

Chapter One

Requirement Analysis

1.1 Requirement Analysis (Use case)

Functional Requirements for ' Administrator' Actor Use Cases:

1. Login

- The system must authenticate the administrator using valid credentials.
- On successful login, the admin is redirected to the dashboard.
- If credentials are invalid, the system must display an error message.

2. Register Users

- The administrator must be able to add new Pharmacists.
- The system must collect user details: name, role, username, and password.
- The system must validate and store the new user data.

3. Manage Medicines

- The administrator must be able to add, edit, and delete medicine records.
- Each medicine record must include: name, type, price, quantity, and expiry date.

4. Track Inventory

- The system must allow the admin to view current stock levels of all medicines.
- The system should notify medicines that are low in stock.
- Filtering and sorting by name, type, or quantity must be available.

5. Monitor Expired Medicines

- The system must display a list of all expired medicines.
- Admin must be able removed.
- Expired items should be flagged automatically based on expiry date.

6. View Sales Reports

- The system must generate and display reports summarizing sales over a selected time period.
- Each report must include medicine name, quantity sold, total sales value, and pharmacist details.
- Reports must be viewable by day, week, month, or custom range.

7. View Weekly Reports

- The system must automatically generate weekly inventory movement reports.
- Reports must include: items sold, current stock, and expired items.

8. View Activity Logs

- The system must record and display logs of pharmacist activities (e.g., login, sales).
- Logs must include: user email, action performed.
- Admin must be able to filter logs by user email.

9. Logout

- Admin must be able to securely log out of the system.
- The session must be terminated to prevent unauthorized access.

Functional Requirements for 'pharmacist' Actor Use Cases:

1. Login

- The system must authenticate the pharmacist using a valid username and password.
- On successful login, the pharmacist is redirected to their dashboard with limited privileges.
- Invalid credentials must prompt an error message.

2. View Medicines

- The system must display a list of all available medicines.
- Each medicine entry must show: name, type, quantity in stock, price, and expiry date.
- Pharmacist can search or filter the medicine list by name, type.

3. Manage Medicines

- The pharmacist must be able to add, edit, and delete medicine records.
- Each medicine record must include: name, type, price, quantity, and expiry date

4. Sell Medicine

- Pharmacist must be able to select medicines and enter the quantity to sell.
- The system must validate available stock before completing the sale.
- Upon successful transaction:
 - The stock must be reduced accordingly.

- A sales record must be created with medicine name, quantity, date/time, and pharmacist ID.

4. Receive Stock Alerts

- The system must display real-time alerts for:
 - Medicines with low stock
 - Medicines expiry.

5. Generate weekly report

- Report must be generated from day to day pharmacist sell, update, delete of the stock
- Reports must include: items sold, current stock, and expired items.

6. Logout

- Pharmacist must be able to securely log out of the system.
- The session must be terminated to prevent unauthorized access.

1.2 Use case diagram components

Actors Identification

| No | Actor | Description |
|----|----------------------|---|
| 1 | Administrator | Manages system operations and overall pharmacy management. |
| 2 | Pharmacist | The person interacts with end user, Focuses on daily operations (selling medicines, stock updates). |

