## Technical Requirements (TRD)

### PROJECT: Jewelry Sales Management System

**Sprint 1: Setup**

#### 1. User Management

**Login**

1. **T1:** Username is required.
2. **T2:** Special characters are not allowed in the username.
3. **T3:** Characters are not allowed (only numbers, if applicable).
4. **T3.1:** The first character cannot be a space.
5. **T4:** Password is required.
6. **T5:** Password must contain at least one special character.
7. **T6:** Password must contain at least one number.
8. **T7:** Password must contain at least one uppercase letter.
9. **T8:** Password must be at least 8 characters long.
10. **T9:** The first character of the password cannot be a space.

**Reset Password**

1. **T13:** User must be able to request a password reset with a valid email.
2. **T14:** A password reset link must be sent to the user's email.
3. **T15:** The password reset link must expire after a specified time (e.g., 24 hours).
4. **T16:** User must be able to set a new password that meets the password requirements (T4 to T9 from the Login use case).

#### 2. Account Management

**View Account**

1. **T17:** Admin must be able to view user account information.
2. **T18:** Account information must include username, email, and profile details.
3. **T19:** Account information must be retrieved from the database securely.

**Create Account**

1. **T20:** Admin must be able to create a new user account with a unique username.
2. **T21:** Account creation must require username, password, and email.
3. **T22:** The system must validate the username and password according to the specified requirements.
4. **T23:** An account creation confirmation email must be sent to the user.

**Update Account**

1. **T24:** Admin must be able to update user account details.
2. **T25:** Account updates must require authentication (e.g., admin login).
3. **T26:** Updated account information must be validated and saved securely.

**Delete Account**

1. **T27:** Admin must be able to delete user accounts.
2. **T28:** Account deletion must require confirmation (e.g., "Are you sure?" prompt).
3. **T29:** All user data must be removed from the system upon account deletion.

**Sprint 2: Business Flow**

#### 3. Profile Management

**View Profile**

1. **T30:** User must be able to view their profile information.
2. **T31:** Profile details must include personal information such as name, contact information, and preferences.
3. **T32:** Profile information must be retrieved from the database securely.

**Update Profile**

1. **T33:** User must be able to update their profile information.
2. **T34:** Profile updates must require authentication (e.g., re-enter password).
3. **T35:** Updated profile information must be validated and saved securely.

#### 4. Staff Management

**View Staff**

1. **T36:** Manager must be able to view staff information.
2. **T37:** Staff list must include details such as name, role, and contact information.
3. **T38:** Staff information must be retrieved from the database securely.

**Update Staff**

1. **T39:** Manager must be able to update staff information.
2. **T40:** Staff updates must require authentication (e.g., manager login).
3. **T41:** Updated staff information must be validated and saved securely.

**Delete Staff**

1. **T42:** Manager must be able to delete staff members.
2. **T43:** Staff deletion must require confirmation (e.g., "Are you sure?" prompt).
3. **T44:** All data related to the staff member must be removed from the system.

**Create Staff**

1. **T45:** Manager must be able to add new staff members.
2. **T46:** Staff creation must require username, password, and role assignment.
3. **T47:** The system must validate the username and password according to the specified requirements.
4. **T48:** A confirmation email must be sent to the staff member.

#### 5. Billing and Sales

**Create Bill**

1. **T49:** Staff must be able to create a new bill for customers.
2. **T50:** Bill creation must include customer details, product details, and total amount.
3. **T51:** The system must validate and save the bill information securely.

**Update Bill**

1. **T52:** Staff must be able to update existing bills.
2. **T53:** Bill updates must include customer details, product details, and total amount.
3. **T54:** Updated bill information must be validated and saved securely.

**Export Bill**

1. **T55:** Staff must be able to export bills for record keeping or customer requests.
2. **T56:** Exported bills must include all relevant details and be in a standard format (e.g., PDF).
3. **T57:** Exported bill information must be retrieved from the database securely.

**Sprint 3: Reporting**

#### 6. Promotion Management

**View Promotion**

1. **T58:** Manager must be able to view current promotions.
2. **T59:** Promotion details must include description, discount, and validity period.
3. **T60:** Promotion information must be retrieved from the database securely.

**Create Promotion**

1. **T61:** Manager must be able to create new promotions.
2. **T62:** Promotion creation must include description, discount, and validity period.
3. **T63:** The system must validate and save the promotion information securely.

**Update Promotion**

1. **T64:** Manager must be able to update existing promotions.
2. **T65:** Promotion updates must include description, discount, and validity period.
3. **T66:** Updated promotion information must be validated and saved securely.

**Delete Promotion**

1. **T67:** Manager must be able to delete promotions.
2. **T68:** Promotion deletion must require confirmation (e.g., "Are you sure?" prompt).
3. **T69:** All data related to the promotion must be removed from the system.

#### 7. Customer Interaction

**View Customer Purchase History**

1. **T70:** Manager and staff must be able to view the purchase history of customers.
2. **T71:** Purchase history must include details such as date, product, and total amount.
3. **T72:** Purchase history information must be retrieved from the database securely.

