**Dental Clinic Services System**

Traceability Record

By

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Mrs. Yun Rim Park

**Test Plan**

**Revision Table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Document Name** | **Detail** | **Status** | **Date** | **Viewable** | **Reviewer& Responsible** |
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| DCSS - Traceability Record  - ver 0.2 | Add Bi-directional metrics System | Draft | 07/17/2014 | Adviser | Kanokwan&Worapun |
| DCSS - Traceability Record  - ver 0.3 | Add Unit test case | Draft | 07/28/2014 | Adviser | Kanokwan&Worapun |
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# Chapter One: Introduction

## 1. Introduction

### 1.1 Objectives

Dental clinic service system consists of a web application and a mobile application which supports iOS7. The system supports English language for people who are patients, officers, or dentists of dental clinics. Furthermore, it offers some features for visitors who would like to gain information about the clinic. This system will reduce officers’ work and help patients save their time. Patients can find information about the dental clinic and personal information using the mobile application as well as the web application. For the visitor who wants to have a dental treatment from the clinic, he/she can make an appointment with a dentist through the application, and the dentist can use the system for checking patients’ appointment schedule. Dental clinic services system integrates the services that are provided by most dental clinics into the web application and the mobile application. By combining all the services into one, the system provides more convenience to dental clinic users as well as staff.

### 1.2 Purpose

The purpose of the traceability record document is to show relation of the project. The traceability is linked between user requirements to system requirement specification, use case, activity diagram, sequence diagram and user interface design.

### 1.3 Project Scope

The objective of this software design is to specify the requirements that the system should fulfill, which are as follows:

* Dental clinic services system provides an application that is accessible via web browser on a computer and also on a mobile phone.
* Dental clinic services system on mobile phone support iOS.
* Dental clinic services system supports English language only.
* Dental clinic services system provides features for dental clinics’ registered user whose are patients, officers and dentists.
* Dental clinic services system assists managing appointments of patients and dentists using the web application and the mobile application.
* Dental clinic services system provides a user authentication for each patient and dentist through dental clinic officers

# Chapter Two: Bi-directional metrics System

## 2. Bi-directional metrics System

### 2.1 Bi-directional metrics System: Requirement Specifications and User Requirement Specification

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | System requirement specification | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | SRS-61 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | SRS-62 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | SRS-63 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | SRS-64 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | SRS-65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | SRS-66 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | SRS-67 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | SRS-68 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | SRS-69 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | System requirement specification | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 10 | SRS-70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | SRS-71 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | SRS-72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | SRS-73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | SRS-74 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | SRS-75 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | SRS-76 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | SRS-77 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | SRS-78 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | SRS-79 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | SRS-80 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | SRS-81 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | SRS-82 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| No. | System requirement specification | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 23 | SRS-83 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | SRS-84 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 | SRS-85 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 | SRS-86 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 | SRS-87 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 | SRS-88 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 | SRS-89 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 | SRS-90 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 | SRS-91 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 | SRS-92 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 33 | SRS-93 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 | SRS-94 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 35 | SRS-95 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| No. | System requirement specification | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 36 | SRS-96 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 | SRS-97 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 | SRS-98 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 39 | SRS-99 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 | SRS-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 41 | SRS-101 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 | SRS-102 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 | SRS-103 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 | SRS-104 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 45 | SRS-105 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 | SRS-106 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 47 | SRS-107 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 | SRS-108 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.2 Bi-directional metrics: Use Case and User Requirement Specification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Use case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | UC-26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | UC-27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | UC-28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | UC-29 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | UC-30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | UC-31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | UC-32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | UC-33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | UC-34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | UC-35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | UC-36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | UC-37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Use Case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | UC-38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | UC-39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | UC-40 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | UC-41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | UC-42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | UC-43 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | UC-44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.3 Bi-directional metrics: Activity Diagram and User Requirement Specification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Activity Diagram | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | AD-22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | AD-23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | AD-24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | AD-25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | AD-26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | AD-27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | AD-28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | AD-29 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | AD-30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | AD-31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | AD-32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | AD-33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | Activity Diagram | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | AD-34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | AD-35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | AD-36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | AD-37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | AD-38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | AD-39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | AD-40 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.4 Bi-directional metrics: Sequence Diagram and User Requirement Specification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Sequence Diagram | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | SD-22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | SD-23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | SD-24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | SD-25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | SD-26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | SD-27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | SD-28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | SD-29 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | SD-30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | SD-31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | SD-32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | Sequence Diagram | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | SD-33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | SD-34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | SD-35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | SD-36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.5 Bi-directional metrics: User Interface Design and User Requirement Specification

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | User Interface Design | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | UI-01 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | UI-02 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | UI-03 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | UI-04 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | UI-05 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | UI-06 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | UI-07 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | UI-08 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | UI-09 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | UI-10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | UI-11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | UI-12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | User Interface Design | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | UI-13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | UI-14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | UI-15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | UI-16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | UI-17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | UI-18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | UI-19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | UI-20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.6 Bi-directional metrics: System Test Case and User Requirement Specification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | System Test Case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | STC-32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | STC-33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | STC 34 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | STC -35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | STC -36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | STC -37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | STC -38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | STC -39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | STC -40 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | STC -41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | STC -42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | STC -43 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | System Test Case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | STC -44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | STC -45 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | STC -46 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | STC -47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | STC -48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | STC-49 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | STC-50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.7 Bi-directional metrics: Unit Test Case and User Requirement Specification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Unit Test Case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 1 | UTC-01 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | UTC-02 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | UTC 03 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | UTC -04 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | UTC -05 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | UTC -06 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | UTC -07 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | UTC -08 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | UTC -09 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | UTC -10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | UTC 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | UTC -12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. | Unit Test Case | URS-26 | URS-27 | URS-28 | URS-29 | URS-30 | URS-31 | URS-32 | URS-33 | URS-34 | URS-35 | URS-36 | URS-37 | URS-38 | URS-39 | URS-40 | URS-41 | URS-42 | URS-43 | URS-44 |
| 13 | UTC -13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | UTC -14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | UTC -15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | UTC -16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | UTC -17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | UTC-18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | UTC-19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | UTC-20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | UTC-21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | UTC-22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | UTC-23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | UTC-24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Chapter Three: Traceability record

## 3. Traceability record

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-26 | SRS-01  SRS-61  SRS-62 | AD-22 | UC-26 | SD-22 | STC-32 |  |  |
| URS-27 | SRS-01  SRS-63  SRS-67  SRS-68  SRS-70  SRS-71 | AD-23 | UC-27 | SD-23 | STC-33 |  |  |
| URS-28 | SRS-01  SRS-59  SRS-63  SRS-64  SRS-67  SRS-68  SRS-70  SRS-71  SRS-72  SRS-73  SRS-104  SRS-105  SRS-106  SRS-107 | AD-24 | UC-28 | SD-24 | STC-34 |  |  |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-29 | SRS-01  SRS-67  SRS-70  SRS-100  SRS-101  SRS-103 | AD-25 | UC-29 | SD-23 | STC-35 |  |  |
| URS-30 | SRS-01  SRS-59  SRS-67  SRS-69  SRS-70  SRS-73  SRS-100  SRS-101  SRS-102  SRS-103  SRS-104  SRS-105  SRS-106  SRS-107 | AD-26 | UC-30 | SD-24 | STC-36 |  |  |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-31 | SRS-01  SRS-65  SRS-67  SRS-70  SRS-74  SRS-75 | AD-27 | UC-31 | SD-33 | STC-37 |  |  |
| URS-32 | SRS-01  SRS-59  SRS-67  SRS-69  SRS-70  SRS-73  SRS-100  SRS-101  SRS-102  SRS-103  SRS-104  SRS-105  SRS-106  SRS-107 | AD-28 | UC-32 | SD-34 | STC-38 |  |  |
| URS-33 | SRS-01  SRS-76  SRS-77  SRS-78  SRS-90  SRS-52 | AD-29 | UC-33 | SD-25 | STC-39 |  |  |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-34 | SRS-01  SRS-76  SRS-80  SRS-81 | AD-30 | UC-34 | SD-35 | STC-40 |  |  |
| URS-35 | SRS-01  SRS-59  SRS-76  SRS-82  SRS-83  SRS-87 | AD-31 | UC-35 | SD-26 | STC-41 |  |  |
| URS-36 | SRS-01  SRS-59  SRS-76  SRS-77  SRS-85  SRS-87 | AD-32 | UC-36 | SD-27 | STC-42 |  |  |
| URS-37 | SRS-01  SRS-76  SRS-84  SRS-86  SRS-87 | AD-33 | UC-37 | SD-28 | STC-43 |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-38 | SRS-01  SRS-76  SRS-80 | AD-34 | UC-38 |  | STC-44 |  |  |
| URS-39 | SRS-01  SRS-88  SRS-90  SRS-91  SRS-92  SRS-93 | AD-35 | UC-39 | SD-29 | STC-45 |  |  |
| URS-40 | SRS-01  SRS-89  SRS-90  SRS-92  SRS-93  SRS-94 | AD-36 | UC-40 | SD-36 | STC-46 |  |  |
| URS-41 | SRS-01  SRS-59  SRS-79  SRS-90  SRS-95  SRS-96  SRS-108 | AD-37 | UC-41 |  | STC-47 |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **URS** | **SRS** | **AD** | **UC** | **SD** | **STC** | **UI** | **UTC** |
| URS-42 | SRS-01  SRS-59  SRS-79  SRS-90  SRS-95  SRS-96  SRS-108 | AD-38 | UC-42 | SD-30 | STC-48 |  |  |
| URS-43 | SRS-01  SRS-59  SRS-90  SRS-97  SRS-99  SRS-108 | AD-39 | UC-43 | SD-31 | STC-49 |  |  |
| URS-44 | SRS-01  SRS-90  SRS-96  SRS-98  SRS-108 | AD-40 | UC-44 | SD-32 | STC-50 |  |  |

# Chapter Four: Appendix

## 4. Appendix

### 4.1 User Requirement Specification

**Feature 4: Patient identification using QR code**

* URS-26: Patient can use the QR code to identify him/herself

**Feature 5: Dental care consulting and following up**

* URS-27: Dentist can view his/her patient follow up message as a list in follow up
* page
* URS-28: Dentist can ask his/her patient follow up message in follow up
* page
* URS-29: Patient can view his/her dentist follow up message as a list in follow up

page in the website

* URS-30: Patient can answer his/her dentist follow up message as a list in
* follow up page in the website
* URS-31: Patient can view his/her dentist follow up message as a list in follow up

page in the mobile application

URS-32: Patient can answer his/her dentist follows up message in follow up

* page in mobile application

**Feature 6: A dental clinic information and promotion**

* URS-33: Patient can view the dental clinic information and promotion in the
* website
* URS-34: Patient can view the dental clinic information and promotion in mobile
* application
* URS-35: Officer can add the information to the database
* URS-36: Officer can edit the dental clinic information in the database
* URS-37: Officer can delete the dental clinic information from the database
* URS-38: Visitor can view the dental clinic information and promotion

**Feature 7: Cost estimation of dental treatments**

* URS-39: Patient can select the dental treatment to estimate the cost by him/herself
* in the website
* URS-40: Patient can select the dental treatment to estimate the cost by him/herself in the mobile application
* URS-41: Visitor can select the dental treatment to estimate the cost by him/herself in the website
* URS-42: Officer can add dental treatment information including the detail and
* cost into the database
* URS-43: Officer can edit dental treatment information including the detail and
* cost in the database
* URS-44: Officer can delete dental treatment information from the database

### 4.2 Use Case

**4**.3 System Requirement Specification

* SRS-01: System shall connect with the database
* SRS-59:System shall show error message “Please fill out this field” for any field that requires being not empty

**SRS-61:** System shall provide the patient’s QR code in QR code function in mobile application

**SRS-62:** System shall provide the patient’s QR code in QR code function in the website

**SRS-63:** System shall provides the dent follow up page in the website

**SRS-64:** System shall provides the follow up form in the dent follow up page in the website

**SRS-65:** System shall provides the follow up page in the mobile application

**SRS-66:** System shall provides the follow up form in the follow up page in the mobile application

* **SRS-67:** System shall retrieve the patient’s message data including the answer from the database

**SRS-68:** System shall provide the patient’s message data as a list in the dent follow up page in the website

**SRS-69:** System shall add the patient’s message data including question and answer into the database

**SRS-70:** System shall retrieve the dentist’s message data including the question from the database

**SRS-71:** System shall provide the dentist’s message data as a list in the dent follow up page in the website

**SRS-72:** System shall add the dentist’s message data including question and answer into the database

**SRS-73:** System shall update follow up table in the database

**SRS-74:** System shall provide the patient’s message data as a list in the follow up page in the mobile application

**SRS-75:** System shall provide the dentist’s message data as a list in the follow up page in the mobile application

**SRS-76:** System shall retrieve the dental clinic information data and promotion’s data including the description from the database

