**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

- o HTML
- o CSS
- JavaScript
- o Bootstrap
- o AJAX

#### Back-end

- o JSP
- o Java
- o Apache HTTP server
- Apache Tomcat Server
- o MySQL

### **Description about technologies used:**

#### > Front-end

- o <u>HTML</u>: It is used to structure a web page and its content.
- o CSS: It is used to style and layout web pages.
- o <u>JavaScript</u>: It is used to make web pages interactive.
- o <u>Bootstrap</u>: For easy styling of webpages.
- o <u>AJAX</u>: 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.
- o <u>Java</u>: It is used to create backend web application using servlets or JSP.
- o <u>Apache HTTP Server</u>: It is used to accept HTTP requests from visitors and send them back the requested information.
- o <u>Apache Tomcat Server</u>: It is used as a servlet container in the webserver, and is used to serve dynamic webpages.
- o 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).
- o 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:

- o User name
- o Password
- o Login button
- o 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)

- Send data to the back end using HTTPS and the data like password must be hashed and salted
- o Verify user name and password.
- o Multi-factor authentication for Registration (send a 6 digit code for verification via email, only if not logged in for 2 day).

- o If credentials are correct then grant access, if not then deny access.
- o If forgot password then send the request to Admin

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

#### **Registration requirements for Patient/User:**

### > Front-End Requirements:

- o User name
- First name
- Last name
- o Email
- Birth date
- o 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).
- o If the code matches then the user account is created

#### **Login requirements for Patient/User:**

#### **Front-End Requirements:**

- User name
- Password
- Login button
- o Don't have an account? (Provide a registration link)
- o 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)

- 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)
- o If credentials are correct then grant access, if not then deny access
- o If forgot password then send the web page to reset password

## II. Functional Requirements: (After Login)

Number of Actors: 3

#### **Actors Name**

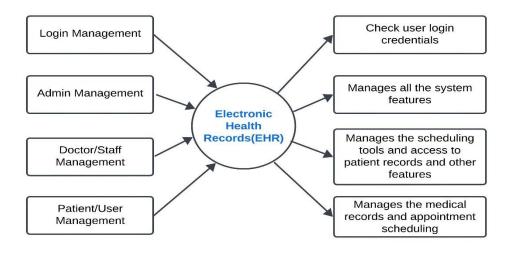
- 1. Admin
- 2. Doctor/Staff (Employee)
- 3. Patient/User (End user)

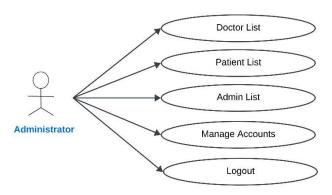
# 1. Requirements for Admin: (After Login)

### > Front-End Requirements:

- o 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

- o CRUD operation on accounts
- o CRUD operation on other data





# **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

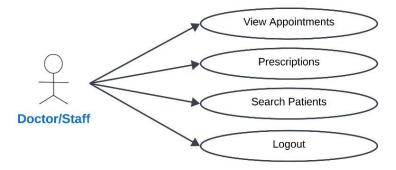
Admin > Login > Dashboard > Manage Accounts > Patient Accounts > Logout

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

### > Front-End Requirements:

- o 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

- o Create, Update and Read accounts
- o 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

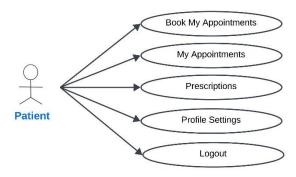
Doctor/Staff > Login > Dashboard > Search Patients > Can view all the Prescription Lists > Can prescribe medicines to the patients there itself > Logout

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

### > Front-End Requirements:

- o 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

- o Create, Update, Read account details like profile
- o 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

