**SRS Jewelry Auction System**

1. ERD

A screenshot of a computer

Description automatically generated

1. Functional Requirement

**Guest Functionality**

**View Jewelry Information**

* **FR1**: The system shall allow guests to view information about jewelry items.
* **FR2**: The system shall require a valid Jewelry ID to retrieve jewelry details from the database.

**View Auction Information**

* **FR3**: The system shall allow guests to view information about current and upcoming auctions.
* **FR4**: The system shall require a valid Auction ID to retrieve auction details from the database.

**Search Jewelry**

* **FR5**: The system shall allow guests to search for jewelry items using a search query.
* **FR6**: The system shall validate the search query as a valid string.
* **FR7**: The system shall retrieve and display search results from the database based on the search query.

**View Blog**

* **FR8**: The system shall allow guests to view blog posts.
* **FR9**: The system shall require a valid Blog ID to retrieve blog details from the database.

**Register**

* **FR10**: The system shall allow guests to register as members.
* **FR11**: The system shall require valid user registration details.
* **FR12**: The system shall store user registration details in the database.

**Registered User Functionality**

**View Profile**

* **FR13**: The system shall allow registered users to view their profile information.
* **FR14**: The system shall require a valid User ID to retrieve user details from the database.

**Update Profile**

* **FR15**: The system shall allow registered users to update their profile information.
* **FR16**: The system shall require a valid User ID to update user details in the database.

**Register for Auction**

* **FR17**: The system shall allow registered users to register for auctions.
* **FR18**: The system shall require a valid Auction ID to register users for the auction.
* **FR19**: The system shall store registration details in the database.

**Place Bid**

* **FR20**: The system shall allow registered users to place bids on auction items.
* **FR21**: The system shall require a valid Auction ID and Bid Amount to place a bid.
* **FR22**: The system shall store bid details in the database.

**View Auction History**

* **FR23**: The system shall allow registered users to view their auction history.
* **FR24**: The system shall require a valid User ID to retrieve auction history from the database.

**Seller Functionality**

**Request Auction**

* **FR25**: The system shall allow sellers to request auctions for their jewelry.
* **FR26**: The system shall require a valid Jewelry ID to process auction requests.
* **FR27**: The system shall store auction request details in the database.

**Request Valuation**

* **FR28**: The system shall allow sellers to request valuations for their jewelry.
* **FR29**: The system shall require a valid Jewelry ID to process valuation requests.
* **FR30**: The system shall store valuation request details in the database.

**Confirm Auction**

* **FR31**: The system shall allow sellers to confirm their participation in auctions.
* **FR32**: The system shall require a valid Jewelry ID to confirm auction participation.
* **FR33**: The system shall store confirmation details in the database.

**Staff Functionality**

**Provide Preliminary Valuation**

* **FR34**: The system shall allow staff to provide preliminary valuations for jewelry.
* **FR35**: The system shall require a valid Jewelry ID to provide a preliminary valuation.
* **FR36**: The system shall store preliminary valuation details in the database.

**Confirm Receipt of Jewelry**

* **FR37**: The system shall allow staff to confirm receipt of jewelry from sellers.
* **FR38**: The system shall require a valid Jewelry ID to confirm receipt.
* **FR39**: The system shall store receipt details in the database.

**Provide Final Valuation**

* **FR40**: The system shall allow staff to provide final valuations for jewelry.
* **FR41**: The system shall require a valid Jewelry ID to provide a final valuation.
* **FR42**: The system shall store final valuation details in the database.

**Conduct Auction**

* **FR43**: The system shall allow staff to conduct auctions as per schedule.
* **FR44**: The system shall require a valid Auction ID to conduct an auction.
* **FR45**: The system shall update auction details in the database.

**Manager Functionality**

**Create Auction Session**

* **FR46**: The system shall allow managers to create new auction sessions.
* **FR47**: The system shall require valid session details to create an auction session.
* **FR48**: The system shall store session details in the database.

