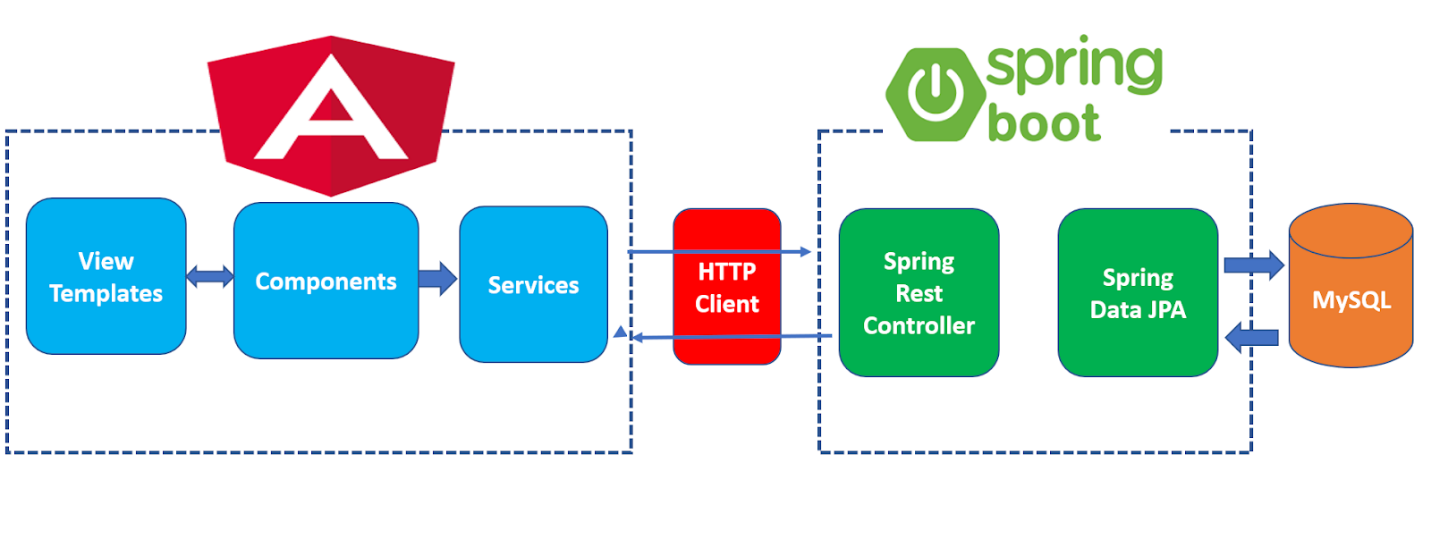
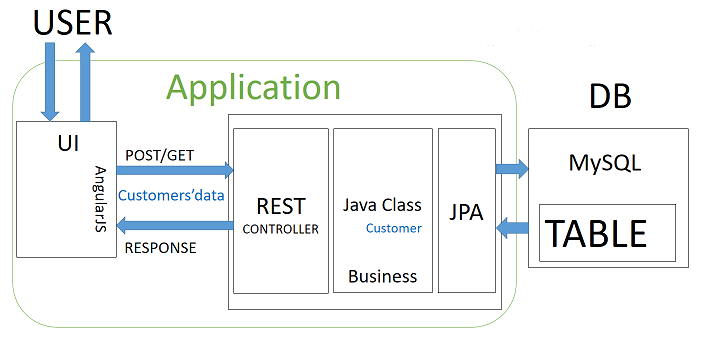
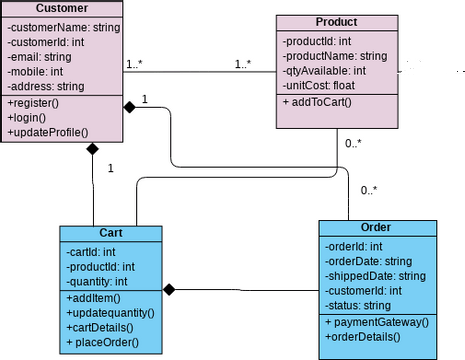
**Design Diagrams**

****

**Architecture Diagram**

****

**Class Diagram**

****

**User Guide for Setting up and Running the Angular and Java Spring Boot eCommerce Application**

**System Requirements**

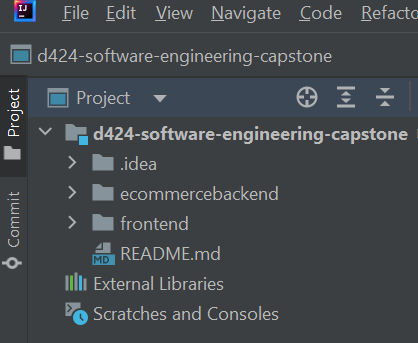
Before starting, ensure your system has the following software installed:

* **Java 8** or higher
* **Node.js 11** or higher
* **NPM** (comes with Node.js)
* **Angular CLI**: npm install -g @angular/cli
* **Maven** for building Spring Boot applications
* **Git** for version control
* **Docker** (for containerization)
* **MySQL**

**1. Application Structure**

eCommerce project consists of two parts:

1. **Front-end**: Angular-based user interface.
2. **Back-end**: Spring Boot-based REST API with a connection to a database (e.g., MySQL).



