MILESTONE 2

PROJECT TITLE: SMART-ASSET VAULT ENTERPRISE

Submitted by

S. No	Name	Student ID
1	Aiswarya Antu	0983439
2	Aiswarya Roy	0996480
3	Priya Meelu	0994395
4	Shenglin Meng	1004708
5	Umashankar Sundarrajan	0992253
6	Venkata Pisupati – (Team Leader)	1014937

Professor – Mona Abou Taka

Submission Date – 20th Feb 2022

Contents

1.Overall Description

1.1 Product Perspective

It is a self-contained product.

1.2 Product Functions

This software provides Admin/Audit Manager to keep the count of every asset and where the assets are assigned. If any asset is moved from one room to another, it allows you to change the location and the track of this transaction is recorded in the asset history, also for a particular asset the status information can be retrieved for the Admin/Audit manager's use.

1.3 User Classes and Characteristics

There will be three types of users to use this software they are:

- ✓ Admin – Oversees all operations and maintains exclusive rights.
- ✓ Audit Manager – oversees staff operations and reports to Admin, holds the right to remove a particular asset.
- ✓ Staff – Oversees basic asset operations and reports to Audit manager as well as Admin.

1.4 Operating Environment

Web Application, requires basic support providing peripherals, with internet access to run on JRE supported machines.

1.5 User Documentation

We will be providing a user manual so that the user can easily comprehend working of this product and for FAQs and troubleshooting. We will be providing all online as well as offline support required.

1.6 Assumptions and Dependencies

This software can give you the correct results if the staff who is using this software should update the asset details correctly whenever it was changed.

2. External Interface Requirements

2.1 User Interfaces

The user interface will be consisting firstly of, a login page where the users will be logging in with a UID and the features respective to their authority, that is, in ascending order Staff<Audit Manager<Admin Head, will be given access to. On login page there will be a logo which will be devised for our initiative, a link leading to a help page which will be including troubleshooting and FAQ related resources and a forgot password/reset password link.

Inside login page:

a) Admin Head

- ✓ Creating an Asset

  --Introducing an Asset to the system.
- ✓ Adding an Asset

  --Establishing a new batch of predefined assets.
- ✓ Adding Multiple Assets

  --Establishing a new batch of multiple predefined Assets.
- ✓ Viewing Asset Status

  --Determining whether the asset is Working, Damaged, Repairing, cannot be repaired.
- ✓ Updating Asset Status

  --Re-Assigning asset status after reviewing the Asset particulars.
- ✓ Viewing Asset Location

  --Determining current location of an Asset.
- ✓ Viewing Assets

  --Retrieving all information about an Asset or a set of assets.
- ✓ Viewing Asset Shifting History by Date

  --Retrieving asset location logs over a specified period of time.
- ✓ Viewing Asset Shifting History by Asset ID

  --Retrieving asset location logs through Asset ID.
- ✓ Viewing Asset Shifting History by User ID

  --Retrieving asset location logs through User ID.

b) Auditor

- ✓ Viewing Asset Shifting History by Date

  --Retrieving asset location logs over a specified period of time.

- ✓ Viewing Asset Shifting History by Asset ID

  --Retrieving asset location logs through Asset ID.

- ✓ Viewing Asset Shifting History by User ID

  --Retrieving asset location logs through User ID.

- ✓ Viewing Assets

  --Retrieving all information about an Asset or a set of assets.

- ✓ Remove Assets

  --Discarding the Asset particular(s) which is/are rendered beyond repair.

- ✓ Viewing Asset Location

  --Determining current location of an Asset

- ✓ Updating Asset Location

  --Re-Assigning present Asset location of Asset particulars after shifting or related operations.

c) Staff

- ✓ Updating Asset Status

  --Re-Assigning asset status after reviewing the Asset particulars.

- ✓ Updating Asset Location

  --Re-Assigning present Asset location of Asset particulars after shifting or related operations.

- ✓ Viewing Asset Location

  --Determining current location of an Asset.

2.2 Hardware Interfaces

Minimum Requirements for host system are:

- ✓ 64-bit Operating System
- ✓ 2 GB RAM
- ✓ Network Card
- ✓ 8 GB ROM

2.3 Software Interfaces

The system must consist of:

- ✓ JRE
- ✓ Image Processing
- ✓ MySQL (RDBMS)
- ✓ Web Browser support

3. System Features - Login

3.1 Description and Priority

Staff, Audit Manager, Admin can access features respective to their roles in this software.

3.2 Stimulus/Response Sequences

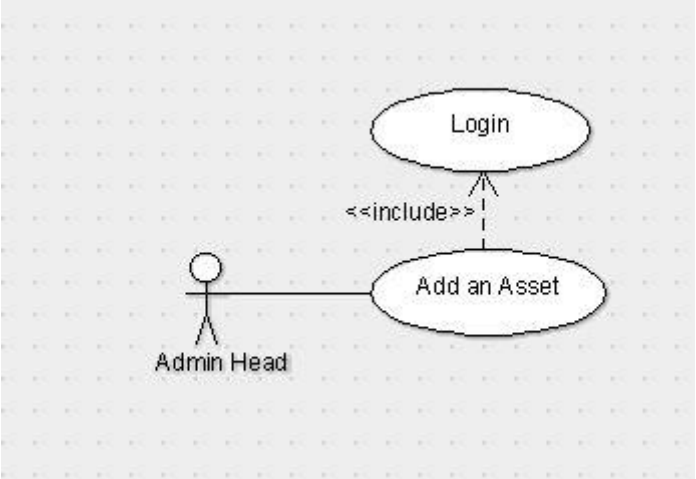
- ✓ Homepage
- ✓ Entering UID and password
- ✓ Beginning the session by logging in

3.3 Functional Requirements

To act as the bridge to guide different actors to their roles and at the same time protect the system as a whole against various threats and factors leading to data compromise. Also providing user guidelines as well as any and every help required to the actors e.g., help, reset password.

