



E-Commerce Product Review System

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Scenario

This project simulates an online product review platform where users can browse and review different products. Products can belong to various categories (e.g., electronics, books, clothing), and users can submit reviews with ratings. Admin users can manage the product list and moderate user-submitted reviews.



Design paradigm / functionalities

- Add, update, or remove products (Admin only)
- Users can search for products
- Users can submit reviews and ratings (1–5 stars)
- Admins can delete inappropriate reviews
- Display average rating for each product
- Sort products by name or average rating



Expected output

- Console-based UI or basic menu system
- View the list of products and their average ratings
- Review list for each product
- Product sorting options (alphabetical, by rating)
- Admin commands for product and review moderation



Class hierarchies

User hierarchy:

- Customer (can submit reviews)
- Admin (can manage reviews and products)

Product hierarchy:

- Electronic product
- Clothing product
- Book product



Interface & methods that applies runtime-polymorphism

Name: Reviewable

Abstract method: `submitReview (Review review)`

Implemented by: Customer

Purpose: Puts in place a restriction and ensures only certain users can submit a review

Runtime-polymorphism

`Product.displayDetails()`



TextIO

Used in: ReviewManager class

Purpose: Read data from a .txt file and write in a .csv file

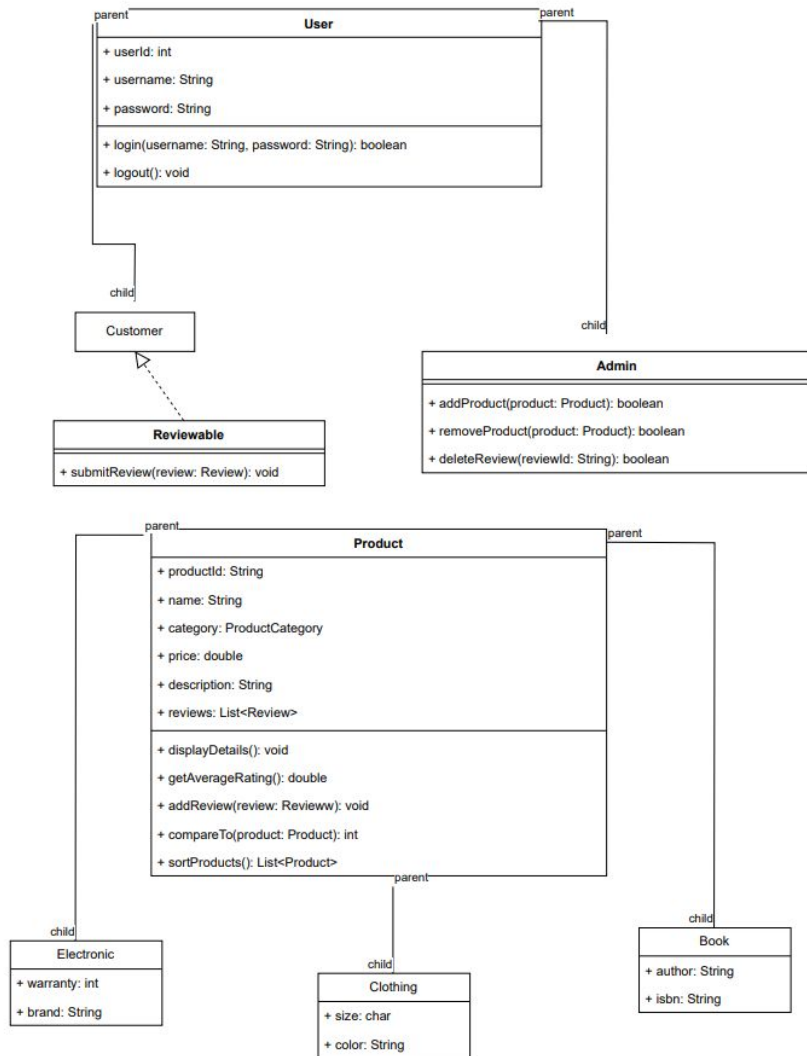
Comparable and comparator

Product implements Comparable<Product>: Comparison based on name

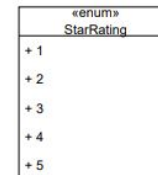
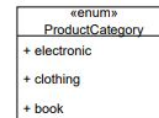
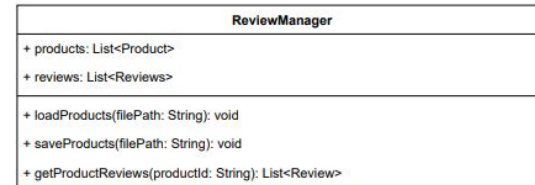
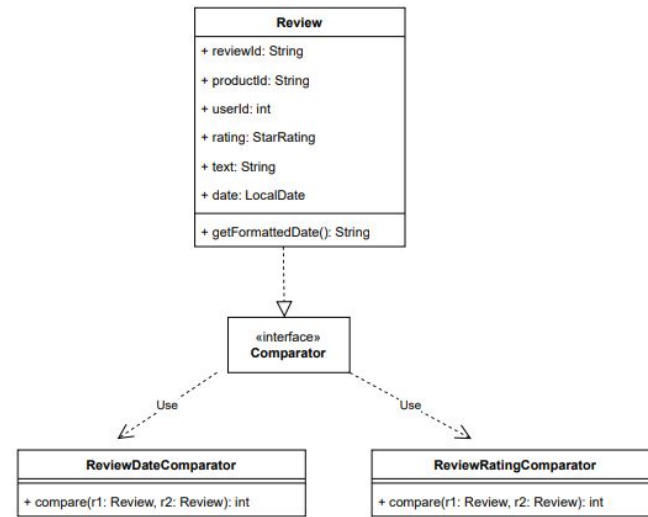
ReviewDateComparator implements Comparator<Review>: Sort reviews by most recent date

ReviewRatingComparator implements Comparator<Review>: Sort reviews by rating (highest to lowest)

Class diagram



Class diagram (Continuation)





Implementations for deliverable 2

1. User hierarchy (base implementation)
 - User (abstract class)
 - Methods: login(), logout()
 - Children classes: -Customer implements Reviewable
 - Admin: Methods: addProduct(...), removeProduct(...), deleteReview(...)
2. Product hierarchy (skeleton)
 - Product (abstract class)
 - Methods: abstract displayDetail(), getAverageRating(), compareTo(...)
 - Implement one product type (e.g., ElectronicProduct)



Implementations for deliverable 2 (continuation)

3. Review class
 - Method: getFormattedDate()
 - StarRating enum
4. Reviewable interface submitReview(...)
5. Text I.O (base implementation)
6. Comparators (interface structure)