# **USE_CASE**: JP014: Develop a web-based tool for medical professionals to easily store and access patient records.

## Introduction - EHR (Electronic Health Record):

An Electronic Health Record (EHR) is a digital version of a patient's medical history. Unlike traditional paper charts, EHR software provides a centralized platform to store and manage a patient's complete medical information in a secure and accessible format.

## Software Requirements:

- **Front-end**
  - HTML
  - CSS
  - JavaScript
  - Bootstrap
  - AJAX

- **Middle-Layer**
  - JSP

- **Back-end**
  - Java
  - Apache HTTP server
  - Apache Tomcat Server
  - MySQL

## Description about technologies used:

- **Front-end**
  - HTML: It is used to structure a web page and its content.
  - CSS: It is used to style and layout web pages.
  - JavaScript: It is used to make web pages interactive.
  - Bootstrap: For easy styling of webpages.
  - AJAX: It enables a web application user to interact with a web page without the interruption of constant web page reloading

- **Back-end**
  - JSP: Simplifies creating dynamic web pages by combining HTML with Java code.
  - Java: It is used to create backend web application using servlets or JSP.
  - Apache HTTP Server: It is used to accept HTTP requests from visitors and send them back the requested information.

- Apache Tomcat Server: It is used as a servlet container in the webserver, and is used to serve dynamic webpages.
- MySQL: It is used to store data in tables that map to objects.

## I. Functional Requirements: (Before Login)

Number of Actors: 3

**Actors Name**

1. Admin

2. Doctor/Staff (Employee)

3. Patient/User (End user)

### 1. Requirements for Admin: (Before Login)

**Login requirements for Admin:**

- **Front-End Requirements:**
  - User name
  - Password
  - Login button
  - Enter verification code after the details submission (Only if you haven't logged in for 1 day)
- **Back-End Requirements:**
  - Send data to the back end using HTTPS and the data like password must be hashed and salted.
  - Verify user name and password
  - Multi-factor authentication for Registration (send a 6 digit code for verification via email, only if not logged in for 1 day).
  - If credentials are correct then grant access, if not then deny access

### 2. Requirements for Doctor/Staff: (Before Login)

**Login requirements for Doctor/Staff:**

- **Front-End Requirements:**
  - User name
  - Password
  - Login button
  - Forgot password? (Provide a forgot password link to contact admin).
  - Enter verification code after the details submission (Only if you haven't logged in for 2 day)

- **Back-End Requirements:**

- Send data to the back end using HTTPS and the data like password must be hashed and salted
- Verify user name and password.
- Multi-factor authentication for Registration (send a 6 digit code for verification via email, only if not logged in for 2 day).
- If credentials are correct then grant access, if not then deny access.
- If forgot password then send the request to Admin

## 3. Requirements for Patient/User: (Before Login)

**Registration requirements for Patient/User:**

- **Front-End Requirements:**
  - User name
  - First name
  - Last name
  - Email
  - Birth date
  - Phone number
  - Password
  - Confirm password
  - Register button
  - Already have an account? (Provide redirect link to login page).
  - Enter verification code after the details submission (Only if you haven't logged in for 2 day)

- **Back-End Requirements:**
  - Send data to the back end using HTTPS and the data like password must be hashed and salted
  - Verify if the user name already exists
  - Multi-factor authentication for Registration (send a 6 digit code for verification via email, only if not logged in for 2 day).
  - If the code matches then the user account is created

**Login requirements for Patient/User:**

- **Front-End Requirements:**
  - User name
  - Password
  - Login button
  - Don't have an account? (Provide a registration link)
  - Forgot password? (Provide a forgot password link to reset password via email)
  - Enter verification code after the details submission (Only if you haven't logged in for 2 day)

- **Back-End Requirements:**
    - Send data to the back end using HTTPS and the data like password must be hashed and salted
    - Verify username and password
    - Multi-factor authentication for Registration (send a 6 digit code for verification via email, only if not logged in for 2 day)
    - If credentials are correct then grant access, if not then deny access
    - If forgot password then send the web page to reset password

