**Software Requirement Specification**

**1. Introduction**

**1.1 Purpose**

The purpose of this document is to define the functional and non-functional requirements for an Hospital management website. The website will allow users to book appointment, search, and book tests for various doctors. The system will be designed to provide a seamless user experience, secure payment transactions, and easy hospital patient management.

**1.2 Scope**

**Dos**

* Issue of login id and password to system operators
* Maintain Patient details and details of staff/doctors
* Books appointment for patients and their information
* Maintain details of beds and appointments
* Ensure user data privacy and security
* Provide excellent customer support to users
* Generates reports and bills.
* Provides a search facility for doctors.

**Don'ts**

* Do not use overly complicated language or design
* Do not require unnecessary personal information from users
* Do not overload the website with too much content
* Do not have a confusing or difficult-to-use user interface

**Benefits**

* Increased accessibility to patients for appointments
* Flexibility for patient to browse at their own pace and on their own schedule
* Decreaing the time taken to book appointment.
* Convenience for both patient and staff.
  1. **Definitions, acronyms and abbreviations** 
     + - **HMS:** Hospital management system
       - **SRS:** software requirement specifications
       - **System operator:** System administrator, patient, doctor organiser
       - **RAM:** Random access memory
       - **Login id:** It is a unique sequence ID allocated to each patient or organiser in the catalog.
       - **Patient:** Any candidate looking to book an appointment or a test.
       - **System administrator/Administrator:** User having all the privileges to operate the EMW.
       - **Staff:** actor that organises the appointment and tests.

**1.4 References**

a. Software Engineering by K.K. Aggarwal & Yogesh Singh, New Age Publishing House, 3rd Edition, 2008.

**1.5 Overview**

The rest of SRS document describes various system requirements, interfaces, features and functionalities. The system will be designed to provide a seamless user experience, secure payment transactions, and easy doctor management for administrators. The website should allow users to register and create an account. Users should be able to login and logout securely.

**2. Overall description**

* The HMS maintains records of doctors, info of patient and appointment info. The system admin will receive lists of the admitted patients and appointments. Then the info of the patients is sent to the staff.
* The HMS allows patients to book appointments for a doctor. It provides a payment gateway through which it will collect payments from the patients. It also allows the patients to give feedback of the doctor who diagnosed them and post reviews for the future patients. It also includes a help and query desk for any customer support required.
* The admin will maintain the following-

1. Details of all the Doctors from the catalog
2. Patient details that booked the appointment
3. Information about all the appointment

* Patient can access the following functions-

1- Register and Login

2- View doctor details

3- Book apointments

4-Patients can use the payment to complete payment of their purchase.

5-Patients can post reviews and feedback for the doctor

6-Patients can access helpdesk for any information and query

* The admin/Patient/doctor organiser will require following information from the system:

1-user details of all the patients

2-doctor details

3-transactions details and generate reports for bill, etc.

**2.1 Product perspective**

The HMS is a standalone web application that is accessible via a web browser. HMS is intended to be a stand-alone product and should not depend on the availability of other software. The website will be accessible to users worldwide, and will be designed to be scalable and reliable. It shall be compatible with all the mainstream browsers such as chrome, firefox , opera, brave.

**2.1.1 System interfaces**

NONE

**2.1.2 User interfaces**

The HMS will have the following user-friendly and menu-driven interfaces:

(a) Login: to allow the entry of patients and organisers through valid login ID and password.

(b)Doctor Details: to maintain doctor details.

(c) User Details: to maintain details of every user that includes patients and organiser.

(d) Book Appointment: to allow the patients to book a appointmement for the following doctor

(e)Manage transactions: to allow the patients to pay for the purchase and refund for cases.

(f)reviews: to allow the patients to post a review or a feedback to doctor they attended.

(g)helpdesk: to allow user to communicate with the admin or organiser in-case they have any query or need help.

The website should generate the following information:

1. Details of all the users using the website
2. Details of all the doctors
3. Details of the transactions of appointment.

