# Functional Requirement

1.1 Asset Registration Function   
 Function ID: FR-01   
 Description: Users can register new assets by entering required information. The system must validate the data, create a new asset record, and initiate the approval workflow.   
 Input: Asset details (Name, Description, Category, Status, Location, PurchaseDate, Value).   
 Output: A new asset record in the Asset entity, an updated AssetUsageRecord, initiation of an AssetApprovalWorkflow, and an email notification sent to the Administrator.  
  
1.2 View Asset Information Function   
 Function ID: FR-02   
 Description: Users can view the details of a specific asset. The system retrieves the asset record and optionally the associated usage record.   
 Input: Asset ID or selection from the asset list.   
 Output: Displayed asset information (Name, Description, Category, Status, Location, PurchaseDate, Value), and optionally the associated AssetUsageRecord.  
  
1.3 Modify Asset Details Function   
 Function ID: FR-03   
 Description: Users can modify the details of an existing asset. The system must validate the updated data, update the asset record, and initiate an approval workflow.   
 Input: Asset ID or selection from the asset list, updated asset details (Name, Description, Category, Status, Location, PurchaseDate, Value).   
 Output: Updated asset record in the Asset entity, updated AssetUsageRecord if necessary, initiation of an AssetApprovalWorkflow, and an email notification sent to the Administrator.  
  
1.4 Delete Asset Record Function   
 Function ID: FR-04   
 Description: Users can delete an asset record. The system must confirm the deletion, remove the asset record, update the usage record, and initiate an approval workflow.   
 Input: Asset ID or selection from the asset list, confirmation of deletion.   
 Output: Deleted asset record from the Asset entity, updated or deleted AssetUsageRecord, initiation of an AssetApprovalWorkflow, and an email notification sent to the Administrator.  
  
1.5 Initiate Asset Approval Function   
 Function ID: FR-05   
 Description: Users can initiate the approval workflow for an asset. The system creates a new approval workflow and sends a notification to the administrator.   
 Input: Asset ID or selection from the asset list, confirmation to initiate approval.   
 Output: A new AssetApprovalWorkflow record, email notification to the Administrator, and audit log entry.  
  
1.6 View Asset Approval Function   
 Function ID: FR-06   
 Description: Users can view the approval status and details of a specific asset. The system retrieves and displays the approval workflow information.   
 Input: Asset ID or selection from the asset list.   
 Output: Displayed approval status, current step, and any relevant comments or actions from the AssetApprovalWorkflow entity.  
  
1.7 Create Asset Usage Record Function   
 Function ID: FR-07   
 Description: Users can create a new asset usage record for a specific asset. The system must validate the usage details, create the record, and initiate an approval workflow.   
 Input: Asset ID or selection from the asset list, usage details (UsageDate, UsageDetails, Status).   
 Output: A new AssetUsageRecord linked to the selected Asset, initiation of an AssetApprovalWorkflow, and an email notification sent to the Administrator.  
  
1.8 View Asset Usage History Function   
 Function ID: FR-08   
 Description: Users can view the usage history of a specific asset. The system retrieves and displays all AssetUsageRecords associated with the asset.   
 Input: Asset ID or selection from the asset list.   
 Output: Displayed usage history (UsageDate, UsageDetails, Status), and audit log entry.  
  
1.9 Update Asset Usage Status Function   
 Function ID: FR-09   
 Description: Users can update the status of an existing asset usage record. The system must validate the new status, update the record, and initiate an approval workflow.   
 Input: AssetUsageRecord ID or selection from the usage record list, new status (e.g., "In Use", "Available", "Maintenance").   
 Output: Updated AssetUsageRecord, initiation of an AssetApprovalWorkflow, and an email notification sent to the Administrator.  
  
1.10 Delete Usage Record Function   
 Function ID: FR-10   
 Description: Users can delete an asset usage record. The system must confirm the deletion, remove the record, and send a notification to the administrator.   
 Input: AssetUsageRecord ID or selection from the usage record list, confirmation of deletion.   
 Output: Deleted AssetUsageRecord, email notification to the Administrator, and audit log entry.  
  
1.11 User Login Function   
 Function ID: FR-11   
 Description: Users can authenticate and log in to the system. The system validates the credentials, initiates a session, and logs the login activity.   
 Input: Username and password.   
 Output: Initiated session, redirected to the appropriate interface based on user role, and audit log entry.  
  
1.12 User Registration Function   
 Function ID: FR-12   
 Description: Administrators can register new users by entering their details. The system must validate the data, create the user record, assign permissions, and send a confirmation email.   
 Input: User details (Name, Email, Role).   
 Output: A new User record, assigned Permission, email notification to the new user, and audit log entry.  
  
