**Case Study: Online Shopping System**

**Context:**

You are required to develop a console-based Online Shopping System using Core Java. The application will allow users to browse products, add items to cart, and place orders. The application will utilize Java Collections for storing product information and order details, implement Object-Oriented Programming principles, and include exception handling to manage potential errors.

**Requirements:**

**Features:**

1. **Browse Products:**
   * Allow users to view a list of available products.
   * Display product details such as name, price, and description.
2. **Add to Cart:**
   * Allow users to add products to their shopping cart.
   * Display the contents of the shopping cart with product details and total price.
3. **Remove from Cart:**
   * Allow users to remove products from their shopping cart.
4. **Place Order:**
   * Allow users to place an order for the items in their shopping cart.
   * Display the order confirmation with details such as order number and total price.

**Classes and Objects:**

1. **Product Class:**
   * Attributes: id, name, price, description.
   * Methods: Constructors, getters and setters, toString method.
2. **CartItem Class:**
   * Attributes: productId, quantity.
   * Methods: Constructors, getters and setters, toString method.
3. **Order Class:**
   * Attributes: id, items (a list of CartItem objects), orderDate, totalPrice, status (pending, shipped, delivered).
   * Methods: Constructors, getters and setters, toString method.
4. **ShoppingCart Class:**
   * Attributes: items (a list of CartItem objects).
   * Methods:
     + addItem(CartItem item): Adds an item to the shopping cart.
     + removeItem(int productId): Removes an item from the shopping cart.
     + calculateTotalPrice(): Calculates the total price of items in the cart.
     + Helper methods for input validation and exception handling.

**Deliverables:**

1. Complete source code for the Online Shopping System.
2. Documentation including:
   * How to run the application.
   * Instructions for each feature.
   * Explanation of the exception handling implemented.
3. A brief report on the application design and how Object-Oriented principles were applied.