**2. Cloning the Repository**

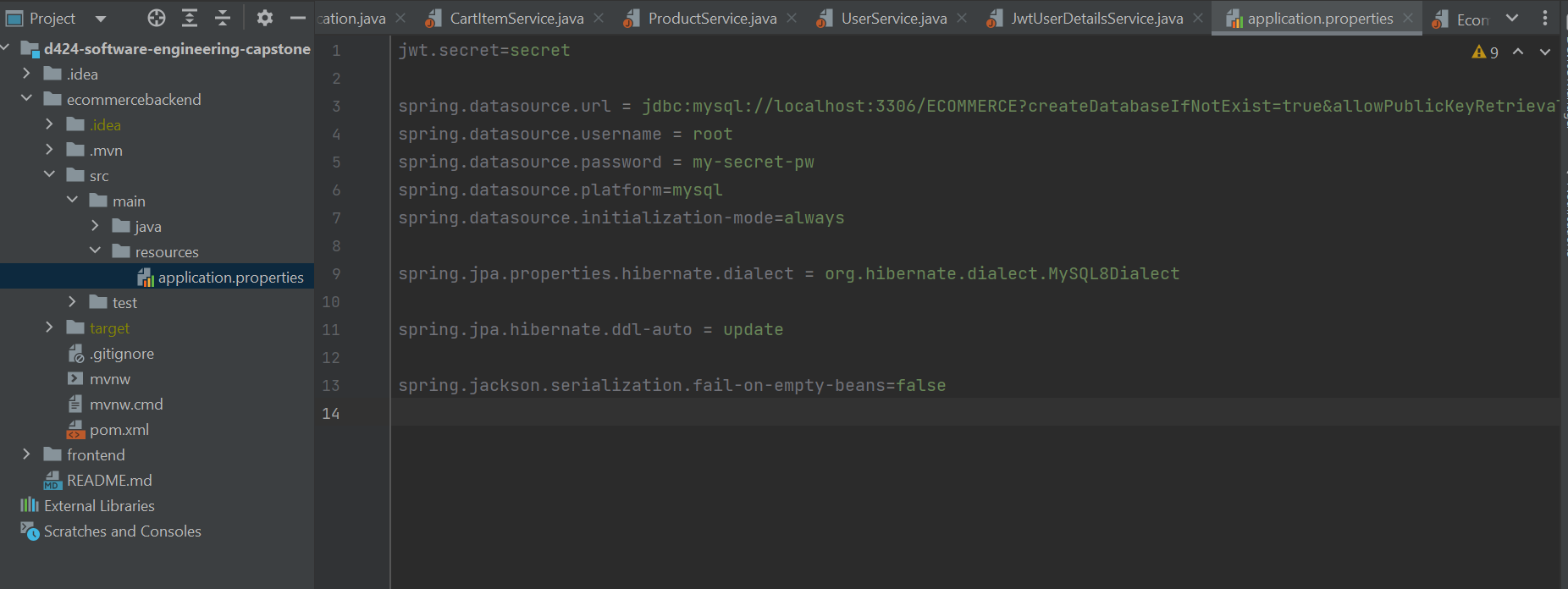
Clone the Repository from GitLab here:

<https://gitlab.com/wgu-gitlab-environment/student-repos/ykumsa/d424-software-engineering-capstone>

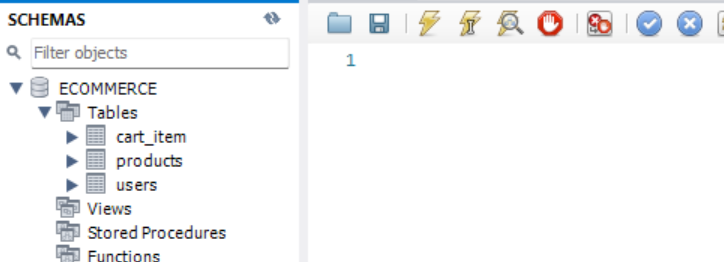
**3. Setting Up the Back-end (Spring Boot)**

**3.1. Configure the Database**

* **MySQL**:
  + Create a database for the application, e.g., ecommerce\_db.
  + Open the application. file located in the backend/src/main/resources/ folder, and configure the database settings:



MySQL using MySQL WorkBench:



**3.2. Build and Run the Spring Boot Application**

Make sure you're in the backend/ folder, and then:

* **Using Maven**:

mvn clean install

mvn spring-boot:run

The back-end server will be running at http://localhost:8080.

**4. Setting Up the Front-end (Angular)**

**4.1. Install Dependencies**

Navigate to the frontend/ folder:

cd frontend/

npm install

**4.2. Run the Angular Application**

Start the Angular development server:

ng serve

The front-end application will be running at http://localhost:4200.