1.13 Manage User Permissions Function   
 Function ID: FR-13   
 Description: Administrators can assign, modify, or revoke permissions for users. The system updates the user's permissions and logs the activity.   
 Input: UserID, PermissionID, new permission settings.   
 Output: Updated PermissionAssignment record, email notification to the user and/or administrator, and audit log entry.  
  
1.14 View User List Function   
 Function ID: FR-14   
 Description: Administrators can view the list of all registered users. The system retrieves and displays the user data, and logs the activity.   
 Input: None (system retrieves all users).   
 Output: Displayed list of users (UserID, Name, Email, Role, RegistrationDate, LastLogin), and audit log entry.  
  
1.15 Manage Administrator Account Function   
 Function ID: FR-15   
 Description: Administrators can manage other administrator accounts by creating, modifying, or deleting them. The system validates the action and logs the activity.   
 Input: Admin details (Name, Email, Role), action (create, modify, delete).   
 Output: Updated Administrator record, email notification to the administrator, and audit log entry.  
  
1.16 Generate Asset Report Function   
 Function ID: FR-16   
 Description: Administrators can generate reports based on asset and usage data. The system must aggregate the data and provide the report in a user-friendly format.   
 Input: Report type, filters (e.g., asset type, location, date range).   
 Output: Generated ReportAnalysis with aggregated data, display in table/chart format, and audit log entry.  
  
1.17 View Report Analysis Function   
 Function ID: FR-17   
 Description: Users or administrators can view detailed analysis reports. The system retrieves and displays the report data, and logs the activity.   
 Input: Report ID or selection from the report list.   
 Output: Displayed report content (Title, Description, GenerationDate, Content), and audit log entry.  
  
1.18 Export Asset Data Function   
 Function ID: FR-18   
 Description: Administrators can export asset data in a selected format. The system must retrieve the data, format it, and make it available for download.   
 Input: Export type (e.g., all assets, specific types), filters (e.g., location, status), export format (e.g., PDF, Excel, CSV).   
 Output: Exported file ready for download, audit log entry, and email notification to the Administrator.  
  
1.19 Import Asset Data Function   
 Function ID: FR-19   
 Description: Administrators can import asset data from a file. The system must validate the file format and structure, and import the data into the system.   
 Input: Data file (e.g., CSV or Excel), type of data to import (e.g., asset records).   
 Output: Imported asset records stored in the database, audit log entry, and email notification to the Administrator.  
  
1.20 Send Email Notification Function   
 Function ID: FR-20   
 Description: The system can send email notifications for various events (e.g., asset registration, approval, or permission changes).   
 Input: Event details (AssetID, UserID, action type), recipient (Administrator), email content.   
 Output: EmailNotification sent to the recipient, audit log entry, and confirmation of delivery.  
  
1.21 View Email Notification History Function   
 Function ID: FR-21   
 Description: Users or administrators can view the history of sent and failed email notifications. The system retrieves and displays the notifications, and logs the activity.   
 Input: Filters (e.g., date, recipient, event type).   
 Output: Displayed EmailNotification records (Subject, Content, SendDate, Status), and audit log entry.  
  
1.22 Audit System Logs Function   
 Function ID: FR-22   
 Description: Administrators can view and filter audit logs to monitor system activities. The system retrieves and displays the logs, and logs the access activity.   
 Input: Filters (e.g., date, user, action type).   
 Output: Displayed AuditLog entries (UserID, Action, Timestamp, Details), and audit log entry for the access.  
  
1.23 Manage Login Record Function   
 Function ID: FR-23   
 Description: Administrators can manage login records, including viewing, filtering, and deleting them. The system logs the management activity.   
 Input: Action (view, filter, delete), filters (e.g., user, date, login status).   
 Output: Displayed LoginRecord entries (UserID, Timestamp, Status), and audit log entry for the management action.  
  
1.24 Manage User Registration Function   
 Function ID: FR-24   
 Description: Administrators can manage the user registration process, including enabling/disabling self-registration and setting validation rules.   
 Input: Configuration settings (e.g., enable/disable self-registration, validation rules, default roles).   
 Output: Updated UserRegistration configuration, audit log entry, and email notification to the Administrator.  
  
1.25 Manage Permission Assignment Function   
 Function ID: FR-25   
 Description: Administrators can assign or modify permissions for users or roles. The system validates the permissions and logs the assignment activity.   
 Input: UserID or Role, PermissionID, new permission settings.   
 Output: Updated PermissionAssignment record, audit log entry, and email notification to the Administrator.  
  
1.26 Manage Report Analysis Function   
 Function ID: FR-26   
 Description: Administrators can configure and manage report analysis settings, including report templates and data aggregation rules.   
 Input: Report analysis settings (e.g., templates, rules, schedules).   
 Output: Updated ReportAnalysis configuration, audit log entry, and email notification to the Administrator.

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