## II. Functional Requirements: (After Login)

Number of Actors: 3

**Actors Name**

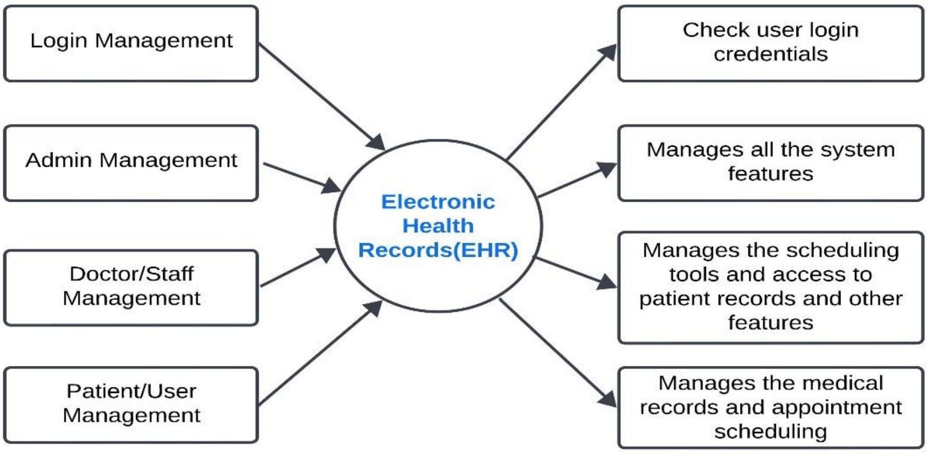
1. Admin

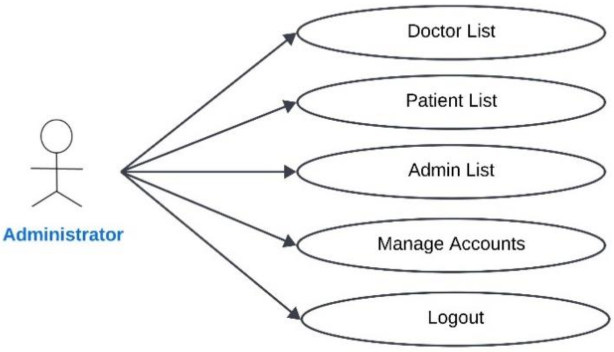
2. Doctor/Staff (Employee)

3. Patient/User (End user)

### 1. Requirements for Admin: (After Login)

- **Front-End Requirements:**
    - Dashboard
        - Doctor List (Below this provide a "*view Doctors*" link to view all the Doctors)
        - Patient List (Below this provide a "*view Patients*" link to view all the Patients)
        - Admin List (Below this provide a "*view Admins*" link to view all the Admins)
        - Manage Accounts : (MENU)
            1. Admin Accounts: CRUD operations on Accounts
            2. Doctor Accounts: CRUD operations on Accounts
            3. Patient Accounts: CRUD operations on Accounts
        - Logout
- **Back-End Requirements:**
    - CRUD operation on accounts
    - CRUD operation on other data


Login Management
Admin Management
Doctor/Staff Management
Patient/User Management
Electronic Health Records(EHR)
Check user login credentials
Manages all the system features
Manages the scheduling tools and access to patient records and other features
Manages the medical records and appointment scheduling



**Application Flow:**

Admin > Login > Dashboard > Can view all the Doctors List > Logout

Admin > Login > Dashboard > Can view all the Patients List > Logout

Admin > Login > Dashboard > Can view all the Admins List> Logout

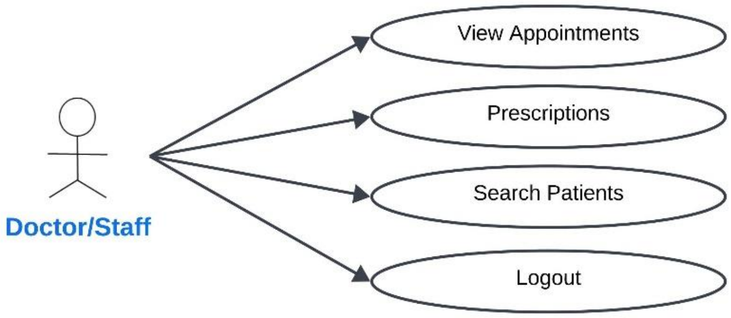
Admin > Login > Dashboard > Manage Accounts > Admin Accounts > Logout

Admin > Login > Dashboard > Manage Accounts > Doctor Accounts > Logout

Admin > Login > Dashboard > Manage Accounts > Patient Accounts > Logout

## 2. Requirements for Doctor/Staff: (After Login)

- **Front-End Requirements:**
  - Dashboard
    - View Appointments (Below this provide a "*Appointment List*" to view all the appointments)
    - Prescriptions (Below this provide a "*Prescription List*" to view all the Prescriptions)
    - Search Patients (Search patients using Username or Phone Number)
    - Logout
- **Back-End Requirements:**
  - Create, Update and Read accounts
  - CRUD operation on other data



**Application Flow:**

Doctor/Staff> Login > Dashboard > Can view Appointment Lists > Logout

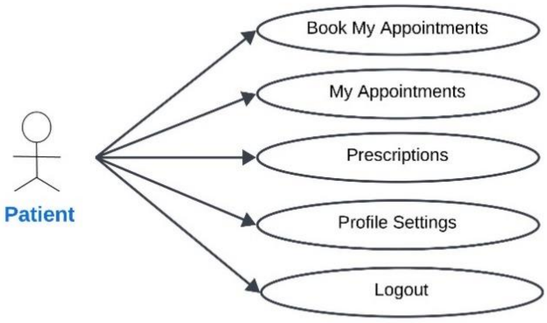
Doctor/Staff > Login > Dashboard > Can view all the Prescription Lists > Logout

