**Dental Clinic Services System**

Software Requirement Specification

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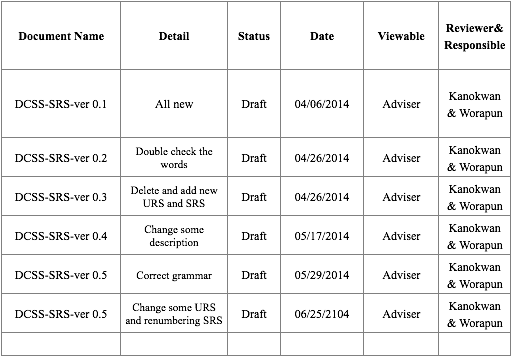
Project Adviser

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Mrs. Yun Rim Park

**Software Requirement Specification**

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**Chapter One: Introduction**

1. **Introduction**

**1.1 Objectives**

Dental clinic service system consists of a web application and mobile application, which support ios7. It offers most of the services needed by dental clinics into the web application and mobile application. This application supports patients, officers or dentists of a dental clinic. Furthermore, it allows visitors to use. This application will reduce officers’ work and save patients’ time also. Patient can find information about the dental clinic, personal information, and others from it. For visitors who want to get a dental treatment from the clinic, they can make an appointment with a dentist through the application and also the dentist can use it for checking patients’ schedule. When all these services are integrated into the system, it can provide much convenience to dental clinic users.

This Software Requirement Specification has described in more detail of each requirement and each function that the system should have. The document includes the scope of the project, the system’s functionalities, user characteristic, functional requirements, and non-functional requirements.

**1.2 Project Scope**

The objective of this software requirement specification is to specify requirements to establish the application that:

* Dental clinic services system is a web application for both computers and mobile devices.
* Dental clinic services system for mobile devices supports iOS.
* Dental clinic services system supports English language.
* Dental clinic services system provides for dental clinics’ patients, officers and dentists.
* Dental clinic services system provides the appointments of patients and dentists.
* Dental clinic services system provides user authentication for patients and dentists, which is maintained by dental clinic officers.

**1.3 User Classes and Characteristics**

The system divides users into 3 groups. Information and characteristics of each group are listed below.

* **Patient**

This group of per son who already register to the system at the dental clinic. They will get patientID and password from the clinic to use the services in website and mobile phone. Patient uses patientID to login. Patient is able to:

* Patient can receive the pateintID and password from the dental clinic
* Patient can login to the website and the mobile application
* Patient can logout from the website and mobile application
* Patient can view his/her appointment in the patient schedule
* Patient can view all appointment in the dental clinic schedule
* **Officer**

This group of person who has the highest privilege in the system. So they gain the management function for maintaining the system. Officer is able to:

* Officer can login to the website by using userID and password
* Officer can logout from the website
* Officer can register for new patient and dentist
* Officer can add appointment into the dental clinic schedule
* Officer can edit appointment in the dental clinic schedule
* Officer can delete appointment in the dental clinic schedule
* **Dentist**

This group of person who has the highest privilege in the system. So they gain the management function for maintaining the system. Dentist is able to:

* Dentist can login to the website by using userID and password
* Dentist can logout from the website
* Dentist can view his/her appointment in the dentist schedule
* Dentist can view all appointment in the dental clinic schedule

**1.4 Operation Environment**

Dental clinic services system provides web application and mobile application for iOS. All user must have the Internet connection. Mobile devices must supports iOS version 7.

**1.5 Acronyms and Definitions Acronyms**

User = Patient,Dentist,Officer

DCSS = Dental clinic services system

PMP = Project Management Plan

SDD = Software Design Document

SRS = Software Requirement Specification

URS = User Requirement Specification

SRS = Software Requirement Specification

UC = Use Case

AD = Activity Diagram

**Chapter Two: Overall Description**

1. **Overall Description**

**2.1 Product Perspective**

The Dental clinic services system is a mobile application base on iOS and web application. So this application helps patients save their time to contact with the dental clinic by providing features such as make an appointment, view upcoming appointment, and cost estimation. Help dentist to following up their patient, view and their appointment schedule. Also reduce works of officer by providing features such as use QR code to identify patient at the clinic, manage appointment for patient and dentist. This application is grouping most of dental clinics' services into one application.

**2.2 Product Features**

The dental clinic services system offers six features. Each of features will create a step by step suit by priority. The following list is a description of each part in more detail.

**2.3 Design and Implementation Constraints**

List of project constraints:

The application works on only iOS version7.

* The application requires the Internet connection.
* The application is available for the users who are already registered to the system and also who are not.

**Chapter Three: User Requirement**

**3. User requirement**

**3.1 Dental clinic services system URS**

**Schedule management**

URS-01: User can view patients’ appointment in mobile application

URS-02: User can view patients’ appointment in website

URS-03: User can view the dentist appointment in website

URS-04: User can view all appointment in mobile application

URS-05: User can view all appointment in website

**Appointment management**

URS-06: User can add new appointment into the database

URS-07: User can edit the appointment

URS-08: User can delete the appointment

URS-09: User can save the appointment to google calendar

**User registration and authentication**

URS-10: User can login to the mobile application

URS-11: User can login to the website

URS-12: User can logout from the mobile application

URS-13: User can logout from the website

URS-14: User can create an account for new patient

URS-15: User can edit patients’ information

URS-16: User can delete patients’ account

URS-17: User can create an account for new dentist

URS-18: User can edit dentists’ information

URS-19: User can delete dentists’ account

URS-20: User can view all patients’ account as a list

USR-21: User can view all dentists’ account as a list

**3.2 Dental clinic services system SRS**

SRS-01: System shall provide patients’ appointment schedule interface in mobile application

SRS-02: System shall query data from appointment table in database

SRS-03: System shall provide patients’ appointment schedule interface in website

SRS-04: System shall provide dentists’ appointment schedule interface in website

SRS-05: System shall provide all appointment schedule of dental clinic in mobile application

SRS-06: System shall provide all appointment schedule of dental clinic in website

SRS-07: System shall provide interface for make a new appointment

SRS-08: System shall add new appointment to appointment table in the database which contains patientID, dentistID, date, startTime, endTime, treatment, and description

SRS-09: System shall show error message “Please fill out this field” for any field that require to not empty

SRS-10: System shall update new appointments’ data to appointment table in the database

SRS-11: System shall delete appointment from appointment table in database

SRS-12: System shall open google calendar page to save the data to calendar

SRS-13: System shall provide the login interface for patient in mobile application

SRS-14: System shall validate by match patientID with the data in patient table in the database

SRS-15: System shall validate by match password with the data in patient table in the database

SRS-16: System shall validate by match userID with the data in clinic users’ table in the database

SRS-17: System shall show error message “Your login failed”

SRS-18: System shall save session after user login

SRS-19: System shall provide the main page interface for patient in mobile application

SRS-20: System shall show error message “Wrong username or password”

SRS-21: System shall save session after user login

SRS-22: System shall provide the login interface for patient in website

SRS-23: System shall provide the login interface for officer in website

SRS-24: System shall provide the login interface for dentist in website

SRS-25: System shall provide the index page for patient

SRS-26: System shall provide the index page for officer

SRS-27: System shall provide the index page for dentist

SRS-28: System shall provide logout button for logout

SRS-29: System shall destroy session after user logout

SRS-30: System shall provide main home page interface in mobile application

SRS-28: System shall provide logout button for logout

SRS-29: System shall destroy session after user logout

SRS-31: System shall provide main home page interface in website

SRS-32: System shall provide interface for create a new account for patient

SRS-33: System shall add new patient to patients’ table in the database which contains patientID, password, firstname, lastname, age, gender, address, phone number, and email address

SRS-34: System shall update new patients’ data to patients’ table in the database

SRS-35: System shall query data from patients’ table in the database

SRS-36: System shall provide interface for edit patients’ information

SRS-37: System shall delete patient from patients’ table in database

SRS-38: System shall provide interface for create a new account for dentist

SRS-39: System shall add new dentist to clinic users’ table in the database

SRS-40: System shall update new dentists’ data to dentists’ table in the database

SRS-41: System shall query data from dentists’ table in the database

SRS-42: System shall delete patient from dentists’ table in database

SRS-43: System shall provide interface for show list of patient

SRS-44: System shall provide interface for show list of patient

**Chapter Four: System Features**

**4. System Features**

**4.1 User requirement specification with system requirement specification**

**URS-01: User can view patients’ appointment in mobile application**

SRS-01: System shall provide patients’ appointment schedule interface in mobile application

SRS-02: System shall query data from appointment table in database

**URS-02: User can view patients’ appointment in website**

SRS-02: System shall query data from appointment table in database

SRS-03: System shall provide patients’ appointment schedule interface in website

**URS-03: User can view the dentist appointment in website**

SRS-02: System shall query data from appointment table in database

SRS-04: System shall provide dentists’ appointment schedule interface in website

**URS-04: User can view all appointment in mobile application**

SRS-02: System shall query data from appointment table in database

SRS-05: System shall provide all appointment schedule of dental clinic in mobile application

**URS-05: User can view all appointment in website**

SRS-02: System shall query data from appointment table in database

SRS-06: System shall provide all appointment schedule of dental clinic in website

**URS-06: User can add new appointment into the database**

SRS-07: System shall provide interface for make a new appointment

SRS-08: System shall add new appointment to appointment table in the database which contains patientID, dentistID, date, startTime, endTime, treatment, and description

SRS-09: System shall show error message “Please fill out this field” for any field that require to not empty

**URS-07: User can edit the appointment**

SRS-02: System shall query data from appointment table in database

SRS-10: System shall update new appointments’ data to appointment table in the database

**URS-08: User can delete the appointment**

SRS-11: System shall delete appointment from appointment table in database

**URS-09: User can save the appointment to google calendar**

SRS-02: System shall query data from appointment table in database

SRS-12: System shall open google calendar page to save the data to calendar

**URS-10: User can login to the mobile application**

SRS-09: System shall show error message “Please fill out this field” for any field that require to not empty

SRS-13: System shall provide the login interface for patient in mobile application

SRS-14: System shall validate by match patientID with the data in patient table in the database

SRS-15: System shall validate by match password with the data in patient table in the database

SRS-16: System shall validate by match userID with the data in clinic users’ table in the database

SRS-17: System shall show error message “Your login failed”

SRS-18: System shall save session after user login

SRS-19: System shall provide the main page interface for patient in mobile application

**URS-11: User can login to the website**

SRS-14: System shall validate by match patientID with the data in patient table in the database

SRS-15: System shall validate by match password with the data in patient table in the database

SRS-16: System shall validate by match userID with the data in clinic users’ table in the database

SRS-20: System shall show error message “Wrong username or password”

SRS-21: System shall save session after user login

SRS-22: System shall provide the login interface for patient in website

SRS-23: System shall provide the login interface for officer in website

SRS-24: System shall provide the login interface for dentist in website

SRS-25: System shall provide the index page for patient

SRS-26: System shall provide the index page for officer

SRS-27: System shall provide the index page for dentist

**URS-12: User can logout from the mobile application**

SRS-28: System shall provide logout button for logout

SRS-29: System shall destroy session after user logout

SRS-30: System shall provide main home page interface in mobile application

**URS-13: User can logout from the website**

SRS-28: System shall provide logout button for logout

SRS-29: System shall destroy session after user logout

SRS-31: System shall provide main home page interface in website

**URS-14: User can create an account for new patient**

SRS-09: System shall show error message “Please fill out this field” for any field that require to not empty

SRS-32: System shall provide interface for create a new account for patient

SRS-33: System shall add new patient to patients’ table in the database which contains patientID, password, firstname, lastname, age, gender, address, phone number, and email address

**URS-15: User can edit patients’ information**

SRS-34: System shall update new patients’ data to patients’ table in the database

SRS-35: System shall query data from patients’ table in the database

SRS-36: System shall provide interface for edit patients’ information

**URS-16: User can delete patients’ account**

SRS-37: System shall delete patient from patients’ table in database

**URS-17: User can create an account for new dentist**

SRS-09: System shall show error message “Please fill out this field” for any field that require to not empty

SRS-38: System shall provide interface for create a new account for dentist

SRS-39: System shall add new dentist to clinic users’ table in the database

**URS-18: User can edit dentists’ information**

SRS-40: System shall update new dentists’ data to dentists’ table in the database

SRS-41: System shall query data from dentists’ table in the database

**URS-19: User can delete dentists’ account**

SRS-42: System shall delete patient from dentists’ table in database

**URS-20: User can view all patients’ account as a list**

SRS-35: System shall query data from patients’ table in the database

SRS-43: System shall provide interface for show list of patient

**USR-21: User can view all dentists’ account as a list**

SRS-41: System shall query data from dentists’ table in the database

SRS-44: System shall provide interface for show list of patient

**4.2 Use Case Diagram**

**4.2.1 Dental clinic services system Use Case for Patient**

**Patient**

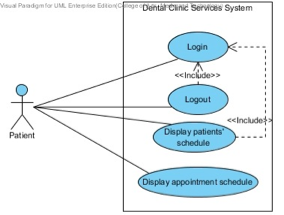


Figure 1: Dental clinic services system patient use case diagram

**4.2.2 Dental clinic services system Use Case for Officer**

**Officer**

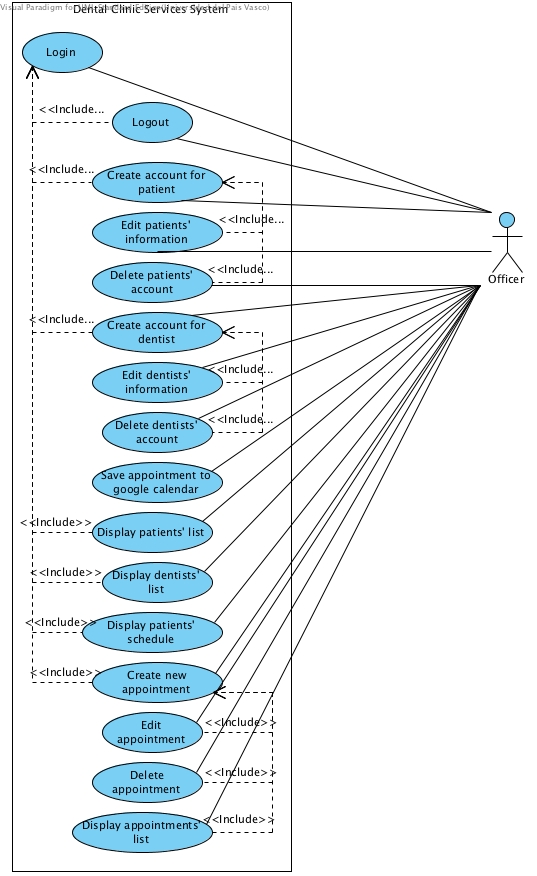


Figure 2: Dental clinic services system officer use case diagram

**4.2.3 Dental clinic services system Use Case for Dentist**

**Dentist**

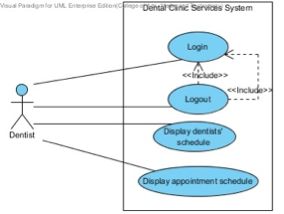


Figure 3: Dental clinic services system dentist use case diagram

**4.3 Use case description**

**4.3.1 Use case description for patient**

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-01 | | |
| **Use Case Name:** | Login(in mobile application) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 23/06/2014 |
| **Actors:** | Patient | | |
| **Description:** | User can login for identifying him/herself to mobile application. | | |
| **Trigger:** | User selects login menu in dental clinic services application | | |
| **Preconditions:** | User enters to the dental clinic services application. | | |
| **Postconditions:** | User can use the services that requires log in. | | |
| **Normal Flow:** | 1. User select at login menu 2. System shall provide the login interface for patient in mobile application 3. User input patientID and password 4. User press ‘Login’ button 5. System shall validate by match patientID  with the data in patient table in the database 6. System shall validate by match password with the data in patient table in the database 7. System shall save session after user login 8. System shall provide the main page interface for patient in mobile application | | |
| **Alternative Flows:** | * 5a. patientID are not match with the data in patient table in the database  1. System shall show error message “Your login failed” 2. Go back to normal flow 2  * 6a. password are not match with the data in patient table in the database  1. System shall show error message “Your login failed” 2. Go back to normal flow 2 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. System validation finds that the user record does not exist in the database. | | |
| **Includes:** | Steps 1-8 in the normal flow would be required for all types of request for login. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to has his/her ID and password first. User id and password are provided by the dental clinics’ officer | | |
| **Notes and Issues:** | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-02 | | |
| **Use Case Name:** | Login(in website) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 23/06/2014 |
| **Actors:** | Patient, Officer, Dentist | | |
| **Description:** | User can login for identifying him/herself to website | | |
| **Trigger:** | User selects login menu in dental clinic website | | |
| **Preconditions:** | User enters to the dental clinic website | | |
| **Postconditions:** | User can use the services that requires log in. | | |
| **Normal Flow:** | 1. User select at login menu 2. System shall provide the login interface for user in websit 3. User input patientID(or userID for user who is officer or dentist) and password 4. User press ‘Login’ button 5. System shall validate by match patientID (or userID for user who is officer or dentist) with the data in patient(or clinic user for officer and dentist) table in the database 6. System shall validate by match password with the data in patient(or clinic user for officer and dentist) table in the database 7. System shall save session after user login 8. System shall provide the main page interface for patient(or officer or dentist follow a type of user) | | |
| **Alternative Flows:** | * 5a. patientID are not match with the data in patient(or clinic user for officer and dentist) table in the database  1. System shall show error message “Wrong username or password” 2. Go back to normal flow 2  * 6a. password are not match with the data in patient(or clinic user for officer and dentist) table in the database  1. System shall show error message “Wrong username or password” 2. Go back to normal flow 2 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. System validation finds that the user record does not exist in the database. | | |
| **Includes:** | Steps 1-8 in the normal flow would be required for all types of request for login. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to has his/her ID and password first. User id and password are provided by the dental clinics’ officer | | |
| **Notes and Issues:** | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-03 | | |
| **Use Case Name:** | Logout(in mobile application) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 23/06/2014 |
| **Actors:** | Patient | | |
| **Description:** | User can logout from the system | | |
| **Trigger:** | User selects logout button | | |
| **Preconditions:** | User is already logged into the system | | |
| **Postconditions:** | User logged out of the system and redirect to main home page | | |
| **Normal Flow:** | 1. User selects logout menu 2. System shall destroy session after user logout 3. System shall provide main home page interface in mobile application | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot logout to the website or the application. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of request for logout. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to login into the website or application already. | | |
| **Notes and Issues:** | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-04 | | |
| **Use Case Name:** | Logout(in website) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 23/06/2014 |
| **Actors:** | Patient, Officer, Dentist | | |
| **Description:** | User can logout from the system | | |
| **Trigger:** | User selects logout button | | |
| **Preconditions:** | User is already logged into the system | | |
| **Postconditions:** | User logged out of the system and redirect to main home page | | |
| **Normal Flow:** | 1. User selects logout menu 2. System shall destroy session after user logout 3. System shall provide main home page interface in website | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot logout to the website or the application. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of request for logout. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to login into the website or application already. | | |
| **Notes and Issues:** | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-05 | | |
| **Use Case Name:** | Display patients’ appointment(in mobile application) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 24/06/2014 |
| **Actors:** | Patient | | |
| **Description:** | Patient can view his/her own appointment in the patient schedule which provide in the mobile application | | |
| **Trigger:** | Patient selects appointment schedule | | |
| **Preconditions:** | Patient is already logged into the application by using patientID and password | | |
| **Postconditions:** | Patient can view their appointment schedule | | |
| **Normal Flow:** | 1. Patient selects patients’ schedule menu 2. System shall query data from appointment table in database 3. System shall provide patients’ appointment schedule interface in mobile application | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her patient ID and password first. The dental clinics’ officer provides patient ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input pateintID and password

Login fail

Display error message

Login success

User select appointment function

User view his/her appointment

Figure 4: Display patients’ appointment in mobile application [AD-01]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-06 | | |
| **Use Case Name:** | Display patients’ appointment(in website) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 24/06/2014 |
| **Actors:** | Patient | | |
| **Description:** | User can view his/her own appointment in the patients’ schedule(for patient,  dentists’ schedule for dentist, and officer can view both of them) which provide in the website | | |
| **Trigger:** | User selects appointment schedule | | |
| **Preconditions:** | User is already logged into the application by using patientID and password | | |
| **Postconditions:** | User can view their appointment schedule | | |
| **Normal Flow:** | 1. User selects patients’ schedule menu 2. System shall query data from appointment table in database 3. System shall provide patients’ appointment schedule interface in website | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her patient ID and password first. The dental clinics’ officer provides patient ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input pateintID and password

Login fail

Display error message

Login success

User select appointment function

User view his/her appointment

Figure 5: Display patients’ appointment in website [AD-02]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-07 | | |
| **Use Case Name:** | Display dentists’ appointment(in website) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 24/06/2014 |
| **Actors:** | Dentist | | |
| **Description:** | User can view his/her own appointment in the dentists’ schedule(for dentist,  patients’ schedule for patient, and officer can view both of them) which provide in the website | | |
| **Trigger:** | User selects appointment schedule | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | User can view their appointment schedule | | |
| **Normal Flow:** | 1. User selects dentists’ schedule menu 2. System shall query data from appointment table in database 3. System shall provide dentists’ appointment schedule interface in website | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The dentist schedule will not show up. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Login fail

Display error message

Login success

User select appointment function

User view his/her appointment

Figure 6: Display dentists’ appointment in website [AD-03]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-08 | | |
| **Use Case Name:** | Display appointment schedule(in mobile application) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Patient | | |
| **Description:** | Patient can view all appointment in the dental clinic calendar which provide in the mobile application | | |
| **Trigger:** | Patient selects calendar menu | | |
| **Preconditions:** | Patient is already logged into the application by using patientID and password | | |
| **Postconditions:** | Patient can view all appointment schedule | | |
| **Normal Flow:** | 1. Patient selects patients’ schedule menu 2. System shall provide all appointment schedule of dental clinic in mobile application | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-2 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her patient ID and password first. The dental clinics’ officer provides patient ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select calendar appointment function

User view all appointment

Figure 7: Display appointment schedule(in mobile application) [AD-05]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-09 | | |
| **Use Case Name:** | Display appointment schedule(in website) | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Patient, Officer, Dentist | | |
| **Description:** | User can view all appointment in the dental clinic calendar which provide in the website | | |
| **Trigger:** | User selects calendar menu | | |
| **Preconditions:** | User is already logged into the application by using patientID and password | | |
| **Postconditions:** | User can view all appointment schedule | | |
| **Normal Flow:** | 1. User selects patients’ schedule menu 2. System shall provide all appointment schedule of dental clinic in website | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-2 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. user has to have his/her patient ID, user ID and password first. The dental clinics’ officer provides patient ID ,user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select calendar appointment function

User view all appointment

Figure 8: Display appointment schedule(in website) [AD-06]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-10 | | |
| **Use Case Name:** | Create new account for patient | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can create an account for new patient to use the services from dental clinic | | |
| **Trigger:** | Officer selects new patient menu | | |
| **Preconditions:** | User is already logged into the application by using patientID and password | | |
| **Postconditions:** | New patients’ account is add to the system and can view as a list | | |
| **Normal Flow:** | 1. Officer selects new patient menu 2. System provide interface for create a new account for patient 3. Officer inputs patientID, password, firstname, lastname, age, gender, address, phone number, and email address of patient 4. Officer press submit button 5. System add new patient to patients’ table in the database 6. System query data from patients’ table in the database 7. System provide interface for show list of patient | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Display error message

Login fail

Login success

User select create new patients’ account

User input patients’ information

Display error message

Invalid form

User views patient account in patient list page

Valid form

Figure 8: Create new account for patient [AD-07]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-11 | | |
| **Use Case Name:** | Edit patients’ information | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can edit patients’ information | | |
| **Trigger:** | Officer selects edit menu in all patient page | | |
| **Preconditions:** | User is already logged into the application by using patientID and password | | |
| **Postconditions:** | New information of patient is add to the system and can view as a list | | |
| **Normal Flow:** | 1. Officer selects edit menu 2. System provide interface for edit patients’ information 3. Officer inputs data which needs to edit such as password, firstname, lastname, age, gender, address, phone number, and email address of patient 4. Officer press submit button 5. System update new patients’ data to patients’ table in the database 6. System query data from patients’ table in the database 7. System provide interface for show list of patient | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Login fail

Display error message

Login success

User select patient list page

Invalid form

User select edit function

Display error message

User input information in to the edit form

Valid form

User views patient account in patient list page

Figure 9: Edit patients’ information [AD-08]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-12 | | |
| **Use Case Name:** | Delete patients’ information | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can delete patients’ account | | |
| **Trigger:** | Officer selects delete menu in all patient page | | |
| **Preconditions:** | Officer is already logged into the application by using patientID and password | | |
| **Postconditions:** | Patients’ account is delete from the system | | |
| **Normal Flow:** | 1. Officer selects delete menu 2. System delete patient from patients’ table in database 3. System query data from patients’ table in the database 4. System provide interface for show list of patient | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-4 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

Login fail

User input userID and password

User select login

Display error message

Login success

User select patient list page

User select delete function

User views patient account in patient list page

Delete fail

Delete success

Figure 10: Delete patients’ information [AD-09]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-13 | | |
| **Use Case Name:** | Create new account for dentist | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can create an account for new dentist to use the services from dental clinic | | |
| **Trigger:** | Officer selects new dentist menu | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | New dentist s’ account is add to the system and can view as a list | | |
| **Normal Flow:** | 1. Officer selects new dentist menu 2. System provide interface for create a new account for patient 3. Officer inputs patientID, password, firstname, lastname, age, gender, address, phone number, and email address of patient 4. Officer press submit button 5. System add new dentist to clinic users’ table in the database 6. System query data from clinic users’ table in the database 7. System provide interface for show list of dentist | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Login fail

Display error message

Login success

User select create new dentists’ account

User input dentists’ information

Invalid form

Display error message

Valid form

User views dentist account in dentist list page

Figure 11: Create new account for dentist [AD-10]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-14 | | |
| **Use Case Name:** | Edit dentists’ information | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can edit dentist s’ information | | |
| **Trigger:** | Officer selects edit menu in all dentist page | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | New information of dentist is add to the system and can view as a list | | |
| **Normal Flow:** | 1. Officer selects edit menu 2. System provide interface for edit dentist s’ information 3. Officer inputs data which needs to edit such as password, firstname, lastname, age, gender, address, phone number, and email address of patient 4. Officer press submit button 5. System update new dentist data to clinic users’ table in the database 6. System query data from clinic users’ table in the database 7. System provide interface for show list of dentist | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Login fail

Display error message

Login success

User select dentist list page

Display error message

Invalid form

User input information in to the edit form

User select edit function

Valid form

User views dentist account in dentist list page

Figure 12: Edit dentists’ information [AD-011]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-15 | | |
| **Use Case Name:** | Delete dentist s’ account | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can delete dentist s’ account | | |
| **Trigger:** | Officer selects delete menu in all dentist page | | |
| **Preconditions:** | Officer is already logged into the application by using userID and password | | |
| **Postconditions:** | Dentist s’ account is delete from the system | | |
| **Normal Flow:** | 1. Officer selects delete menu 2. System delete dentist from clinic users’ table in database 3. System query data from clinic users’ table in the database 4. System provide interface for show list of dentist | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-4 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

Login fail

User input userID and password

User select login

Display error message

Login success

User select dentist list page

User select delete function

User views dentist account in dentist list page

Delete fail

Delete success

Figure 13: Delete dentists’ information [AD-12]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-16 | | |
| **Use Case Name:** | Display patients’ list | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can view list of patient from website | | |
| **Trigger:** | Officer selects patient account menu | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | The list of patient is shown | | |
| **Normal Flow:** | 1. Officer selects patient account menu 2. System query data from patients’ table in the database 3. System provide interface for show list of patient | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

Login fail

User input userID and password

User select login

Display error message

Login success

User select patient list page

User views patient account in patient list page

Figure 14: Display patients’ list [AD-13]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-17 | | |
| **Use Case Name:** | Display dentists’ list | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can view list of patient from website | | |
| **Trigger:** | Officer selects dentist account menu | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | The list of dentist is shown | | |
| **Normal Flow:** | 1. Officer selects dentist account menu 2. System query data from clinic users’ table in the database 3. System provide interface for show list of dentist | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-3 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

Login fail

User input userID and password

User select login

Display error message

Login success

User select dentist list page

User views dentist account in dentist list page

Figure 15: Display dentists’ list [AD-14]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-18 | | |
| **Use Case Name:** | Create new appointment | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can create a new appointment for patient and save to the Google calendar | | |
| **Trigger:** | Officer selects make appointment menu | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | New appointment added to the database and can view in Google calendar | | |
| **Normal Flow:** | 1. Officer selects make appointment menu 2. System provide interface for make a new appointment 3. Officer inputs which contains patientID, dentistID, date, startTime, endTime, treatment, and description 4. Officer press submit button 5. System add new appointment to appointments’ table in the database 6. System query data from appointments’ table in the database 7. System provide appointment schedule interface in website | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Display error message

Login fail

Login success

User select create new appointment

User input appointment information in the form

Display error message

Invalid form

Valid form

User views appointment information schedule in appointment page

Figure 16: Create new appointment [AD-15]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-19 | | |
| **Use Case Name:** | Edit appointment | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can edit appointment | | |
| **Trigger:** | Officer selects edit menu in all appointment page | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | New information of appointment is add to the system and can view as a list | | |
| **Normal Flow:** | 1. Officer selects edit menu 2. System provide interface for edit appointment 3. Officer inputs data which needs to edit such as dentistID, date, startTime, endTime, treatment, and description 4. Officer press submit button 5. System update new appointment data to clinic userss’ table in the database 6. System query data from appointments’ table in the database 7. System provide dentists’ appointment schedule | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-7 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User select login

User input userID and password

Display error message

Login fail

Login success

User select appointment page

User input appointment information in the form

Display error message

Invalid form

User views appointment information schedule in appointment page

User select edit function

Valid form

Figure 17: Edit appointment [AD-16]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-20 | | |
| **Use Case Name:** | Delete appointments’ account | | |
| **Created By:** | Kanokwan Maneerat | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 25/06/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can delete appointment | | |
| **Trigger:** | Officer selects delete menu in all appointment page | | |
| **Preconditions:** | Officer is already logged into the application by using userID and password | | |
| **Postconditions:** | Appointment is delete from the system | | |
| **Normal Flow:** | 1. Officer selects delete menu 2. System delete appointment from appointments’ table in database 3. System query data from appointments’ table in the database 4. System provide interface for show list of appointments | | |
| **Alternative Flows:** | N/A | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-4 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

Login fail

User input userID and password

User select login

Display error message

Login success

User select appointment page

User select delete function

Cancel

Delete success

User views appointment information schedule in appointment page

Figure 18: Delete appointments’ account [AD-17]

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case ID:** | UC-21 | | |
| **Use Case Name:** | Save the appointment to google calendar | | |
| **Created By:** | Worapun Wongkium | **Last Updated By:** | Kanokwan Maneerat |
| **Date Created:** | 17/04/2014 | **Last Revision Date:** | 25/06/2014 |
| **Actors:** | Officer | | |
| **Description:** | Officer can save appointment to the Google calendar | | |
| **Trigger:** | Officer selects view appointment page | | |
| **Preconditions:** | User is already logged into the application by using userID and password | | |
| **Postconditions:** | New appointment added google calendar and can view in Google calendar | | |
| **Normal Flow:** | 1. Officer selects view appointment page 2. System provide interface for appointment page 3. System query data from appointments’ table in the database 4. Officer press save button to save appointment to google calendar 5. System provide appointment information in google calendar 6. Officer confirm for saving appointment in google calendar 7. System provide appointment schedule interface in website | | |
| **Alternative Flows:** | * 4a. Officer press submit button and all inputs are not fill  1. System show error message “Please fill out this field” for any field that require to not empty 2. Go back to normal flow 3 | | |
| **Exceptions:** | System initiated: System unavailable the information will not deliver. If there are no internet connection user cannot login to the website or the application. The patient schedule will not show up. | | |
| **Includes:** | Steps 1-10 in the normal flow would be required for all types of display dentist schedule. | | |
| **Frequency of Use:** | On demand | | |
| **Special Requirements:** | N/A | | |
| **Assumptions:** | User understands English language. User has to have his/her user ID and password first. The dental clinics’ officer provides user ID and password. | | |
| **Notes and Issues:** | N/A | | |

User input userID and password

User select login

Login fail

Display error message

Login success

User select appointment page

User select save to google calendar function

User confirm saving appointment

User view appointment information in google calendar in google website

Cancel

Saving success

User views appointment information schedule in appointment page

Figure 19: Delete appointments’ account [AD-20]