A Real Time and Interactive Dashboard in Tourism Industry

**Software Requirement Specification**

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# 1. Document History

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| History | Status | Date | Viewable | Editable | Responsible |
| Project-Software Requirement Specification\_v1.docx  Create:  - Introduction  - Project Feature  - User Requirement Specification  - Specific Requirement  - System Requirement Specification  - Reference | Draft | 29 June 2019 | ZJY, LYW,  AJP | ZJY, LYW | ZJY, LYW |
| Project-Software Requirement Specification\_v2.docx  Modify:  User Requirement Specification  - Specific Requirement  - System Requirement Specification | Draft | 22  Aug  2019 | ZJY, LYW,  AJP | ZJY, LYW | ZJY, LYW |
| Project-Software Requirement Specification\_v3.docx  Modify:  User Requirement Specification  - Specific Requirement  - System Requirement Specification | Draft | 07  Oct  2019 | ZJY, LYW,  AJP | ZJY, LYW | ZJY, LYW |
| Project-Software Requirement Specification\_v4.docx  Modify:  User Requirement Specification  - Specific Requirement  - System Requirement Specification | Final | 20  Nov  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 for 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 for 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 three actors following:

**2.3.1 The admin**

The admin can manage accounts and do all staff’s stuff.

**2.3.2 The staff**

The staff can register accounts, login to dashboard and view data visualization summaries.

**2.3.3 The normal user**

The normal user can view and write 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

RIDT = A Real Time and Interactive Dashboard for Tourism Industry

UC = Use Case

URS = User Requirement Specification

SRS = System Requirement Specification  
AD = Activity Diagram

CD = Class Diagram

**2.5.2 Definitions**

|  |  |
| --- | --- |
| Name | 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] |
| 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] |
| 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] |
| 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] |

# 3. Project Feature

**Feature-1. Account authorization**

1.1 Admin could login to backend.

1.2 Admin could view all accounts.

1.3 Admin could delete staff account.

1.4 Admin could add staff account.

1.5 Admin could edit account information.

1.6 Admin could accept or reject stuff account register request.

1.7 Staff could login to system.

1.8 Staff could edit their account information.

1.9 Staff could logout.

1.10 Normal user could register account.

**Feature-2. Staff view the summary of data visualization result**

* 1. Staff could view all visualization data summaries which contains:

(1) All the summary sparkline chart.

(2) Positive comments rate line chart.

(3) Word frequency bar chart.

(4) Number of comments bar chart.

(5) Types of comments stacked column chart.

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

* 1. Staff could view data presented in word-cloud which contains the most frequently occurring words.

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

* 1. Staff could view data presented in a heatmap; It shows different type of comments increment of different hotels.

**Feature-5. View the comments by sentiment.**

* 1. Staff could view data by sentiment (Positive comments, negative comments, neutral comments).

**Feature-6. All users view comments.**

* 1. All the users (Admin, staff, normal user) could view the comments in the home page which contains:

(1) Hotel list

(2) Comments list.

**Feature-7. Staff write comments.**

* 1. Staff could write a comment for hotel.

**Feature-8. Admin views system log.**

* 1. Admin could view the system log (Time, type of log, creator, info).

# 4. User Requirement Specification

## 4.1 User Requirement Analysis

In systems engineering and software engineering, requirements analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating and managing software or system requirements.

Requirements analysis is critical to the success or failure of a systems or software project. The requirements should be documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design.[5]

## 4.2 User Requirement Specification

**Feature-1. Account authorization**

URS-01: Admin can login to backend.

URS-02: Admin can view all accounts

URS-03: Admin can view waiting list page.

URS-04: Admin can edit staff account information.

URS-05: Admin can delete staff account.

URS-06: Admin can add staff account.

URS-07: Admin can accept account register request.

URS-08: Admin can reject account register request.

URS-09: Staff can login to system.

URS-10: Staff can edit account information.



URS-11: Staff can logout.

URS-12: Normal user can register account.

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

URS-13: Staff can view all the summary by using sparkline chart.

URS-14: Staff can view positive comments rate by using line chart.

URS-15: Staff can view word frequency by using bar chart.

URS-16: Staff can view number of comments by using bar chart.

URS-17: Staff can view types of comments stacked by using column chart.

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

URS-18: Staff can view the most frequently occurring words by word cloud.

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

URS-19: Staff can view data presented in a heatmap.

**Feature-5. View the comments by sentiment**

URS-20: Staff can view data by click positive button.

URS-21: Staff can view data by click natural button.

URS-22: Staff can view data by click negative button.

**Feature-6. All users view comments**

URS-23: All users can view hotel list in the homepage.

URS-24: All users can click to view a hotel page.

URS-25: All users can view all comments of a hotel.

**Feature-7. Staff write comments**

URS-26: Staff can write hotel comments.

