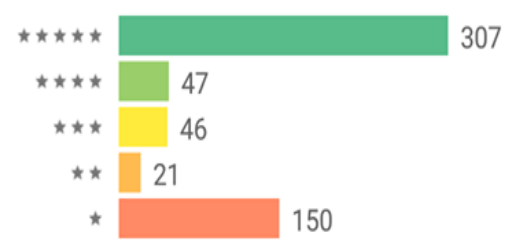
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Appendices

Appendices A:



3.6 ★★★★★
571



Most helpful first Options

 emad ghaith
★★★★★ 18/02/2017

البرنامج رائع ولكن لماذا لم يتم إضافة خدمة الرسائل المجانية إلى التطبيق... إذا أضيفت هذه الميزة ربما يكون افضل وشكرا لجهودكم...

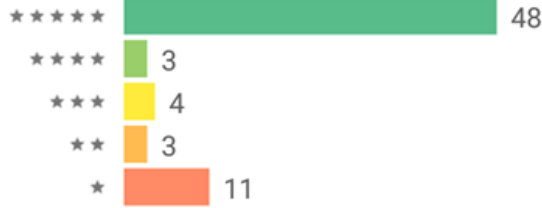
A Google user
★★★★★ 16/02/2017

 islam bali
★★★★★ 14/10/2016
For an older version



← حسابي سبيد كليك

4.1 ★★★★★
69



Most helpful first

Options



Mohammed Khrais

★★★★★ 14/03/2016



يحتاج لتعديلات كثيرة
أولاً معدل التحميل يجب أن يكون بالجيجا و ليس
كنسبة .. ثانياً أهم معلومة غير موجودة بالتطبيق و هو
تاريخ بداية و نهاية الاشتراك مع اضافة تنبيه قبل نهايته
بيومين ..

Eng. Rashad S. Hammad

★★★★★ 18/02/2016



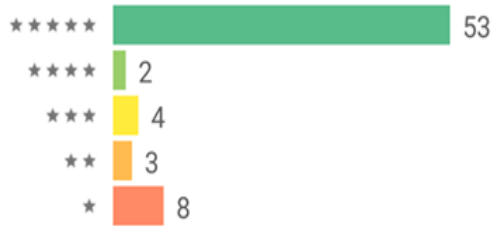
برنامج ضعيف!!
يعني (معدل التحميل) و "التنبيهات" أهم ميزتين
المفروض المشترك ينزل البرنامج عشوائياً ولا خاصة



← Orange Palestine

4.3

★★★★★
70



Most helpful first ▲

Options ▲

Ahmed Zaki
 ★★★★★ 17/02/2017
 For an older version



mohammed mohaisen
 ★★★★★ 14/01/2017
 For an older version



It's just OK!



Baha'A Medhat
 ★★★★★ 14/12/2016
 For an older version



Appendices B:

Use Cases Detailed Descriptions

Use case ID : 1	Case Name : Choose Company
Relation	Include: U2
Actor	User
Description	The user selects a registered company, are then login to the company
Pre-Condition	Choose a company
Post-Condition	User successfully been chosen company
Normal Path	√ User selectable registered the company √ User click Register
Abnormal Path	The process is not available

B - U Table1:Home Page

Use case ID : 2	Case Name : Login
Relation	Extend:U4
Actor	User
Description	When a user selects the company, works on the log, are presented for Home page
Pre-Condition	Login
Post-Condition	User successfully been Login
Normal Path	√ The user login in the company √ User click Register
Abnormal Path	The process is not available

B - U Table2: login

Use case ID : 3		Case Name : Logout
Relation	Association	
Actor	User	
Description	When a user selects the company, works on the log, are presented for Home page	
Pre-Condition	Logout	
Post-Condition	User successfully been Logout	
Normal Path	√ The user logout in the company	
Abnormal Path	The process is not available	

B - U Table3: logout

Use case ID : 4		Case Name : Home Page
Relation	Extend :U5,U6,U7	
Actor	User	
Description	Are presented Home page ,display is located inside view About, Navigation menu, Distributors	
Pre-Condition	View Company Home Page	
Post-Condition	User successfully been View Home page	
Normal Path	√ The user view Home pagein the company	
Abnormal Path	The process is not available	

B - U Table4: Home Page

Case Name : View personal details	
Relation	Extend U6
Actor	User
Description	User choose if he want to (see name), or see the (phone number) or (download package) or see (loading quantity) or (subscription date) or (expiration date) or (download quality).
Pre-Condition	Checking data
Post-Condition	User successfully checking in database
Normal Path	√ check data
Abnormal Path	The process is not available

A - UC Table4:Personal details

Case Name : my support	
Relation	Extend U12 , U13
Actor	User
Description	User choose if he want to (submit a complaint) , or choose (call customer service)
Pre-Condition	communicate with the company
Post-Condition	Answered by the company
Normal Path	√ call the company , company answer √ send a complain √ submit
Abnormal Path	The process is not available