**2.1.3 Hardware interfaces**

As the Hostpital Management System is a web-based platform, there are no specific hardware interfaces required to run the system. However, users will need to have access to a computer or mobile device with a modern web browser and reliable internet connectivity to use the system. The system shall be compatible with popular web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge. Additionally, the system shall be designed using a responsive design approach to ensure that it is accessible on a range of screen sizes, including desktops, laptops, tablets, and smartphones.

**2.1.4 Software interfaces**

NONE

**2.1.5 Communications interfaces**

Communication is via a online network.

**2.1.6 Memory constraints**

NONE

**2.1.7 Site adaptation requirements**

The system shall support multiple languages to cater to a global audience. The system shall be designed to support language translations of user interface elements and content.

**2.2 Product functions**

The HMS will allow access to registered users with specific roles. Depending upon the user’s role, he/she will be able to access only specific modules of the system.

A summary of major functions that the HMS will perform is given as follows:

* + - Protect the database by requiring a correct and registered username and password.
    - Make data organization easier by classifying participants according to sub-types of personal doctors.
    - Facilitate a systematic process of entering, organizing, retrieving, modifying and deleting data from the database without the need to go the database itself.
    - Add new user information easily.
    - Provide an option for users to update information.
    - Delete existing client information.
    - Create and display new doctors.
    - Provide an easy function where you can go back one form whenever necessary.
    - Display user information in an organized manner for easy understandability.
    - Display payment terms of patient including the total appointment fee, amounts paid by the patient and the balance. Also provide refund in particular case.

**2.3 User characteristics**

* + - Qualification: At least comfortable with one language.
    - Experience: Should be well versed/informed about the registration process of the website.
    - Technical Experience: Elementary knowledge of computers and browsers.

**2.4 Constraints**

* + - Requires a stable internet connection for accessing the website
    - As a website in dependent on browser and browser code are different for different browsers. In website development, cross-browser compatibility is important. Website will only operate fully on mainstream browsers. Some functions may be restricted in certain browsers

**2.5 Assumptions and dependencies**

* + - Website requires the location access of the user to display nearby doctors for the patient.
    - Full working HMS depends on the browser and internet connection.
    - All the doctor details in downloaded or uploaded by the doctor organiser and shown to the patient.

**2.6 Apportioning of requirements**

Not required

**3. Specific requirements**

This section contains the software requirements in detail along with the various forms to be developed.

**3.1 External interfaces**

**3.1.1 User interfaces**

The following user interfaces will provided by the system:

1. **Login Form**

This will be the first form, which will be displayed. It will allow the user to access the different forms based on his/her role. Various fields available on this form will be:

* **Login ID:**Alphanumeric of length in the range of 4 to 15 characters. Special characters and blank spaces are not allowed.
* **Password:**Alphanumeric of length in the range of 4 to 15 characters. Blank spaces are not allowed. However, special characters are allowed.

1. **Change Password**

The change password form facilitates the user to change the password. Various fields available on this form will be:

* **Login ID:**Alphanumeric of length in the range of 4 to 15 characters. Special characters and blank spaces are not allowed.
* **Old Password:**Alphanumeric of length in the range of 4 to 15 characters. Blank spaces are not allowed. However, special characters are allowed.
* **New Password:**Alphanumeric of length in the range of 4 to 15 characters. Blank spaces are not allowed. However, special characters are allowed.
* **Confirm Password:**Alphanumeric of length in the range of 4 to 15 characters. Blank spaces are not allowed. However, special characters are allowed. The content of this field must match with the contents of the new password field.

1. **Maintain Patient Details**

This form will be accessible only to the system administrator. It will allow him/her to add/update/delete/view information about users for the website.

Various fields available on this form will be:

* **User number:** Numeric and will have value from 10 to 99999.
* **Photograph:** Will allow user to upload their image.
* **Name:** Alphanumeric, with length 3 to 50 characters. Blank spaces are allowed. Special characters are not allowed.
* **Date of birth:** Will be of format mm/dd/yyyy. It will have 10 alphanumeric characters.
* **Address:** Alphanumeric of length up to 10 to 200 characters. Blank spaces are allowed.
* **Telephone:** Numeric and can have length up to 11 digits.
* **Email:** Alphanumeric and can have length up to 50 characters. Email must have one ‘@’ and ‘.’ symbol.
* **Login date:** Will be of format mm/dd/yyyy. It will have 10 alphanumeric characters.
* **Password:** Alphanumeric of length in the range of 4 to 15 characters. Blank spaces are not allowed. However, special characters are allowed. Initially contains 8 digits randomly generated number (auto-generated).