**Feature-8. Admin views system log**

URS-27: Admin can view the system log (Time, type of log, creator, info).

# 5. Specific Requirement

## 图片包含 文字, 地图 描述已自动生成5.1.1 Use Case Diagram of Feature 1

## 5.1.2 Use Case Diagram of Feature 2

Figure 1: Use Case Diagram of Feature 1

图片包含 文字

描述已自动生成

Figure 2: Use Case Diagram of Feature 2

## 5.1.3 Use Case Diagram of Feature 3

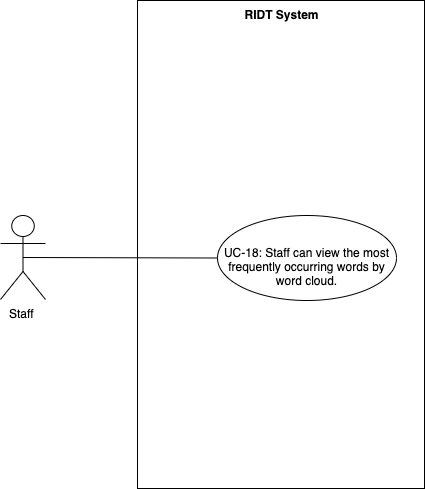


Figure 3: Use Case Diagram of Feature 3

## 5.1.4 Use Case Diagram of Feature 4

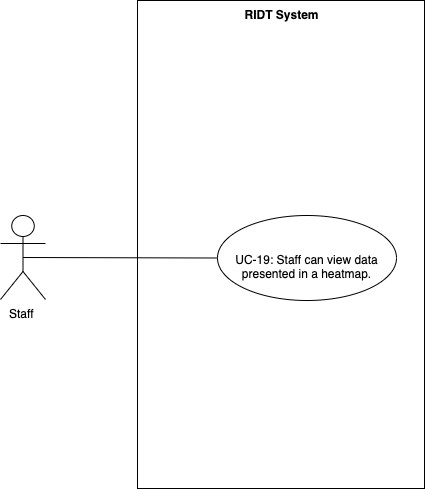


Figure 4: Use Case Diagram of Feature 4

## 5.1.5 Use Case Diagram of Feature 5

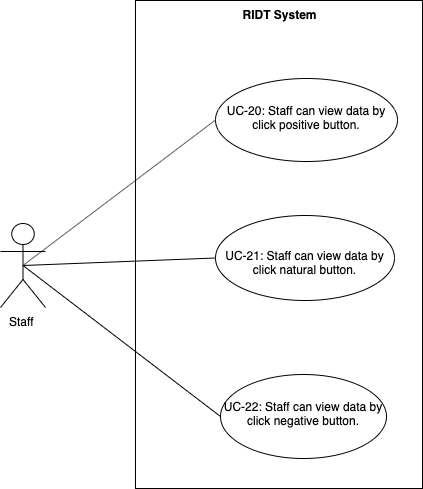


Figure 5: Use Case Diagram of Feature 5

## 5.1.6 Use Case Diagram of Feature 6

Figure 6: Use Case Diagram of Feature 6

## 5.1.4 Use Case Diagram of Feature 7

图片包含 屏幕截图

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Figure 7: Use Case Diagram of Feature 7

## 5.1.4 Use Case Diagram of Feature 8

图片包含 屏幕截图

描述已自动生成

Figure 8: Use Case Diagram of Feature 8

## 5.2 Use Case Description and Activity Diagram

## 5.2.1 Account authorization

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-01 | | | |
| Use Case Name | Login to the administer system | | | |
| Actors | Admin | | | |
| Description | Admin can login to the administer system by inputting username and password | | | |
| Trigger | Admin clicks “Login” button | | | |
| Preconditions | System connect with internet successful | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Admin login to dashboard successful. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks login button. | |  | |
|  |  | | 2. System provides the login interface. | |
|  | 3. Admin inputs username and password. | |  | |
|  |  | | 4. System checks input format. [E1] [E2] | |
|  |  | | 5.System validates that the username and password. [A1] | |
|  |  | | 6.System directs to system. | |
| Alternative Flow | A1: Username and password do not match.  1: Display: “The username or password is incorrect.”  2: System goes to 3rd step in normal flows. | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 3rd step in normal flows. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD01: Login to the system

图片包含 文字, 地图

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Figure 9: Login to the system

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-02 | | | |
| Use Case Name | View all accounts | | | |
| Actors | Admin | | | |
| Description | Admin can view all accounts | | | |
| Trigger | Admin clicks “all accounts” button | | | |
| Preconditions | Admin must login into the system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin can view all accounts information. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks all accounts button. | |  | |
|  |  | | 2. System displays all accounts information. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD02: View all accounts