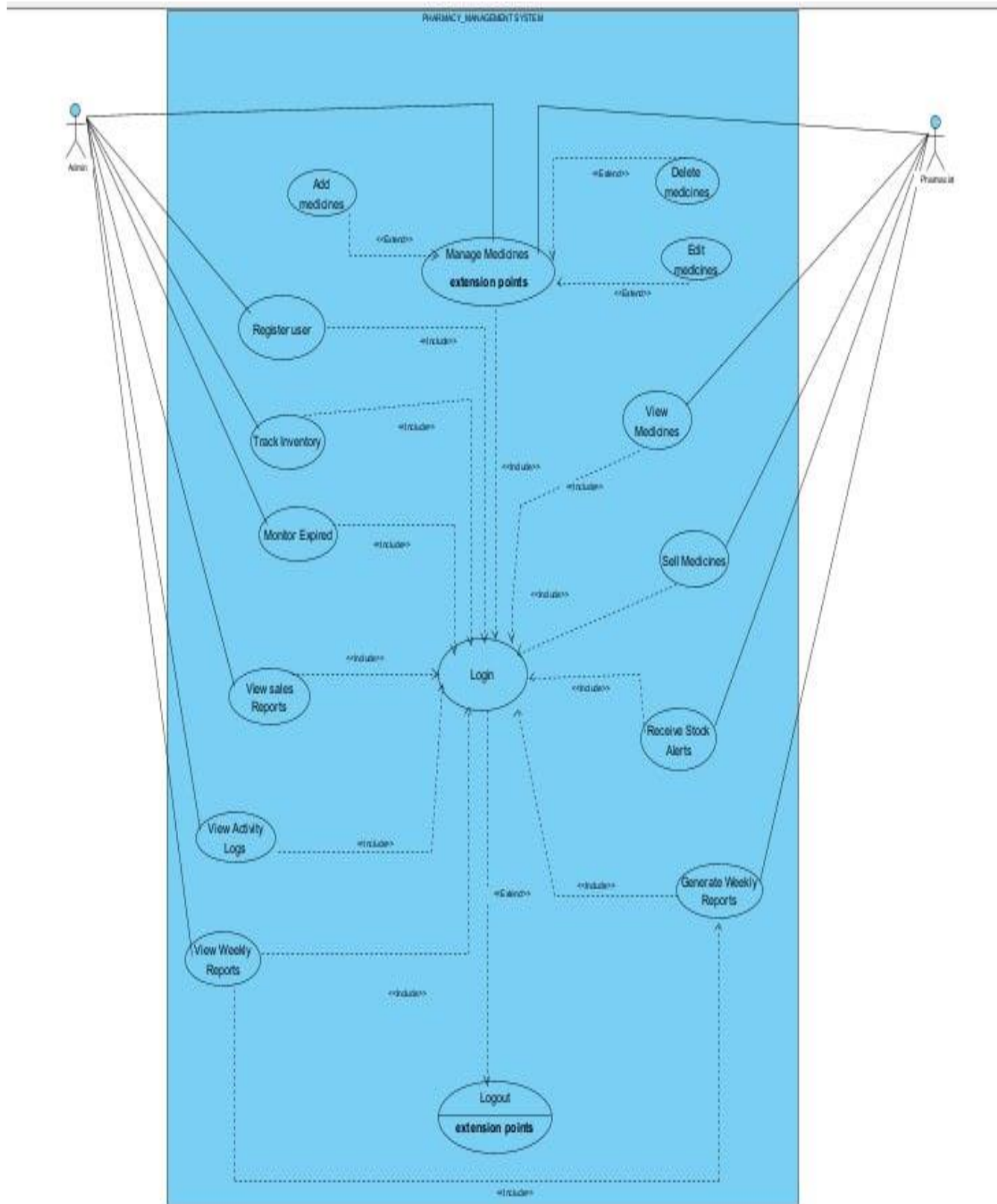
Use Cases

Use cases describe the specific functionalities or services provided by the system. They represent goals that actors want to achieve. In your system, the use cases for each actor are:

| Category | ID | Use Case Name | Use Case Description |
|-----------------|------|------------------|--|
| Common use Case | UC-1 | login | Login in the system using secure credentials |
| | UC-2 | Manage medicines | Add, update and delete medicine |
| | UC 3 | Logout | Log out from the system securely |
| Admin use | UC-4 | Register user | Add pharmacist into the system |

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| case | UC-5 | Track Inventory | view current stock levels of all medicines |
| | UC-6 | Monitor Expired Medicines | Generate a list of medicines nearing expiry and remove expired items. |
| | UC-7 | View Sales Reports | a summary of sold medicine |
| | UC-8 | View Weekly Reports | View weekly sold, expired ,and stock level of medicine |
| | UC- 9 | View Activity Logs | Check logs of user actions (e.g., who modified stock or who sold medicine). |
| Pharmacist | UC-10 | View Medicines | Search medicines by name, category, or availability. |
| | UC-11 | Sell Medicine | Process a sale: Select medicine, sell for customer and deduct stock automatically. |
| | UC-12 | Receive Stock Alerts | Get notified when stock is low or nearing expiry. |
| | UC-13 | Generate weekly report | Generate weekly sold, expired ,and stock level of medicine |