1. **Maintain Doctor Details**

This form will be accessible only to the system administrator. It will allow him/her to add/update/delete/view information about doctors and its details given from the organiser.

Various fields available on this form will be:

* **Accession number:** Numeric and will have value from 10 to 99999.
* **Doctor Organiser:** Will display all the organisers.
* **ISBN:** Numeric
* **Title:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Photographs:** will allow the organiser to upload images for the basic overview of the doctor for the patient.
* **Performances:** list of all the subdoctors in the doctors and the artists performing

1. **Booking Appointments**

This form will be accessible only to the system administrator and patient. It will allow him/her to issue appointments to the patient(s).

Various fields available on this form will be:

* **User number:** Numeric and will have value from 100 to 5999.
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Doctor:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Ticket /pass type** (the following user information will be displayed):
* **Basic:** Alphanumeric of length 3 to 100 character.
* **Premium:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Custom:** customizable as per the patient needs. It will be of format Alphanumeric of length 3 to 100 character.
* **Booking status** (the following fields will be displayed)
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Title:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **booking date:** Will be of format mm/dd/yyyy. It will have 10 alphanumeric characters.
* **Date of the doctor:** Date of the doctor. It will be of format mm/dd/yyyy and will have 10 alphanumeric characters

1. **Transactions and Payment**

This form will be accessible to the system administrator and patient. It will allow him/her to pay for the purchase of the ticket/passes for the doctor.

Various fields available on this form will be:

* **User number:** Numeric and will have value from 100 to 5999.
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Doctor:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Appointment** (the following user information will be displayed): Information about the appointment made by the patient.
* **Payment details** (the following fields will be displayed)
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Title:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Select gateway:** It will have 10 alphanumeric characters.
* **Amount payable**: Numeric and will have value from 10 to 99999.
* **Select method:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Balance:** amount left to be paid after the payment. Numeric and will have value from 10 to 99999.
* **Payment confirmation:** whether payment is received or not. Alphanumeric of length 3 to 100 characters
* **Date of the doctor:** Date of return. It will be of format mm/dd/yyyy and will have 10 alphanumeric characters

1. **Refund**

This form will be accessible to the system administrator and patient. It will allow him/her to get refund for the purchase of the ticket/passes for the doctor.

Various fields available on this form will be:

* **User number:** Numeric and will have value from 100 to 5999.
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Doctor:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Appointment** (the following user information will be displayed): Information about the appointment made by the patient.
* **Payment details** (the following fields will be displayed)
* **Accession number:** Numeric and will have value from 10 to 99999.
* **Title:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Gateway:** It will have 10 alphanumeric characters.
* **Amount**: Numeric and will have value from 10 to 99999.
* **Method:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Payment confirmation:** whether payment is received or not. Alphanumeric of length 3 to 100 characters
* **Date of the doctor:** Date of return. It will be of format mm/dd/yyyy and will have 10 alphanumeric characters
* **Payment status** (status of the payment)
* **Status:** It will have 10 alphanumeric characters.
* **Amount**: Numeric and will have value from 10 to 99999.
* **Fault:** Reason due to which payment failed. Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.
* **Payment confirmation:** whether payment is received or not. Alphanumeric of length 3 to 100 characters
* **Date of the doctor:** Date of return. It will be of format mm/dd/yyyy and will have 10 alphanumeric characters

1. **Search Doctor**

This form will be accessible to the system administrator and patient. It will allow him/her to search about an existing doctor.

The field available on this form will be:

* **Type text here:** Alphanumeric of length 3 to 100 characters. Special characters (except brackets) are not allowed. Numeric data will be allowed.

