**Case Study: Product Review and Rating System**

**Objective:**

Develop a menu-based console application to assess your proficiency in Core Java, MySQL, and JDBC. The application will simulate a product review and rating system for an e-commerce platform, allowing users to submit reviews, view product details, and analyze product ratings.

**Functionalities:**

1. **Product Management:**
   * Add new products to the platform
   * View product details
   * Update product information
   * Delete products from the platform
2. **Review Submission:**
   * Submit new reviews for products
   * View review details
   * Update review information
   * Delete reviews
3. **Rating Analysis:**
   * Calculate average ratings for products
   * Analyze ratings distribution (e.g., number of 5-star, 4-star, etc. ratings)
   * View top-rated products

**Database Schema:**

* **Product Table:**
  + product\_id (Primary Key)
  + product\_name
  + price
  + description
  + category\_id (Foreign Key references Category Table)
* **Review Table:**
  + review\_id (Primary Key)
  + product\_id (Foreign Key references Product Table)
  + customer\_id (Foreign Key references Customer Table)
  + review\_text
  + rating
* **Rating Table:**
  + rating\_id (Primary Key)
  + product\_id (Foreign Key references Product Table)
  + rating\_value
  + rating\_date

**Requirements:**

* Develop a menu-based console application using Core Java.
* Use JDBC for interactions with the MySQL database.
* Implement menu options for managing products, submitting reviews, and analyzing product ratings.
* Ensure that the application accurately calculates average ratings, analyzes ratings distribution, and displays top-rated products.
* 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.