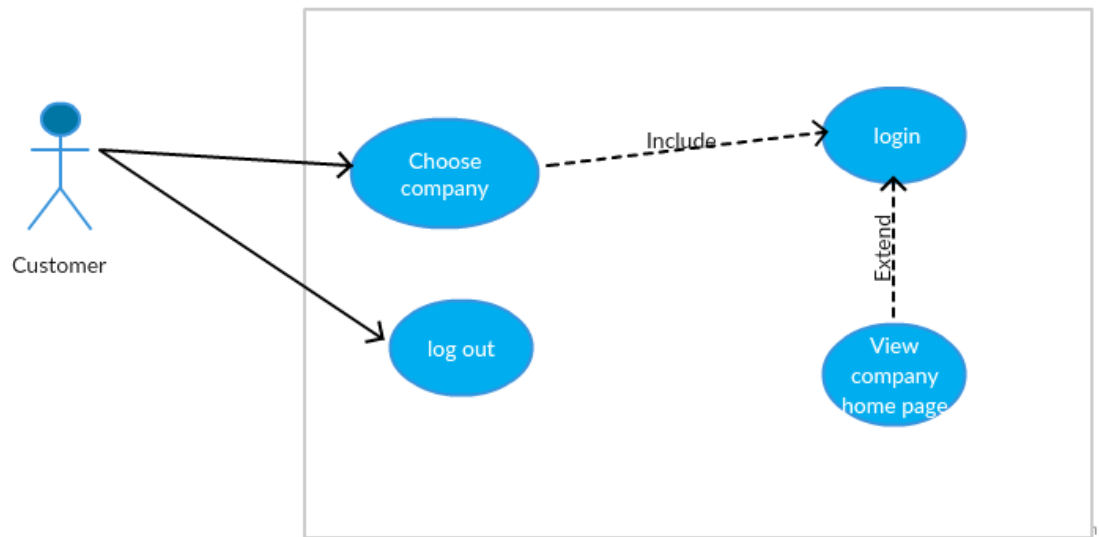
A - UC Table6:My support

Case Name : payment history	
Relation	Extend U6
Actor	User
Description	User see (payment date) , or see (package) or see (subscription period)
Pre-Condition	Error data
Post-Condition	Correct data
Normal Path	√ see user data
Abnormal Path	The process is not available

A - UC Table7: payment history

Use cases diagrams

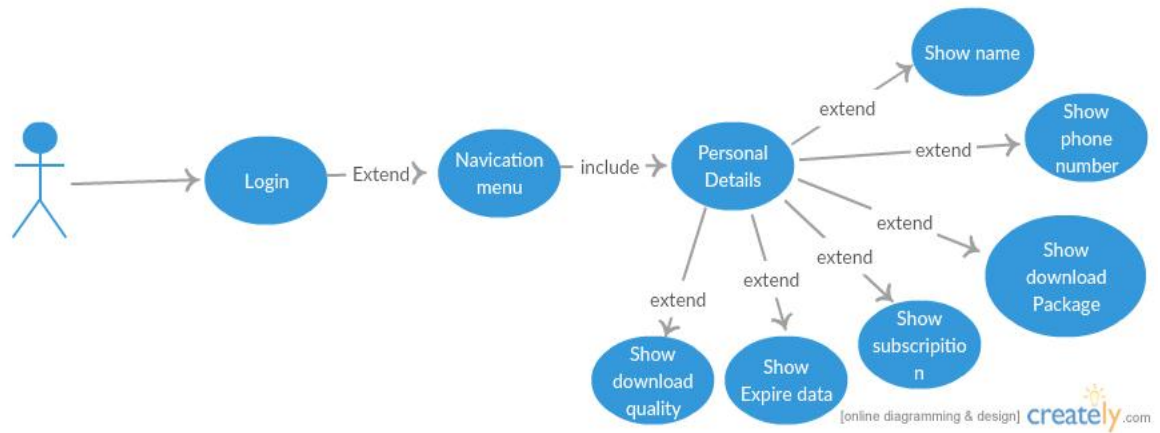
1- Use case login for customer (E-Account app)



B- Use case1: login for customer (E-Account App)

