IT314 Software Engineering
Hospital Management System
Group 15

Use Case 1: User Login/Authentication

Identifier: UC-1

Actors: Doctor, Receptionist, Admin, Patient

Description:

- o   This use case involves the process of user authentication and login to access the Hospital Management System.

Preconditions:

- o   The user must have an active account.

Main Flow:

1.The user navigates to the login page.

2.The user enters their username and password.

3.The system verifies the credentials.

4.If the credentials are valid, the user gains access to the system.

Alternate Flows:

1.1 The user forgets password

- o   If the user forgets their password, they can click on the "Forgot Password" link on the login page.
- o   The system prompts the user to enter their registered email address.
- o   The user enters their email address.
- o   The system sends a password reset link to the provided email address.

- The user checks their email, clicks on the reset link, and is directed to a page where they can create a new password.
- The system verifies the link's validity and allows the user to set a new password.
- After successfully setting a new password, the user is redirected to the login page and can log in using the new credentials.

3.1 If the credentials are invalid, an error message is displayed, and access is denied.

Postconditions:

- The user gains access to the system.

Use Case 2: Patient Registration

Identifier: UC-2

Actors: Receptionist, Patient

Description:

- This use case involves the registration of new patients into the hospital system.

Preconditions:

- None

Main Flow:

1. The user navigates to the website's homepage.

2. The user selects the "Sign Up" option, typically found prominently on the homepage.

3. The system presents the registration form, which includes fields for essential user information. Common fields may include: - Name - Email address - Password - Confirm password

4. The user enters their information into the required fields.

5. The system performs validation checks on the entered information, ensuring that the email address is unique, the password meets security criteria, and other necessary criteria are met.

6. If the validation checks pass, the system proceeds to create a new user account, generating a unique user ID.

7. The system sends a confirmation email to the user's provided email address with a verification link.

8. The user clicks on the verification link to confirm their email address and activate their account.

9. After email verification, the system activates the user account, granting access.

10. The user is redirected to the login page and can now log in using their registered email address and password.

Alternate Flows:

1.1. Invalid Registration Information : - If the user provides invalid or incomplete information during registration, the system displays error messages indicating the issues and prompts the user to correct them.

2.1. Email Address Already Registered : - If the user attempts to register with an email address that is already associated with an existing account, the system displays an error message and prompts the user to use a different email address.

3.1. Verification Email Not Received : - If the user does not receive the verification email within a reasonable timeframe, the system provides an option to resend the email or check the spam folder.

4.1. Email Verification Link Expired : - If the user clicks on an expired verification link, the system informs them and provides an option to request a new verification email.

Postconditions:

- o   A new patient record is created in the system.

Use Case 3: Management of an Appointment

Identifier: UC-3

Actors: Patient, Receptionist

Description:

- o   This use case allows patients to schedule, reschedule, or cancel appointments with doctors.

Preconditions:

- o   The patient is logged into the system.

Main Flow:

1.The patient or receptionist accesses the appointment management section.

2.The system displays the patient's upcoming appointments.

3. The patient or receptionist selects one of the following actions:

      a. Schedule a new appointment.
      b. Reschedule an existing appointment.
      c. Cancel an existing appointment.

4.The patient or receptionist chooses the doctor and appointment time.

5.The system updates the appointment accordingly.

Alternate Flows:

3.c.1

When the patient or receptionist chooses to cancel an appointment, the system prompts the patient to confirm the cancellation.

If the patient or receptionist decides not to cancel, the system returns to the appointment management screen without making any changes.

4.1 Request Unavailable Time Slot:

If the patient or receptionist attempts to schedule an appointment but the selected time slot is unavailable, the system presents alternative available time slots for the same doctor.

The patient or receptionist can choose an alternative time slot from the options provided, and the appointment is scheduled accordingly.

Postconditions:

    o The appointment is scheduled, rescheduled, or canceled.

Use Case 4: View Prescription & Medical History

Identifier: UC-4

Actors: Patient, Doctor

Description:

    o This use case allows patients and doctors to view the patient's prescription and medical history.

Preconditions:

o The patient or doctor is logged into the system.

Main Flow:

1.The patient or doctor accesses the patient's medical records.

2.The system retrieves and displays the patient's prescription and medical history.

Alternate Flows:

o None

Postconditions:

o The patient's prescription and medical history are displayed.

Use Case 5: Doctor/Receptionist Applies for Leave

Identifier: UC-5

Actors: Doctor, Receptionist

Description:

o This use case allows doctors and receptionists to request leave from their duties.

Preconditions:

o The doctor or receptionist is logged into the system.

Main Flow:

1.The doctor or receptionist initiates the leave request.

2.The system presents a leave request form.

3.The doctor or receptionist enters leave details (dates, reason).

4.The system records the leave request.

Alternate Flows:

o None

Postconditions:

  o Leave request is submitted for approval.

Use Case 6: Receptionist Manages operations (Add-Remove)

Identifier: UC-6

Actors: Receptionist

Description:

  o This use case allows receptionists to manage all the operations and their details.

