

ABSTRAK

Penerimaan Peserta Didik Baru (PPDB) di SMK N 1 Percut Sei Tuan memerlukan sistem yang efisien untuk memprediksi jurusan calon siswa berdasarkan nilai akademik. Penelitian ini bertujuan mengembangkan sistem prediksi jurusan berbasis *website* dengan menerapkan algoritma regresi linear guna meningkatkan transparansi dan akurasi dalam proses seleksi. Sistem ini akan memprediksi 14 jurusan yang ada di SMK N 1 Percut Sei Tuan, jurusan yang akan di prediksi adalah Teknik Konstruksi dan Perumahan, Desain Pemodelan dan Informasi Bangunan, Teknik Geomatika, Teknik Instalasi Tenaga Listrik, Teknik Jaringan Tenaga Listrik, Teknik Pemanasan, Tata Udara dan Pendinginan, Teknik Audio Video, Teknik Pemesinan, Teknik Pengelasan, Teknik Kendaraan Ringan, Teknik Sepeda Motor, Rekayasa Perangkat Lunak, Teknik Komputer dan Jaringan, dan Produksi dan Siaran Program Televisi. Sistem ini menggunakan data nilai rapor SMP semester 5 dan 6 sebagai variabel prediktor, meliputi Bahasa Indonesia, Matematika, IPA, dan Bahasa Inggris. Metode pengembangan sistem mencakup pengumpulan data melalui observasi, studi literatur, dan wawancara, serta perancangan aplikasi menggunakan bahasa pemrograman PHP, HTML, JavaScript, *database* MySQL, dan XAMPP. Pemodelan sistem dilakukan dengan UML (*Unified Modeling Language*), mencakup *use case diagram*, *sequence diagram*, dan *activity diagram*. Algoritma regresi linear diimplementasikan dengan menghitung nilai rata-rata mata pelajaran, koefisien regresi, dan intercept untuk memprediksi kelulusan. Hasil penelitian dari nilai lima calon siswa yang di uji, M. Dafi dan Admad Suhendra tidak memiliki kesempatan atau tidak lulus di jurusan manapun. Adellya Saputri dan Alfit Septian lulus di satu jurusan yang sama, yaitu Produksi dan Siaran Program Televisi. Sedangkan Ummi memiliki kelulusan di lima jurusan, yaitu Desain Pemodelan dan Informasi Bangunan, Teknik Audio Video, Teknik Pengelasan, Teknik Kendaraan Ringan, dan Produksi dan Siaran Program Televisi.

Kata Kunci: Regresi Linear, Prediksi Jurusan, Sistem Berbasis Web, SMK N 1 Percut Sei Tuan, PPDB.

ABSTRACT

The New Student Admission (PPDB) process at SMK N 1 Percut Sei Tuan requires an efficient system to predict prospective students' appropriate majors based on academic performance. This study aims to develop a web-based major prediction system by applying a linear regression algorithm to enhance transparency and accuracy in the selection process. The system predicts 14 available majors at SMK N 1 Percut Sei Tuan, including: Civil Construction and Housing Engineering, Modeling and Building Information Design, Geomatics Engineering, Electrical Installation Engineering, Electrical Power Network Engineering, Heating, Air Conditioning and Refrigeration Engineering, Audio Video Engineering, Machining Engineering, Welding Engineering, Light Vehicle Engineering, Motorcycle Engineering, Software Engineering, Computer and Network Engineering, and Television Production and Broadcasting.

The system uses report card scores from the 5th and 6th semesters of junior high school as predictor variables, including Bahasa Indonesia, Mathematics, Science, and English. The system development method includes data collection through observation, literature study, and interviews, as well as system design using PHP, HTML, JavaScript, MySQL database, and XAMPP. System modeling was carried out using UML (Unified Modeling Language), which includes use case diagrams, sequence diagrams, and activity diagrams. The linear regression algorithm is implemented by calculating subject averages, regression coefficients, and intercepts to predict student acceptance.

The results of the study, based on five student data samples, show that M. Dafi and Ahmad Suhendra were not eligible for any major. Adellya Saputri and Alfit Septian were accepted into one major, Television Production and Broadcasting. Meanwhile, Umami qualified for five majors: Modeling and Building Information Design, Audio Video Engineering, Welding Engineering, Light Vehicle Engineering, and Television Production and Broadcasting.

Keywords: Linear Regression, Major Prediction, Web-Based System, SMK N 1 Percut Sei Tuan, PPDB.