1. **Generates Reports**

The reports will be accessible to the system administrator and patient. The system will generate different reports according to the specified criteria.

(i) Details of patient

* Name
* User number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* User details

(ii) Details of appointment issued to patient

* Name of the doctor
* Date of doctor
* Patient Name
* User number \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Appointment ID
* Date of Birth
* Telephone

(iii) Status of payment and bill receipt

* Name of patient
* Payment id
* Reference number\_\_\_\_\_\_\_\_\_\_\_\_
* User number\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Total amount \_\_\_\_\_\_\_\_\_\_\_\_\_
* Doctor name
* Payment method
* gateway
* Balance

**3.1.1 User interfaces**

As stated in section 2.1.3

**3.1.3 Software Interfaces**

As stated in section 2.1.4.

**3.1.4 Communication Interfaces**

None

**3.2 Functions**

**3.2.1 Registration**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** This use case allows an actor to register securely in the system Creating and saving data in the database |
|  | **Actor:** patient and admin |
|  | **Precondition:** none |
|  | **Postcondition:** the patient is successfully registered and his details are securely saved |
|  | **Basic Flow:**   1. The use case starts when the user clicks the “Sign Up” tab on the navigation bar. 2. The system displays the signup page that allow users to fill in their username/email address, first and last name and their password. 3. The user must enter a valid username that does not already exists. 4. The user keys in the details and clicks “Sign Up” button. 5. The system displays the user’s profile page. |
|  | **Alternate Flow:**   1. Invalid details- if the user’s id/name entered by the user is already taken/exists or the information entered by the user is missing then the registration fails and the user is redirected to basic flow to register again. 2. User already registered- if the user trying to register is already registered then the login is failed and the user is redirected to login page where he/she must enter details to login in. |
|  | **Special requirements:** N/A |
|  | **Associated use case:** N/A |

**B. Validity Checks**

1. Every user will have a unique login ID.
2. Login ID cannot be blank
3. Login ID can only have 4 to 15 characters
4. Login ID will not accept special characters and blank spaces
5. Password cannot be blank
6. Length of password can only be 4 to 15 digits
7. User Name should not be blank
8. User Name cannot be blank.
9. Length of User Name can be of 3 to 50 characters.
10. User Name will only accept alphabetic characters and blank spaces.
11. Email cannot be blank
12. Email cannot be blank.
13. Email can have up to 50 characters.
14. Email should contain @ and . characters.
15. Phone cannot be blank.
16. Phone cannot include alphabets, special characters and blank spaces.
17. Phone can be up to 10 digits
18. Date of birth cannot be blank
19. Alphabets, digits, hyphen and underscore characters are allowed in the password field.
20. Password will not accept blank spaces.

**C. Sequencing Information**

None

**D. Error Handling/Response to Abnormal Situations**

If any of the validation flows does not hold true, appropriate error message will be prompted to the user for doing the needful.

**3.2.2 Login**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** user tries to sign into the system to view their details. |
|  | **Actor:** patient and admin |
|  | **Precondition:** user should be registered beforehand in the database |
|  | **Postcondition:** the user has access to the system |
|  | **Basic Flow:**   1. The use case starts when the user clicks the “Login” tab on the navigation bar 2. The system displays the login page that allow users to fill in their username/email address and password 3. The user keys in the details and clicks “Sign In” button 4. The system checks the details in the database 5. The system displays the user’s profile page |
|  | **Alternate flow:**   1. Invalid credentials- if the user name/id or password entered by the user is incorrect or missing then the login fails and the user is redirected back to the basic flow. 2. User not registered-if the user trying to login, has no saved data in the database then the user is not registered and is redirected to the registration page. |
|  | **Special requirements:** N/A |
|  | **Associated use case:** N/A |

**B. Validity Checks**

1. Every user will have a unique login ID.
2. Login ID cannot be blank.
3. Login ID can only have 4 to 15 characters.
4. Login ID will not accept special characters and blank spaces.
5. Password cannot be blank.
6. Password will not accept blank spaces.
7. Length of password can only be 4 to 15 digits.
8. Alphabets, digits, hyphen and underscore characters are allowed in the password field.

