A Real Time and Interactive Dashboard in Tourism Industry

Software Requirement Specification

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Table of Contents

[1. Document History 3](#_Toc13594290)

[2. Introduction 4](#_Toc13594291)

[2.1 Purpose 4](#_Toc13594292)

[2.2 Project Overview 4](#_Toc13594293)

[2.3 User Characteristics 5](#_Toc13594294)

[2.4 Operation Environment 6](#_Toc13594295)

[2.5 Acronyms and Definitions 6](#_Toc13594296)

[3. Project Feature 9](#_Toc13594297)

[4. User requirement specification 11](#_Toc13594298)

[4.1 User Requirement Analysis 11](#_Toc13594299)

[4.2 User Requirement Specification 11](#_Toc13594300)

[5. Specific Requirement 13](#_Toc13594301)

[5.1 Use Case Scenario 13](#_Toc13594302)

[5.2 Use Case Description 17](#_Toc13594303)

# 1. Document History

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| History | Status | Date | Viewable | Editable | Responsible |
| A Real Time and Interactive Dashboard in Tourism Industry  Create:  - user requirement specification  - system requirement specification | Draft | June 29, 2019 | ZJY, LYW,  AJP | ZJY, LYW | ZJY, LYW |
|  |  |  |  |  |  |

ZJY = Junyu Zhou

LYW = Yawei Li

AJP = Dr. Pree Thiengburanathum

# 2. Introduction

## 2.1 Purpose

The purpose of the software requirement specification (SRS) is to describe the functional and non-functional requirements of a real time and interactive dashboard in tourism industry. The requirements in the SRS are involved with the users to use the web-based application. The software requirement specification provides developers and users to understand each other in structure details. The application will be designed followed the SRS.

## 2.2 Project Overview

A real time and interactive dashboard in tourism industry is developed for the decision maker to view and manage the data easily and efficiently. Due to a large number of data, there are numerous work and extra things to do for doing statistics. A real time and interactive dashboard in tourism industry will provide the effective platform to decision maker to manage and statistics the massive data.

**2.2.1 Project Scope**

A real time and interactive dashboard in tourism industry is a web-based application. It is for decision maker to do the easy statistics of mess data in a real time way. For decision maker to manage and keep tracks all the data.

**2.2.2 Document Scope**

This document will include use case, use case description and software requirement of A real time and interactive dashboard in tourism industry. The scope of use case will cover the dashboard system and login/logout system.

Use case diagrams are usually referred to as behavior diagrams used to describe a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors).

A software requirements specification (SRS) is a comprehensive description of the intended purpose and environment for software under development. The SRS fully describes what the software will do and how it will be expected to perform.

## 2.3 User Characteristics

This system provides visualization data for decision makers easily to do statistics. In addition, A real-time and interactive dashboard in tourism industry will provide more than one types of visualization for users (for example, heatmap, word cloud)), they will reduce the paper-based work and record all data in an understandable way.

In this application we have two actors following:

**2.3.1 The decision maker**

The decision maker is the people who will use the admin dashboard.

**2.3.2 The user**

The user is the people who will write and view comments.