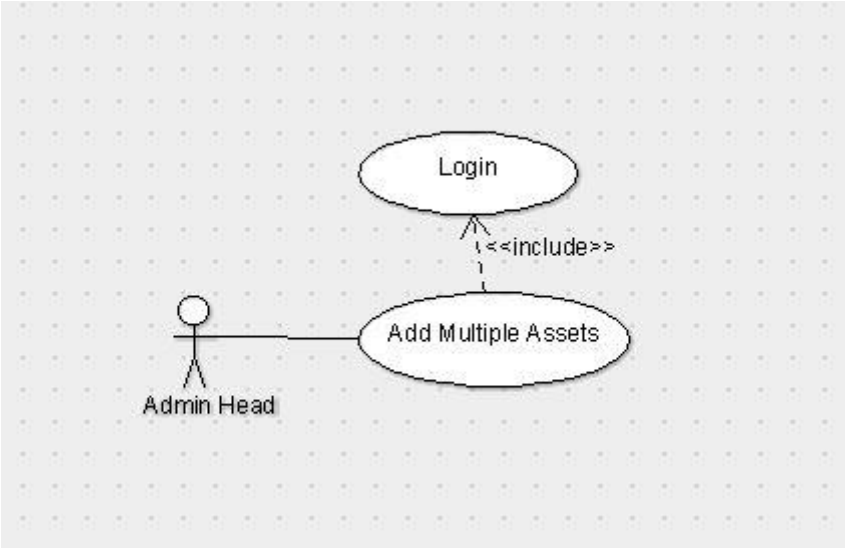
4.Use Case Diagrams

4.1 Add an asset



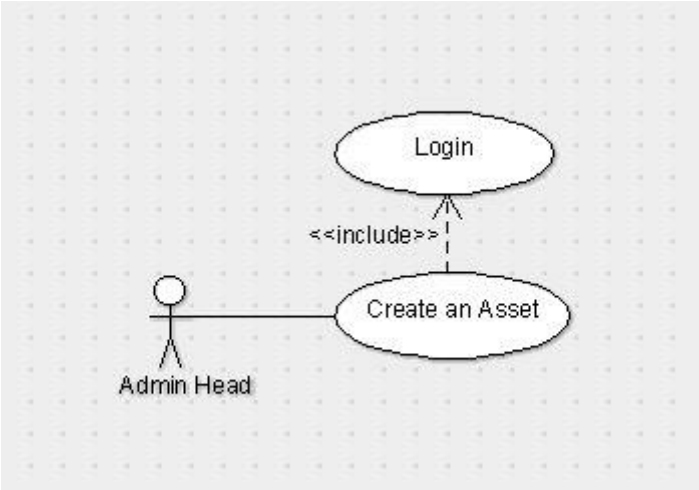
USE CASE	COMMENT
Use case name	Add an Asset
Brief Description	The admin adds an asset and tries to login
Actor	Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Admin will proceed to login to the homepage and will be heading to add an asset.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head will be unable to login
Post conditions	To check whether the admin is able to login successfully and able to add the asset.

4.2 Add Multiple assets



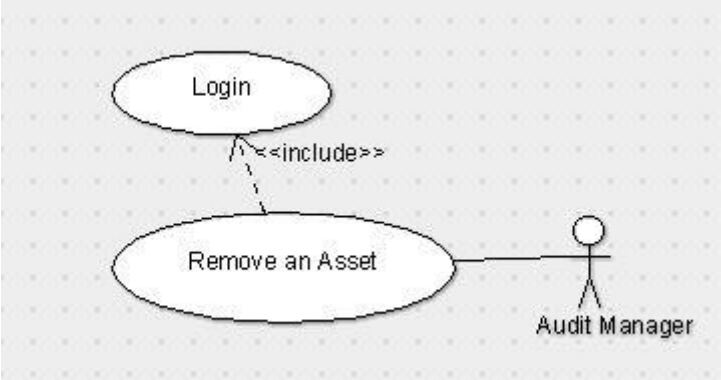
USE CASE	COMMENT
Use case name	Add Multiple assets
Brief Description	The admin tries to add multiple assets.
Actor	Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Admin will proceed to login to the homepage and will be heading to add multiple assets.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head will be unable to login
Post conditions	To check whether the admin is able to login successfully and able to add multiple assets.

4.3 Create an asset



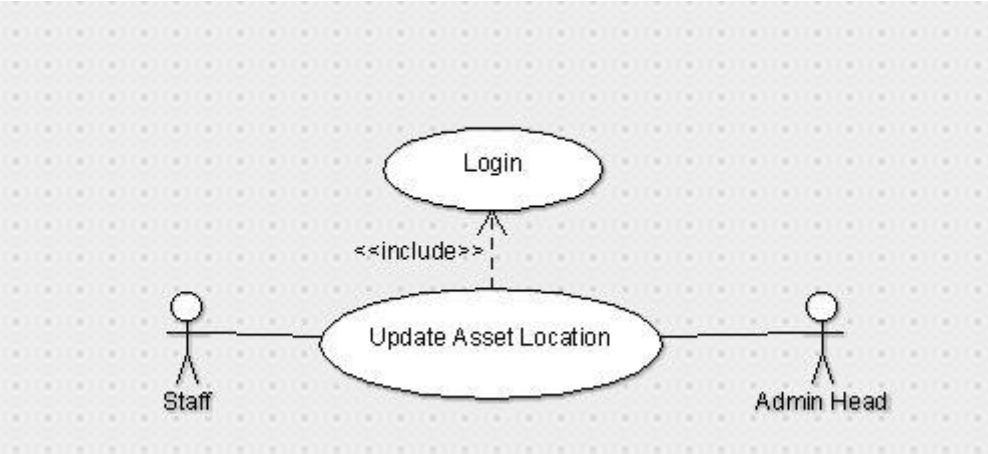
USE CASE	COMMENT
Use case name	Create an asset
Brief Description	The admin tries to create assets.
Actor	Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Admin will proceed to login to the homepage and will be heading to create an asset
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head will be unable to login
Post conditions	To check whether the admin is able to login successfully and able to create an asset.

4.4 Remove an asset



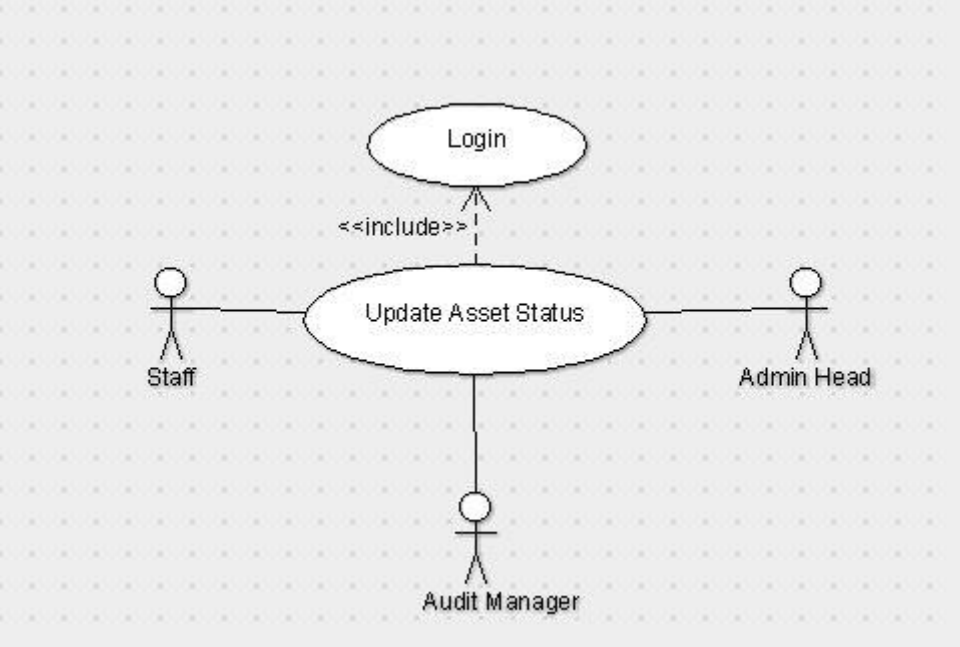
USE CASE	COMMENT
Use case name	Remove an asset
Brief Description	The Audit manager tries to remove assets.
Actor	Audit manager
Preconditions	Should have a valid credentials
Basic Flow	Audit Manager will proceed to login to the homepage and will be heading to remove an asset
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the Audit Manager will be unable to login
Post conditions	To check whether the Audit Manager is able to login successfully and able to remove an asset.

