Documentation for Medical Record System Integration

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Integration Overview

The Medical Record System combine several technologies and components to provide a functional and efficient solution for managing patient records and appointments. The integration ensures easy interaction between the user interface(UI), the database, and the backend logic.

Key Integration Elements

Database Integration:
The program connects a Java application to a MySQL database for continuous data storage. Integration is achieved using:

- JDBC (Java Database Connectivity): Enables Java to interact with MySQL.
- Prepared Statements: Used for secure database operations, preventing SQL injection.
- Foreign Key Relationships: Ensure data integrity between related tables.

Modular Design:
The program uses the DAO (Data Access Object) pattern to separate database logic from application logic:

- PatientDAO: Manages operations related to patient records.
- AppointmentDAO: Handles operations for appointments.

GUI Integration:
The system uses Java Swing to create a graphical user interface:

- Input from the GUI is passed to the DAO layer for database operations.
- Patient and appointment data are dynamically fetched from the database and displayed in the GUI using the table.

Logging Integration
The system integrates Java's Logging Framework to:

- Log errors during database operations.
- Track issues related to integration and system execution.

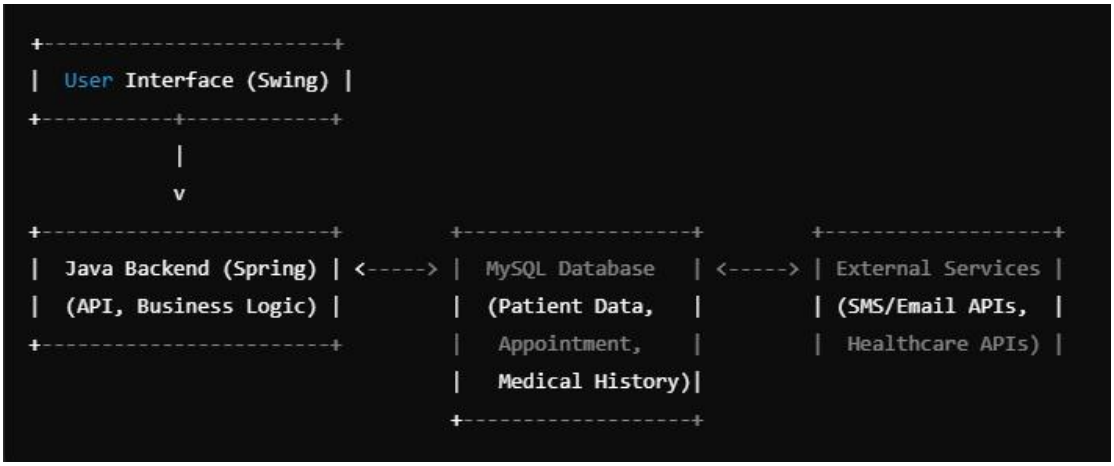
File Resource Integration
The program includes a feature to load an image (logo) dynamically using a file path. The logo is integrated into the GUI for branding purposes.

Tools and Technologies Used

- Programming Language: Java
- Database: MySQL
- Database Connection: JDBC
- Logging: Java Logging Framework
- User Interface: Java Swing
- Design Patterns:

- DAO (Data Access Object) for database interaction.
- MVC (Model-View-Controller) for separating concerns.

MySQL Overall System Architecture Diagram:



Entity-Relationship Diagram (ERD):