**Report**

**Members:**

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**Project:**

University Management System

**Introduction:**

This program implements a **University Management System** that performs basic operations related to managing students, courses, and attendance records. It is designed to be interactive, user-friendly, and modular, allowing for easy extension and maintenance.

### **Key Features:**

1. **User Authentication**:
   1. The program ensures security by requiring login credentials before accessing the system.
   2. It uses a predefined username-password pair (admin, admin123) for authentication.
2. **Student Management**:
   1. **Add Student**: Users can add a new student by providing an ID, name, and department.
   2. **View Students**: Displays the list of all students with their details.
3. **Course Management**:
   1. **Add Course**: Users can create a new course by entering a course ID, course name, and instructor's name.
   2. **View Courses**: Displays all registered courses with their details.
4. **Attendance Management**:
   1. **Mark Attendance**: Allows marking attendance for a specific course and student.
   2. **View Attendance**: Displays attendance records for a particular course.
5. **Persistent Data Storage**:
   1. The program saves student and course data to text files (students.txt and courses.txt) and reloads them on startup, ensuring data persistence across sessions.

### **Strengths:**

1. **Modular Design**:
   1. Each functionality is implemented as a separate function, enhancing code readability and maintainability.
2. **Persistent Data Storage**:
   1. The use of text files ensures that student and course data are not lost between sessions.
3. **User Authentication**:
   1. A simple authentication mechanism provides a basic level of security.
4. **Extensibility**:
   1. The modular structure allows for easy addition of new features, such as enhanced attendance reporting or student search functionality.
5. **Input Validation**:
   1. Prevents invalid inputs by checking user entries during menu selection.

### **Conclusion:**

This program provides a solid foundation for a University Management System with basic functionalities like managing students, courses, and attendance. While it meets the requirements for a small-scale system, it can be further enhanced to improve scalability, security, and usability. By addressing its limitations, this system could serve as a robust solution for educational institutions.