## 2.4 Operation Environment

PyCharm

Visual Studio Code

MongoDB

Pusher

React

Flask

GitHub

Draw.io

## 2.5 Acronyms and Definitions

**2.5.1 Acronyms**

ZJY = Junyu Zhou

LYW = Yawei Li

AJP = Dr. Pree Thiengburanathum

UC = Use Case

URS = User Requirement Specification

SRS = System Requirement Specification  
AD = Activity Diagram

CD = Class Diagram

**2.5.2 Definitions**

|  |  |
| --- | --- |
|  | Description |
| Use case | (1) A use case is a software and system engineering term that describes how a user uses a system to accomplish a particular goal. A use case acts as a software modeling technique that defines the features to be implemented and the resolution of any errors that may be encountered. [1]( <https://www.techopedia.com/definition/25813/use-case>) |
| Requirement | (1)A condition or capability needed by the user to solve a problem or achieve an objective for project.  (2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document. [2] (<https://en.wikipedia.org/wiki/Software_requirements>) |
| Specification | Description of an activity or work product that serves as the basis or input for further activities or work product. A specification can comprise requirements to a Product and how they will be solved. [3]( <https://books.google.co.th/books?id=dZTaRee1PXMC&pg=PA534&lpg=PA534&dq=Description+of+an+activity+or+work+product+that+serves+as+the+basis+or+input+for+further+activities+or+work+product.+A+specification+can+comprise+requirements+to+a+Product+and+how+they+will+be+solved.&source=bl&ots=OHePmeIc05&sig=ACfU3U02RfmAjmc6dJNONRAaT7TANIRIvw&hl=zh-CN&sa=X&ved=2ahUKEwiW0dyCopjjAhVKLY8KHa6GCVoQ6AEwAXoECAkQAQ#v=onepage&q=Description%20of%20an%20activity%20or%20work%20product%20that%20serves%20as%20the%20basis%20or%20input%20for%20further%20activities%20or%20work%20product.%20A%20specification%20can%20comprise%20requirements%20to%20a%20Product%20and%20how%20they%20will%20be%20solved.&f=false>) |
| User Interface | Visual part of computer application or operating system through which a user interacts with a computer or a software. It determines how commands are given to the computer or the program and how information is displayed on the screen. [4]( <http://www.businessdictionary.com/definition/user-interface.html>) |

# 3. Project Feature

**Feature-1. Login**

• Decision maker could log in to the system.

**Feature-2. View the summary of data visualization result**

• Decision maker could view the data summary (word frequency bar chart, number of comments histogram, types of comments Stacked column chart, positive comments rate line chart) on the dashboard.

**Feature-3. View the word-cloud of data**

• The decision maker could view the data presented in word-cloud.

**Feature-4. View the heatmap of data**

• The decision maker could view the data presented in a heatmap.

**Feature-5. View the data by name, date, sentiment or search for reviews**

• The decision maker could view data by select the filter or input name.

**Feature-6. Log out**

• The decision maker could log out from the dashboard.

**Feature-7. View comments**

• User could view comments.

**Feature-8. Write comments**

• User could write comments.

# 4. User requirement specification

## 4.1 User Requirement Analysis

## 4.2 User Requirement Specification

**Feature-1. Login**

URS-01: Decision maker inputs username and password to login to the dashboard.

**Feature-2. View the summary of data visualization result**

URS-02: Decision maker views data summary on the homepage.

**Feature-3. View the word-cloud of data**

URS-03: Decision maker views data by word-cloud.

**Feature-4. View the heatmap of data**

URS-04: Decision maker views data by heatmap.

**Feature-5. View the data by name, date, sentiment or search for reviews**

URS-05: Decision maker views data by inputting name.

URS-06: Decision maker views data by selecting date.

URS-07: Decision maker selects sentiment to view.

URS-08: Decision maker searches reviews.

**Feature-6. Log out**

URS-09: Decision maker logs out from the dashboard.

**Feature-7. View comments**

URS-10: User views comments.

**Feature-8. Write comments**

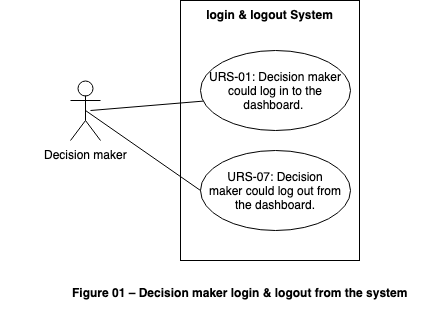
URS-10: User writes comments.

# 5. Specific Requirement

## 5.1 Use Case Scenario

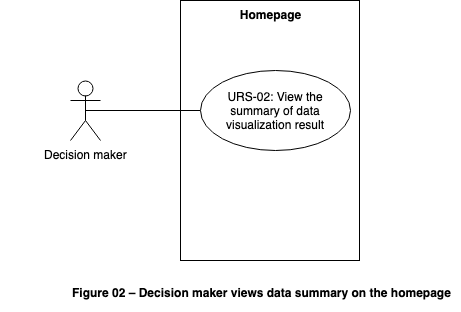
**5.1.1 Use Case Diagram of Feature 1 &Feature 6**