**Set Auction Period**

* **FR49**: The system shall allow managers to set auction periods for sessions.
* **FR50**: The system shall require a valid Session ID to set the auction period.
* **FR51**: The system shall store auction period details in the database.

**Allocate Staff for Auction**

* **FR52**: The system shall allow managers to allocate staff for managing auction sessions.
* **FR53**: The system shall require a valid Session ID and Staff ID to allocate staff.
* **FR54**: The system shall store staff allocation details in the database.

**Approve Final Valuation**

* **FR55**: The system shall allow managers to approve final valuations provided by staff.
* **FR56**: The system shall require a valid Valuation ID to approve the valuation.
* **FR57**: The system shall store approval details in the database.

**View Dashboard**

* **FR58**: The system shall allow managers to view the dashboard for overall auction statistics and analytics.
* **FR59**: The system shall require a valid Manager ID to access the dashboard.
* **FR60**: The system shall retrieve and display dashboard data from the database.

**Admin Functionality**

**Manage Users**

* **FR61**: The system shall allow admins to manage user accounts and roles.
* **FR62**: The system shall require a valid User ID to manage user accounts.
* **FR63**: The system shall update user details in the database.

**Generate Report**

* **FR64**: The system shall allow admins to generate reports for various activities within the system.
* **FR65**: The system shall require a valid report type to generate a report.
* **FR66**: The system shall generate and store report data in the database.

**Manage Products**

* **FR67**: The system shall allow admins to manage product information.
* **FR68**: The system shall require a valid Product ID to manage products.
* **FR69**: The system shall update product details in the database.

**Revenue Statistics**

* **FR70**: The system shall allow admins to view and generate revenue statistics.
* **FR71**: The system shall require a valid date range to generate revenue statistics.
* **FR72**: The system shall generate and store revenue data in the database.

1. Technical Requirement

**Guest**

1. **View Jewelry Information**
   * T1: Jewelry ID: Jewelry ID is required.
   * T2: Jewelry ID: Valid jewelry ID must exist in the database.
   * T3: Jewelry Details: Jewelry details must be retrieved from the database.
2. **View Auction Information**
   * T4: Auction ID: Auction ID is required.
   * T5: Auction ID: Valid auction ID must exist in the database.
   * T6: Auction Details: Auction details must be retrieved from the database.
3. **Search Jewelry**
   * T7: Search Query: Search query is required.
   * T8: Search Query: Search query must be a valid string.
   * T9: Search Results: Search results must be retrieved from the database.
4. **View Blog**
   * T10: Blog ID: Blog ID is required.
   * T11: Blog ID: Valid blog ID must exist in the database.
   * T12: Blog Details: Blog details must be retrieved from the database.
5. **Register**
   * T13: User Details: User registration details are required.
   * T14: User Details: User registration details must be valid.
   * T15: Registration: User registration must be stored in the database.

**Registered User**

1. **View Profile**
   * T16: User ID: User ID is required.
   * T17: User ID: Valid user ID must exist in the database.
   * T18: User Details: User details must be retrieved from the database.
2. **Update Profile**
   * T19: User ID: User ID is required.
   * T20: User ID: Valid user ID must exist in the database.
   * T21: User Details: User details must be updated in the database.
3. **Register for Auction**
   * T22: Auction ID: Auction ID is required.
   * T23: Auction ID: Valid auction ID must exist in the database.
   * T24: Registration Details: Registration details must be stored in the database.
4. **Place Bid**
   * T25: Auction ID: Auction ID is required.
   * T26: Auction ID: Valid auction ID must exist in the database.
   * T27: Bid Amount: Bid amount must be valid.
   * T28: Bid Details: Bid details must be stored in the database.
5. **View Auction History**
   * T29: User ID: User ID is required.
   * T30: User ID: Valid user ID must exist in the database.
   * T31: Auction History: Auction history must be retrieved from the database.