**SRS-77:** System shall provide the dental information’s data or promotion’s data in the edit information and promotion form

**SRS-78:** System shall provide the dental clinic promotion’s data and information’s data in the information and promotion page in the website

**SRS-79:** System shall provide the create dental treatment page

**SRS-80:** System shall provide the dental clinic promotion’s data and information’s data in the information and promotion page in mobile application

**SRS-81:**  System shall provide the dental clinic information and promotion page in the mobile application

**SRS-82:** System shall provide the create information and promotion page

**SRS-83:** System shall add dental clinic information’s data or promotion’s data including dental information description into the database

**SRS-84:** System shall update information and promotion table in the database

**SRS-85:**  System shall edit dental clinic information’s data or promotion’s data in information and promotion table in the database

**SRS-86:** System shall delete dental clinic information’s data or promotion’s data from information and promotion table in the database

**SRS-87:** System shall provide the dental information and promotion as a list in all information and promotion page

**SRS-88:** System shall provide the cost estimation page in website

**SRS-89:** System shall provide the cost estimation page in mobile application

**SRS-90:** System shall retrieve the dental treatments’ data including dental treatment name, description and cost from the database

**SRS-91:** System shall provide the dental treatment data as a list in the cost estimation page

**SRS-92:**  System shall calculate the dental treatment cost

**SRS-93:** System shall provide the totally cost of dental treatment that the user selected

**SRS-94:** System shall provide the dental treatment data as a list in the cost estimation page in mobile application

**SRS-95:** System shall add the dental treatment information data including dental treatment name, description and cost into the database

**SRS-96:** System shall update the dental treatment table in the database

**SRS-97:**  System shall edit dental treatment information’s data in dental treatment table in the database

**SRS-98:** System shall delete dental clinic information’s data from dental treatment table in the database

**SRS-99:** System shall provide the dental treatment‘s data in the dental treatment edit form

**SRS-100:** System shall provides the patient follow up page in the website

**SRS-101:** System shall provides the follow up form in the patient follow up page in the website

**SRS-102:** System shall provide the patient’s message data as a list in the patient follow up page in the website

**SRS-103:** System shall provide the dentist’s message data as a list in the patient follow up page in the website

**SRS-104:** System shall show the question status if the question is already saved it will show number one

**SRS-105:** System shall show the question status if it is not saved yet show number zero

**SRS-106:** System shall show the answer status if the answer is already saved it will show number one

**SRS-107:** System shall show the answer status if it is not saved yet show number zero

**SRS-108:** System shall provide the dental treatment data as a list in the cost all dental treatment page

### 4.4 Activity Diagram

### 4.5 Sequence Diagram

### 

### 4.7 User Interface Design

### 4.6 System Test Case

### STC-32: Patient can use the QR code to identify his/herself

**STC-33: Dentist can view his/her patient follow up message as a list in follow up page**

**STC-34: Dentist can ask his/her patient follow up message in follow up page**

**STC-35: Patient can view his/her dentist follow up message as a list in follow up page in the website**

**STC-36): Patient can answer his/her dentist follow up message as a list in follow up page in the website**

**STC-37: Patient can view his/her dentist follow up message as a list in follow up page in the mobile application**

**STC-38: Patient can answer his/her dentist follows up message in follow up page in mobile application**

**STC-39: Patient can view the dental clinic information and promotion in the website**

**STC-40: Patient can view the dental clinic information and promotion in mobile application**

**STC-41: Officer can add the information to the database**

**STC-42: Officer can edit the dental clinic information in the database**

**STC-43: Officer can delete the dental clinic information from the database**

**STC-44: Visitor can view the dental clinic information and promotion**

**STC-45: Patient can select the dental treatment to estimate the cost by him/herself**

**STC-46: Patient can select the dental treatment to estimate the cost by him/herself in the mobile application**

**STC-47: Visitor can select the dental treatment to estimate the cost by him/herself in the website**

**STC-48: Officer can add dental treatment information including the detail and cost into the database**

**STC-49: Officer can edit dental treatment information including the detail and cost in the database**

**STC-50: Officer can delete dental treatment information from the database**

### 4.7 Unit Test Case