**Case Study: Product Inventory System**

**Objective:**

Develop a menu-based console application to assess your proficiency in Core Java, MySQL, and JDBC. The application will simulate a product inventory system for a retail business, allowing users to manage products, categories, and inventory levels.

**Functionalities:**

1. **Product Management:**
   * Add a new product
   * View product details
   * Update product information
   * Delete a product
2. **Category Management:**
   * Add a new category
   * View category details
   * Update category information
   * Delete a category
3. **Inventory Management:**
   * Add new inventory
   * View inventory details
   * Update inventory information
   * Delete inventory

**Database Schema:**

* **Product Table:**
  + product\_id (Primary Key)
  + name
  + category\_id (Foreign Key references Category Table)
  + price
  + stock\_quantity
* **Category Table:**
  + category\_id (Primary Key)
  + name
  + description
* **Inventory Table:**
  + inventory\_id (Primary Key)
  + product\_id (Foreign Key references Product Table)
  + quantity
  + date\_added

**Requirements:**

* Develop a menu-based console application using Core Java.
* Use JDBC for interactions with the MySQL database.
* Implement menu options for managing products, categories, and inventory.
* Ensure that the application updates inventory levels and handles product and category data 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.