**Seller**

1. **Request Valuation**
   * T32: Jewelry ID: Jewelry ID is required.
   * T33: Jewelry ID: Valid jewelry ID must exist in the database.
   * T34: Valuation Details: Valuation details must be stored in the database.
2. **Confirm Auction**
   * T35: Jewelry ID: Jewelry ID is required.
   * T36: Jewelry ID: Valid jewelry ID must exist in the database.
   * T37: Confirmation Details: Confirmation details must be stored in the database.

**Staff**

1. **Provide Preliminary Valuation**
   * T38: Jewelry ID: Jewelry ID is required.
   * T39: Jewelry ID: Valid jewelry ID must exist in the database.
   * T40: Valuation Details: Valuation details must be stored in the database.
2. **Confirm Receipt of Jewelry**
   * T41: Jewelry ID: Jewelry ID is required.
   * T42: Jewelry ID: Valid jewelry ID must exist in the database.
   * T43: Receipt Details: Receipt details must be stored in the database.
3. **Provide Final Valuation**
   * T44: Jewelry ID: Jewelry ID is required.
   * T45: Jewelry ID: Valid jewelry ID must exist in the database.
   * T46: Final Valuation Details: Final valuation details must be stored in the database.
4. **Conduct Auction**
   * T47: Auction ID: Auction ID is required.
   * T48: Auction ID: Valid auction ID must exist in the database.
   * T49: Auction Details: Auction details must be updated in the database.

**Manager**

1. **Create Auction Session**
   * T50: Session Details: Session details are required.
   * T51: Session Details: Session details must be valid.
   * T52: Session Details: Session details must be stored in the database.
2. **Set Auction Period**
   * T53: Session ID: Session ID is required.
   * T54: Session ID: Valid session ID must exist in the database.
   * T55: Auction Period: Auction period details must be stored in the database.
3. **Allocate Staff for Auction**
   * T56: Session ID: Session ID is required.
   * T57: Staff ID: Valid staff ID must exist in the database.
   * T58: Allocation Details: Allocation details must be stored in the database.
4. **Approve Final Valuation**
   * T59: Valuation ID: Valuation ID is required.
   * T60: Valuation ID: Valid valuation ID must exist in the database.
   * T61: Approval Details: Approval details must be stored in the database.
5. **View Dashboard**
   * T62: Manager ID: Manager ID is required.
   * T63: Manager ID: Valid manager ID must exist in the database.
   * T64: Dashboard Data: Dashboard data must be retrieved from the database.
6. **Manage Auction (Update/Delete Auction)**
   * T65: Session ID: Session ID is required.
   * T66: Session ID: Valid session ID must exist in the database.
   * T67: Update Details: Update details must be valid and stored in the database.
   * T68: Delete Confirmation: Deletion must be confirmed and processed in the database.

**Admin**

1. **Manage Users**
   * T69: User ID: User ID is required.
   * T70: User ID: Valid user ID must exist in the database.
   * T71: User Details: User details must be updated in the database.
2. **Generate Report**
   * T72: Report Type: Report type is required.
   * T73: Report Type: Report type must be valid.
   * T74: Report Data: Report data must be generated and stored in the database.
3. **Manage Products**
   * T75: Product ID: Product ID is required.
   * T76: Product ID: Valid product ID must exist in the database.
   * T77: Product Details: Product details must be updated in the database.
4. **Revenue Statistics**
   * T78: Date Range: Date range is required.
   * T79: Date Range: Date range must be valid.
   * T80: Revenue Data: Revenue data must be generated and stored in the database.
5. Business rules

**General Rules**

1. **Authentication**: All users must authenticate using a valid username and password to access their respective functionalities.
2. **Authorization**: Users can only access functionalities that correspond to their roles (Guest, Registered User, Seller, Staff, Manager, Admin).

**Guest Rules**

1. **View Jewelry Information**:
   * Jewelry information is accessible without login.
   * Valid jewelry IDs must be provided to view details.
2. **View Auction Information**:
   * Auction details are publicly accessible.
   * Valid auction IDs must be provided to view details.
3. **Search Jewelry**:
   * Guests can search for jewelry using keywords.
   * Search results are fetched from the database.
4. **View Blog**:
   * Guests can read blog posts without logging in.
   * Blog IDs must be valid to retrieve details.
5. **Register**:
   * Guests can register as members by providing required personal details.
   * Registration details must be stored securely in the database.