4.5 Update asset location



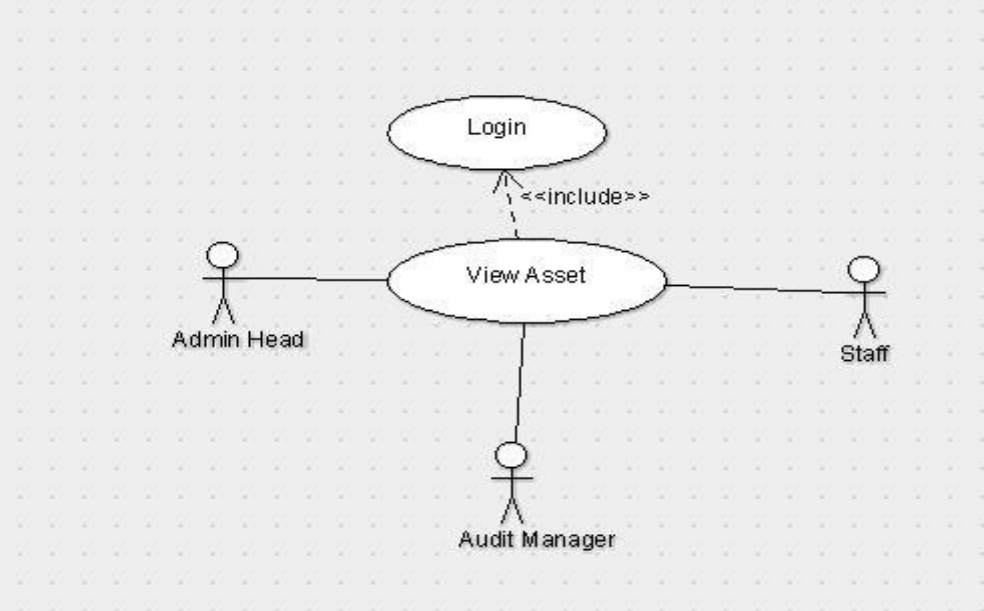
USE CASE	COMMENT
Use case name	Update asset location
Brief Description	Staff and Admin Head tries to update the asset location
Actor	Staff and Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Staff and Admin head will proceed to login into the homepage. Then they will be heading to update the location status of the asset.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head and staff will be unable to login
Post conditions	To check whether the Admin Head and staff are able to login successfully and to update the asset location.

4.6 Update asset status



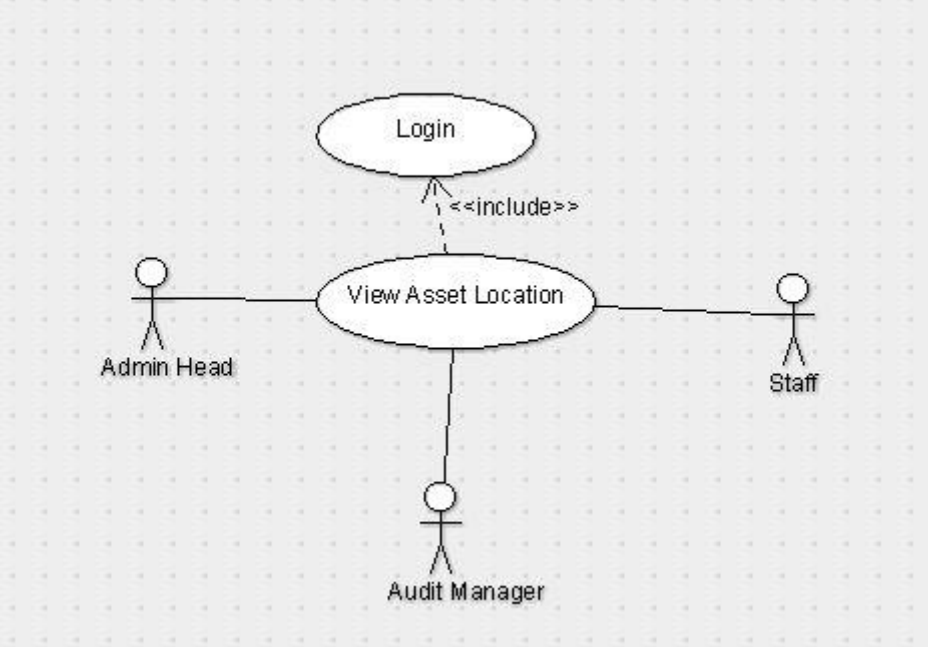
USE CASE	COMMENT
Use case name	Update asset status.
Brief Description	Staff, Audit Manager and Admin Head tries to update the asset status
Actor	Staff, Audit Manager and Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Staff, Audit Manager and Admin Head all the three will be logging into the website through their credentials. After the login process they will be heading to update the asset status.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head, Audit Manager and staff will be unable to login
Post conditions	To check whether the Admin Head, Audit Manager and staff are able to login successfully and to update the asset status.

4.7 View asset



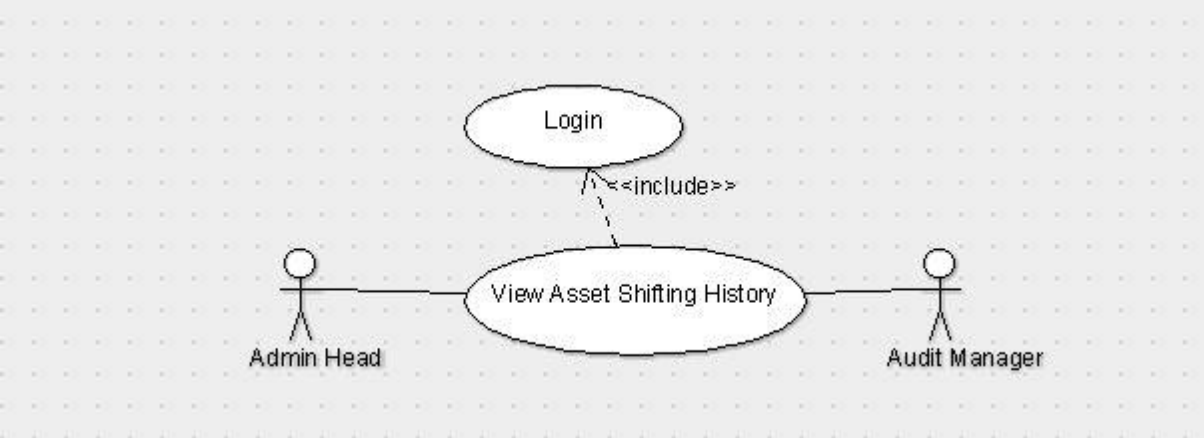
USE CASE	COMMENT
Use case name	View Asset.
Brief Description	Staff, Audit Manager and Admin Head tries to view the asset
Actor	Staff, Audit Manager and Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Staff, Audit Manager and Admin Head all the three will be logging into the website through their credentials. After the login process they will be heading to View the asset.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head, Audit Manager and staff will be unable to login
Post conditions	To check whether the Admin Head, Audit Manager and staff are able to login and to view the asset successfully.