图片包含 文字, 地图

描述已自动生成

Figure 10: View all accounts

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

## AD03: View waiting list page

图片包含 文字, 地图

描述已自动生成

Figure 11: View waiting list page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-03 | | | |
| Use Case Name | Admin edits staff account information | | | |
| Actors | Admin | | | |
| Description | Admin can edit staff account information | | | |
| Trigger | Admin clicks “Edit” button | | | |
| Preconditions | Admin must login into the system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Admin can edit account information. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks Edit button. | |  | |
|  |  | | 2. System provides edit information page. [E1] | |
|  | 3. Admin inputs information. | |  | |
|  | 4. Admin saves information. | |  | |
|  |  | | 5. System checks input format. [E2] | |
|  |  | | 6. System stores to database. | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 4th step in normal flows. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD04: Admin edits staff account information

图片包含 文字, 地图

描述已自动生成

Figure 12: Admin edits staff account information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-05 | | | |
| Use Case Name | Delete staff account | | | |
| Actors | Admin | | | |
| Description | Admin can delete staff account | | | |
| Trigger | Admin clicks “Delete” button | | | |
| Preconditions | Admin must login into the system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin can delete staff accounts. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks delete account button. | |  | |
|  | 2. Admin selects account to delete. | |  | |
|  |  | | 3. System deletes account. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD05: Delete staff account

图片包含 文字, 地图

描述已自动生成

Figure 13: Delete staff account

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-06 | | | |
| Use Case Name | Add staff account | | | |
| Actors | Admin | | | |
| Description | Admin can add staff account | | | |
| Trigger | Admin clicks “Add staff account” button | | | |
| Preconditions | System connect with internet successful | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Admin add staff account | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks “Add staff account” button. | |  | |
|  |  | | 2. System provides add account page. [E1] | |
|  | 3. Admin inputs username and password. | |  | |
|  | 4. Admin clicks save information. | |  | |
|  |  | | 5. System checks input format. [E2] [E3] | |
|  |  | | 6. System stores to database | |
|  |  | | 7. System displays: “Add account successful.” | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 4th step in normal flows.  E3: Account already exists in database.  1: Display: “The account already exists in database.”  2. System goes to 3rd step in normal flows. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD06: Add staff account

图片包含 文字, 地图

描述已自动生成

Figure 14: Add staff account

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-07 | | | |
| Use Case Name | Accept account register request. | | | |
| Actors | Admin | | | |
| Description | Admin can accept staff account register request | | | |
| Trigger | Admin clicks Accept button | | | |
| Preconditions | Admin must login into the system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin can accept staff account register request. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks waiting list button. | |  | |
|  |  | | 2. System displays all waiting list accounts information. [E1] | |
|  | 3. Admin clicks accept button. | |  | |
|  |  | | 4. System stores account into database. | |
|  |  | | 5. System returns result to admin. | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD07: Accept account register request

图片包含 屏幕截图, 文字, 地图

描述已自动生成

Figure 15: Accept account register request

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-08 | | | |
| Use Case Name | Reject account register request | | | |
| Actors | Admin | | | |
| Description | Admin can reject staff account register request | | | |
| Trigger | Admin clicks ‘Reject’ button | | | |
| Preconditions | Admin must login into the system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin can reject staff account register request. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks waiting list button. | |  | |
|  |  | | 2. System displays all waiting list accounts information. [E1] | |
|  | 3. Admin clicks reject button. | |  | |
|  |  | | 4. System returns result to admin. | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD08: Reject account register request

图片包含 文字, 地图, 屏幕截图

描述已自动生成

Figure 16: Reject account register request

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-09 | | | |
| Use Case Name | Login to system | | | |
| Actors | Staff | | | |
| Description | Staff can login to system | | | |
| Trigger | Staff clicks “Login” button | | | |
| Preconditions | System connect with internet successful | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Staff login to system successful. | | | |
| Normal Flows | User | | System | |
|  | 1. Staff clicks login button. | |  | |
|  |  | | 2. System provides the login interface. | |
|  | 3. Staff inputs username and password. | |  | |
|  |  | | 4. System checks input format. [E1] [E2] | |
|  |  | | 5.System validates that the username and password. [A1] | |
|  |  | | 6.System directs to system. | |
| Alternative Flow | A1: Username and password do not match.  1: Display: “The username or password is incorrect.”  2: System goes to 3rd step in normal flows. | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 3rd step in normal flows. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD09: Login to system

图片包含 文字, 地图

描述已自动生成

Figure 17: Login to system

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-10 | | | |
| Use Case Name | Staff edits account information | | | |
| Actors | Staff | | | |
| Description | Staff can edit account information | | | |
| Trigger | Staff clicks “Edit” button | | | |
| Preconditions | Staff must login into system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Staff can edit account information. | | | |
| Normal Flows | User | | System | |
|  | 1. Staff clicks Edit button. | |  | |
|  |  | | 2. System provides edit information page. [E1] | |
|  | 3. Staff inputs information. | |  | |
|  | 4. Staff saves information. | |  | |
|  |  | | 5. System checks input format. [E2] | |
|  |  | | 6. System stores to database. | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 4th step in normal flows. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD10: Staff edits account information