**Registered User Rules**

1. **View Profile**:
   * Registered users can view their profile information.
   * Users must be authenticated to access their profile.
2. **Update Profile**:
   * Registered users can update their profile information.
   * Updates must be validated and stored in the database.
3. **Register for Auction**:
   * Registered users can sign up for auctions.
   * Registration must be completed before the auction starts.
4. **Place Bid**:
   * Registered users can place bids on auction items.
   * Bids must be higher than the current highest bid and validated.
5. **View Auction History**:
   * Users can view their past auction activities.
   * History details must be fetched from the database.

**Seller Rules**

1. **Request Auction**:
   * Sellers can submit items for auction.
   * Jewelry items must undergo a preliminary valuation before acceptance.
2. **Request Valuation**:
   * Sellers can request an initial valuation for their items.
   * Valuation requests must be processed within a specified timeframe.
3. **Confirm Auction**:
   * Sellers must confirm their participation in the auction after receiving the final valuation.
   * Confirmation must be received before the auction can be scheduled.

**Staff Rules**

1. **Provide Preliminary Valuation**:
   * Staff must provide a preliminary valuation based on the jewelry details submitted.
   * Valuation details must be communicated to the seller and stored.
2. **Confirm Receipt of Jewelry**:
   * Staff must confirm the physical receipt of jewelry from the seller.
   * Confirmation details must be recorded in the system.
3. **Provide Final Valuation**:
   * Staff must perform a final valuation of the received jewelry.
   * Final valuations must be approved by a manager.
4. **Conduct Auction**:
   * Staff are responsible for conducting the auction sessions.
   * Auction details and results must be accurately recorded.

**Manager Rules**

1. **Create Auction Session**:
   * Managers can create new auction sessions.
   * Sessions must have a defined start and end date.
2. **Set Auction Period**:
   * Managers must set the period for each auction session.
   * Auction periods must be communicated to all registered participants.
3. **Allocate Staff for Auction**:
   * Managers allocate staff members to manage specific auction sessions.
   * Allocation details must be recorded.
4. **Approve Final Valuation**:
   * Managers review and approve final valuations provided by staff.
   * Approval details must be recorded before the auction can proceed.
5. **View Dashboard**:
   * Managers can view overall auction statistics and analytics.
   * Dashboard data must be current and accurate.

**Admin Rules**

1. **Manage Users**:
   * Admins can create, update, or delete user accounts.
   * User actions must be logged for security purposes.
2. **Generate Report**:
   * Admins can generate various system reports.
   * Reports must be comprehensive and accurate.
3. **Manage Products**:
   * Admins can update product information in the system.
   * Changes must be validated and recorded.
4. **Revenue Statistics**:
   * Admins can view and analyze revenue data.
   * Revenue statistics must cover specified date ranges and be accurate.
5. Usecase List

Guest Use Cases: View Jewelry Information, View Auction Information, Search Jewelry, View Blog, Register

Registered User Use Cases: View Profile, Update Profile, Register for Auction, Place Bid, View Auction History

Seller Use Cases: Request Auction, Request Valuation, Confirm Auction,

Staff Use Cases: Provide Preliminary Valuation, Confirm Receipt of Jewelry, Provide Final Valuation, Conduct Auction

Manager Use Cases: Create Auction Session, Set Auction Period, Allocate Staff for Auction, Approve Final Valuation, View Dashboard

Admin Use Cases: Manage Users, Generate Report, Manage Products, Revenue Statistics

1. Screen flow

**1. Home Page**

* **Description**: The landing page where users get introduced to the auction platform.
* **Actions**:
  + View information about the company.
  + View featured jewelry and upcoming auctions.
  + Navigate to other sections like Blog, Login, Register, Search.

