System Requirements Specification (SRS) – Kiddo Shield

Online Child Vaccination Tracker system could divide the four main parts, Patient part, Doctor part, Admin part and the acknowledgement part.
This document describes the system requirement of the Account part.

Title : kiddo Shield

Client:

Hospital, parent

Definition:

The Child Health and Vaccination Website is an online platform that allows parents and healthcare providers to manage child health comprehensively. It includes features like a Child Vaccination Tracker, disease and vaccine information, personalized diet plans, and virtual doctor consultations. The platform prioritizes security, compliance, usability, and performance, aiming to provide a centralized and user-friendly solution for informed child healthcare management.

Objective:

The purpose of the project is to create a user-friendly and efficient online platform that empowers parents in managing their child's healthcare effectively.

Scope:

The system aims to provide parents with a comprehensive platform for managing their child's health, including vaccination scheduling, online consultations, diet planning, and information about different diseases. It includes various features like vaccination slot booking (Parents can schedule vaccination appointments for their children through the online platform) ,reminders, online consulting, health records (Parents and healthcare providers can access and update health records as needed),user-friendly interface, Diet Plan Management.

1.Functional Requirements

The Account part of e-Farming System has three modules which are divided 13 processes described as below.

User Registration and Authentication
Users (parents and healthcare providers) must register with valid credentials.
Two-factor authentication for enhanced security.

Child Profile Management
Parents can add, edit, and delete child profiles.
Include fields for basic demographics, medical history, and relevant contact information.

Vaccination Slot Booking:
Parents will be able to schedule vaccination appointments for their children.
The system will provide a calendar view for available vaccination slots.

Reminders:
Automated reminders will be sent to parents leading up to schedule vaccinations.

Online Consulting:
Healthcare professionals will be able to conduct secure video calls or chat consultations.
Appointment scheduling for online consultations will be available.

Diet Plans:
Parents will have access to view and follow diet plans for their children.

Disease Information:
-Information on various diseases, especially those preventable through vaccination, will be available.
-The system will include a search functionality for disease information.

Vaccine Information

Comprehensive details on vaccines, including composition, recommended age groups, and potential side effects.
Links to official health sources for further reading.

Health Records:
-Parents and healthcare providers will be able to access and update digital health records.
-The system will maintain a comprehensive vaccination history for each child.

Security and Privacy:
-The system will implement secure user authentication for parents and healthcare providers.

1.1 Patient Module

- Patient is the user of system who wants to take vaccine foe their children.
- He is also able to view the information about vaccines and their prices.

1.1.1 Account Creation Process

- Online Child Vaccination Tracker system compels to create the account before using it. So, This System should provide the function which makes patient creates new account.
- When patient creates new account, the function demands for information described as below.

    1. Login information
    2. Contact Details

- The Login information
  The Login information consists of some items described as below.

    1. User ID
    2. Password
    3. First Name
    4. Last Name

5. E-mail address
6. Aadhar No.
7. DOB of Child

- All items are compulsory demanded.

- User ID
  - ✓ The UserID should be unique. If the UserID correspond with not case-sensitive to other which is previously registered, the UserID should not be registered as an account.

- Password
  - ✓ The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

    1. Numeric figure (at least one)
    2. Capital alphabet (A-Z)(at least one)
    3. Small alphabet (a-z)(at least one)
    4. Special character (#, $, %, &, etc.) (at least one)

  - ✓ The Password is masked by dummy characters. The re-entering Password is demanded.
  - ✓ The Password must be encrypted in Online Child Vaccination Tracker system.

- User Type
  The User Type falls into three categories described as below.

    1. Patient
    2. Doctor
    3. Administrator

  - ✓ The User Type defines also three types of user; "Patient user", "Doctor user", and "Administrator user".
  - ✓ In an Account Creation Process, the user can select Patient.
  - ✓ No one could select The Administrator, because Administrator is implemented to Online Child Vaccination Tracker system in advance.

- Contact Details
- The Contact Detail consists of some items described as below.

    1. Permanent Address

2. Contact Phone No

- All items are compulsory demanded.

- Permanent Address
  - ✓ Permanent Address should be filled.
  - ✓ But only the state should be selected from options.

1.1.2 Login Process

- Online Child Vaccination Tracker System always compels user authentication before using itself except when a new account is successfully created.

- The user authentication demands UserID and Password. The UserID and the Password should be checked in three ways.

  - First, The UserID and the Password should be existed and correct.
    - ✓ If The UserID and the Password are not equal to what the user has registered, the user authentication cannot be provided.

  - Second, the User Type linked to the UserID should be "Patient".
    - ✓ When the User Type is "patient", then user can be placed on “Patient Home”.

  - Finally, UserID should be available.
    - ✓ The Administrator can decide whether the UserID is available or suspended – Refer to the SRS of the Admin part.
    - ✓ If patient is rejected, user authentication is not provided for system user.

- The patient account should alive for so long as the duration decided by Admin.

- Only when the three checks are successfully completed, patient can be placed on respected page.

- The “Patient Home” provides the some items described as below.

  1. A trigger to logout
  2. A trigger to update Account
  3. A trigger to Change Password
  4. A trigger to Search Vaccine

5. A trigger to check vaccine update

1.1.3 Forgot Password Process

- When system user lost their Password, the recovery method should be provided by Online Child Vaccination Tracker system.
  The recovery method is described as below.