2- Use Case My personal details

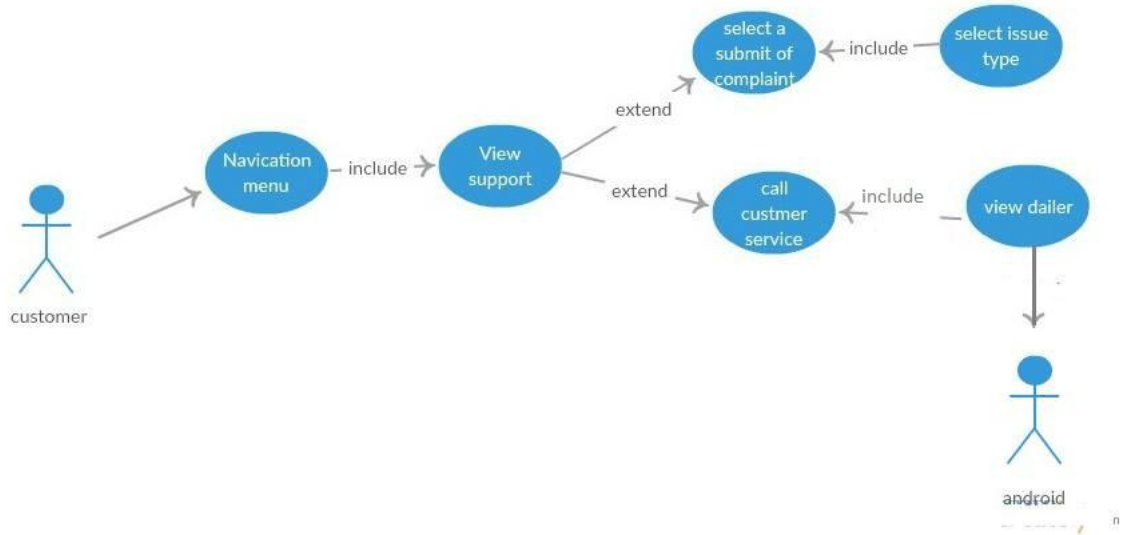
This process the user's data show in terms of the name - the phone number - the download package - subscription - the date of expiry of the package - the download quality



A- Use Case2: My personal details

3- Use Case My support

This process and show support for the process and in the two operations (to lodge a complaint - contact customer service) inside the lodge a complaint there are three processes (Choose a category complaint - in writing details of the complaint - send a complaint)

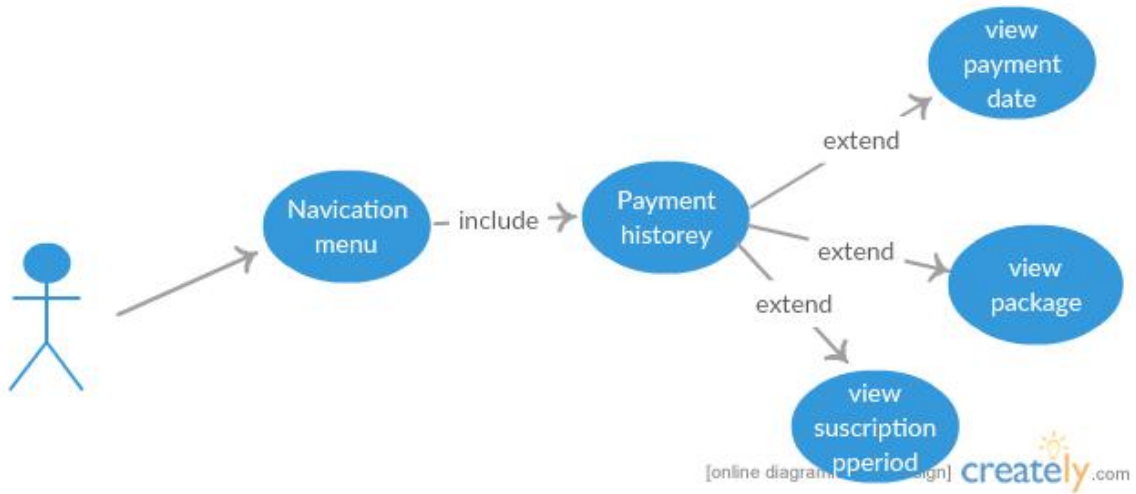


B- Use case3: My support

4- Use case Payment history

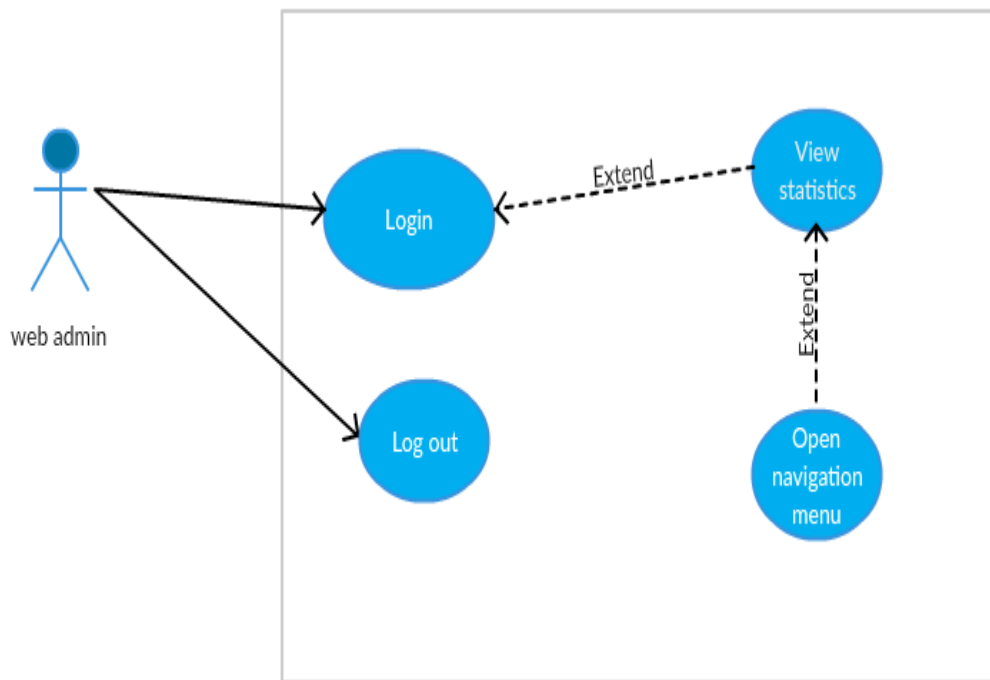
Payment history show the following details (payment date - pay package subscription).

