Project Report: College Admission Management System

1. Introduction

The admission process in colleges involves handling a large number of student applications, verifying their details, calculating merit, and allocating seats based on predefined cut-offs. Manual processing of applications is time-consuming and prone to errors.
The *College Admission Management System* provides an automated way to manage student registrations, course allocation, and merit-based admissions. It ensures transparency, efficiency, and accuracy in handling the admission workflow.

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2. Abstract

This project is designed to manage the **end-to-end admission process** of a college. Students register and apply for courses, the system calculates merit based on predefined criteria, and the admin approves or rejects applications depending on cut-off marks. The system supports **CSV and PDF exports** of the final admission list for official records.

Key features include:

- Student Registration
- Course Management
- Merit Score Calculation
- Admission Approval/Rejection by Admin
- Export of Approved List in CSV/PDF formats
- Simple Console/GUI Admin Panel

The project combines **Java, JDBC, and MySQL** for backend processing and uses **iText PDF** for document generation.

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3. Tools Used

- **Java (JDK 19 or later)** → Core programming language for application logic.
- **JDBC (Java Database Connectivity)** → To connect and interact with MySQL.
- **MySQL Database** → Stores student, course, and application details.
- **iText 7 PDF Library** → To generate admission lists in PDF format.
- **Apache POI / CSV Writers** → To generate CSV and DOCX output files.
- **Eclipse IDE** → Development environment.

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4. Steps Involved in Building the Project

1. **Database Design**
    - Create tables: `Students`, `Courses`, `Applications`.
    - Define relationships: A student can apply to multiple courses.
2. **Student Registration**
    - Form to capture student details (name, marks, contact, etc.).
    - Insert records into the `Students` table.
3. **Course Management**
    - Admin adds courses with cut-off marks and seat availability.
4. **Application Submission**
    - Students apply for available courses.
    - Record stored in `Applications` table with "Pending" status.
5. **Merit Calculation**
    - Calculate merit score using marks/percentages.
    - Rank students for each course.
6. **Approval/Rejection**
    - Admin reviews applications against cut-offs.
    - Approves eligible students and rejects others.
7. **Export Admission List**
    - Generate **CSV file** containing approved students.
    - Generate **PDF file** with tabular data (using iText).
    - Ensure formatted output for record keeping.
8. **Admin Panel (Console/GUI)**
    - Provide menu options for admin:
        1. Register Student
        2. Add Course
        3. Apply to Course
        4. Compute Merit
        5. Allocate Seats
        6. Export Approved List (CSV/PDF/DOCX)

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5. Conclusion

The *College Admission Management System* simplifies and digitalizes the entire admission workflow. By using **Java + JDBC + MySQL**, the project ensures secure storage and efficient processing of student applications. The **merit-based allocation** ensures fairness, while **CSV and PDF exports** provide official documentation for future reference.
This system can be extended further with a **web-based interface** or **role-based authentication** to handle admissions at scale.