  - First, system user enters their User ID for Online Child Vaccination Tracker System.

  - Next, Online Child Vaccination Tracker System demands the Answer which has been registered since when the Account was created.

  - Only when the Answer is correct, patient get the new password by E-mail which also has been registered since when the Account was created.

  - The new password is automatically generated by Online Child Vaccination Tracker System.

    - ✓ Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.

- As a consequence, The patient could get the patient authentication using the new password.
  - Then, the patient had better change the new password manually.

- If the Answer is not correct, otherwise, the correct Answer is demanded for user again.
  - In that case, Of course, patient couldn't get the new password.

1.1.4 Change Password Process

- When patient wants to change their Password, the measure should be provided by Online Child Vaccination Tracker System.

- Therefore, Online Child Vaccination Tracker System should provide the function which is available after getting the patient authentication.

- The function demands the current password and the new password.

    - Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
    - The current password and the new password are masked by using dummy characters.
    - The new password is demanded to enter twice to avoid a typing error.

- Only when the current password is correct, patient could change their Password.

- When the current password is changed into new password, Online Child Vaccination Tracker System compels user authentication again.

1.1.5 Update Account Process

- Online Child Vaccination Tracker System should provide the function which makes the account updated for patient.

- The information patient could update is described below.

    1. Login information
    2. User information
    3. Security Question Information

- The Login information
  The updatable items as described below.

    1. First Name
    2. Last Name
    3. E-mail address

    - All items are compulsory demanded, but updating is optional.

- The User information
  The updatable items as described below.

    1. User Name

2. User Phone No
3. E-mail address
4. Permanent address

- All items are compulsory demanded, but updating is optional.

- The Security Question information
  The updatable items as described below.

1. Selected Question
2. Answer

- All items are compulsory demanded, but updating is optional.

1.1 Doctor Module

1.2.1 Account Creation Process

- Child vaccination System compels to create the account before using it. So, E-Farming System should provide the function which makes farmer creates new account.

- When parent creates new account, the function demands four information described as below.

1. Login information
2. Contact Details

- The Login information
  The Login information consists of some items described as below.

3. First Name
4. Last Name
5. E-mail address

- All items are compulsory demanded.

- Contact Details

- The Contact Detail consists of some items described as below.

    1.Permanent Address
    2.Contact Phone No

  - All items are compulsory demanded.

  - Permanent Address
    - ✓ Permanent Address should be filled.
    - ✓ But only the state should be selected from options.

  - .

- Login information should be entered on one screen, and then Doctor information and information should be entered on another screen.

2.Non-Functional Requirements:

2.1 Performance Requirements:

-The system will load and display critical pages within 2 seconds under normal operating conditions.

-The system will support a minimum of 1000 concurrent users during peak times without significant degradation of performance.

2.2 Scalability:

-The architecture will allow for easy scalability to accommodate an increase in the user base or data volume.
-The system will handle a growth rate of at least 20% in terms of users and data annually.

2.3Availability:

-The system will have an uptime of at least 99.5% excluding scheduled maintenance periods.
-Scheduled maintenance will occur during off-peak hours, and users will be notified in advance.

2.4 Reliability:

-The system will be capable of handling unexpected failures gracefully, with minimal impact on users.
-The Mean Time Between Failures (MTBF) will be at least 500 hours.

2.5 Security:

-The system will undergo regular security audits to identify and address vulnerabilities.
-Access to sensitive information will be logged and monitored for unauthorized access.

2.6 Maintainability:

A database software will be used to maintain System data Persistence.
IT operations team will easily monitor and configure System using Administrative tools provided by Servers.
Separate environment will be maintained for system for isolation in production, testing, and development**.**

2.7Portablility:

PDA: Portable Device Application
Portable device application system will be provided portable user interface through users will be able to access online web based system.
System can be deployed to single server, multi server, to any OS, Cloud (Azure or AWS or GCP).

Accessibility:

only parents and hospital will be able to login on website after authentication.

Durability:

The system will maintain child details.
The system will implement backup and recovery for retaining data over the time.
The system will use cache for faster data retrieval and improved performance.

Efficiency:

Maximum number of parents can login to website at same time.
The system architecture should be scalable to handle an increasing number of users and data.
System will be able to manage load.

Modularity:

System will designed and developed using reusable, independent scenarios in the form of modules.
These modules will be loosely coupled and highly cohesive.

Safety:

-All user data, especially health records and personally identifiable information (PII), should be encrypted during transmission and storage.
-Establish a data recovery plan to restore information in case of accidental deletion, system failure, or other emergencies.
-Maintain detailed audit trails for user activities, especially those involving access to health records.
-Ensure that users only have access to the data necessary for their roles.

4.Constraints

4.1 Legal and Ethical Considerations

Compliance with HIPAA or other relevant data protection laws.
Obtain consent for data collection and sharing.

4.2 Compatibility

Support major web browsers and mobile platforms.
Ensure responsiveness across various screen sizes.

5.Assumptions and Dependencies

5.1 Data Accuracy

Assume users provide accurate and up-to-date information.
Implement data validation checks during input.

5.2 Internet Connectivity

Users are expected to have a stable internet connection for real-time updates, notifications, and virtual consultations.

6 Appendix

Include wireframes, mock-ups, and flowcharts detailing the user journey and system architecture.