Project 4   Team: Arshia, Mahan, AmirMahdi, Saba, Pariya

Project Breakdown

1. Classes and Relationships

1. **Product Class:**

   o Responsibilities: Represents individual products with attributes such as name, price range, category, stock, and ratings.

   o Relationships: Used by Cart and Order classes.

2. **Cart Class:**

   o Responsibilities: Manages the shopping cart, including adding and removing items, and calculating total items.

   o Relationships: Uses Product class to handle items.

3. **Order Class:**

   o Responsibilities: Handles user orders, including order completion status and details of the items in the cart.

   o Relationships: Uses Cart class to get the details of the items in the order.

4. **Shop Class:**

   o Responsibilities: Manages the overall shop operations, including adding products, viewing products, searching products, managing the cart, finalizing orders, and loading/saving data.

   o Relationships: Uses Product, Cart, and Order classes to perform operations.

Task Assignment

1. Arshia - Product Class

- Tasks:

    - Implement the Product class with private attributes.

    - Create getter and setter methods for attributes.

    - Add methods for adding ratings and calculating average ratings.

- Responsibilities:

    - Ensure the Product class handles product details and ratings.

    - Write unit tests for Product methods to verify correct functionality.

2. Mahan - Cart Class

- Tasks:

    - Implement the Cart class with private attributes.

    - Create methods to add and remove items, view cart contents, and calculate total items.

- Responsibilities:

    - Ensure the Cart class manages items correctly and interacts with Product instances.

    - Write unit tests for Cart methods to ensure correct functionality.

3. AmirMahdi - Order Class

- Tasks:

    - Implement the Order class with private attributes.

- o Create methods to complete an order and provide detailed order information.

- Responsibilities:

  - o Ensure the Order class correctly handles the cart and provides order details.

  - o Write unit tests for Order methods to verify order management.

4. Saba - Shop Class (Part 1)

- Tasks:

  - o Implement methods in the Shop class related to product management, such as adding products, viewing products, and finding products.

- Responsibilities:

  - o Ensure product-related operations in the Shop class are functioning correctly.

  - o Write unit tests for product management methods in Shop.

5. Pariya - Shop Class (Part 2)

- Tasks:

  - o Implement methods in the Shop class related to cart management, order finalization, and data persistence (save/load).

  - o Integrate methods for viewing cart contents, removing items, finalizing orders, and handling ratings.

- Responsibilities:

- Ensure cart and order management, as well as data saving/loading, work seamlessly in the Shop class.

- Write unit tests for cart and order management methods in Shop.

Relationships and Integration

- **Product:**

  - Used by: Cart (to add items), Order (to detail items), Shop (for product management).

- **Cart:**

  - Used by: Order (to create an order), Shop (to manage cart operations).

- **Order:**

  - Used by: Shop (to finalize and view orders).

- **Shop:**

  - Uses: Product, Cart, and Order classes to manage the overall shop operations.