**Case Study: Doctor Appointment**

**Objective:**

Develop a menu-based console application to assess your proficiency in Core Java, MySQL, and JDBC. The application will manage a hospital information system, allowing users to perform CRUD (Create, Read, Update, Delete) operations for patients and doctors, and include functionality for scheduling appointments.

**Functionalities:**

1. **Patient Management:**
   * Add a new patient
   * View patient details
   * Update patient information
   * Delete a patient
2. **Doctor Management:**
   * Add a new doctor
   * View doctor details
   * Update doctor information
   * Delete a doctor
3. **Appointment Scheduling:**
   * Display list of available doctors
   * Display list of patients
   * Schedule an appointment for a patient with a doctor
   * Update the appointment record in the database
   * Validate that the selected doctor is available
   * Validate that the selected patient doesn't have overlapping appointments

**Database Schema:**

* **Patient Table:**
  + patient\_id (Primary Key)
  + name
  + date\_of\_birth
  + gender
  + contact\_number
* **Doctor Table:**
  + doctor\_id (Primary Key)
  + name
  + specialization
  + contact\_number
* **Appointment Table:**
  + appointment\_id (Primary Key)
  + doctor\_id (Foreign Key references Doctor Table)
  + patient\_id (Foreign Key references Patient Table)
  + appointment\_date
  + appointment\_time

**Requirements:**

* Develop a menu-based console application using Core Java.
* Use JDBC for interactions with the MySQL database.
* Implement menu options for CRUD operations for patients and doctors, and appointment scheduling.
* Ensure that the application updates the appointment records appropriately.
* Handle exceptions effectively and provide user-friendly error messages.
* Ensure the application code is clean, well-documented, and follows standard coding conventions.

**Submission:**

* Submit the complete source code along with a README file that provides setup and usage instructions.
* Share your project by uploading it to a public GitHub repository.
* Provide the link to the GitHub repository.