A- Use case Payment history



B- Use case4: Payment history

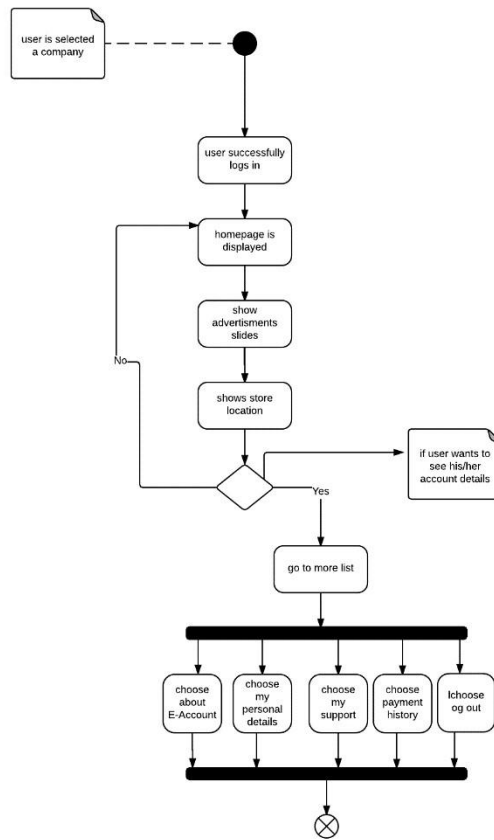
5- Use case Login for web admin



B- Use case5: Login for web admin

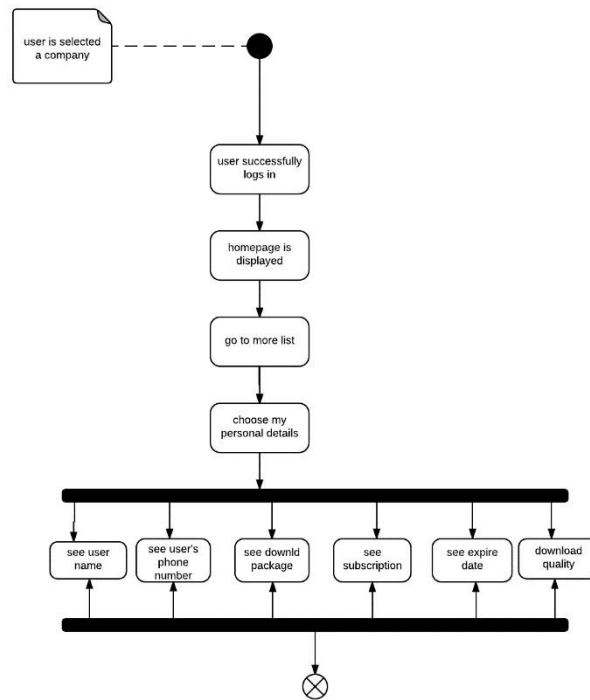
Activity diagrams

1- Activity diagram homepage



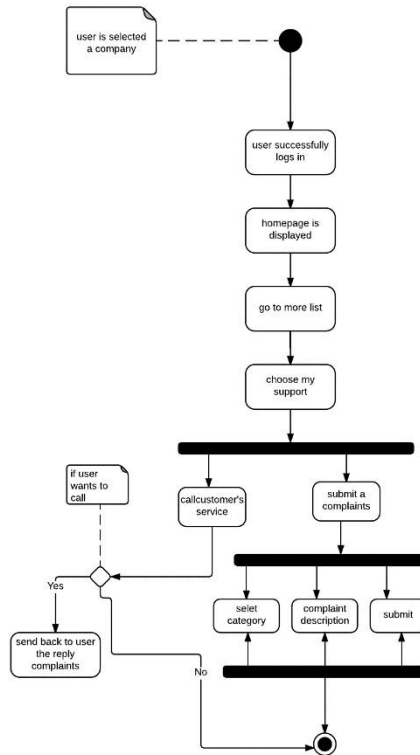
B- Activity diagram1: homepage

2-Activity diagram my personal details



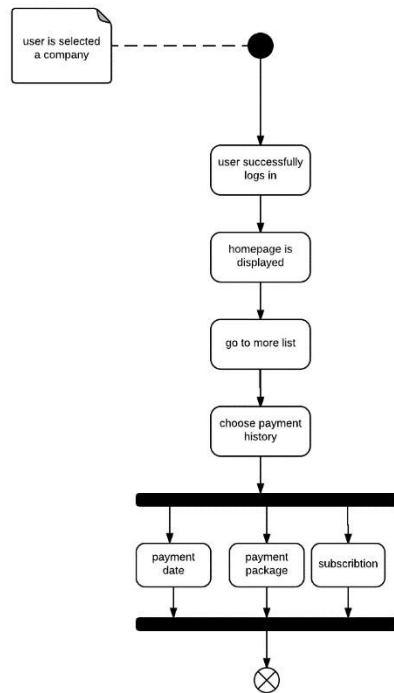
B- Activity diagram2: my personal details