**Decision maker:**

****

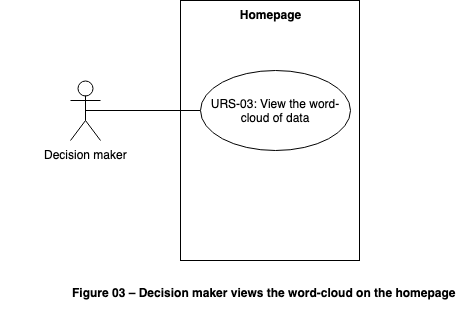
**5.1.2 Use Case Diagram of Feature 2**

**Decision maker:**

****

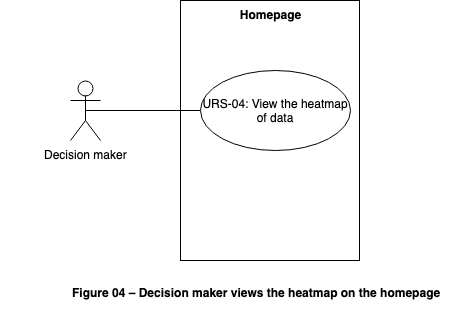
**5.1.3 Use Case Diagram of Feature 3**

**Decision maker:**

****

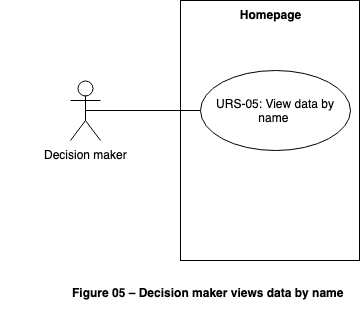
**5.1.4 Use Case Diagram of Feature 4**

**Decision maker:**

****

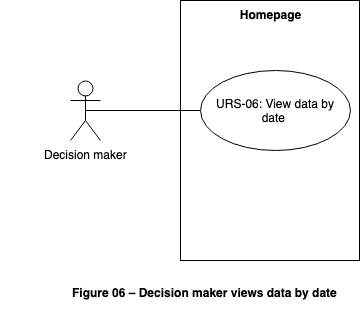
**5.1.5 Use Case Diagram of Feature 5**

**Decision maker:**

****

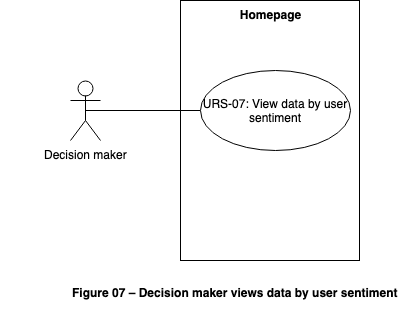
**5.1.6 Use Case Diagram of Feature 6**

**Decision maker:**

****

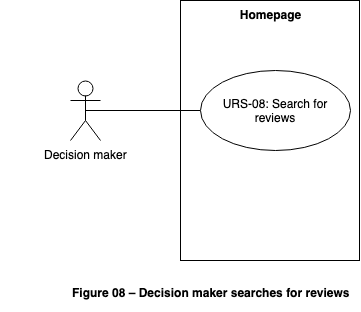
**5.1.7 Use Case Diagram of Feature 7**

**Decision maker:**

****

**5.1.8 Use Case Diagram of Feature 8**

**Decision maker:**

****

## 5.2 Use Case Description

**5.2.1 login & logout System**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-01 | | | |
| Use Case Name | Login to the system | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can login to the system by input username and password. | | | |
| Trigger | Decision maker clicks “Login” button. | | | |
| Preconditions | System connect with internet successful. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - Must contain characters and numbers and not more than 10 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Decision maker login to dashboard successful. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System provides the login interface. | |
|  | 2. Decision maker inputs username and password. | |  | |
|  |  | | 3.System validates that the username and password. [A1] | |
| Alternative Flow | A1: Username and password do not match.  1: Display: “The username or password is not correct.”  2: System goes to 1st step in normal flows. | | | |
| Exception Flow |  | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-02 | | | |
| Use Case Name | View the summary | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the summary of data visualization result. | | | |
| Trigger | Decision maker logged in successful. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker can view the summary page. | | | |
| Normal Flows | User | | System | |
|  |  | | 1.System displays the word frequency bar chart, number of comments histogram, types of comments Stacked column chart and positive comments rate line chart. [E1] | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-03 | | | |
| Use Case Name | View the Word-Cloud | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the Word-Cloud of data. | | | |
| Trigger | Decision maker clicks “Word-Cloud” button. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker can view the Word-Cloud page. | | | |
| Normal Flows | User | | System | |
|  | 1.Decision maker clicks the “Word-Cloud” button. | |  | |
|  |  | | 2. System displays the Word-Cloud. [E1] | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-04 | | | |
| Use Case Name | View the Heatmap | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the Heatmap of data. | | | |
| Trigger | Decision maker clicks “Heatmap” button. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker can view the Heatmap page. | | | |
| Normal Flows | User | | System | |
|  | 1.Decision maker clicks the “Heatmap” button. | |  | |
|  |  | | 2. System displays the Heatmap. [E1] | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-05 | | | |
| Use Case Name | View by name | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the data by inputting name. | | | |
| Trigger | Decision maker selects to view by inputting name. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Name | String | - Must more than 0 characters.  - Must less than 20 characters | | CAMT |
| Post conditions | Decision maker can view the data by inputting name. | | | |
| Normal Flows | User | | System | |
|  | 1. Decision maker clicks the search bar. | |  | |
|  | 2. Decision maker inputs name. | |  | |
|  |  | | 3. System searches in database. [E1] | |
|  |  | | 4. System displays results. | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-06 | | | |
| Use Case Name | View by date | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the data by date. | | | |
| Trigger | Decision maker selects to view by dragging a date bar. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker can view the data by dragging a date bar. | | | |
| Normal Flows | User | | System | |
|  | 1. Decision maker drags a date bar. | |  | |
|  |  | | 2. System searches in database. [E1] | |
|  |  | | 3. System displays results. | |
|  |  | |  | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-07 | | | |
| Use Case Name | View data by user sentiment. | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can view the data by selecting sentiment. | | | |
| Trigger | Decision maker selects to view by selecting sentiment. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker can view the data by selecting sentiment. | | | |
| Normal Flows | User | | System | |
|  | 1. Decision maker selects the sentiment list. | |  | |
|  |  | | 2. System searches in database. [E1] | |
|  |  | | 3. System displays results. | |
|  |  | |  | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-08 | | | |
| Use Case Name | Search reviews | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can search reviews. | | | |
| Trigger | Decision maker selects to search by inputting reviews. | | | |
| Preconditions | Decision maker must login into the system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Reviews | String | - Must more than 0 characters. | | Fabulous |
| Post conditions | Decision maker can search reviews. | | | |
| Normal Flows | User | | System | |
|  | 1. Decision maker clicks the search bar. | |  | |
|  | 2. Decision maker inputs reviews. | |  | |
|  |  | | 3. System searches in database. [E1] [A1] | |
|  |  | | 4. System displays results. | |
| Alternative Flow | A1: Reviews don’t exist in database.  1: Display: “The review doesn’t exist in database.”  2: System goes to 1st step in normal flows. | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-09 | | | |
| Use Case Name | Log out to the system | | | |
| Actors | Decision maker | | | |
| Description | Decision maker can log out to the system. | | | |
| Trigger | Decision maker clicks “Log out” button. | | | |
| Preconditions | System connect with internet successful. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Decision maker login out successful. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System provides the log out interface. | |
|  | 2. Decision maker clicks log out button. | |  | |
|  |  | | 3.System log out to the system. | |
| Alternative Flow |  | | | |
| Exception Flow |  | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-10 | | | |
| Use Case Name | View reviews | | | |
| Actors | All users | | | |
| Description | Users can view reviews. | | | |
| Trigger | Users visit homepage. | | | |
| Preconditions | System connect with internet successful. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Users view reviews. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays reviews from database. [E1] | |
|  |  | |  | |
|  |  | |  | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-11 | | | |
| Use Case Name | Write reviews | | | |
| Actors | All users | | | |
| Description | Users can write reviews. | | | |
| Trigger | Users visit homepage. | | | |
| Preconditions | System connect with internet successful. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Reviews | String | - Must more than 0 characters. | | Fabulous |
| Post conditions | Users write reviews. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System provides the write review interface. | |
|  | 2. Users input reviews. | |  | |
|  |  | | 3.System records and shows reviews [E1] | |
| Alternative Flow |  | | | |
| Exception Flow | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh. | | | |
| Assumption | Decision maker must have an individual account. | | | |