**Input Customer Info**

1. **T73:** Staff must be able to input and update customer information.
2. **T74:** Customer information must include name, contact details, and address.
3. **T75:** Customer information must be validated and saved securely.

#### 8. Product Management

**Import Product by Barcode**

1. **T76:** Staff must be able to import products into the system using barcodes.
2. **T77:** Product information must be retrieved using the barcode and saved to the inventory.
3. **T78:** Barcode scanning must be validated and processed securely.

**Import Product by Product Code**

1. **T79:** Staff must be able to import products using product codes.
2. **T80:** Product information must be retrieved using the product code and saved to the inventory.
3. **T81:** Product code entry must be validated and processed securely.

**Remove Product out of Bill**

1. **T82:** Staff must be able to remove products from an existing bill.
2. **T83:** Product removal must update the bill's total amount.
3. **T84:** Product removal must be validated and processed securely.

**Add Product to Stall**

1. **T85:** Staff must be able to add new products to stalls and create barcodes.
2. **T86:** Product addition must include details such as name, price, and quantity.
3. **T87:** Product information must be validated and saved securely.

**Buy Old Products**

1. **T88:** Staff must be able to evaluate and buy back old products from customers.
2. **T89:** Purchase of old products must include details such as product condition and price.
3. **T90:** Purchase information must be validated and saved securely.

**Update Product in Stall**

1. **T91:** Staff must be able to update the details of products in stalls.
2. **T92:** Product updates must include name, price, and quantity.
3. **T93:** Updated product information must be validated and saved securely.

**View Product in Stall**

1. **T94:** Staff and managers must be able to view products available in stalls.
2. **T95:** Product details must include name, price, quantity, and barcode.
3. **T96:** Product information must be retrieved from the database securely.

**Sprint 4: Dashboard**

#### 9. Store and Stall Management

**Add Stall**

1. **T97:** Manager must be able to add new stalls to the store.
2. **T98:** Stall addition must include details such as name, location, and assigned staff.
3. **T99:** Stall information must be validated and saved securely.

**Update Stall**

1. **T100:** Manager must be able to update stall information.
2. **T101:** Stall updates must include name, location, and assigned staff.
3. **T102:** Updated stall information must be validated and saved securely.

#### 10. Policy Management

**View Return and Exchange Policy**

1. **T103:** Manager and staff must be able to view the return and exchange policy.
2. **T104:** Policy details must include conditions and procedures for returns and exchanges.
3. **T105:** Policy information must be retrieved from the database securely.

**Edit Return and Exchange Policy**

1. **T106:** Manager must be able to edit the return and exchange policy.
2. **T107:** Policy updates must include conditions and procedures for returns and exchanges.
3. **T108:** Updated policy information must be validated and saved securely.

#### 11. Statistics and Reports

**View Each Stall's Revenue**

1. **T109:** Staff must be able to view the revenue generated by each stall.
2. **T110:** Revenue details must include total sales, profits, and expenses.
3. **T111:** Revenue information must be retrieved from the database securely.

**View Each Stall's Orders Statistics**

1. **T112:** Staff must be able to view order statistics for each stall.
2. **T113:** Order statistics must include total orders, completed orders, and pending orders.
3. **T114:** Order statistics information must be retrieved from the database securely.

**View Each Stall's Product Report**

1. **T115:** Staff must be able to view product reports for each stall.
2. **T116:** Product reports must include details such as total products sold, bestsellers, and stock levels.
3. **T117:** Product report information must be retrieved from the database securely.

**View Revenue of All Stalls**

1. **T118:** Managers must be able to view the total revenue of all stalls.
2. **T119:** Revenue details must include total sales, profits, and expenses for all stalls.
3. **T120:** Revenue information must be retrieved from the database securely.

**View Staff Statistics**

1. **T121:** Managers must be able to view statistics related to staff performance.
2. **T122:** Staff statistics must include total sales, customer feedback, and hours worked.
3. **T123:** Staff statistics information must be retrieved from the database securely.

**View Orders Statistics**

1. **T124:** Managers must be able to view overall order statistics.
2. **T125:** Order statistics must include total orders, completed orders, pending orders, and canceled orders.
3. **T126:** Order statistics information must be retrieved from the database securely.

**View Products Statistics**

1. **T127:** Managers must be able to view product-related statistics.
2. **T128:** Product statistics must include total products sold, bestsellers, stock levels, and inventory turnover.
3. **T129:** Product statistics information must be retrieved from the database securely.

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### Sprint 1: Setup

**Goal:** Establish the core infrastructure and implement essential user management features.

**Set up project environment**:

* 1. Initialize the project repository.
  2. Set up continuous integration and deployment pipelines.
  3. Configure development and testing environments.