**C. Sequencing Information**

None

**D. Error Handling/Response to Abnormal Situations**

If any of the validation flows does not hold true, appropriate error message will be prompted to the user for doing the needful.

**3.2.3 Maintain Patient Details**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** This use case documents the steps that the admin must follow in order to maintain user details and add, update, delete, and view patient information |
|  | **Actor:** admin |
|  | **Precondition:** admin must be logged into the system before this use case begins |
|  | **Postcondition:** if the use case is successful, then user information is added, updated, deleted or viewed. |
|  | **Basic flow:**   1. The use case starts when the admin wished to add/update/delete/view patient information. 2. Once the admin provides the requested information, one of the following subflows is executed-  * if the admin selects “add patient”, the add a user subflow is executed * if the admin selects “update patient details”, the update user details subflow is executed * if the admin selects “delete patient details”, the delete user details subflow is executed * if the admin selects “view patient details”, the view user details subflow is executed   **Basic flow 1(Add a Patient)**  the system requests that the admin enter the patient details. this includes**-**   1. user number 2. photograph 3. name 4. Date of Birth 5. Email 6. Address 7. Login id 8. Password   Once the administrator provides the requested information, the system checks that user number is unique. Then user is added to the system.  **Basic flow 2(Update a User)**  1. The system requests that the administrator enter the patient number.  2. The administrator enters the patient number.  3. The system retrieves and displays the user’s information.  4. The administrator makes the desired changes to the user information. This includes any of the information specified in the Add a user subflow.  5. Once the administrator updates the necessary information, the system updates the user record with the updated information.  **Basic Flow 3(Delete a User)**  1. The system requests that the administrator specify the user number of the user.  2. The administrator enters the user number. The system retrieves and displays the user information.  3. The system prompts the Administrator to confirm the deletion of user record.  4. The administrator verifies the deletion.  5. The system deletes the record.  **Basic Flow 4(View a patient)**  1. The system requests that the administrator specify the user number.  2. The system retrieves and displays the user information. |
|  | **Alternate flow:**   1. **invalid entry-** if the admin enters invalid accession number number/id the system displays an error message. the admin returns to basic flow and re-enter the accession number/id. 2. **Patient not found-** if in the update a patient, delete or view patient details, the user information with the specified accession number/id does not exist, the system displays a error message. the admin returns to basic flow and may re-renter the accession number. 3. **Deletion not allowed-**if in the delete user details of the user selected, ongoing ticket details or registration details are present, then the admin is not allowed to delete the user information and basic flow is started again |
|  | **Special requirements:** N/A |
|  | **Associated use case:** N/A |

**B. Validity Checks**

1. Only the administrator/DEO will be authorized to access the user Details module
2. Every user will have a unique membership number
3. User number can only have value from 100 to 5999 digits.
4. User number will not accept alphabets, special characters and blank spaces.
5. Every User will have a unique membership number
6. Date of birth cannot be blank.
7. Address cannot be blank.
8. Address can have length up to 10 to 200 characters.
9. Phone cannot be blank.
10. Phone cannot include alphabets, special characters and blank spaces.
11. Phone can be up to 11 digits.
12. Email cannot be blank.
13. Email can have up to 50 characters.
14. Email should contain @ and. characters.
15. Email cannot include blank spaces.

**C. Sequencing Information**

None

**D. Error Handling/Response to Abnormal Situations**

If any of the validation/sequencing flows does not hold true, appropriate error message will be prompted to the administrator for doing the needful.