4.8 View asset location



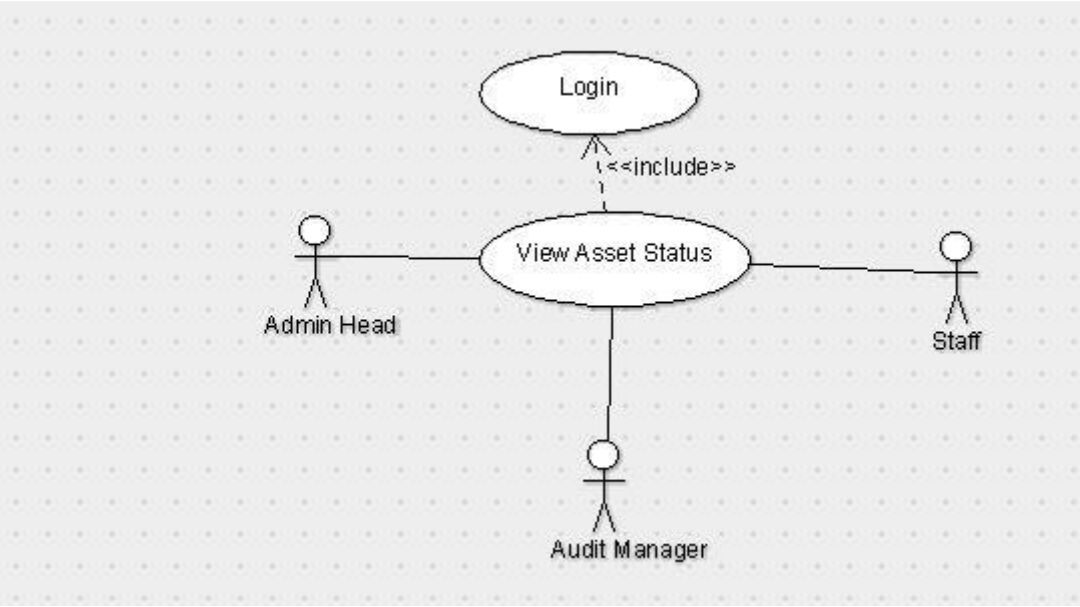
USE CASE	COMMENT
Use case name	View Asset location
Brief Description	Staff, Audit Manager and Admin Head tries to view the asset location
Actor	Staff, Audit Manager and Admin Head
Preconditions	Should have a valid credentials
Basic Flow	Staff, Audit Manager and Admin Head all the three will be logging into the website through their credentials. After the login process they will be heading to View the asset location.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the admin head, Audit Manager and staff will be unable to login
Post conditions	To check whether the Admin Head, Audit Manager and staff are able to login and to view the asset location successfully.

4.9 View asset shifting history



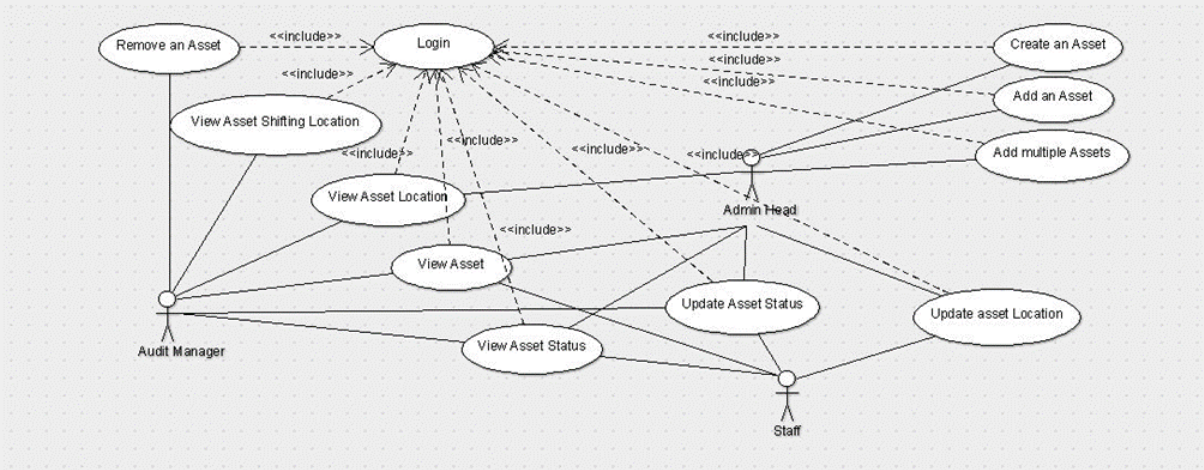
USE CASE	COMMENT
Use case name	View asset shifting history.
Brief Description	Admin head and Audit Manager proceeds to view the asset shifting history.
Actor	Admin head and Audit Manager
Preconditions	Should have a valid credentials
Basic Flow	Admin Head and Audit Manager will be logging into the website and going to the history to check the asset shifting history.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the Admin Head and Audit Manager will be unable to login.
Post conditions	To check whether the Admin Head and Audit Manager are able to login and to view the asset shifting history successfully.

