Sistem Monitoring Siswa untuk Guru dan Orang Tua Siswa Menggunakan Algoritma Fuzzy C-Means di SD Muhammadiyah Demangrejo.

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ABSTRAK

SD Muhammadiyah Demangrejo merupakan Sekolah Dasar yang berlokasi di Sentolo, Kulon Progo, Yogyakarta, Indonesia. Sistem penilaian siswa masih menggunakan cara manual atau data-data dari nilai akademik siswa masih di simpan di miscrosoft excel menyebabkan data sulit dibaca. Orang tua siswa menerima laporan tentang nilai akademik siswa hanya disaat penerimaa rapor di pertengah semester dan akhir semester, menyebabkan orang tua siswa tidak bisa memantau nilai akademik siswa setiap hari. Penelitian ini bertujuan untuk membuat sistem monitoring siswa dan pengolahan data nilai akademik siswa menggunakan Algoritma *Fuzzy C-Means*.

Langkah Penelitian dan pengbangunan sistem monitoring menggunakan metode penelitian waterfall dimulai dengan wawancara untuk akuisisi data kemudian melakukan pembuatan prototipe, proses coding, testing dan aplikasi siap digunakan. Algoritma *Fuzzy C-Means* merupakan algoritma klasterisasi dimana data dikelompokan ke dalam suatu pusat *cluster* data dengan derajat keanggotaan masing-masing *cluster*.

Hasil analisis dari sistem monitoring siswa untuk guru dan orang tua di SD Muhammadiyah Demangrejo siswa menujukan bahwa, data nilai dari 10 siswa dengan tiga kriteria yaitu nilai mata pelajaran, nilai absen dan nilai kompetensi inti, Sistem Monitoring Siswa dan Algoritma *Fuzzy C-Means* dapat mempermudah Guru dalam mengelola nilai akademis siswa dan terdapat fitur otomatis yang dapat menghasilkan nilai semester. Di sisi Orang Tua Siswa, sistem monitoring siswa dapat menampilkan nilai harian siswa, absen harian siswa dan nilai nilai semester siswa.

Kata Kunci : Algoritma Fuzzy C-Means, Metode Waterfall, Sistem Monitoring Siswa, Data Mining

Student Monitoring System for Teachers and Parents Using the Fuzzy C-Means Algorithm at SD Muhammadiyah Demangrejo.

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ABSTRACT

SD Muhammadiyah Demangrejo is an elementary school located in Sentolo, Kulon Progo, Yogyakarta, Indonesia. The student assessment system still uses manual methods or data from students' academic scores are still stored in Microsoft Excel, causing the data to be difficult to read. Parents of students receive reports on students' academic scores only when receiving report cards in the middle of the semester and at the end of the semester, causing parents to not be able to monitor students' academic scores every day. This study aims to create a student monitoring system and data processing of students' academic scores using the Fuzzy C-Means Algorithm.

Steps Research and development of a monitoring system using the waterfall research method starts with interviews for data acquisition and then makes prototypes, coding processes, testing and ready-to-use applications. Fuzzy C-Means algorithm is a clustering algorithm where data is grouped into a data cluster center with the degree of membership of each cluster.

The results of the analysis of the student monitoring system for teachers and parents at SD Muhammadiyah Demangrejo students show that, the value data from 10 students with three criteria, namely subject grades, absentee values and core competency scores, Student Monitoring System and Fuzzy C-Means Algorithm can facilitate Teachers in managing students' academic grades and there is an automatic feature that can generate semester grades. On the Parents side, the student monitoring system can display student daily grades, student daily absences and student semester grades.

Keywords: Fuzzy C-Means Algorithm, Waterfall Method, Student Monitoring System, Data Mining