

MODULE 3 PRACTICAL (SPOT) EXCEPTION HANDLING

Custom Exception Handling in an Online Shopping System

An e-commerce platform wants to implement a Java-based order management system that ensures proper validation of orders. The system should handle the following scenarios using **user-defined exceptions**:

- **OutOfStockException**: Thrown when a customer tries to purchase an item that is out of stock.
 - **InvalidQuantityException**: Thrown when a user enters a quantity of 0 or a negative number.
 - **PaymentFailedException**: Thrown when a user's payment method is declined.
1. **Design a Java program** to manage an online shopping system using **object-oriented principles**.
 2. Create **custom exception classes** for handling invalid transactions.
 3. Implement a `Product` class with attributes like `productName`, `price`, and `stockQuantity`.
 4. Implement a `ShoppingCart` class that allows users to:
 - Add items to the cart (should throw `OutOfStockException` if the product is unavailable).
 - Remove items from the cart.
 - Checkout (should validate payment and throw `PaymentFailedException` for failed payments).