Project Report: Auction System (Console-based)

Project Title:

Auction System (Console-Based Application)

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Technologies Used:

- **Programming Language:** Java (Basic Level)
- **Database:** MySQL (Basic Level)

Project Description:

This project is a **Console-Based Auction System** built using Java for backend logic and MySQL for database management. The system facilitates the auction of items by allowing users to add products, place bids, and view the highest bids on items.

Features Implemented:

1. **User Registration and Login:**
   - Simple login and registration mechanism.
2. **Add Auction Items:**
   - Registered users can list new items for auction.
3. **View Auction Items:**
   - Users can view all items available for bidding.
4. **Place Bids:**
   - Users can place bids on listed items.
5. **View Highest Bids:**
   - Displays the current highest bid for each item.
6. **Auction History:**
   - Optional: View previous bids on items.

Tools & Environment:

- **IDE:** Eclipse / IntelliJ IDEA / VS Code
- **Database:** MySQL Workbench / Command Line Interface
- **JDBC:** For Java-MySQL connectivity

Database Structure:

- **Users Table:**

  - user_id (Primary Key)
  - username
  - password

- **Items Table:**

  - item_id (Primary Key)
  - item_name
  - description
  - starting_price

- **Bids Table:**

  - bid_id (Primary Key)
  - item_id (Foreign Key)
  - user_id (Foreign Key)
  - bid_amount

Flow of the System:

1. User logs in or registers.
2. Once logged in, options are displayed:
   - Add new auction item.
   - View available auction items.
   - Place a bid on an item.
   - View highest bid of an item.
3. Actions are performed via console prompts.
4. Database is updated based on the actions performed.

Sample Console Output:

```
Welcome to the Auction System!
1. Register
2. Login
```

```
Enter your choice:

Login Successful!
1. Add Auction Item
2. View Items
3. Exit
Enter your choice:
```

Limitations:

- Console-based, no graphical interface.
- No role differentiation (e.g., admin vs bidder).
- No session management or security features.

Future Enhancements:

- Implement GUI using Java Swing or JavaFX.
- Introduce Admin Panel for managing items.
- Add authentication security like password hashing.
- Add notifications for outbid users.

Conclusion:

This basic **Auction System** provides fundamental features of an auction process. It demonstrates the integration of Java with MySQL using JDBC for a CRUD-based application.

References:

- Official MySQL Documentation
- Java JDBC Tutorials

End of Report