**3.2.4 Doctor Details**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** this use case provides all the details about the doctors |
|  | **Actor:** patient, admin and doctor organiser |
|  | **Precondition:** patient should be logged into the system and must provide his/her location |
|  | **Postcondition:** the patient has access to all information about the doctors and location details. |
|  | **Basic Flow:**   1. The use case starts when the patient clicks the “doctors details” tab on the navigation bar 2. The system displays the details of the doctors that allow patients to book appointment 3. The patient is shown information of doctors on the basis of his/her location   **Basic Flow 1 (Add an** Doctor**)**  The system requests that the administrator enter the doctor information. This includes:   * Accession number * Doctor organiser * ISBN * Title * Photographs * performances * Artists   Once the administrator provides the requested information, the doctor is added to the system.  **Basic Flow 2 (Update an Doctor)**  1. The system requests that the administrator enter the accession number.  2. The administrator enters the accession number.  3. The system retrieves and displays the doctor information.  4. The administrator makes the desired changes to the doctor information. This includes any of the information specified in the Add a doctor subflow.  5. Once the administrator updates the necessary information, the system updates the doctor information with the updated information.  **Basic Flow 3 (Delete an Doctor)**  1. The system requests that the administrator specify the accession number.  2. The administrator enters the accession number. The system retrieves and displays the required information.  3. The system prompts the administrator to confirm the deletion of the doctor record.  4. The administrator verifies the deletion.  5. The system deletes the record.  **Basic Flow 4 (View an Doctor)**  1. The system requests that the administrator specify the accession number.  2. The system retrieves and displays the doctor information. |
|  | **Alternate flow:**   1. Login failed-if the user is not logged into the system, the system will show an error and redirects to the login page in order to login again. |
|  | **Special requirements:** N/A |
|  | **Associated use case:** N/A |

**B. Validity Checks**

1. Only the administrator/DEO will be authorized to access the patient Details module
2. Every doctor will have a unique accession number.
3. Accession number cannot be blank.
4. Accession number can only have value from 10 to 99999 digits.
5. Doctor organiser cannot be blank.
6. ISBN number cannot be blank.
7. Length of ISBN number for any patient can only be equal to 11 digits.
8. ISBN number will not accept alphabets, special characters and blank spaces.
9. Title cannot be blank.
10. Length of title can be of 3 to 100 characters.
11. Title will only accept alphabetic characters, brackets, numeric digits and blank spaces.
12. artists cannot be blank.
13. Length of first name and last name can be of 3 to 300 characters.
14. Artists will not accept special characters and numeric digits.

**C. Sequencing Information**

None

**D. Error Handling/Response to Abnormal Situations**

If any of the validation flows does not hold true, appropriate error message will be prompted to the patient for doing the needful.

**3.2.5 Book Appointment**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** this use case provides all the details about the tickets and booking appointment for the corresponding doctors. |
|  | **Actor:** patient, admin and doctor organiser |
|  | **Precondition:** patient should be logged into the system and must provide his/her location |
|  | **Postcondition:** the patient has access to all information about the doctors and location details. |
|  | **Basic Flow:**   1. The use case starts when the patient clicks the “doctors details” tab on the navigation bar 2. The system displays the details of the doctors that allow patients to purchase tickets 3. The patient is shown information of doctors on the basis of his/her location 4. The patient is shown the price and other details of the doctors. |
|  | **Alternate Flow:**   1. **Login failed**-if the patient is not logged into the system the the system will show and error and redirects to the login page in order to login again. |
|  | **Special requirements:** N/A |
|  | **Associated use case:** custom, basic, premium |

**B. Validity Checks**

1. The administrator and patient will be authorized to access the book tickets module
2. Every patient will have a unique membership number.
3. patient number can only have value from 100 to 5999 digits.
4. Patient number will not accept alphabets, special characters and blank spaces.
5. patient list cannot be blank.
6. Accession number cannot be blank.
7. Accession number can only have value from 10 to 99999 digits.
8. Date cannot be blank.
9. Title cannot be blank.
10. Length of title can be of 3 to 100 characters.
11. Title will only accept alphabetic characters, brackets, numeric digits and blank spaces.
12. Amount cannot be blank.
13. Amount can only have numeric value from 10 to 9999999 digits

**C. Sequencing Information**

Patient and doctor details should be available in the system.

**D. Error Handling/Response to Abnormal Situations**

If any of the validation/sequencing flows does not hold true, appropriate error message will be prompted to the administrator for doing the needful.

