**Case Study: Laboratory Information Management System**

**Objective:**

Develop a menu-based console application to assess your proficiency in Core Java, MySQL, and JDBC. The application will simulate a laboratory information management system for a life sciences research facility, allowing users to manage experiments, samples, and researchers.

**Functionalities:**

1. **Experiment Management:**
   * Add new experiments
   * View experiment details
   * Update experiment information
   * Delete experiments
2. **Sample Management:**
   * Register new samples
   * View sample details
   * Update sample information
   * Delete samples
3. **Researcher Management:**
   * Add new researchers
   * View researcher details
   * Update researcher information
   * Delete researchers

**Database Schema:**

* **Experiment Table:**
  + experiment\_id (Primary Key)
  + experiment\_name
  + researcher\_id (Foreign Key references Researcher Table)
  + start\_date
  + end\_date
  + status (Planned, In Progress, Completed)
* **Sample Table:**
  + sample\_id (Primary Key)
  + sample\_name
  + experiment\_id (Foreign Key references Experiment Table)
  + collection\_date
  + description
* **Researcher Table:**
  + researcher\_id (Primary Key)
  + researcher\_name
  + specialization
  + email
  + phone\_number

**Requirements:**

* Develop a menu-based console application using Core Java.
* Use JDBC for interactions with the MySQL database.
* Implement menu options for managing experiments, samples, and researchers.
* Ensure the application allows for assigning samples to experiments, updating experiment status, and managing researchers efficiently.
* 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 to the coaches.