Project #1 : Online Grocery Store Management System

You have been assigned to develop and maintain a comprehensive online Grocery Store Management System that supports user authentication, product management, order processing, User Profile Management, Product Search and Filtering. Your tasks will involve building and testing REST APIs, version control, project management with Maven, and continuous integration with Jenkins.

1. Building REST API:

User Authentication Endpoints

User Registration:

• Develop a POST /users/register endpoint to allow new users to register with details like username, password, and email.

User Login:

• Develop a POST /users/login endpoint to authenticate users with their username and password.

Product Management Endpoints

Add a New Product:

• Develop a POST /products endpoint to add a new product with details like name, category, price, and stock quantity.

Retrieve Product Details:

• Develop a GET /products/{productId} endpoint to retrieve the details of a specific product.

Order Processing Endpoints

Place a New Order:

• Develop a POST /orders endpoint to place a new order with details like userId, productId, quantity, and totalPrice.

Retrieve Order Details:

• Develop a GET /orders/{orderId} endpoint to retrieve the details of a specific order.

User Profile Management Endpoints

Update User Profile:

• Develop a PUT /users/{userId} endpoint to update user profile information like username and email.

Delete User Account:

• Develop a DELETE /users/{userId} endpoint to delete a user account.

Product Search and Filtering Endpoints

Search Products by Name:

• Develop a GET /products/search endpoint to search for products by name using a query parameter.

Filter Products by Category:

• Develop a GET /products/filter endpoint to filter products by category using a query parameter.

Testing REST API using Rest Assured:

Write automated tests for the API endpoints using Rest Assured.

• Use Request and Response Specifications to avoid repetitive code.

• Log request and response details for debugging purposes.

• Assert response codes and validate the response body using jsonpath().

• Handle input parameters such as base URI, query parameters, path parameters, request body, authorization, and headers.

• Perform end-to-end testing to ensure that all API functionalities work together seamlessly.
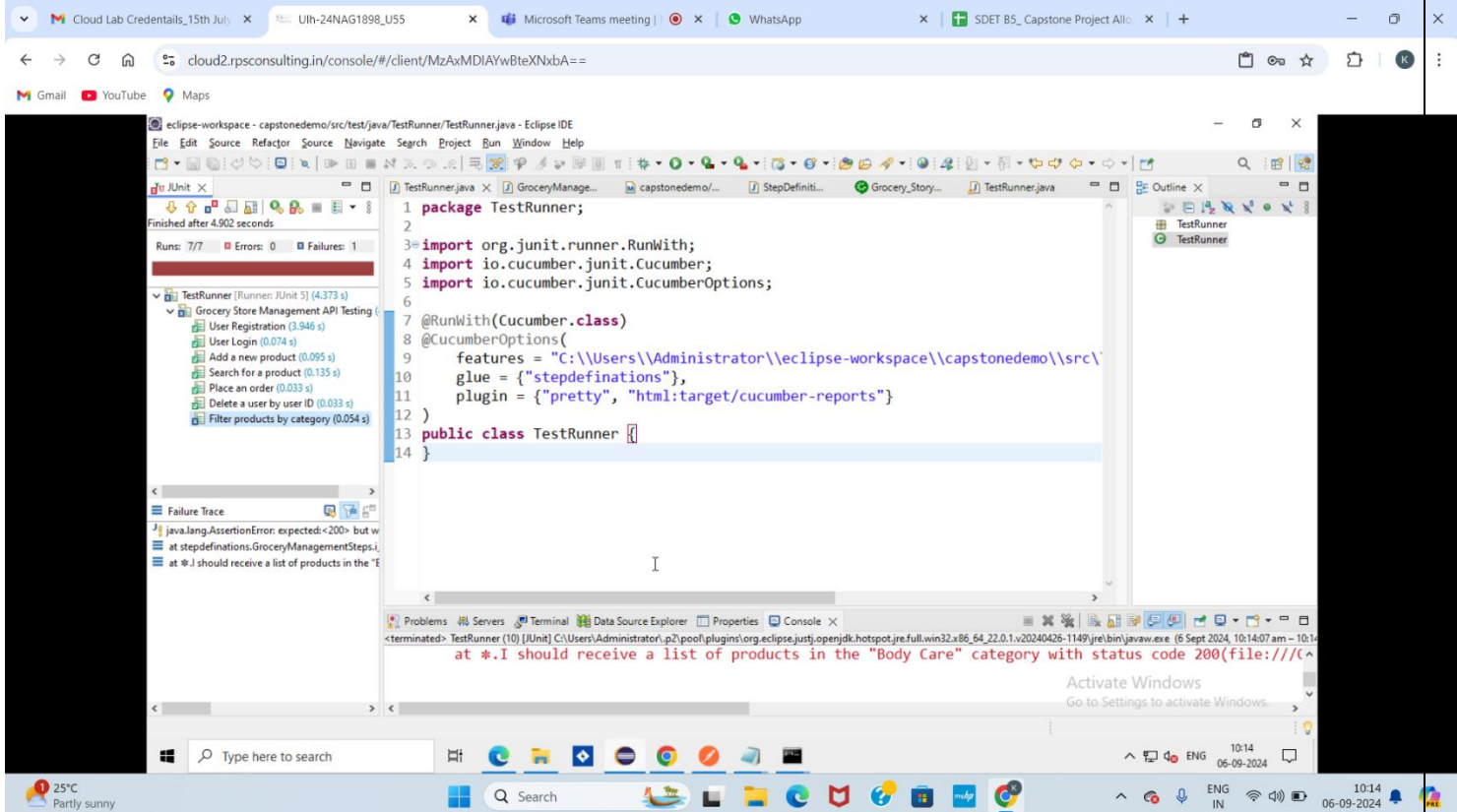
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eclipse-workspace - capstonedemo/src/test/java/TestRunner/TestRunner.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Problems Servers Terminal Data Source Explorer Properties Console × Results of running class TestRunner

`<terminated> TestRunner (10) [JUnit] C:\Users\Administrator\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-1149\jre\bin\javaw.exe  (6 Sept 2024, 9:54:41 am – 9:54:59 am) [pid: 11000]`

```
Scenario: User Registration                                                              # src/main/resources/Feature/Grocery_Story.fe
  Given the API is running                                                               # stepdefinations.GroceryManagementSteps.the_
  When I register a new user with username "NewUser" and email "newuser@example.com"      # stepdefinations.GroceryManagementSteps.i_re
  Then the user should be successfully registered with status code 201                    # stepdefinations.GroceryManagementSteps.the_

Scenario: User Login                                                     # src/main/resources/Feature/Grocery_Story.feature:8
  Given the API is running                                               # stepdefinations.GroceryManagementSteps.the_api_is_running()
  When I log in with username "Vanitha" and password "Vanitha123"        # stepdefinations.GroceryManagementSteps.i_log_in_with_username_
  Then the login should be successful with status code 200               # stepdefinations.GroceryManagementSteps.the_login_should_be_suc

Scenario: Add a new product                                                                # src/main/resources/Feature/
  Given the API is running                                                                 # stepdefinations.GroceryMana
  When I add a product with name "Lotion", category "Body Care", price 150.0, and stock quantity 100   # stepdefinations.GroceryMana
  Then the product should be successfully added with status code 201                       # stepdefinations.GroceryMana

Scenario: Search for a product                                           # src/main/resources/Feature/Grocery_Story.feature:18
  Given the API is running                                               # stepdefinations.GroceryManagementSteps.the_api_is_running()
  When I search for products with name "Shampoo"                         # stepdefinations.GroceryManagementSteps.i_search_for_products_with_n
  Then I should get the product details with status code 404             # stepdefinations.GroceryManagementSteps.i_should_get_the_product_det

Scenario: Place an order                                                                  # src/main/resources/Feature/Grocery_Story.fe
  Given the API is running                                                                 # stepdefinations.GroceryManagementSteps.the_
  When I place an order with userId 1, productId 1, quantity 5, and totalPrice 500.0        # stepdefinations.GroceryManagementSteps.i_pl
  Then the order should be successfully created with status code 404                        # stepdefinations.GroceryManagementSteps.the_
```

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Screenshot 2 (bottom)

eclipse-workspace - capstonedemo/src/test/java/stepdefinations/GroceryManagementSteps.java - Eclipse IDE

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Problems Servers Terminal Data Source Explorer Properties Console × JUnit

`<terminated> TestRunner (10) [JUnit] C:\Users\Administrator\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_22.0.1.v20240426-1149\jre\bin\javaw.exe  (6 Sept 2024, 10:00:02 am – 10:00:10 am) [pid: 9912]`

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Scenario: Delete a user by user ID                                       # src/main/resources/Feature/Grocery_Story.feature:28
  Given the API is running                                               # stepdefinations.GroceryManagementSteps.the_api_is_running()
  When I delete the user with ID 7                                       # stepdefinations.GroceryManagementSteps.i_delete_the_user_wit
  Then the user should be successfully deleted with status code 400       # stepdefinations.GroceryManagementSteps.the_user_should_be_su

Scenario: Filter products by category                                                     # src/main/resources/Feature/Grocery_S
  Given the API is running                                                                 # stepdefinations.GroceryManagementSte
  When I filter the products by category "Body Care"                                        # stepdefinations.GroceryManagementSte
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eclipse-workspace - capstonedemo/src/test/java/TestRunner/TestRunner.java - Eclipse IDE

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Scenario: Filter products by category                                  # src/main/resources/Feature/Grocery_S
  Given the API is running                                             # stepdefinations.GroceryManagementSte
  When I filter the products by category "Body Care"                   # stepdefinations.GroceryManagementSte
  Then I should receive a list of products in the "Body Care" category with status code 200 # stepdefinations.GroceryManagementSte
      java.lang.AssertionError: expected:<200> but was:<404>
        at org.junit.Assert.fail(Assert.java:89)
        at org.junit.Assert.failNotEquals(Assert.java:835)
        at org.junit.Assert.assertEquals(Assert.java:647)
        at org.junit.Assert.assertEquals(Assert.java:633)
        at stepdefinations.GroceryManagementSteps.i_should_receive_a_list_of_products_in_the_category_with_status_code(GroceryMana
        at *.I should receive a list of products in the "Body Care" category with status code 200(file:///C:/Users/Administrator/e
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