

# Hospital Management System Documentation.

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## 1. Introduction

- The Hospital Management System is a Java-based project developed to manage hospital-related records,
- including information about doctors, patients, and appointments. It uses JDBC to interact with a MySQL
- database and follows CRUD operations. The system uses a Command Line Interface (CLI) for user
- interaction and is developed using IntelliJ IDEA.

## 2. Technologies Used

- Java (Core)
- JDBC (Java Database Operations)
- MySQL
- IntelliJ IDEA

## 3. Modules & Features

- Doctor Management - Add, update, delete doctor records.
- Patient Management - Add and view patients.
- Appointment Management - Link patients and doctors via IDs; book and view appointments.
- CLI-based Interaction - Menu-driven interface for ease of use.

## 4. Database Design

- Doctor Table: ID (PK), Name, Specialization
- Patient Table: ID (PK), Name, Age, Gender, Weight
- Appointment Table: ID (PK), Patient\_ID (FK), Doctor\_ID (FK)

## 5. Java Classes Overview

- Doctor.java - Defines doctor entity.
- Patient.java - Defines patient entity.
- HospitalManagementSystem.java - Contains main logic.
- Main.java - Entry point of the program.

## 6. Core Logic & Functionality

- Connects to MySQL database using JDBC.
- Presents CLI menu for interaction.
- Performs add/view actions for patients and doctors.
- Validates IDs and checks doctor availability before appointment.

## 7. System Flow

- User selects option from CLI.
- Input is processed by the respective method.
- JDBC executes SQL queries.
- Checks availability and confirms appointments.
- Displays confirmation or error messages.

## 8. Conclusion & Future Scope

- The system effectively manages hospital data using Java and MySQL.
- Future improvements may include:
  - GUI (JavaFX/Swing)
  - Web Interface using Spring Boot