📝 Report: School Attendance System using Java Swing and MySQL

### **Group Members**

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### **1. Introduction**

The School Attendance System is a desktop-based application designed to manage and track student attendance in a school environment. This system provides a user-friendly Java Swing interface and utilizes a MySQL database for backend data storage. The key objective is to digitize the traditional paper-based attendance tracking process.

### **2. Technologies Used**

| **Component** | **Technology** |
| --- | --- |
| Frontend GUI | Java Swing |
| Backend Database | MySQL |
| Database Connectivity | JDBC (Java Database Connectivity) |
| IDE | **IntelliJ IDEA** |
| Java SDK Version | **Java SE 24** |

### **3. System Modules**

#### **a. Admin Module**

* Login functionality
* Add/view faculty and students
* View reports

#### **b. Faculty Module**

* Login functionality
* Mark attendance for students
* View/update previous attendance

#### **c. Student Module**

* View attendance records
* Check attendance percentage

### **4. Features**

* Role-based login (Admin, Faculty, Student)
* Attendance marked date-wise per subject/class
* Secure password handling (basic encryption)
* CRUD operations (Create, Read, Update, Delete) for students and faculty
* Attendance percentage calculation
* Simple GUI with menus, forms, and tables

### **5. Challenges**

* Designing an intuitive Swing UI layout
* Managing JDBC exceptions and SQL errors
* Ensuring attendance data integrity (e.g., one entry per student per day)

### **6. Conclusion**

This School Attendance System provides a complete solution to manage attendance efficiently in educational institutions. It demonstrates the practical application of Java OOP, Swing UI design, and database operations using JDBC with Java SDK 24.