4.10 View asset status

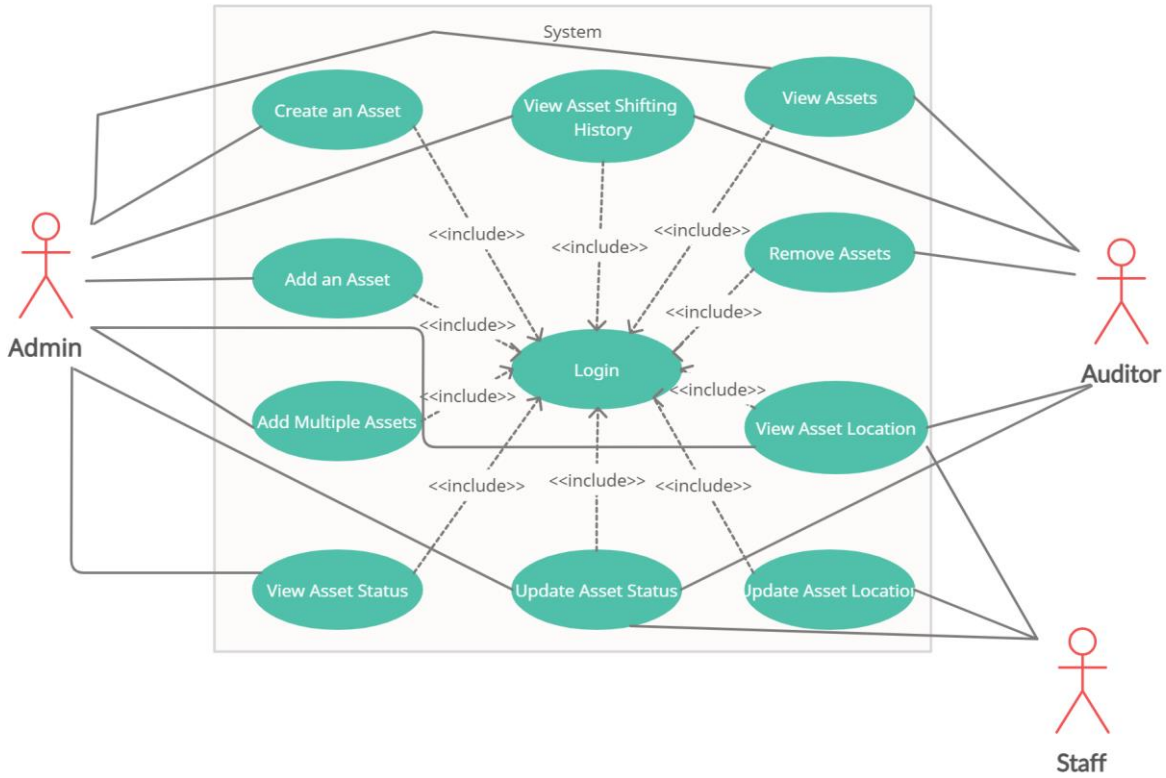


USE CASE	COMMENT
Use case name	View asset status
Brief Description	Admin head, Audit Manager and staff proceed to view the asset status.
Actor	Admin head, Audit Manager and staff
Preconditions	Should have a valid credentials
Basic Flow	Admin head Audit Manager and staff will be logging into the website and heading to view the status of the asset.
Extension (Alternate Flow)	N/A
Exception Flow	If the credentials are invalid the Admin Head, Staff and Audit Manager will be unable to login.
Post conditions	To check whether the Admin Head, Audit Manager and staff are able to login and to view the asset status.

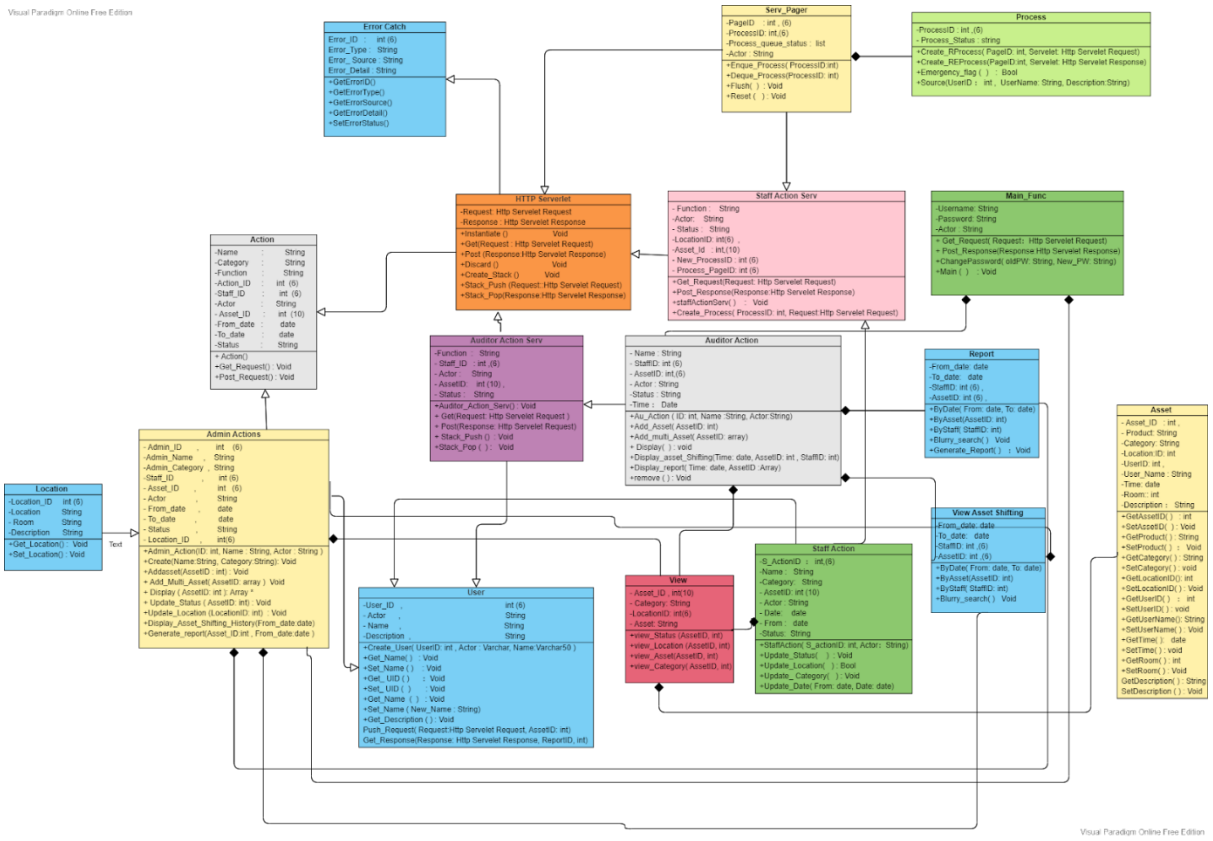
4.11 Draft Use Case



4.12 Main Use Case Diagram



5. Class Diagram



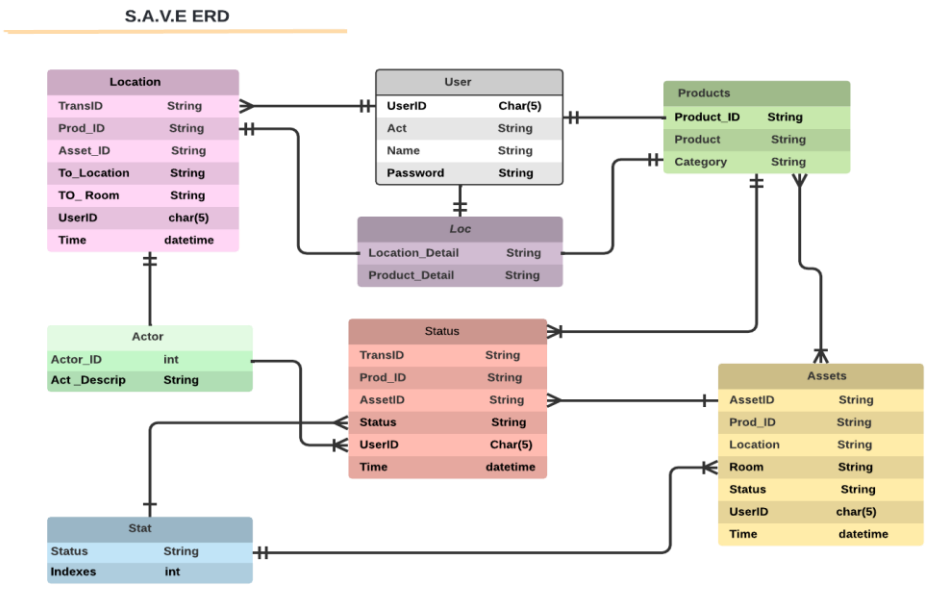
5.1 Class Name & Description

Class Name	Description
User	User is a class name that has the User_Id, Actor as its attributes and Create User (), Get Name () as its method for creating user id to access accounts
Main Function	Username and password access comes under the Main Func () class which is a super class that connects with Auditor and Admin actions as sub classes. And Get_Request, Post_Request and Change_Passwords its operations.
Admin Action	Admin Class has authorization to different admin categories like Staff_Id, Asset Id,