3-Activity diagram my personal details



B- Activity diagram3: my personal details

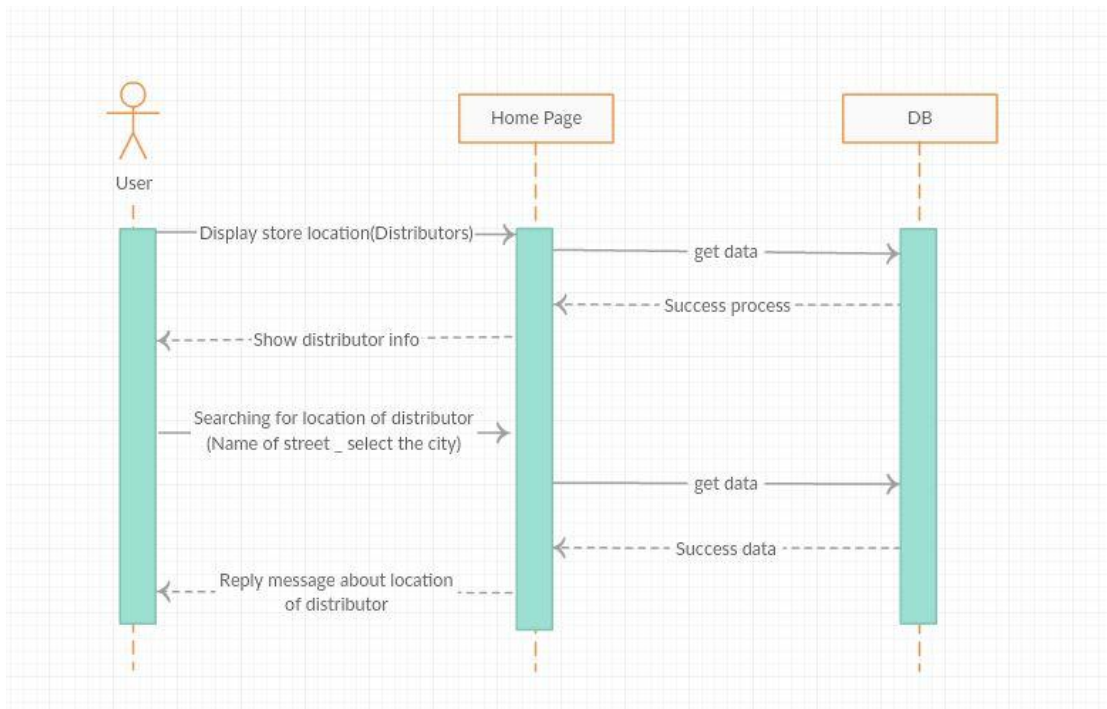
4-Activity diagram payment history



B- Activity diagram4: payment history

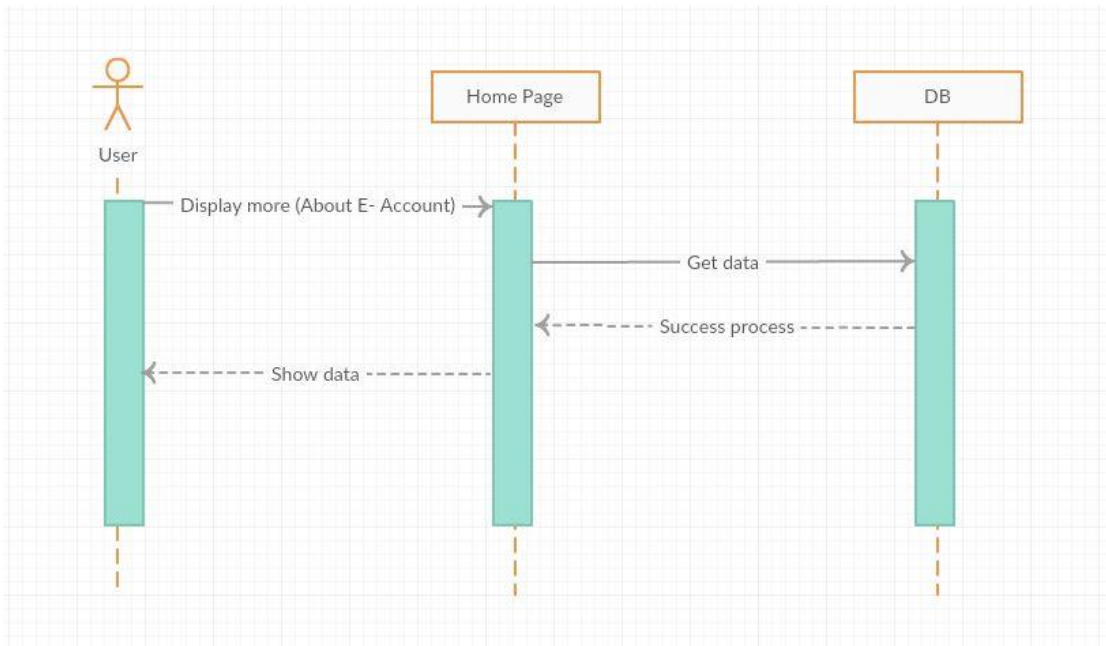
Sequences diagrams

