**Case Study: Online Auction System**

**Context:**

You are required to develop a console-based Online Auction System using Core Java. The application will allow users to list items for auction, place bids on items, and manage auction processes. The application will utilize Java Collections for storing item and bid information, implement Object-Oriented Programming principles, and include exception handling to manage potential errors.

**Requirements:**

**Features:**

1. **Add and Remove Items:**
   * Allow users to add new items for auction.
   * Allow users to remove items from auction.
2. **Update Item Details:**
   * Allow users to update details of existing items, such as name, description, and starting price.
3. **Start and End Auctions:**
   * Allow users to start an auction for an item.
   * Allow users to end an auction for an item.
4. **Place Bids:**
   * Allow users to place bids on items.
   * Ensure that bids are higher than the current highest bid.
5. **View Auction Status:**
   * Allow users to view the status of ongoing auctions.
   * Display information such as item name, current highest bid, and time remaining in the auction.

**Classes and Objects:**

1. **Item Class:**
   * Attributes: id, name, description, startingPrice, currentHighestBid, isAuctionOpen.
   * Methods: Constructors, getters and setters, toString method.
2. **Bid Class:**
   * Attributes: id, itemId, userId, bidAmount, bidDateTime.
   * Methods: Constructors, getters and setters, toString method.
3. **OnlineAuctionSystem Class:**
   * Attributes: HashMap<Integer, Item> items, HashMap<Integer, ArrayList<Bid>> bids.
   * Methods:
     + addItem(Item item): Adds a new item to the auction.
     + removeItem(int itemId): Removes an item from the auction.
     + updateItem(int itemId, Item updatedItem): Updates details of an existing item.
     + startAuction(int itemId): Starts an auction for an item.
     + endAuction(int itemId): Ends an auction for an item.
     + placeBid(int itemId, int userId, double bidAmount): Places a bid on an item.
     + viewAuctionStatus(): Displays the status of ongoing auctions.
     + Helper methods for input validation and exception handling.

**Deliverables:**

1. Complete source code for the Online Auction 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.