	location_Id as its attributes. Create (), Add (), Display () and Update () its methods.
Asset	Asset class defines asset_id, location_id, user_id, username as its attributes. user class,view class has access to the asset class.
Staff Action	Update status location, asset and categories as its operations. Name (), Category (), Asset Id ()
Auditor Action	This Class has attributes like Name, Staff_Id, Asset_Id, Status. To retrieve asset shifting, reporting time. Add () or delete () assets as its operations.
Location	Admin class can have access to the Location class. Its attributes are location_Id and get_location (), set_location () its methods.
Process	Process_status its attribute and Create_RProcess and Create_REProcess its methods
View	View class contains viewing of Asset_Id, Category, Location_Id as its attributes. view_status,view_location,view_category as its method.
View Asset Shifting	Admin and auditor class has access From_date, to_date, StaffId, AssetId as its attributes. Bydate (), Byasset (), Byasset () as its methods.
Report	From_date, to_date, StaffId,AssetId as its attributes. Bydate (), Byasset (), ByStaff (), Generate_Report () as its methods.
Auditor Action Server	This class generalizes auditor action, user and http servlet class. Its attributes are function, staff_Id, AssetId, status. Auditor_Action server (), Get (Request), Post (Response), Stack_Push (), Stack_Pop () are its operations.
Staff Action Server	This class contains function, status, LocationId, Asset_Id, New_ProcessID, Process_PageID. Its methods are get_request, post_response, staffactionsev()

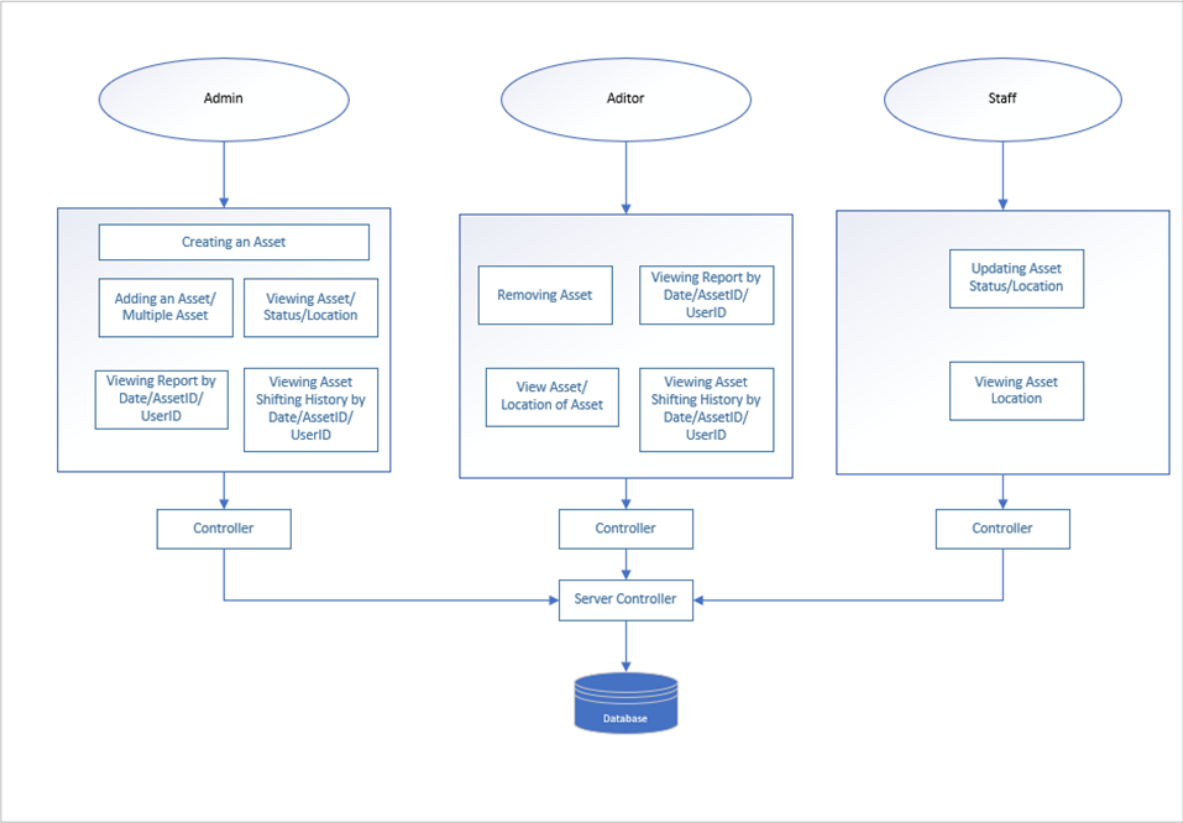
HTTP Server	Request and Response are its attributes. And Instantiate (), Get (Request), Post (Response), Discard (), Create_stack () are its methods
Action	Action class consists of Name, Category, Function, Action_Id, Staff_Id, Status as its attributes.
Serv_Pager	PageID, ProcessID, Process_queue_status as its attributes. Enque_Process (), Deque_Process (), flush (), Reset () are its methods.

6. Draft of ER Diagram - physical data model



7. Draft of System Architecture

7.1 Architecture Diagram



An architecture diagram is a visual representation of all the elements that make up part, or all, of a system. Above all, it helps the engineers, designers, stakeholders, and anyone else involved in the project, understand a system layout. There are three main actors including Admin, Auditor, and the Staff.

Admin can do the following activities:

1. Create an Asset: Create new asset which is needed for the enterprise using asset id.

2. Adding an Asset/ Multiple Asset: Adding the received asset in the system, which can be a single asset or multiple assets or a group of assets.

3. Viewing Asset/Status/Location: The admin can view the asset once it is added to the system and the current status of the system, also the location where the asset is added.

4. Admin can access the report by filtering using the date, AssetID or userID. - Optional

5. Viewing Asset shifting history: It means once an asset is added to the location and someone else changed the asset from that location and moved to some other room, based on the AssetID admin can track the actual place of the asset and also the current location of the asset. So, admin can access the shifting history of the asset.

Auditor is the third-party person or the stakeholder for managing and viewing the asset. Auditor can do the following activities:

1. Remove Asset: Auditor can remove the asset which is no longer needed.

2. Viewing Asset/Status/Location: The auditor can view the asset once it is added to the system and the status of the system, also the location where the asset is added.