Doctor/Staff > Login > Dashboard >Search Patients > Can view all the Prescription Lists > Can prescribe medicines to the patients there itself > Logout

## 2. Requirements for Patient/User: (After Login)

- **Front-End Requirements:**
  - Dashboard
    - Book My Appointments (Below this provide a "*Book Appointment*" link to book an appointment with Doctor)
    - My Appointments (Below this provide a "*View Appointment History*" link view the previous appointment history)
    - Prescriptions (Below this provide a "*View Prescription List*" link view the prescription lists from Doctor side)
    - Profile Settings (Can change E-Mail ID and Phone Number)
    - Logout

- **Back-End Requirements:**
  - Create, Update, Read account details like profile
  - CRUD operations on other data



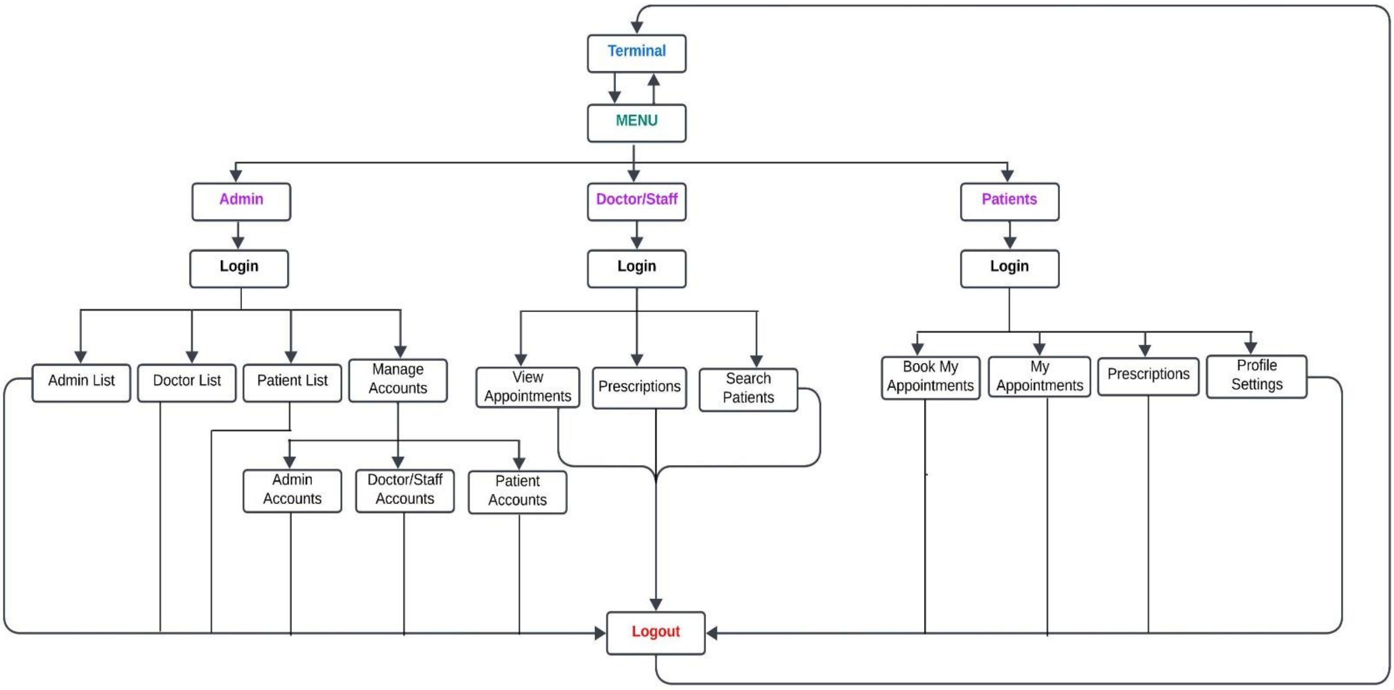
**Application Flow:**

Patient > Login with credentials > Dashboard > Book My Appointments > Logout

Patient > Login with credentials > Dashboard > My Appointments > Logout

Patient > Login with credentials > Dashboard > Can view Prescriptions Lists> Logout

Patient > Login with credentials > Dashboard > Can update the Profile Settings like E-Mail Id and Phone Number > Logout


Terminal
MENU
Admin
Doctor/Staff
Patients
Login
Login
Login
Admin List
Doctor List
Patient List
Manage Accounts
View Appointments
Prescriptions
Search Patients
Book My Appointments
My Appointments
Prescriptions
Profile Settings
Admin Accounts
Doctor/Staff Accounts
Patient Accounts
Logout