1- Sequence diagram home page (Distributors)



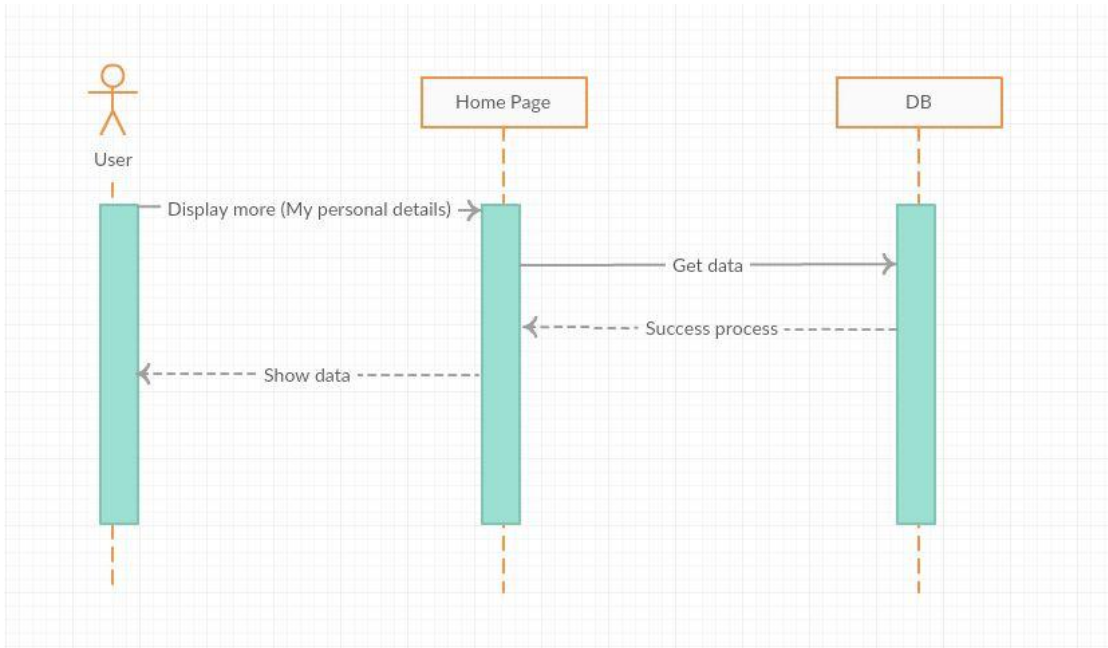
B- Sequence diagram1: home page(Distributors)

2- Sequence diagram home page (About E-account)



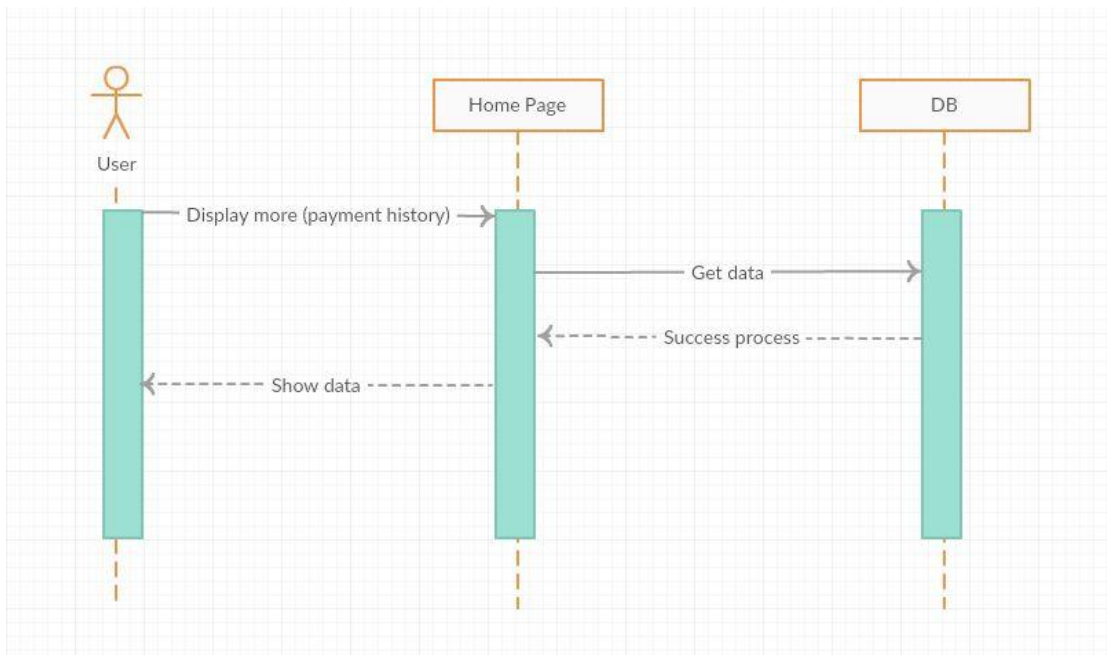
B- Sequence diagram2: home page (About E-account)