3. Auditor can access the report by filtering using the date, AssetID or userID. - Optional

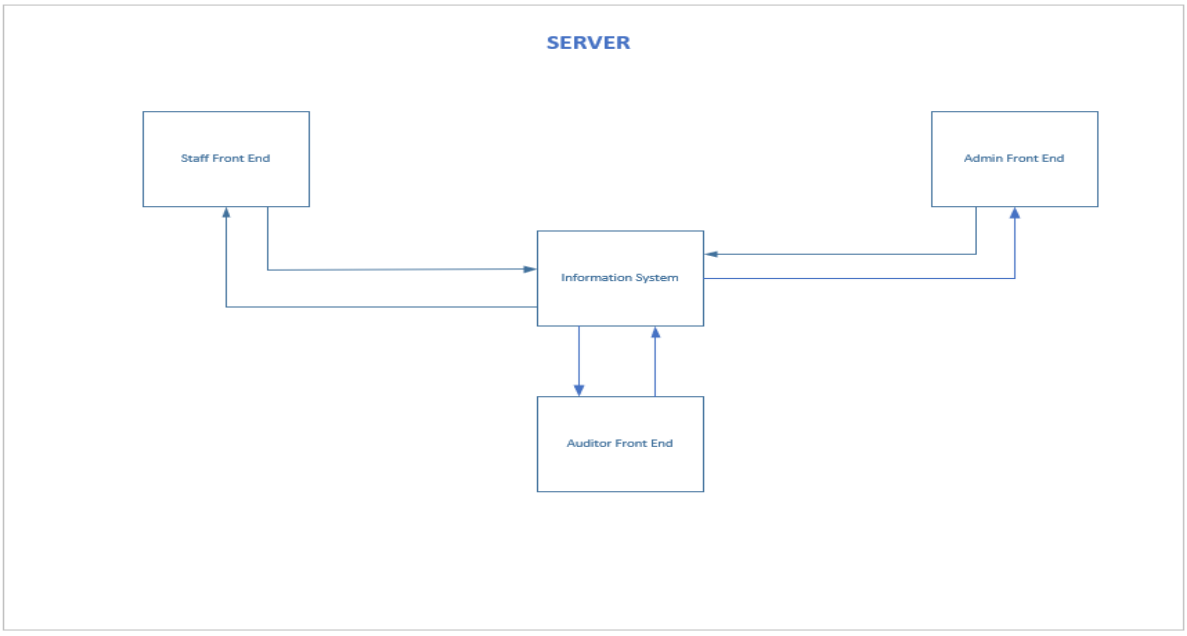
4. Viewing Asset shifting history: Shifting history can be viewed by the auditor same as the admin.

Staff is the other employees in that organization who have the access to edit or view the details of assets.

1. Update the asset/status/ location: any changes to the asset the staff can edit and update to the system.

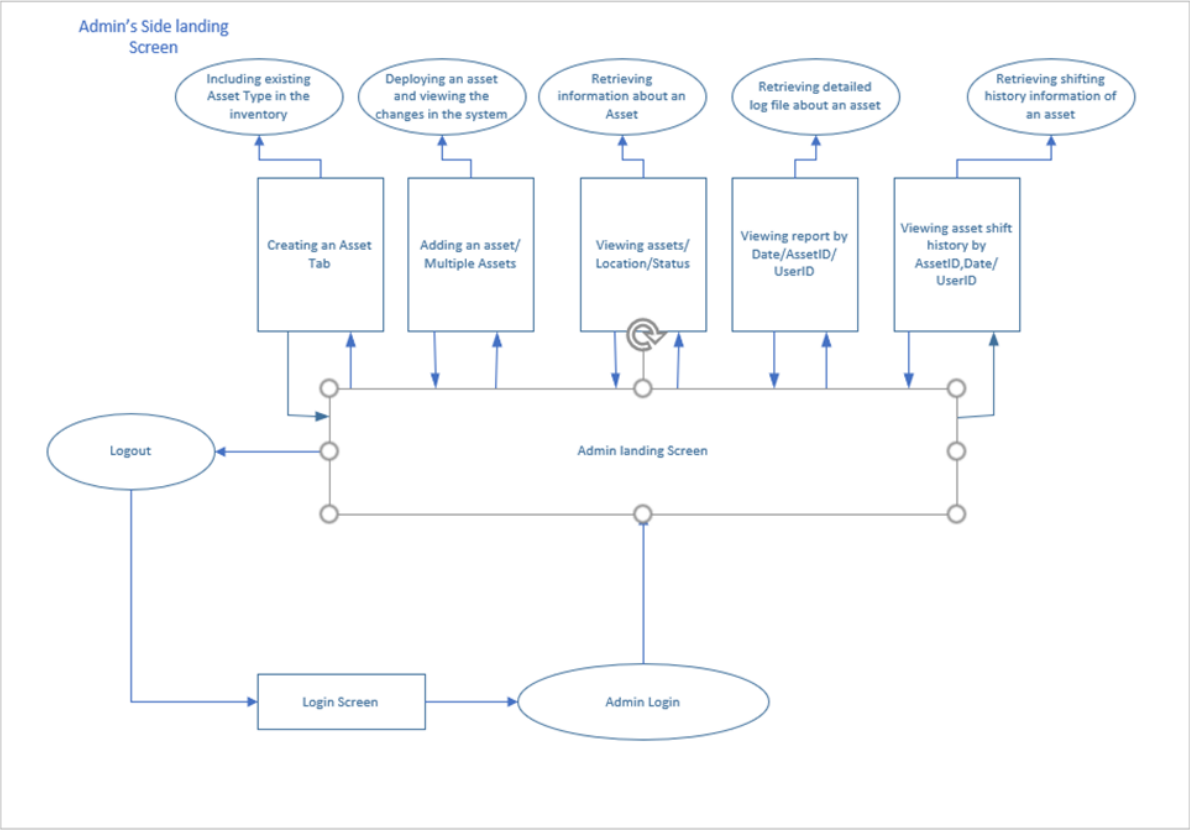
2. View the asset/location/status: They also have the permission to view the location of the asset location.

7.2 Server Diagram



The figure depicts a Server Diagram used mapping out your elements and device interactions. Data entry and data extraction can be performed by all users of the Asset management system - Staff, Administrator, and Auditor - from the front end. Each user has a request and response from the Information system as shown in the figure.