**User Authentication**:

* 1. **User Login**: As a registered user, I want to log in to my account using my username and password so that I can access my personalized dashboard. (Use case 1)
  2. **User Logout**: As a logged-in user, I want to log out of my account so that I can ensure the security of my account when I am not using the system. (Use case 2)
  3. **Reset Password**: As a user, I want to reset my password using my email so that I can regain access to my account if I forget my password. (Use case 3)

**User Account Management**:

* 1. **Create Account**: As an admin, I want to create a new user account with a unique username so that new users can access the system. (Use case 5)
  2. **View Account**: As an admin, I want to view user account information so that I can manage and review user details. (Use case 4)
  3. **Update Account**: As an admin, I want to update user account details so that user information is current and accurate. (Use case 6)
  4. **Delete Account**: As an admin, I want to delete user accounts so that I can remove users who no longer need access to the system. (Use case 7)

### Sprint 2: Business Flow

**Goal:** Implement features related to business processes and staff management.

**User Profile Management**:

* 1. **View Profile**: As a user, I want to view my profile information so that I can see my personal details. (Use case 8)
  2. **Update Profile**: As a user, I want to update my profile information so that my personal details are current and accurate. (Use case 9)

**Staff Management**:

* 1. **View Staff**: As a manager, I want to view staff information so that I can manage and review staff details. (Use case 10)
  2. **Update Staff**: As a manager, I want to update staff information so that staff details are current and accurate. (Use case 11)
  3. **Delete Staff**: As a manager, I want to delete staff members so that I can remove staff who no longer work for the organization. (Use case 12)
  4. **Create Staff**: As a manager, I want to add new staff members with appropriate roles so that they can access the system. (Use case 13)

**Billing**:

* 1. **Create Bill**: As a staff member, I want to create a new bill for customers so that sales can be processed and recorded. (Use case 14)
  2. **Update Bill**: As a staff member, I want to update existing bills so that corrections and changes can be made to the sales records. (Use case 29)
  3. **Export Bill**: As a staff member, I want to export bills so that records can be kept or provided to customers. (Use case 30)
  4. **Remove Product from Bill**: As a staff member, I want to remove products from an existing bill so that corrections can be made to the bill. (Use case 24)

**Promotions**:

* 1. **View Promotion**: As a manager, I want to view current promotions so that I can manage and review promotional details. (Use case 15)
  2. **Create Promotion**: As a manager, I want to create new promotions so that customers can be offered discounts and special deals. (Use case 16)
  3. **Update Promotion**: As a manager, I want to update existing promotions so that promotional details are current and accurate. (Use case 17)
  4. **Delete Promotion**: As a manager, I want to delete promotions so that expired or unnecessary promotions are removed from the system. (Use case 18)

### Sprint 3: Reporting

**Goal:** Develop features for reporting and analysis of business data.

**Customer and Return Management**:

* 1. **View Customer Purchase History**: As a manager or staff member, I want to view the purchase history of customers so that I can review past transactions. (Use case 19)
  2. **View Return and Exchange Policy**: As a manager or staff member, I want to view the return and exchange policy so that I understand the conditions and procedures. (Use case 20)
  3. **Edit Return and Exchange Policy**: As a manager, I want to edit the return and exchange policy so that it can be updated to reflect current practices. (Use case 21)

**Product Management**:

* 1. **Import Product by Barcode**: As a staff member, I want to import products into the system using barcodes so that inventory is accurately recorded. (Use case 22)
  2. **Import Product by Product Code**: As a staff member, I want to import products using product codes so that inventory is accurately recorded. (Use case 23)
  3. **Add Product to Stall**: As a staff member, I want to add new products to stalls so that inventory is updated. (Use case 26)
  4. **Evaluate and Buy Back Old Products**: As a staff member, I want to evaluate and buy back old products from customers so that they can sell their items back to the store. (Use case 27)

### Sprint 4: Dashboard

**Goal:** Implement dashboard and analytics features to provide insights and improve decision-making.

**Stall Management**:

* 1. **Add Stall**: As a manager, I want to add new stalls to the store so that I can expand the inventory locations. (Use case 31)
  2. **Update Stall**: As a manager, I want to update stall information so that details are current and accurate. (Use case 32)
  3. **Update Product in Stall**: As a staff member, I want to update the details of products in stalls so that inventory information is current and accurate. (Use case 35)

**Reporting and Analytics**:

* 1. **View Each Stall's Revenue**: As a staff member, I want to view the revenue generated by each stall so that I can analyze sales performance. (Use case 28)
  2. **View Each Stall's Orders Statistics**: As a staff member, I want to view order statistics for each stall so that I can analyze sales performance. (Use case 33)
  3. **View Each Stall's Product Report**: As a staff member, I want to view product reports for each stall so that I can analyze inventory performance. (Use case 34)
  4. **View Revenue of All Stalls**: As a manager, I want to view the total revenue of all stalls so that I can analyze overall sales performance. (Use case 37)
  5. **View Staff Statistics**: As a manager, I want to view statistics related to staff performance so that I can evaluate their effectiveness. (Use case 38)
  6. **View Orders Statistics**: As a manager, I want to view overall order statistics so that I can analyze sales performance. (Use case 39)
  7. **View Products Statistics**: As a manager, I want to view product-related statistics so that I can analyze inventory performance. (Use case 40)