Preconditions:

  o The receptionist is logged into the system.

Main Flow:

1.The receptionist accesses the operation management section.

2.The system displays the list of available operations theatres.

3.The receptionist adds operation details.

4.The system updates the operation details accordingly.

Alternate Flows:

  o None

Postconditions:

  o The operation list is updated.

Use Case 7: Doctor Views Appointments

Identifier: UC-7

Actors: Doctor

Description:

- o   This use case allows doctors to view their scheduled appointments.

Preconditions:

- o   The doctor is logged into the system.

Main Flow:

1.The doctor accesses the appointment management section.

2.The system displays the doctor's upcoming appointments.

Alternate Flow:

- o   None

Postconditions:

- o   The doctor's appointments are displayed.

Use Case 8: Receptionist Generates Bill and Prints Receipt

Identifier: UC-8

Actors: Receptionist

Description:

- o   This use case involves the receptionist generating bills for services provided to patients and printing receipts for payment transactions within the Hospital Management System.

Preconditions:

- o   The receptionist is logged into the system.

Main Flow:

1.The receptionist selects a patient's bill to generate.

2.The system calculates charges for consultations, treatments, and medications.

3.The receptionist reviews the bill.

4.The system generates the bill and receipt.

5.The receptionist prints the receipt for the patient.

Alternate Flow:

- o   None

Postconditions:

- o   A bill is generated for the patient's services.
- o   A receipt is printed for the patient's payment transactions.

Use Case 9: Gives Prescription

Identifier: UC-9

Actors: Doctor

Description:

- o   This use case involves the doctor providing a prescription to a patient after a consultation or examination, enabling the patient to obtain necessary medications or treatment instructions.

Preconditions:

- o   The doctor is logged into the Hospital Management System.
- o   The patient has completed a consultation or examination with the doctor.
- o   The doctor has reviewed the patient's medical history and condition.

Main Flow:

1.   The doctor logs into the Hospital Management System using their credentials.
2.   The system presents the doctor with their personalized dashboard or main menu.
3.   The doctor selects the patient for whom they need to provide a prescription.
4.   The system displays the patient's medical history, previous diagnoses, current medical condition, and any relevant information.

5. The doctor reviews the patient's information to ensure a comprehensive understanding of their condition.
6. Based on the examination and diagnosis, the doctor formulates a prescription.
7. The doctor enters the prescription details into the system, ensuring accuracy and completeness.
8. The system generates a prescription document based on the entered information.
9. The doctor reviews the prescription to verify that it accurately reflects the intended treatment plan.
10. The doctor provides the prescription to the patient in a printed or electronic format, explaining any specific instructions.
11. The system records the prescription in the patient's medical record for future reference and follow-up.

Alternate Flow:

o   None

Postconditions:

o   A prescription is generated and provided to the patient for their treatment.

Use Case 10: Admin Adds/Removes Employee

Identifier: UC-10

Actors: Admin

Description:

o   This use case allows the admin to add or remove employees from the hospital staff.

Preconditions:

o   The admin is logged into the system.

Main Flow:

1.The administrator accesses the employee management section within the Hospital Management System.

2.The system displays the current list of employees in the hospital.

3.The administrator reviews the list to determine whether any changes are required.

4.If the administrator decides to add a new employee:

- o The system provides an option to add an employee.
- o The administrator enters the necessary details of the new employee, including their name, contact information, role, department, and employment status.
- o The system validates the information entered.
- o If the information is valid, the system adds the new employee to the employee list, and their employment record is created.
- o The system notifies the administrator of the successful addition.

5.If the administrator decides to remove an employee:

- o The system provides an option to remove an employee.
- o The administrator selects the employee to be removed from the list.
- o The system prompts the administrator to confirm the removal.
- o If confirmed, the employee's record is removed from the system, and they are no longer listed as a hospital employee.
- o The system notifies the administrator of the successful removal.

Alternate Flows:

- o None

Postconditions:

- o Employee records are updated.

Use Case 11: Admin Allows Leave

Identifier: UC-11

Actors: Admin

Description:

- o This use case allows the admin to approve or reject leave requests submitted by doctors or receptionists.

Preconditions:

- o The admin is logged into the system.

Main Flow:

1.The admin accesses the leave management section.

2.The system displays pending leave requests.

3.The admin reviews and approves or rejects leave requests.

4.The system updates the status of leave requests accordingly.

Alternate Flows:

2.1 Leave Request Withdrawal:

- o   If an employee wishes to withdraw a leave request that is pending approval, they can initiate a withdrawal request.
- o   The employee accesses the leave management section.
- o   The system displays their pending leave requests.
- o   The employee selects the leave request to be withdrawn.
- o   The system prompts the employee to confirm the withdrawal.
- o   If confirmed, the system updates the leave status to "Withdrawn" for the respective employee.
- o   The employee is notified of the withdrawal.

Postconditions:

- o   Leave requests are approved or rejected.

Use Case Diagram: