**SMART PRESCRIPTION APPLICATION**

Traceability Record

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**Document History**

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*Acronym*

NAT = NatthakanKaeokanpai

PHI = PhithiwatSitthitun

PROM = PrompongSugunnasil

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# Chapter One | Introduction

## 1.1 Purpose

**Traceability** is the ability to verify the history, location, or application of an item by means of documented recorded identification. Other common definitions include the capability (and implementation) of keeping track of a given set or type of information to a given degree, or the ability to chronologically interrelate uniquely identifiable entities in a way that is verifiable

## 1.2 Project Scope

Smart prescription application can create the prescription of the patient in form of QR code that creates by a doctor. Smart prescription application requires a mobile application for scan QR code by the pharmacist. Pharmacist can get the prescription of patient with the detail of drug on a mobile application.

Smart prescription application can also record the history of allergy drug of patient and report to the Food and Drug Administration, Ministry of Public Health organization or (FDA) for observing unusually allergy drug that has been found in Thailand.

# Chapter Two | Traceability Record Table

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-01 | Doctors can view a doctor home page on the web application. | SRS-001  SRS-002  SRS-003 | UC-01 | Class-07 | UI-07 | SD-01 | AD-01 | UTC-01 | STC-01 |
| URS-02 | Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username. | SRS-001  SRS-004  SRS-005  SRS-006  SRS-007  SRS-008  SRS-009  SRS-010  SRS-011  SRS-012  SRS-013  SRS-014  SRS-015  SRS-016  SRS-017  SRS-018  SRS-019  SRS-020  SRS-113 | UC-02 | Class-09  Class-10 | UI-08 | SD-02 | AD-02 | UTC-11 | STC-02 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-03 | Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username. | SRS-001  SRS-004  SRS-006  SRS-007  SRS-008  SRS-009  SRS-010  SRS-011  SRS-012  SRS-013  SRS-014  SRS-015  SRS-021  SRS-022  SRS-023  SRS-024  SRS-025  SRS-026  SRS-027  SRS-028  SRS-029  SRS-030  SRS-113 | UC-03 | Class-09  Class-10 | UI-09 | SD-03 | AD-03 | UTC-12 | STC-03 |
| URS-04 | Doctors can delete a patient’s profile on the web application. | SRS-001  SRS-004  SRS-021  SRS-022  SRS-024  SRS-031  SRS-032 | UC-04 | Class-09  Class-10 | UI-10 | SD-04 | AD-04 | UTC-13 | STC-04 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-05 | Doctors can search patient’s profiles on the web application by using personal id, name, and surname. | SRS-001  SRS-004  SRS-021  SRS-022  SRS-024  SRS-030  SRS-035  SRS-036 SRS-114 | UC-05 | Class-09  Class-10 | UI-10 | SD-05 | AD-05 | UTC-14 | STC-05 |
| URS-06 | Doctors can view a patient’s profile on the web application. | SRS-001  SRS-004  SRS-021  SRS-022  SRS-024  SRS-037  SRS-038  SRS-039 | UC-06 | Class-09  Class-10 | UI-11 | SD-06 | AD-06 | UTC-10 | STC-06 |
| URS-07 | Doctors can view list of patient’s profiles on the web application. | SRS-001  SRS-004  SRS-021  SRS-022  SRS-030 | UC-07 | Class-09  Class-10 | UI-10 | SD-07 | AD-07 | UTC-09 | STC-07 |
| URS-08 | Administrators can view an admin home page on the web application. | SRS-001  SRS-040  SRS-041 | UC-08 | Class-06 | UI-02 | SD-08 | AD-08 | UTC-01 | STC-08 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-09 | Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position. | SRS-001  SRS-004  SRS-042  SRS-043  SRS-044  SRS-045  SRS-046  SRS-047  SRS-048  SRS-049  SRS-050  SRS-051  SRS-052  SRS-111  SRS-115  SRS-116 | UC-09 | Class-03  Class-04  Class-05 | UI-03 | SD-09 | AD-09 | UTC-05 | STC-09 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-10 | Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position. | SRS-001  SRS-004  SRS-021  SRS-023  SRS-043  SRS-044 SRS-045 SRS-046  SRS-047  SRS-048  SRS-049  SRS-050  SRS-054  SRS-055  SRS-056  SRS-057  SRS-058  SRS-059  SRS-111  SRS-115  SRS-116 | UC-10 | Class-03  Class-04  Class-05 | UI-04 | SD-10 | AD-10 | UTC-06 | STC-10 |
| URS-11 | Administrators can delete a user’s profile on the web application. | SRS-001  SRS-004  SRS-021  SRS-031  SRS-054  SRS-055  SRS-059  SRS-060  SRS-061  SRS-062 | UC-11 | Class-03  Class-04  Class-05 | UI-05 | SD-11 | AD-11 | UTC-07 | STC-11 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-12 | Administrators can search a user’s profile on the web application by using name, surname, and username. | SRS-001  SRS-004  SRS-021  SRS-035  SRS-054  SRS-055  SRS-059  SRS-063  SRS-114 | UC-12 | Class-03  Class-04  Class-05 | UI-05 | SD-12 | AD-12 | UTC-08 | STC-12 |
| URS-13 | Administrators can view a user’s profile on the web application. | SRS-001  SRS-004  SRS-021  SRS-037  SRS-039  SRS-054  SRS-055  SRS-064 | UC-13 | Class-03  Class-04  Class-05 | UI-06 | SD-13 | AD-13 | UTC-04 | STC-13 |
| URS-14 | Administrators can view list of user’s profile on the web application. | SRS-001  SRS-004  SRS-021  SRS-054  SRS-059 | UC-14 | Class-03  Class-04  Class-05 | UI-05 | SD-14 | AD-14 | UTC-03 | STC-14 |
| URS-15 | Doctors, Administrations, and FDAs can login to the web application by using username and password. | SRS-065  SRS-068  SRS-069  SRS-070  SRS-071  SRS-072  SRS-073  SRS-074 SRS-117 | UC-15 | Class-01  Class-02 | UI-19 | SD-15 | AD-15 | UTC-01 | STC-15 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **STC#** |
| URS-16 | Doctors, Administrations, and FDAs can logout from the web application. | SRS-001  SRS-075 | UC-16 | Class-02 | - | SD-16 | AD-16 | UTC-02 | STC-16 |
| URS-17 | Patients can login to the mobile application by using username and password. | SRS-066  SRS-067  SRS-076  SRS-077  SRS-078  SRS-079 | UC-17 | Class-15  Class-17  Class-18  Class-19  Class-23 | UI-20 | SD-17 | AD-17 | UTC-23 | STC-26 |
| URS-18 | Patients can logout from the mobile application. | SRS-080  SRS-081 | UC-18 | Class-13  Class-20  Class-26 | - | SD-18 | AD-18 | - | STC-27 |
| URS-19 | Patients can view the QR code on the mobile application. | SRS-082  SRS-083  SRS-084 | UC-19 | Class-13  Class-16  Class-20  Class-26 | UI-22 | SD-19 | AD-19 | UTC-24  UTC-25 | STC-28 |
| URS-20 | Pharmacists can scan the QR code on the mobile application. | SRS-085  SRS-086  SRS-087 | UC-20 | Class-14  Class-15  Class-23 | UI-23 | SD-20 | AD-20 | UTC-25 | STC-29 |
| URS-21 | Pharmacists can add the time of dispensation to the patient’s profile on the mobile application. | SRS-088  SRS-089  SRS-090 | UC-21 | Class-13  Class-17  Class-21  Class-22  Class-26 | UI-24 | SD-21 | AD-21 | UTC-25 | STC-30 |
| URS-22 | Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug. | SRS-001  SRS-004  SRS-006  SRS-007  SRS-008  SRS-009  SRS-010  SRS-014  SRS-015  SRS-091  SRS-092 | UC-22 | Class-11  Class-12 | UI-12 | SD-22 | AD-22 | UTC-19 | STC-17 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **TC#** |
|  |  | SRS-093  SRS-094  SRS-095  SRS-096  SRS-108 |  |  |  |  |  |  |  |
| URS-23 | Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug. | SRS-001  SRS-004  SRS-006  SRS-007  SRS-008  SRS-009  SRS-010  SRS-014  SRS-015  SRS-021  SRS-023  SRS-053  SRS-092  SRS-097  SRS-098  SRS-099  SRS-100  SRS-101  SRS-102  SRS-103  SRS-108 | UC-23 | Class-11  Class-12 | UI-13 | SD-23 | AD-23 | UTC-20 | STC-18 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **TC#** |
| URS-24 | Doctors can delete an allergy report on the web application. | SRS-001  SRS-004  SRS-021  SRS-031  SRS-053  SRS-097  SRS-103  SRS-104  SRS-105  SRS-106 | UC-24 | Class-11  Class-12 | UI-14 | SD-24 | AD-24 | UTC-21 | STC-19 |
| URS-25 | Doctors can search an allergy report on the web application by using personal id, name, and surname. | SRS-001  SRS-004  SRS-021  SRS-035  SRS-053  SRS-097  SRS-103  SRS-107  SRS-114 | UC-25 | Class-11  Class-12 | UI-14 | SD-25 | AD-25 | UTC-22 | STC-20 |
| URS-26 | Doctors can view an allergy drug report on the web application. | SRS-001  SRS-004  SRS-021  SRS-037  SRS-043  SRS-053  SRS-097 | UC-26 | Class-11  Class-12 | UI-15 | SD-26 | AD-26 | UTC-16 | STC-21 |
| URS-27 | Doctors can view list of allergy drug reports on the web application. | SRS-001  SRS-004  SRS-021  SRS-053  SRS-103 | UC-27 | Class-11  Class-12 | UI-14 | SD-27 | AD-27 | UTC-15 | STC-22 |
| **URS#** | **Description** | **SRS#** | **UC#** | **Class#** | **UI#** | **SD#** | **AD#** | **UTC#** | **TC#** |
| URS-28 | FDAs can view a FDA home page on the web application. | SRS-001  SRS-109  SRS-110 | UC-28 | Class-08 | UI-16 | SD-28 | AD-28 | UTC-01 | STC-23 |
| URS-29 | FDAs can view an allergy report on the web application. | SRS-001  SRS-004  SRS-037  SRS-043  SRS-053  SRS-097 | UC-29 | Class-11  Class-12 | UI-18 | SD-29 | AD-29 | UTC-18 | STC-24 |
| URS-30 | FDAs can view list of allergy reports on the web application. | SRS-001  SRS-004  SRS-053  SRS-103  SRS-112 | UC-30 | Class-11  Class-12 | UI-17 | SD-30 | AD-30 | UTC-17 | STC-26 |

# User Requirement Specification

URS-01: Doctors can view a doctor home page on the web application.

URS-02: Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username.

URS-03: Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username.

URS-04: Doctors can delete a patient’s profile on the web application.

URS-05: Doctors can search patient’s profiles on the web application by using personal id, name, and surname.

URS-06: Doctors can view a patient’s profile on the web application.

URS-07: Doctors can view list of patient’s profiles on the web application.

URS-08: Administrators can view an admin home page on the web application.

URS-09: Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

URS-10: Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

URS-11: Administrators can delete a user’s profile on the web application.

URS-12: Administrators can search a user’s profile on the web application by using name, surname, and username.

URS-13: Administrators can view a user’s profile on the web application.

URS-14: Administrators can view list of user’s profile on the web application.

URS-15: Doctors, Administrations, and FDAs can login to the web application by using username and password.

URS-16: Doctors, Administrations, and FDAs can logout from the web application.

URS-17: Patients can login to the mobile application by using username and password.

URS-18: Patients can logout from the mobile application.

URS-19: Patients can view the QR code on the mobile application.

URS-20: Pharmacists can scan the QR code on the mobile application.

URS-21:Pharmacists can add the time of dispensation to the patient’s profile on the mobile application.

URS-01: Doctors can view a doctor home page on the web application.

URS-22: Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

URS-23: Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

URS-24: Doctors can delete an allergy report on the web application.

URS-25: Doctors can search an allergy report on the web application by using personal id, name, and surname.

URS-26: Doctors can view an allergy drug report on the web application.

URS-27: Doctors can view list of allergy drug reports on the web application.

URS-28: FDAs can view a FDA home page on the web application.

URS-29: FDAs can view an allergy report on the web application.

URS-30: FDAs can view list of allergy reports on the web application.

# System Requirement Specification

SRS-001: The system shall provide menu bars (home, and logout).

SRS-002: The system shall provide patient options menu box (create patient and manage patient) and allergy options menu box (create allergy report and manage allergy reports).

SRS-003: The system shall display information of current doctor which includes position, name, surname and username.

SRS-004: The system shall provide the breadcrumb link.

SRS-005: The system shall provide patient create form for input information which includes personal ID, name, surname, prescription, and username.

SRS-006: The system shall display error message “Personal ID cannot be blank.” when doctors do not input personal ID.

SRS-007: The system shall display error message “Personal ID has already been exist.” when doctors input personal ID that exist in the database.

SRS-008: The system shall display error message “Personal ID is invalid” when doctors input wrong personal Id.

SRS-009: The system shall display error message “Name cannot be blank.” when doctors do not input name.

SRS-010: The system shall display error message “Surname cannot be blank.” when doctors do not input surname.

SRS-011: The system shall display error message “Prescription cannot be blank.” when doctors do not input prescription.

SRS-012: The system shall display error message “Username cannot be blank.” when doctors do not input username.

SRS-013: The system shall display error message “Username has already been taken. Please change.” when doctors input username that repeated with the database.

SRS-014: The system shall display error message “Name is invalid.” when doctors input name with not a letter on English language.

SRS-015: The system shall display error message “Surname is invalid.” when doctors input surname with not a letter on English language.

SRS-016: The system shall provide a ‘Create’ button for creating patient’s profiles.

SRS-017: The system shall generate the password to a patient’s profile, which is 5 digits number.

SRS-018: The system shall store date time of creating profile into the database when doctors click ‘Create’ button.

SRS-019: The system shall store name of doctor into the database for responsible when doctors click ‘Create’ button

SRS-020: The system shall save data of patient’s profiles to database when doctors click a ‘Create’ button and redirect user to patient’s profile UI.

SRS-021: The system shall provide the manage page, which includes create button, search text field, search button.

SRS-022: The system shall provide the table lists of patient which include seven columns (no., personal ID, name, surname, responsible, create date and options.)

SRS-023: The system shall provide ‘Update’ button () in the options column of table.

SRS-024: The system shall retrieve patient’s profiles from database.

SRS-025: The system shall provide patient update profiles form that has default information (personal ID, name, surname, prescription, and username).

SRS-026: The system shall provide a ‘Update’ button for updating patient’s profiles.

SRS-027: The system shall store date time of updating profile into the database when doctors click ‘Update’ button.

SRS-028: The system shall store name of doctor into the database for responsible when doctors click ‘Update’ button

SRS-029: The system shall save a new data of patient’s profiles to database when doctors click ‘Update’ button and redirect user to patient’s profile UI.

SRS-030: The system shall display the message to show the number and total amount of patient’s profiles.

SRS-031: The system shall provide ‘Delete’ button () in the options column of table.

SRS-032: The system shall interface to show the confirm box “Are you sure you want to delete this item?” when doctors click ‘Delete’ button on the web application.

SRS-033: The system shall be able to delete a patient’s profiles from the database when doctors click ‘OK’ button on the confirm box.

SRS-034: The system shall be not able to delete a patient’s profiles from the database when doctors click ‘Cancel’ button.

SRS-035: The system shall display the message “*No results found*”, when the data that input does not exist in the database.

SRS-036: The system shall display the patient’s information on the table, when searching found the match letters exist in the database.

SRS-037: The system shall provide ‘View’ button () in the options column of table.

SRS-038: The system shall provide the patient’s profiles UI, which includes personal ID, name, surname, prescription, responsible, username, password, create date and update date of patient’s profiles.

SRS-039: The system shall provide the ‘Update’ button and ‘Delete’ button.

SRS-040: The system shall provide user options menu box (create user and manage user).

SRS-041: The system shall display information of current admin which includes position, name, surname and username.

SRS-042: The system shall provide user’s profiles form for input information which include name, surname, username, password, confirm-password and select points of position (Administrator, Doctor, and FDA).

SRS-043: The system shall display error message “Name cannot be blank.” when admins do not input name.

SRS-044: The system shall display error message “Surname cannot be blank.” when admins do not input surname.

SRS-045: The system shall display error message “Username cannot be blank.” when admins do not input username.

SRS-046: The system shall display error message “Username has already been taken. Please change.” when admins input username that repeated with the database.

SRS-047: The system shall display error message “Password and Confirm-Password do not Match, Please try again.” when admins input password and confirm-password do not match.

SRS-048: The system shall display error message “Name is invalid.” when admins input name with not a letter on English language.

SRS-049: The system shall display error message “Surname is invalid.” when admins input surname with not a letter on English language.

SRS-050: The system shall display error message “Position cannot be blank.” when admins do not select the position.

SRS-051: The system shall provide a ‘Create’ button for creating user’s profile.

SRS-052: The system shall save data of user’s profiles to database when admins click a ‘Create’ button and redirect user to user’s profile UI.

SRS-053: The system shall provide the table lists of patient which include seven columns (no., personal ID, name, surname, reporter, create date and options.)

SRS-054: The system shall provide the table lists of user which include six columns (no., position, name, surname, username and options.)

SRS-055: The system shall retrieve user’s profiles from database.

SRS-056: The system shall provide user update form that has default information (name, surname, username, password, confirm-password and position).

SRS-057: The system shall provide a ‘Update’ button for updating user’s profiles.

SRS-058: The system shall save a new data of user’s profiles to database when admins click ‘Update’ button and redirect user to user’s profile UI.

SRS-059: The system shall display the message to show the number and total amount of user’s profiles.

SRS-060: The system shall interface to show the confirm box “Are you sure you want to delete this item?” when admins click ‘Delete’ button on the web application.

SRS-061: The system shall be able to delete a user’s profiles from the database when admins click ‘OK’ button on the confirm box.

SRS-062: The system shall be not able to delete a user’s profiles from the database when admins click ‘Cancel’ button.

SRS-063: The system shall display the user’s information on the table, when searching found the match letters exist in the database.

SRS-064: The system shall provide the user’s profiles page, which includes Id, name, surname, username, password, confirm-password and position.

SRS-065: The system shall provide the login form, to receive username and password.

SRS-066: The system displays the alert message “Cannot be blank “if users do not input the username and password on the login form.

SRS-067: The system shall redirect user to the main page if user login successful

SRS-068: The system shall validate username and password from database.

SRS-069: The system shall provide ‘Login’ button for login to the web application.

SRS-070: The system shall displays error message “Username cannot be blank.” when user do not input username.

SRS-071: The system shall displays error message “Password cannot be blank.” when user do not input password.

SRS-072: The system shall displays error box message “Username is incorrect!” when username does not exist in the database.

SRS-073: The system shall displays error box message “Password is incorrect!” when password does not exist in the database.

SRS-074: The system shall redirect user to particular home page if users login success.

SRS-075: The system shall redirect users to main page if users click logout button.

SRS-076: The system shall provide the login form, to receive username and password.

SRS-077: The system shall validate username and password from database.

SRS-078: The system shall provide ‘login’ button for login to the mobile application.

SRS-079: The system shall display message “Incorrect username or password” if username or password.

SRS-080: The system shall provide “logout” button on the main page.

SRS-081: The system shall redirect users to the login page if users click ‘logout’ button.

SRS-082: The system shall provide the QR code page, which includes exit button and “Show QR code” button.

SRS-083: The system shall generate the QR code after select “Show QR code” button.

SRS-084: The system shall display the QR code to patient.

SRS-085: The system shall provide the scan QR button for open the scan QR function.

SRS-086: The system shall scan QR code on the mobile application.

SRS-087: The system shall provide the information of patient after scan QR code completed.

SRS-088**:** The system shall provide ‘confirm’ button for specify prescription.

SRS-089: The system shall display message “Successful” after select “confirm” button.

SRS-090: The system shall record the current time to the patient’s profile.

SRS-091: The system shall provide allergy report create form for input information which includes personal ID, name, surname, and allergy drug.

SRS-092: The system shall display error message “Allergy Drug cannot be blank.” when doctors do not input allergy drug.

SRS-093: The system shall provide a ‘Create’ button for creating allergy report.

SRS-094: The system shall store date time of creating report into the database when doctors click ‘Create’ button.

SRS-095: The system shall store name of doctor into the database for reporter when doctors click ‘Create’ button

SRS-096: The system shall save data of allergy report to database when doctors click a ‘Create’ button and redirect user to allergy report UI.

SRS-097: The system shall retrieve allergy report from database.

SRS-098: The system shall provide allergy report update form that has default information (personal ID, name, surname, and allergy drug).

SRS-099: The system shall provide a ‘Update’ button for updating allergy report.

SRS-100: The system shall store date time of updating profile into the database when doctors click ‘Update’ button.

SRS-101: The system shall store name of doctor into the database for reporter when doctors click ‘Update’ button

SRS-102: The system shall save a new data of allergy report to database when doctors click ‘Update’ button and redirect user to allergy report page.

SRS-103: The system shall display the message to show the number and total amount of allergy reports.

SRS-104: The system shall interface to show the confirm box “Are you sure you want to delete this item?” when doctors click ‘Delete’ button on the web application.

SRS-105: The system shall be able to delete an allergy report from the database when doctors click ‘OK’ button on the confirm box.

SRS-106: The system shall be not able to delete an allergy report from the database when doctors click ‘Cancel’ button.

SRS-107: The system shall display the user’s information on the table, when searching found the match letters exist in the database.

SRS-108: The system shall validate personal ID, name, surname, and allergy drug by Ajax validation.

SRS-109: The system shall provide allergy options menu box (view reports list).

SRS-110: The system shall display information of current FDA which includes position, name, surname and username.

SRS-111: The system shall validate name, surname, username, password, confirm-password and position by Ajax validation.

SRS-112: The system shall provide the list of allergy report page,

SRS-113: The system shall validate personal id, name, surname, prescription, and username by Ajax validation.

SRS-114: The system shall validate input data by Ajax validation.

SRS-115: The system shall display error message “Password cannot be blank.” when admins does not input password.

SRS-116: The system shall display error message “Confirm-Password cannot be blank.” when admins does not input confirm-password.

SRS-117: The system shall provide menu bars (home, and login).

# Use case

UC-01: Doctors can view a doctor home page on the web application.

UC-02: Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username.

UC-03: Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username.

UC-04: Doctors can delete a patient’s profile on the web application.

UC-05: Doctors can search patient’s profiles on the web application by using personal id, name, and surname.

UC-06: Doctors can view a patient’s profile on the web application.

UC-07: Doctors can view list of patient’s profiles on the web application.

UC-08: Administrators can view an admin home page on the web application.

UC-09: Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

UC-10: Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

UC-11: Administrators can delete a user’s profile on the web application.

UC-12: Administrators can search a user’s profile on the web application by using name, surname, and username.

UC-13: Administrators can view a user’s profile on the web application.

UC-14: Administrators can view list of user’s profile on the web application.

UC-15: Doctors, Administrations, and FDAs can login to the web application by using username and password.

UC-16: Doctors, Administrations, and FDAs can logout from the web application.

UC-17: Patients can login to the mobile application by using username and password.

UC-18: Patients can logout from the mobile application.

UC-19: Patients can view the QR code on the mobile application.

UC-20: Pharmacists can scan the QR code on the mobile application.

UC-21:Pharmacists can add the time of dispensation to the patient’s profile on the mobile application.

UC-01: Doctors can view a doctor home page on the web application.

UC-22: Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

UC-23: Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

UC-24: Doctors can delete an allergy report on the web application.

UC-25: Doctors can search an allergy report on the web application by using personal id, name, and surname.

UC-26: Doctors can view an allergy drug report on the web application.

UC-27: Doctors can view list of allergy drug reports on the web application.

UC-28: FDAs can view a FDA home page on the web application.

UC-29: FDAs can view an allergy report on the web application.

UC-30: FDAs can view list of allergy reports on the web application.

# Class

Class-01: LoginForm

Class-02: SiteController

Class-03: User

Class-04: UserController

Class-05: Role

Class-06: AdminController

Class-07: DoctorController

Class-08: FdaController

Class-09: Patient

Class-10: PatientController

Class-11: Allergy

Class-12: AllergyController

Class-13: MainActivity

Class-14: QrEncodeActivity

Class-15: LoginActivity

Class-16: QRCodeEncoder

Class-17: ApiService

Class-18: LoginListener

Class-19: LoginEventManager

Class-20: PreferencesManager

Class-21: PrescriptionManager

Class-22: UpdateTimeListener

Class-23: LoginFragment

Class-24: MainFragment

# User Interface

UI-01: Main page

UI-02: Administration home page

UI-03: Create user page

UI-04: Update user page

UI-05: Manage users page

UI-06: User’s profile page

UI-07: Doctor home page

UI-08: Create patient page

UI-09: Update patient page

UI-10: Manage patients page

UI-11: Patient’s profile page

UI-12: Create allergy report page

UI-13: Update allergy report page

UI-14: Manage allergy reports page

UI-15: Allergy report page

UI-16: FDA home page

UI-17: List allergy reports page

UI-18: FDA Allergy report page

UI-19: Login page

UI-20: Login page (mobile)

UI-21: Main page (mobile)

UI-22: QR code page (mobile)

UI-23: Scan QR code page (mobile)

UI-24: Pharmacist page (mobile)

# Activity Diagram

AD-01: Doctors can view a doctor home page on the web application.

AD-02: Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username.

AD-03: Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username.

AD-04: Doctors can delete a patient’s profile on the web application.

AD-05: Doctors can search patient’s profiles on the web application by using personal id, name, and surname.

AD-06: Doctors can view a patient’s profile on the web application.

AD-07: Doctors can view list of patient’s profiles on the web application.

AD-08: Administrators can view an admin home page on the web application.

AD-09: Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

AD-10: Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

AD-11: Administrators can delete a user’s profile on the web application.

AD-12: Administrators can search a user’s profile on the web application by using name, surname, and username.

AD-13: Administrators can view a user’s profile on the web application.

AD-14: Administrators can view list of user’s profile on the web application.

AD-15: Doctors, Administrations, and FDAs can login to the web application by using username and password.

AD-16: Doctors, Administrations, and FDAs can logout from the web application.

AD-17: Patients can login to the mobile application by using username and password.

AD-18: Patients can logout from the mobile application.

AD-19: Patients can view the QR code on the mobile application.

AD-20: Pharmacists can scan the QR code on the mobile application.

AD-21:Pharmacists can add the time of dispensation to the patient’s profile on the mobile application.

AD-22: Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

AD-23: Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

AD-24: Doctors can delete an allergy report on the web application.

AD-25: Doctors can search an allergy report on the web application by using personal id, name, and surname.

AD-26: Doctors can view an allergy drug report on the web application.

AD-27: Doctors can view list of allergy drug reports on the web application.

AD-28: FDAs can view a FDA home page on the web application.

AD-29: FDAs can view an allergy report on the web application.

AD-30: FDAs can view list of allergy reports on the web application.

# Sequence Diagram

SD-01: Doctors can view a doctor home page on the web application.

SD-02: Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username.

SD-03: Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username.

SD-04: Doctors can delete a patient’s profile on the web application.

SD-05: Doctors can search patient’s profiles on the web application by using personal id, name, and surname.

SD-06: Doctors can view a patient’s profile on the web application.

SD-07: Doctors can view list of patient’s profiles on the web application.

SD-08: Administrators can view an admin home page on the web application.

SD-09: Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

SD-10: Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

SD-11: Administrators can delete a user’s profile on the web application.

SD-12: Administrators can search a user’s profile on the web application by using name, surname, and username.

SD-13: Administrators can view a user’s profile on the web application.

SD-14: Administrators can view list of user’s profile on the web application.

SD-15: Doctors, Administrations, and FDAs can login to the web application by using username and password.

SD-16: Doctors, Administrations, and FDAs can logout from the web application.

SD-17: Patients can login to the mobile application by using username and password.

SD-18: Patients can logout from the mobile application.

SD-19: Patients can view the QR code on the mobile application.

SD-20: Pharmacists can scan the QR code on the mobile application.

