**HOSPITAL MANAGEMENT SYSTEM**

**System Requirements :-**

1. Windows/Linux/MAC Operating System
2. JDK installed and any of the IDE.
3. My SQL installed in system.
4. My SQL Connector.

**Implementation of the System :**

**Key Concepts**

Connection: The Connection class represents a connection to a database. It is used to establish a connection, execute SQL statements, and retrieve results.

PreparedStatement: The PreparedStatement class is used to execute parameterized SQL statements. It allows us to pass parameters to the SQL query, which helps prevent SQL injection attacks.

ResultSet: The ResultSet class represents the result of a database query. It allows us to retrieve and manipulate the data returned by the query.

JDBC: The program uses JDBC (Java Database Connectivity) to connect to a MySQL database and perform database operations.

Classes and Objects: The program utilizes classes and objects to represent patients and doctors, allowing for easy management and manipulation of data.

User Input: The program uses the Scanner class to accept user input for various operations.

In this system, we focus on the functionality and logic of the program in this system, we will have the 3 Modules : 1.Patient Module, Doctor Module, Appointment Module, we will connect the SQL connector to our IDE, and will fetch all the tables/ schema that we are created in the Hospital database.

In patient module, we will have the inputs as PatientID will be auto incremented as we add the patients, PatientName,PatientAge,PatientGender. The patientID will be the primary key.

The code is structured as a Java class named Patient. It has a constructor that takes a Connection object and a Scanner object as parameters. The Connection object is used to establish a connection to the database, and the Scanner object is used to read user input.

The class has three methods:

1. addPatient(): This method prompts the user to enter the patient's name, age, and gender. It then inserts the patient's information into the database using a parameterized SQL query.

2. viewPatients(): This method retrieves all the patients from the database and displays their information in a tabular format.

3. getPatientByID(int id): This method checks if a patient with the given ID exists in the database. It returns true if the patient exists and false otherwise.

In Doctor Module, The Doctor class has two methods: viewDoctors() and getDoctorByID(int id). Let's take a closer look at each of these methods.

1. The viewDoctors() method retrieves all the doctors' information from the database and prints it in a tabular format.
2. The getDoctorByID(int id) method retrieves a doctor's information from the database based on the provided id.