1.3 Example of use case model



1.4 use Case Description Template

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| Use Case ID | | UC-1 |
| Use Case Name | | login |
| Actor | | Administrator & pharmacist |
| Summary | | Authenticate and access system based on role |
| Precondition | | User is registered |
| Basic Scenario | Actor Action | System response |
| . 1. User submits credentials. 2. System checks them. 3. System routes to dashboard | Enters username & password | Verifies credentials; on success, redirects to role-specific dashboard. |
| Alternative Scenario | | If credentials are wrong: show error & request re-entry. |
| Post Condition | | User lands on their respective dashboard. |

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| Use Case ID | | UC-2 |
| Use Case Name | | Manage medicine |
| Actor | | Administrator & pharmacist |
| Summary | | Add, update, or delete medicines |
| Precondition | | User is logged in |
| Basic Scenario | Actor Action | System response |
| 1. User enters "Manage Medicines." 2. Inputs new/edited data. | Chooses to add/edit/delete a medicine; fills in details. | Validates inputs; on success, updates database and acknowledges.. |

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| 3. System validates & saves. | | |
| Alternative Scenario | | If validation fails: prompt user to correct errors. |
| Post Condition | | Medicine records updated per user's action. |

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| Use Case ID | | UC-3 |
| Use Case Name | | Log out |
| Actor | | Administrator & pharmacist |
| Summary | | Securely end user session and return to login |
| Precondition | | User is logged in |
| Basic Scenario | Actor Action | System response |
| 1. User clicks "Logout." 2. System terminates session. 3. Redirects to login page. | Clicks logout button. | Destroys session tokens; redirects to login screen. |
| Alternative Scenario | | - |
| Post Condition | | User session ended |

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| Use Case ID | | UC-4 |
| Use Case Name | | Register user |
| Actor | | Administrator |
| Summary | | Add new users pharmacists |

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| Precondition | | Admin is logged in |
| Basic Scenario | Actor Action | System response |
| 1. Admin opens "Register User." 2. Inputs user data & role. 3. Submits form. 4. System saves record & confirms.. | Navigates to user registration; fills in details & assigns role. | Persists new-user info; displays confirmation message. |
| Alternative Scenario | | - |
| Post Condition | | New user created with credentials & assigned role. |

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| Use Case ID | | UC-5 |
| Use Case Name | | Track Inventory |
| Actor | | Administrator |
| Summary | | Overview and update of current stock levels |
| Precondition | | Admin is logged in |
| Basic Scenario | Actor Action | System response |
| 1.admin opens inventory. 2. System lists each stock quantity. 3. User modifies counts if needed. 4. System saves updates. | Accesses "Track Inventory"; reviews and/or edits quantities. | Shows up-to-date stock levels; persists any changes upon submission.. |
| Alternative Scenario | | - |
| Post Condition | | Inventory view shows latest data; any edits are stored. |

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| Use Case ID | | UC-6 |
| Use Case Name | | Monitor Expired Medicines |
| Actor | | Administrator |
| Summary | | Identify expired or near-expiry medicines |
| Precondition | | Admin is logged in |
| Basic Scenario | Actor Action | System response |
| 1. System scans expiry dates. 2. Generates list of expired/soon-to-expire. 3. User takes action (remove/replace). | Reviews flagged items. | Reviews flagged items. |
| Alternative Scenario | | - |
| Post Condition | | Expired/near-expiry medicines are identified for action. |

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| Use Case ID | | UC-7 |
| Use Case Name | | View Sales Reports |
| Actor | | Administrator |
| Summary | | |
| Precondition | | Admin is logged in |
| Basic Scenario | Actor Action | System response |
| 1. Admin goes to "Sales Reports." 2. Picks time frame. 3. System compiles & shows report. 4. Option to | Selects report section; enters date range. | Queries database; displays report. |