**2. Login Page**

* **Description**: The login screen for registered users.
* **Actions**:
  + Enter username and password.
  + Navigate to Register page if not registered.

**3. Register Page**

* **Description**: The registration screen for new users.
* **Actions**:
  + Enter personal details (name, email, password, etc.).
  + Submit registration form.

**4. Jewelry Information Page**

* **Description**: Display detailed information about a specific jewelry item.
* **Actions**:
  + View jewelry details (images, description, starting bid, etc.).
  + Navigate back to the search results or home page.

**5. Auction Information Page**

* **Description**: Display details about a specific auction session.
* **Actions**:
  + View auction details (items, start time, end time, etc.).
  + Register for auction (for logged-in users).

**6. Search Results Page**

* **Description**: Display search results for jewelry items.
* **Actions**:
  + Enter search query.
  + View list of jewelry items matching the query.
  + Click on a jewelry item to view detailed information.

**7. Blog Page**

* **Description**: Display a list of blog posts.
* **Actions**:
  + View summaries of blog posts.
  + Click on a blog post to read the full article.

**8. Blog Detail Page**

* **Description**: Display full content of a specific blog post.
* **Actions**:
  + Read the blog post.
  + Navigate back to the list of blog posts.

**9. User Profile Page**

* **Description**: Display profile information for logged-in users.
* **Actions**:
  + View personal details.
  + Update profile information.
  + Change password.
  + Logout.

**10. Auction Registration Page**

* **Description**: Screen for registering to participate in an auction.
* **Actions**:
  + View auction details.
  + Confirm registration.

**11. Place Bid Page**

* **Description**: Screen for placing bids on jewelry items.
* **Actions**:
  + Enter bid amount.
  + Confirm bid.

**12. Auction History Page**

* **Description**: Display the user's past auction activities.
* **Actions**:
  + View list of past auctions and results.

**13. Seller Request Auction Page**

* **Description**: Screen for sellers to request auctioning their jewelry.
* **Actions**:
  + Enter jewelry details.
  + Submit auction request.

**14. Seller Request Valuation Page**

* **Description**: Screen for sellers to request a valuation for their jewelry.
* **Actions**:
  + Enter jewelry details.
  + Request preliminary valuation.

**15. Seller Confirm Auction Page**

* **Description**: Screen for sellers to confirm their participation in auctions.
* **Actions**:
  + View final valuation.
  + Confirm participation in auction.

**16. Staff Valuation Page**

* **Description**: Screen for staff to provide preliminary and final valuations.
* **Actions**:
  + Enter valuation details.
  + Submit valuations for manager approval.

**17. Staff Auction Management Page**

* **Description**: Screen for staff to conduct auctions.
* **Actions**:
  + View auction details.
  + Manage bids and auction process.

**18. Manager Auction Session Page**

* **Description**: Screen for managers to create and manage auction sessions.
* **Actions**:
  + Create new auction session.
  + Set auction periods.
  + Allocate staff for auctions.

**19. Manager Valuation Approval Page**

* **Description**: Screen for managers to approve final valuations.
* **Actions**:
  + View valuation details.
  + Approve or reject valuations.

**20. Manager Dashboard Page**

* **Description**: Dashboard displaying overall auction statistics and analytics.
* **Actions**:
  + View auction statistics.
  + Analyze auction performance.

**21. Admin User Management Page**

* **Description**: Screen for admins to manage user accounts and roles.
* **Actions**:
  + Create, update, or delete user accounts.
  + Assign roles to users.

**22. Admin Report Generation Page**

* **Description**: Screen for admins to generate various system reports.
* **Actions**:
  + Select report type.
  + Generate and view report.

**23. Admin Product Management Page**

* **Description**: Screen for admins to manage product information.
* **Actions**:
  + Update product details.

**24. Admin Revenue Statistics Page**

* **Description**: Screen for admins to view and analyze revenue statistics.
* **Actions**:
  + Enter date range.
  + View and analyze revenue data.