

PENGEMBANGAN DAN ANALISIS KUALITAS SISTEM INFORMASI JADWAL AKADEMIK BERBASIS *YII FRAMEWORK* DI JURUSAN PENDIDIKAN TEKNIK ELEKTRONIKA FAKULTAS TEKNIK UNIVERSITAS NEGERI YOGYAKARTA

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ABSTRAK

Penelitian ini bertujuan untuk (1) mengembangkan sistem informasi jadwal akademik Jurusan Pendidikan Teknik Elektronika Universitas Negeri Yogyakarta; (2) menguji kualitas perangkat lunak yang dikembangkan berdasarkan standar kualitas perangkat lunak ISO 9126 yang mencakup aspek *functionality*, *reliability*, *usability*, *efficiency*, *maintainability* dan *portability*.

Model pengembangan perangkat lunak yang digunakan adalah model *waterfall* dan paradigma pemrograman berorientasi obyek. Tahapan pertama pengembangan perangkat lunak adalah analisis kebutuhan. Tahapan kedua adalah desain yang mencakup pemodelan UML, ERD dan desain *user interface*. Tahap ketiga adalah implementasi yaitu dengan penulisan kode program dengan *Yii Framework*. Tahap keempat adalah pengujian dimana pengujian *functionality* mencakup uji fungsi *software* dan *security* dengan *software Acunetix Web Vulnerability*, pengujian *reliability* menggunakan *software WAPT*, pengujian *usability* menggunakan kuesioner USE, pengujian *efficiency* menggunakan *GTMetrix*, pengujian *maintainability* menggunakan *Source Code SearchEngine* dan pengujian *portability* menggunakan *software BrowseEmAll*.

Berdasarkan hasil analisis dan pengujian dapat diambil kesimpulan yaitu, (1) dihasilkan *software* sistem informasi jadwal Jurusan Pendidikan Elektronika UNY berbasis *Yii Framework* dengan model pengembangan *waterfall* dan paradigma pemrograman berorientasi obyek. *Yii Framework* mempercepat proses pengembangan *software* karena adanya *extensions* dan modul; (2) hasil pengujian perangkat lunak pada aspek *functionality* didapatkan hasil 100% fungsi *software* berjalan baik dan rendah adanya kerentanan (*low vulnerability*). Pengujian *reliability* didapatkan hasil 100%. Pengujian *usability* didapatkan hasil 77,89%, pengujian *efficiency* didapatkan *grade Page Speed* yaitu A, *grade YSlow* yaitu B dan *load time* sebesar 1,64 detik. Pengujian *maintainability* didapatkan nilai *maintainability index* (MI) sebesar 70,03 (*moderate maintable*). Pengujian *portability* didapatkan *software* dapat berjalan di 8 *web browser dekstop* dan 8 *web browser mobile* tanpa terdapat *error*.

Kata kunci: sistem informasi, website, jadwal akademik, *yii framework*, ISO 9126, *functionality*, *reliability*, *usability*, *efficiency*, *maintainability*, *portability*.

**DEVELOPMENT AND QUALITY ANALYSIS OF INFORMATION SYSTEM OF
ACADEMIC SCHEDULE BASED ON YII FRAMEWORK AT ELECTRONICS
ENGINEERING EDUCATION DEPARTMENT YOGYAKARTA STATE UNIVERSITY**

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ABSTRACT

The aims of this research are: (1) To develop information system of academic schedule of Electronics Engineering Education Department, Yogyakarta State University; (2) To test the quality of the software developed based on ISO 9126 which consists of functionality, reliability, usability, efficiency, maintainability and portability.

Software development model used is the waterfall model and object-oriented programming paradigm . The first stage is requirements analysis. The second stage is design which includes UML , ERD and user interface design. The third stage is implementation by writing program code with Yii Framework . The fourth stage is software testing which consists of functionality testing includes test software functionality and security with Acunetix Web Vulnerability, reliability testing using WAPT, usability testing using the USE questionnaire, efficiency testing using GTMetrix, maintainability testing using the Source Code SearchEngine and portability testing using BrowseEmAll.

The results of this research are: (1) The academic scheduling information system of Electronics Engineering Education Department, Yogyakarta State University is developed by using Yii Framework. Yii Framework accelerates the software development process because of its extensions and modules; (2) The results of the software testing aspects functionality are 100 % and low vulnerability (Appropriate). The result of reliability testing is 100 % (Appropriate). The result of usability testing is 77.89 % (Appropriate). The results of efficiency testing are grade A for Page Speed, grade B for YSlow and 1.64 seconds for load time (Appropriate). The result of maintainability testing is 70.03 in the form of MI value (Appropriate). The result of portability testing shows that the software can run in the 8 desktop browsers and 8 mobile browsers (Appropriate).

Keywords: information system, website, academic schedule, yii framework, ISO 9126, functionality, reliability, usability, efficiency, maintainability, portability.