**3.2.6 Manage transaction**

**A. Use case description**

|  |  |
| --- | --- |
|  | **Brief description:** This use case manages the transaction made by the patients to purchase doctor tickets/passes. |
|  | **Actor:** patient, admin |
|  | **Precondition:** patient should be logged into the system and must provide his/her location |
|  | **Postcondition:** the patient has access to all information about the doctor payments |
|  | **Basic flow:**  1. The use case starts when the patient clicks the “payment” tab on the navigation bar  2. The system displays the details of the doctors that allow patients to purchase tickets  3. The patient is shown information of payment and amount to be paid  4. The patient is shown the price and other details of the doctors.  5. The patient then selects payment gateway and payment methods  6. The patient then completes the payment. |
|  | **Alternate flow:**  **1.Login failed**-if the patient is not logged into the system then the system will show and error and redirects to the login page in order to login again.  **2.Payment failed-**if the payment is failed due to some fault, then the patient is prompted with a failed payment error with the fault specification and redirected the payment page. |
|  | **Special requirements:** N/A |
|  | **Associated use case:** payment failed and refund |

**B. Validity Checks**

1. The administrator and patient will be authorized to access the book tickets.
2. Membership number can only have value from 10 to 5999 digits
3. Transaction id should not be blank
4. Transaction id can only have value from 10 to 9999.
5. Transaction id must be unique
6. Doctor Title must not be blank
7. Payment status must not be blank
8. Payment status can only have alphabetic characters.

**C. Sequencing Information**

Patient, doctor , appointment details and payment details should be available in the system.

**D. Error Handling/Response to Abnormal Situations**

If any of the validation/sequencing flows does not hold true, appropriate error message will be prompted to the administrator for doing the needful.

**3.3 Performance Requirements**

As the Hostpital Management System is a web-based platform, there are no specific hardware interfaces required to run the system. Responses of the website should be quick and smooth, it should not feel laggy or poorly optimized.

Patients will need to have access to a computer or mobile device with a modern web browser and reliable internet connectivity to use the system. The system shall be compatible with popular web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge. The system shall be designed using a responsive design approach to ensure that it is accessible on a range of screen sizes, including desktops, laptops, tablets, and smartphones.

**3.4 Logical Database Requirements**

|  |  |
| --- | --- |
| **Table name** | **Description** |
| Patient profile | Stores information about patients |
| Doctor information | Stores information about doctors |
| Payment information | Stores information regarding payments |
| Content management | Stores the website content |
| Refund | Stores information about the refunds |
| Patients | Stores information about the patients |
| Reviews | Stores all the reviews about doctors |

**3.5 Design Constraints**

NONE

**3.6 Software System Attributes**

**3.6.1 Reliability**

This requirement relates to the website's availability and functionality. The website should be available at all times, with minimal downtime and interruptions, to ensure that patients can access the information they need and purchase tickets without any issues.

**3.6.2 Usability**

The website shall provide a user-friendly interface that is easy to navigate and understand. The website shall be designed to be accessible to users with disabilities, such as screen readers and keyboard-only users.

**3.6.3 Security**

The website shall implement secure measures to protect user data, such as encryption of sensitive data, and protection against common web vulnerabilities, such as cross-site scripting (XSS) and SQL injection attacks.

**3.6.4 Maintainability**

The application should be designed in a maintainable manner such that it will be easy to incorporate new changes and requirements in the individual modules.

**3.6.5 Backup and Recovery**

The website should be backed up regularly, and a recovery plan should be in place to restore the website in case of a catastrophic doctor.

**3.6.6 Performance**

The website shall be designed to handle high traffic and provide fast response times. The website shall be able to handle concurrent user requests and provide an uptime of at least 99%.

**3.6.7 Mobile Optimization**

This requirement relates to how well the website performs on mobile devices, such as smartphones and tablets. The website should be designed with a responsive design and mobile-specific features, such as mobile ticket scanning, to ensure that users can access the website and purchase tickets from their mobile devices.

**3.6.8 Compatibility**

This requirement relates to ensuring that the website is compatible with different web browsers and operating systems. The website should be designed to work on a wide range of devices and platforms, to ensure that it can be accessed by the widest possible audience.

**3.7 Other requirement**

NONE