**4.3. Connect Angular to Spring Boot API**

In the Angular project, you may have a configuration file where the API URL is defined (e.g., environment.ts):



Ensure the API URL points to your running back-end server.

**5. Running the Application with Docker**

**5.1. Build Docker Images**

For both the back-end and front-end, Dockerfiles are present.

1. **Back-end Docker Image**:

Inside the backend/ folder:

docker build -t ecommerce-backend .

1. **Front-end Docker Image**:

Inside the frontend/ folder:

docker build -t ecommerce-frontend .

**5.2. Run Docker Containers**

Once the images are built, you can run the application using the following commands:

# Run the MySQL container

docker run --name mysql-container -e MYSQL\_ROOT\_PASSWORD=your\_password -e MYSQL\_DATABASE=ecommerce\_db -p 3306:3306 -d mysql:latest

# Run the backend container

docker run --name ecommerce-backend-container -p 8080:8080 ecommerce-backend

# Run the frontend container

docker run --name ecommerce-frontend-container -p 4200:80 ecommerce-frontend

The application will now be running with the following services:

* Front-end: http://localhost:4200
* Back-end: http://localhost:8080

**User Guide for Running the Angular and Java Spring Boot eCommerce Application**

This guide is designed to help users interact with and run eCommerce application, providing an overview of the key features and functionalities from a user’s perspective.

**1. Accessing the Application**

Once the application is deployed or running locally, it can be accessed through the following URLs:

* **Front-end (Angular)**: http://localhost:4200 or domain (e.g., <http://myecommerceapp.com>), will deploy it later
* **Back-end (Spring Boot API)**: http://localhost:8080/api (usually hidden from direct user access)

**2. User Registration**

**Step-by-Step Guide:**

1. **Navigate to the Registration Page**:
   * Access the registration page from the homepage, typically under a “Sign Up” or “Register” link.
2. **Fill Out the Registration Form**:
   * Fields include:
     + **Username**: Choose a unique username (maximum 35 characters).
     + **Email**: Enter your email address (used for account recovery and notifications).
     + **Password**: Create a secure password.
     + **Full Name**: Enter your full name.
     + **Address**: Provide a valid shipping address.
     + **Phone Number**: Enter a contact phone number.
3. **Submit the Form**:
   * Click the **Register** button to complete your account creation.
   * You will receive a confirmation message once your registration is successful.

**3. Logging In**

**Step-by-Step Guide:**

1. **Navigate to the Login Page**:
   * Click the **Login** link on the homepage.
2. **Enter Credentials**:
   * Input your **username** and **password**.
3. **Submit the Login Form**:
   * Click the **Login** button to authenticate and access your account.
4. **Login Success**:
   * Once logged in, you’ll be redirected to the homepage or your dashboard.

**4. Browsing Products**

1. **Navigate to the Product Listing**:
   * On the homepage or via the **Shop** section, view a list of available products.
2. **Filter and Search**:
   * Use the search bar to find specific products by name or category.
   * Apply filters (e.g., price, category, ratings) to refine your search results.
3. **View Product Details**:
   * Click on a product to view more details, such as descriptions, price, and availability.

**5. Adding Products to Cart**

1. **Select a Product**:
   * From the product details page, choose the quantity of the item you wish to purchase.
2. **Click “Add to Cart”**:
   * Add the product to your shopping cart by clicking the **Add to Cart** button.
3. **View Cart**:
   * Access your cart at any time by clicking the **Cart** icon or link.

**6. Managing Your Shopping Cart**

1. **View Cart Contents**:
   * In your shopping cart, you will see the list of all items added.
2. **Update Quantities**:
   * Adjust the quantity of any product using the quantity selector next to each item.
3. **Remove Items**:
   * Remove unwanted products by clicking the **Remove** button next to the item.
4. **Proceed to Checkout**:
   * Once you’ve finalized your selection, click **Proceed to Checkout** to start the purchase process.

**7. Checking Out and Placing Orders**

1. **Review Your Cart**:
   * On the checkout page, review your cart items and ensure everything is correct.
2. **Enter Shipping Information**:
   * Confirm your shipping address. You can edit or enter a new address if necessary.
3. **Payment Details**:
   * Enter your payment information (e.g., credit card or PayPal).
4. **Place Your Order**:
   * After reviewing all details, click the **Place Order** button to complete the purchase.
5. **Order Confirmation**:
   * Once the order is successful, you’ll receive an order confirmation email with your order details.

**8. Managing Your Account**

1. **View Order History**:
   * Go to your **Account Dashboard** and click **Order History** to view all your past orders.
2. **Update Account Information**:
   * In the account settings, you can change your:
     + **Username**
     + **Email**
     + **Password**
     + **Address**
     + **Phone number**
3. **Logout**:
   * Click the **Logout** button to securely sign out of your account.