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| export/download. | | |
| Alternative Scenario | | - |
| Post Condition | | Sales report is available on screen |

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| Use Case ID | | UC-8 |
| Use Case Name | | View Weekly Reports |
| Actor | | Administrator |
| Summary | | Provide weekly summaries of sales, inventory, activities |
| Precondition | | Weekly data accumulated |
| Basic Scenario | Actor Action | System response |
| 1. User selects week. 2. System aggregates sales, inventory, actions. 3. Displays summary report with charts/tables. | Chooses reporting module; picks week. | Collates relevant data; renders weekly dashboard and allows export. |
| Alternative Scenario | | - |
| Post Condition | | Weekly summary is generated and available |

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| Use Case ID | | UC-9 |
| Use Case Name | | View Activity Logs |

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| Actor | | Administrator |
| Summary | | View system activity logs for audit |
| Precondition | | Admin is logged in |
| Basic Scenario | Actor Action | System response |
| 1. Admin visits “Activity Logs.” 2. Applies optional filters. 3. System retrieves & displays entries with timestamps and user IDs. | Opens logs section; sets any date/user filters. | Persists new-user info; displays confirmation message. |
| Alternative Scenario | | - |
| Post Condition | | Admin can review or export filtered log data.. |

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| Use Case ID | | UC-10 |
| Use Case Name | | View Medicines |
| Actor | | pharmacist |
| Summary | | View list of available medicines and details |
| Precondition | | pharmacist is logged in |
| Basic Scenario | Actor Action | System response |
| 1. User opens medicine list. 2. System shows names, stock, expiry, price. 3. User filters/searches as needed. | Selects “View Medicines | Displays table of all medicines with key fields; supports filter/search. |
| Alternative Scenario | | - |
| Post Condition | | Medicine list displayed; user may interact with i |

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| Use Case ID | | UC-11 |
| Use Case Name | | sell medicine |
| Actor | | Pharmacist |
| Summary | | Sell medicines and record transactions |
| Precondition | | Pharmacist is logged in Medicine is in stock |
| Basic Scenario | Actor Action | System response |
| 1. Pharmacist selects item & quantity. 2. System checks availability. 3. Pharmacist confirms sale. 4. System updates stock & issues receipt. | Chooses medicine & enters quantity; confirms sale details. | Validates stock; deducts quantity; generates printable receipt. |
| Alternative Scenario | | If insufficient stock: notify user & block sale. |
| Post Condition | | Sale recorded; stock levels updated; receipt created. |

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| Use Case ID | | UC-12 |
| Use Case Name | | Receive Stock Alerts |
| Actor | | Pharmacist |
| Summary | | Alert when stock falls below threshold |
| Precondition | | Admin is logged in Continuous inventory monitoring |
| Basic Scenario | Actor | System response |

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| | Action | |
| 1. System checks levels periodically or on update. 2. When threshold breached, generates alert. 3. Alert appears in dashboard or notify. | - | Monitors stock; triggers alert event when any item < threshold. |
| Alternative Scenario | | - |
| Post Condition | | Pharmacist receives visual/notification alert. |

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| Use Case ID | | UC-13 |
| Use Case Name | | Generate weekly report |
| Actor | | Pharmacist |
| Summary | | Provide weekly summaries of sales, inventory, activities |
| Precondition | | Pharmacist logged in Weekly data accumulated from daily pharmacist work |
| Basic Scenario | Actor Action | System response |
| 1. User selects week. 2. System aggregates sales, inventory, actions. 3. Displays summary report with charts/tables | - | System Collates relevant data; renders weekly dashboard |
| Alternative Scenario | | - |
| Post Condition | | Weekly summary is generated and available |

1.5 Tools and steps to draw Use Case

- **Diagramming Interface:** Visual Paradigm provides an intuitive drag-and-drop interface for creating and organizing diagram elements.
- **UML Toolset:** It includes comprehensive UML support for various diagram types, including use case diagrams.
- **Actor and Use Case Elements:** Predefined shapes for actors, use cases, and system boundaries.
- **Relationship Tools:** Tools for drawing associations, generalizations, includes, and extends relationships.
- **Documentation and Notes:** Features for adding detailed descriptions and notes to diagram elements