SD-21:Pharmacists can add the time of dispensation to the patient’s profile on the mobile application.

SD-22: Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

SD-23: Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

SD-24: Doctors can delete an allergy report on the web application.

SD-25: Doctors can search an allergy report on the web application by using personal id, name, and surname.

SD-26: Doctors can view an allergy drug report on the web application.

SD-27: Doctors can view list of allergy drug reports on the web application.

SD-28: FDAs can view a FDA home page on the web application.

SD-29: FDAs can view an allergy report on the web application.

SD-30: FDAs can view list of allergy reports on the web application.

# Unit Test Case

UTC-01: login(String username, String password) : Boolean

UTC-02: logout() : Boolean

UTC-03: getUserList() : ArrayList

UTC-04: viewUser(Int userId) : Mixed

UTC-05: createUser(User user) : Boolean

UTC-06: updateUser(User user) : Boolean

UTC-07: deleteUser(Int userId) : Boolean

UTC-08: searchUser(String users) : ArrayList

UTC-09: getPatientList() : ArrayList

UTC-10: viewPatient(Int personal\_id) : Mixed

UTC-11: createPatient(Patient patient) : Boolean

UTC-12: updatePatient(Patient patient) : Boolean

UTC-13: deletePatient(Int personal\_id) : Boolean

UTC-14: searchPatient(String patients) : ArrayList

UTC-15: getAllergyList() : ArrayList

UTC-16: viewAllergy(Int allergy\_id) : Mixed

UTC-17: getAllergyList2() : ArrayList

UTC-18: viewAllergy2(Int allergy\_id) : Mixed

UTC-19: createAllergy(Allergy allergy) : Boolean

UTC-20: updateAllergy(Allergy allergy) : Boolean

UTC-21: deleteAllergy(Int allergy\_id) : Boolean

UTC-22: searchAllergy(String allergies) : ArrayList

UTC-23: Login() : void

UTC-24: getUserInformation() : UserInformationModel

UTC-25: encode(String contents, BarcodeFormat format, int width, int height): BitMatrix

# System Test Case

STC-01: Doctors can view a doctor home page on the web application.

STC-02: Doctors can create a patient’s profile on the web application by inputting personal id, name, surname, prescription and username.

STC-03: Doctors can update a patient’s profile on the web application by application by input personal id, name, surname, prescription and username.

STC-04: Doctors can delete a patient’s profile on the web application.

STC-05: Doctors can search patient’s profiles on the web application by using personal id, name, and surname.

STC-06: Doctors can view a patient’s profile on the web application.

STC-07: Doctors can view list of patient’s profiles on the web application.

STC-08: Administrators can view an admin home page on the web application.

STC-09: Administrators can create a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

STC-10: Administrators can update a user’s profile on the web application by inputting name, surname, username, password, confirm-password and position.

STC-11: Administrators can delete a user’s profile on the web application.

STC-12: Administrators can search a user’s profile on the web application by using name, surname, and username.

STC-13: Administrators can view a user’s profile on the web application.

STC-14: Administrators can view list of user’s profile on the web application.

STC-15: Doctors, Administrations, and FDAs can login to the web application by using username and password.

STC-16: Doctors, Administrations, and FDAs can logout from the web application.

STC-17: Patients can login to the mobile application by using username and password.

STC-18: Patients can logout from the mobile application.

STC-19: Patients can view the QR code on the mobile application.

STC-20: Pharmacists can scan the QR code on the mobile application.

STC-21:Pharmacists can add the time of dispensation to the patient’s profile on the mobile application.

STC-01: Doctors can view a doctor home page on the web application.

STC-22: Doctors can create an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

STC-23: Doctors can update an allergy report on the web application by inputting personal id, name, surname, and allergy drug.

STC-24: Doctors can delete an allergy report on the web application.

STC-25: Doctors can search an allergy report on the web application by using personal id, name, and surname.

STC-26: Doctors can view an allergy drug report on the web application.

STC-27: Doctors can view list of allergy drug reports on the web application.

STC-28: FDAs can view a FDA home page on the web application.

STC-29: FDAs can view an allergy report on the web application.

STC-30: FDAs can view list of allergy reports on the web application.