7.3 Admin Landing Screen



It's the detailed view of the admin landing screen. Here the admin has to login the system using the admin credentials. So, the admin can view the multiple tabs for the different functions such as:

1. Creating asset tab for creating new assets and to include the existing asset type in the inventory.

2. Adding an Asset/Multiple Asset where the admin can deploy assets and view the changes in the system.

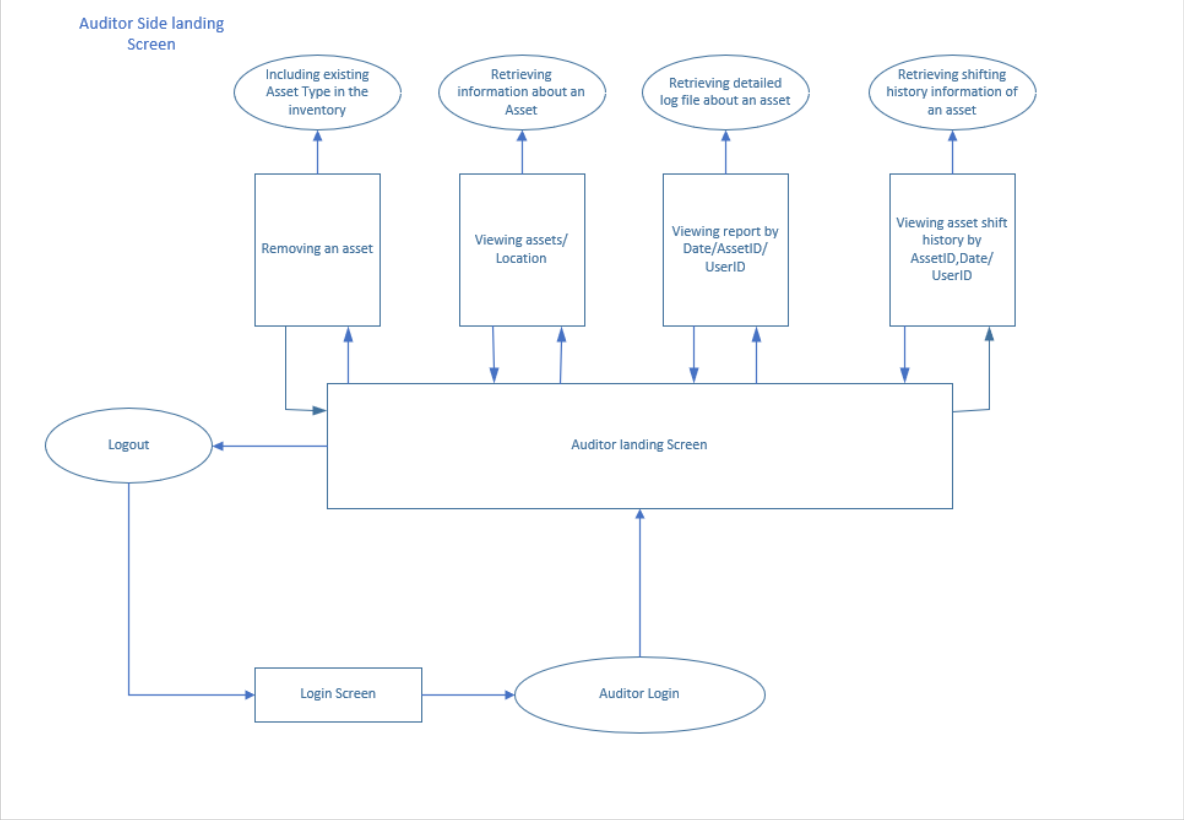
3. Retrieving information about an asset such as type of asset, location and status can be done by view asset/Location/Status Tab.

4. Detailed log files about assets can be identified by the viewing report tab using userID, AssetID, and Date. - Optional

5. Retrieving shifting history information of assets can be viewed by asset shift history tab by AssetID, Date and UserID.

6. Admin can log out once the activities are done.

7.4 Auditor Landing Screen



The figure indicates the landing screen of the auditor. The auditor has to login to the system using the auditor credentials.

1. The Auditor page includes the remove asset tab for removing the asset

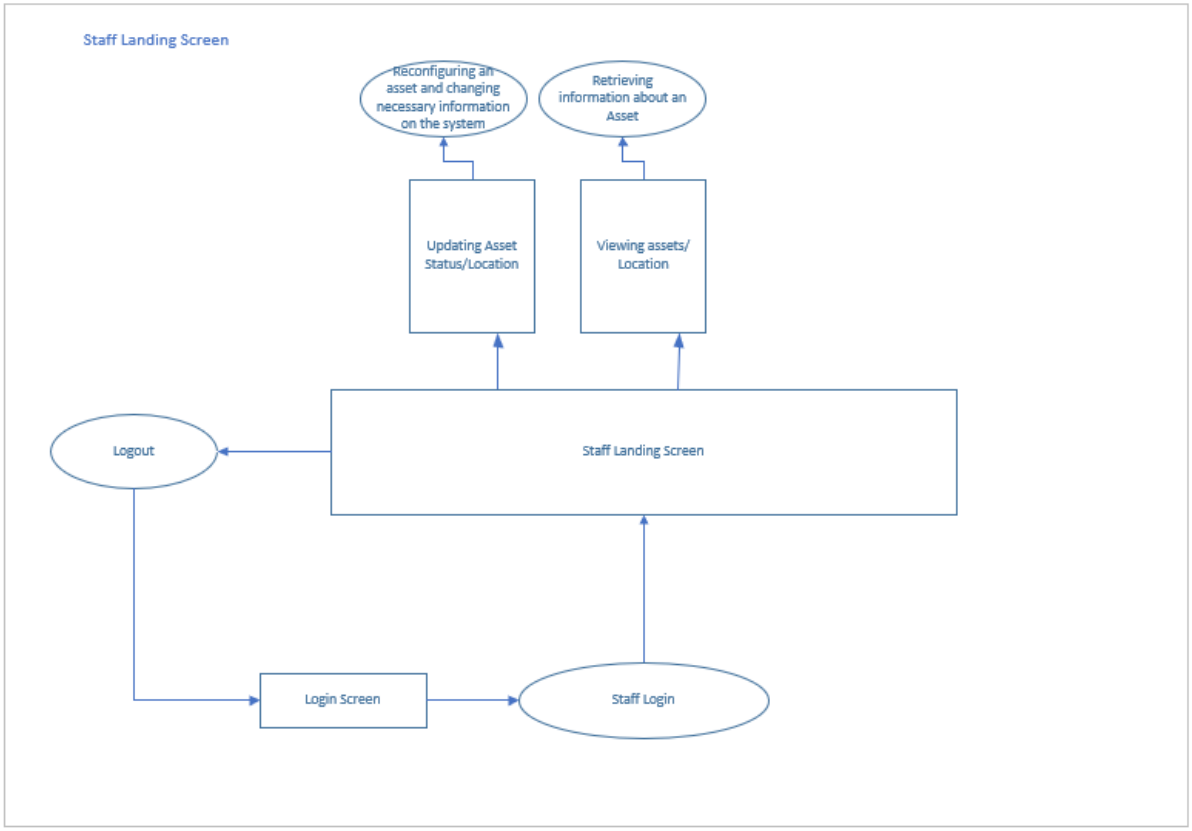
2. Retrieving information about an asset can be viewed by the view asset/Location Tab.

3. Detailed log files about assets can be identified by the viewing report tab using userID, AssetID, and Date. - Optional

4. Retrieving shifting history information of assets can be viewed by asset shift history tab by AssetID, Date and UserID.

5. Auditors can log out once the activities are done.

7.5 Staff Landing Screen



The figure pictures the Staff landing screen of SAVE. The staff has to login using staff credentials from the login page to be navigated to the staff landing page. Each staff are authorized to perform following activities:

1. Staff can view asset status/location to retrieve information about an asset, including its type, location, and status.

2. Staff can update asset status/location to reconfigure the asset information in the system.