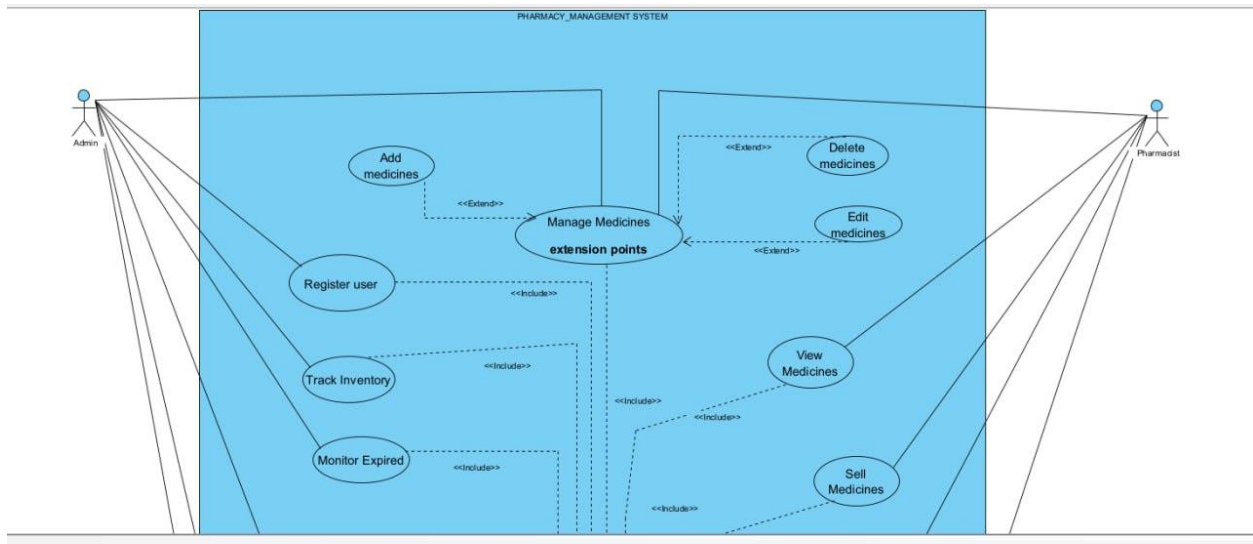
Methodologies

Unified Modeling Language (UML):

