Project Report

College Admission Management System

Abstract:

The College Admission Management System is a Java-based console application designed to automate and streamline the admission workflow in educational institutions. The system manages course creation, student registration, merit calculation, seat allocation, and export of final admission lists in CSV and PDF formats. By integrating MySQL for persistent storage and using a structured, layered architecture, the project reduces manual effort, improves accuracy, and ensures a seamless and transparent admission process.

Introduction:

College admissions involve multiple steps such as collecting applications, evaluating students based on merit, allocating seats, and preparing final admission lists. When handled manually, these steps can be slow, error-prone, and difficult to track.

This project, College Admission Management System, aims to digitize and automate the entire workflow. The system provides functionalities for administrators to create and manage courses, register students, process applications, calculate merit scores, and generate admission reports. Built using Java, JDBC, and MySQL, it offers a simple console-based interface while maintaining a scalable design suitable for future expansion into GUI-based or web-based systems.

Tools Used:

- Java 17 – Core programming language
- MySQL 8 – Database for storing students, courses, and applications.
- JDBC – Communication between Java application and MySQL
- Maven – Build automation and dependency management
- PDFBox & Apache Commons CSV – PDF and CSV generation

Steps Involved in Building the Project:

1. **Requirement Analysis** – Understanding how admissions are processed manually.
2. **Database Design** – Creating tables for students, courses, and applications.
3. **Setting Up the Project Structure** using Maven.
4. **Model Layer Development** – Mapping database entities into Java classes.
5. **DAO Layer Implementation** – Writing JDBC code for CRUD operations.
6. **Service Layer Logic** – Implementing merit calculation, seat allocation, and validations.
7. **Console UI Development** – Displaying menus and capturing user input.
8. **Testing** – Verifying all functionalities such as registration, applying, and exporting.
9. **Packaging the Application**– Using Maven Shade plugin to create an executable jar.
10. **Generating Output Files** – Exporting admission list as CSV and PDF

Conclusion:

The College Admission Management System successfully automates the essential tasks involved in student admissions. It minimizes manual work, ensures accurate merit calculations, and generates professional reports in CSV/PDF formats. Built using Java, JDBC, and MySQL, the system follows a clean, modular architecture, making it easy to maintain and extend. This project demonstrates strong understanding of backend development, database integration, and real-world software design, fulfilling the requirements of the internship.

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