3- Sequence diagram My personal details



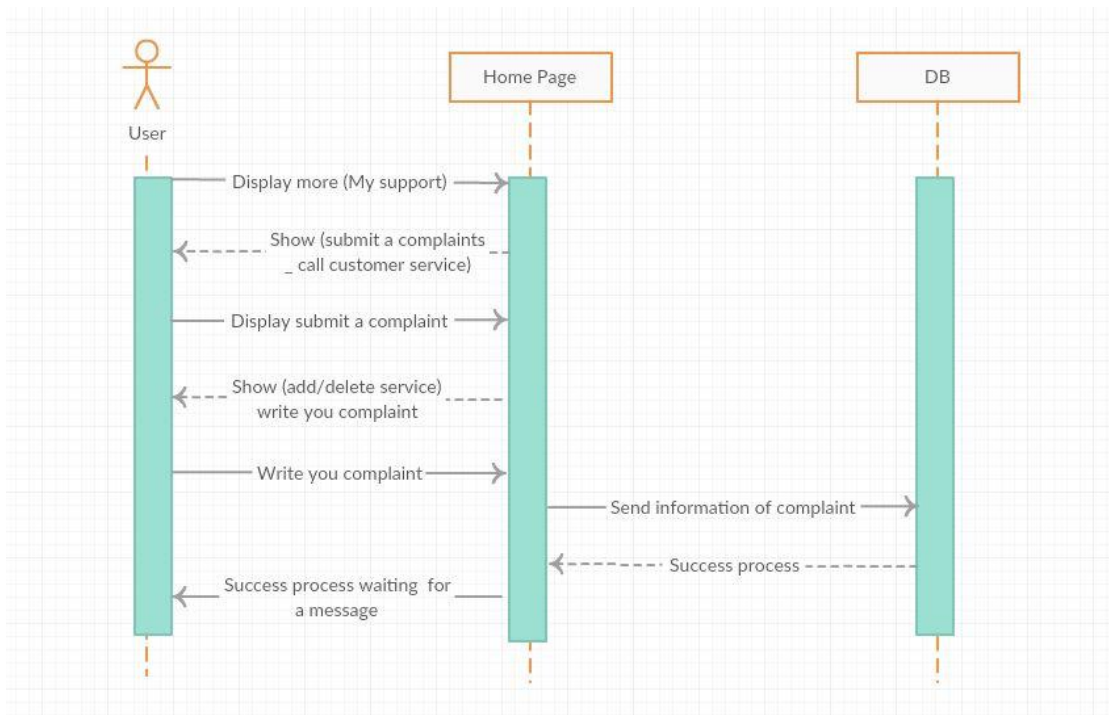
B- Sequence diagram3: My personal details