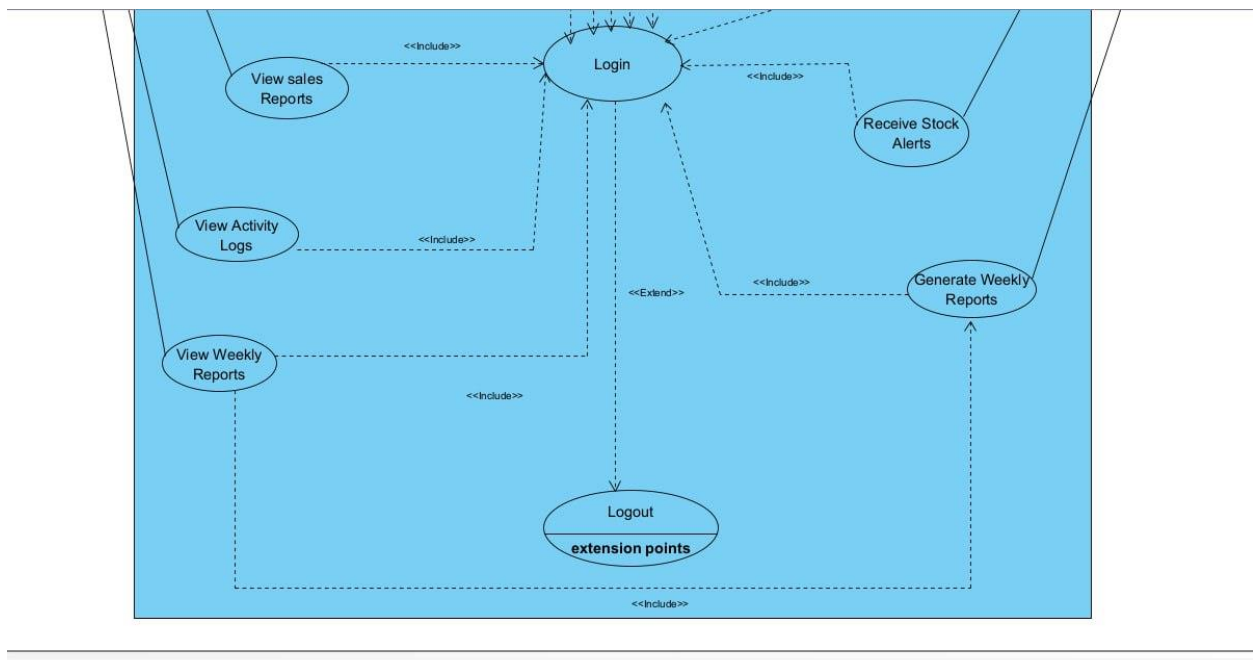
- **Actors:** Represent external entities that interact with the system.
- **Use Cases:** Represent the functional requirements or interactions between actors and the system.
- **System Boundary:** Defines the scope of the system and encapsulates all use cases.
- **Relationships:** Includes associations, generalizations, and dependencies between actors and use cases.

Step-by-Step Guide to Drawing a Use case Diagram

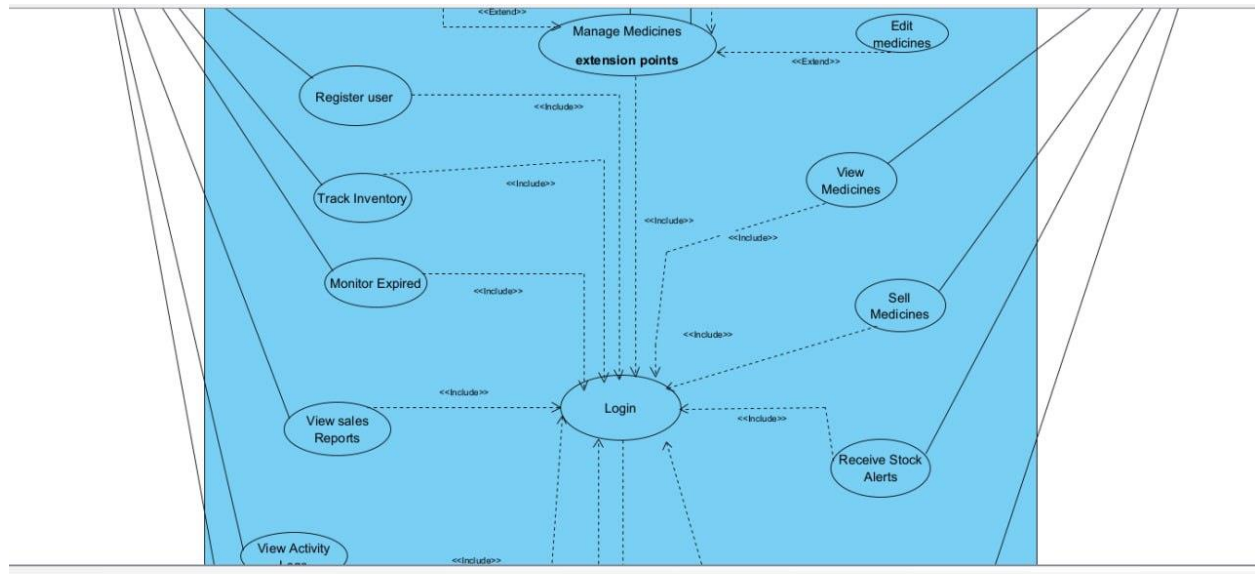
STEP-1



STEP- 2



Step-3



STEP-4