4-Sequence diagram Payment history



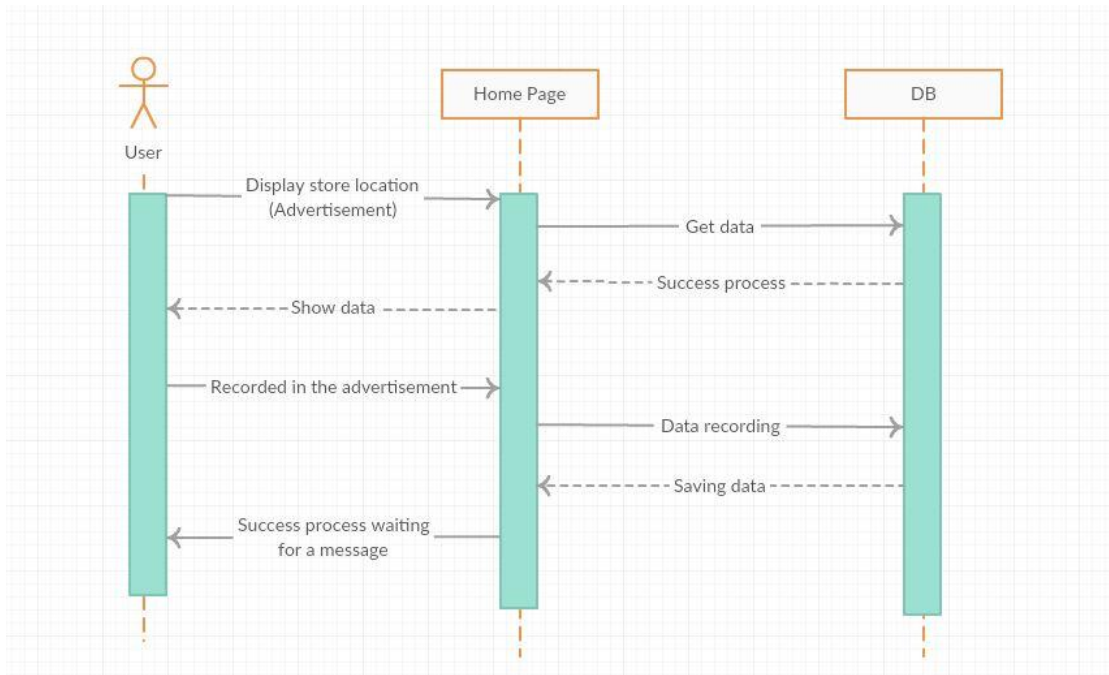
B- Sequence diagram4: Payment history

5-Sequence diagram My support



A-Sequence diagram5: My support

6-Sequence diagram Advertisement



B- Sequence diagram6: Advertisement

Appendices C:

Questionnaire of evaluation of E-account system:

استبياناه تقييم لنظام "حساب الكتروني" E-Account system

إدارة الشركة الموقرة

السلام عليكم ورحمة الله وبركاته

تهدف الاستبانة الى معرفة وجهة نظركم و انطباعاتكم عن استخدام E-Account

و هو برنامج يهدف الى تسهيل التواصل بين موظفي الشركة و المشتركين من خلال عرض بيانات المشترك بحيث يسوق للشركة و يسهل للمشاركين معاملاتهم مع الشركة.
نرجو منكم التفضل بالاجابة عن اسئلة الاستبانة التالية علما ان اجاباتكم ستستخدم لغرض البحث العلمي فقط و ستكون مساهمتكم في محل الاحترام و التقدير.

و تفضلوا بقبول فائق التقدير و الاحترام

الطالبات:

بثينة باسم صالحة

عائشة تيسير الكحلوت

نور محمد الحداد

كلية تكنولوجيا المعلومات

جامعة فلسطين

مدينة الزهراء

استبيان تقييم لنظام "حساب الكتروني" E-Account system

حول استخدام نظام E-Account :

بعد قراءتك للخيارات ضع دائرة حول الرقم المناسب لرأيك:

الدائرة حول الرقم 5 تعني موافق بشدة

الدائرة حول الرقم 4 تعني موافق

الدائرة حول الرقم 3 تعني محايد

الدائرة حول الرقم 2 تعني غير موافق بشدة

الدائرة حول الرقم 1 تعني غير موافق

Questions of questionnaire:-

تهدف هذه المجموعة لمعرفة وجهة نظر المشترك تجاه الفائدة من استخدام نظام E-Account					
1	هل نظام E-Account سهل الاستخدام	موافق	موافق بشده	محايد	غير موافق
2	هل نظام E-Account يقدم خدمات كافية	موافق	موافق بشده	محايد	غير موافق
3	هل نظام E-Account يروج للمؤسسة بشكل أفضل	موافق	موافق بشده	محايد	غير موافق
4	نظام E-Account واضح و مفهوم	موافق	موافق بشده	محايد	غير موافق
5	هل نظام E-account يساعدك بالشكل المطلوب	موافق	موافق بشده	محايد	غير موافق
6	ساعدك على التواصل بشكل أسرع مع الشركة E-account هل	موافق	موافق بشده	محايد	غير موافق
7	أوصي باستخدام نظام E-Account	موافق	موافق بشده	محايد	غير موافق

تهدف هذه المجموعة لمعرفة وجهة الشركة تجاه سهولة استخدام النظام E-Account

1	يساعد في التفاعل مع المشتركين E-Account هلنظام	موافق	موافق بشده	محايد	غير موافق
2	يساعد على زيادة الإنتاجية E-Account هل النظام	موافق	موافق بشده	محايد	غير موافق
3	يروج للمؤسسة بشكل أفضل E-Account هلنظام	موافق	موافق بشده	محايد	غير موافق
4	يساعد الموظفين في انجاز مهامهم بشكل هل E-account هل نظام	موافق	موافق بشده	محايد	غير موافق
5	يساهم في التواصل مع المشتركين بشكل أسرع E-Account هل نظام	موافق	موافق بشده	محايد	غير موافق

.....: شكرا لحسن معاونتكم:.....