图片包含 文字, 地图

描述已自动生成

Figure 18: Staff edits account information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-11 | | | |
| Use Case Name | Log out | | | |
| Actors | Staff | | | |
| Description | Staff can log out from dashboard | | | |
| Trigger | Staff clicks “Logout” button | | | |
| Preconditions | Staff must login into dashboard | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff log out from system. | | | |
| Normal Flows | User | | System | |
|  | 1. Staff clicks Log out button. | |  | |
|  |  | | 2. System log out from dashboard. | |
| Alternative Flow |  | | | |
| Exception |  | | | |
| Assumption | Staff must have an individual account. | | | |

## AD11: Log out

图片包含 屏幕截图

描述已自动生成

Figure 19: Log out

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-12 | | | |
| Use Case Name | Register account | | | |
| Actors | Normal user | | | |
| Description | Normal user can register account | | | |
| Trigger | Normal user clicks “Register” button | | | |
| Preconditions | System connect with internet successful | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Username | String | - More than 6 digits.  - Must contain characters and not more than 12 digits.  - No special characters and space. | | Admin001 |
| Password | String | - Not less than 6 digits. | | Admin001 |
| Post conditions | Normal user can register account. | | | |
| Normal Flows | User | | System | |
|  | 1. Normal user clicks Register button. | |  | |
|  |  | | 2. System provides register information page. [E1] | |
|  | 3. Normal user inputs information. | |  | |
|  | 4. Normal user saves information. | |  | |
|  |  | | 5. System checks input format. [E2] | |
|  |  | | 6. System sends account information to waiting list. | |
|  |  | | 7. System displays: “register information was recorded, please wait for the result.” | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel.  E2: Input format error.  1: Display: “Format is incorrect.”  2: System goes to 4th step in normal flows. | | | |
| Assumption | Normal user must understand English. | | | |

## AD12: Register account

**图片包含 文字, 地图

描述已自动生成**

Figure 20: Register account

## 5.2.2 View the summary of data visualization result

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-13 | | | |
| Use Case Name | View summary sparkline chart | | | |
| Actors | Staff | | | |
| Description | Staff can view all the summary by using sparkline chart. | | | |
| Trigger | Staff click dashboard button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff can view all the summary by using sparkline chart. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays a summary sparkline chart. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD13: View summary by sparkline chart

图片包含 文字, 地图

描述已自动生成

Figure 21: View summary by sparkline chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-14 | | | |
| Use Case Name | View positive comments rate by line chart | | | |
| Actors | Staff | | | |
| Description | Staff views positive comments rate by using line chart. | | | |
| Trigger | Staff click dashboard button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff can view positive comments rate by using line chart. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays a positive comments rate line chart. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD14: View positive comments rate by line chart

图片包含 文字, 地图

描述已自动生成

Figure 22: View positive comments rate by line chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-15 | | | |
| Use Case Name | View word frequency by bar chart | | | |
| Actors | Staff | | | |
| Description | Staff views word frequency by using bar chart. | | | |
| Trigger | Staff click dashboard button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff can view word frequency by using bar chart. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays a word frequency bar chart. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD15: View word frequency by bar chart

图片包含 文字, 地图

描述已自动生成

Figure 23: View word frequency by bar chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-16 | | | |
| Use Case Name | View number of comments by bar chart | | | |
| Actors | Staff | | | |
| Description | Staff views number of comments by using bar chart. | | | |
| Trigger | Staff click dashboard button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff can view number of comments by using bar chart. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays a number of comments bar chart. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD16: View number of comments by bar chart

图片包含 文字, 地图

描述已自动生成

Figure 24: View number of comments by bar chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-17 | | | |
| Use Case Name | View types of comments stacked column chart | | | |
| Actors | Staff | | | |
| Description | Staff views types of comments stacked by using column chart. | | | |
| Trigger | Staff click dashboard button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff can view types of comments stacked by using column chart. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays types of comments stacked column chart. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD17: View types of comments stacked by column chart

图片包含 文字, 地图

描述已自动生成

Figure 25: View types of comments stacked by column chart

## 5.2.3 Views the word-cloud of data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-18 | | | |
| Use Case Name | View the word-cloud of data | | | |
| Actors | Staff | | | |
| Description | Staff can view the most frequently occurring words by word cloud. | | | |
| Trigger | Staff clicks view word-cloud button | | | |
| Preconditions | Staff login to system | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff views the word cloud | | | |
| Normal Flows | User | | System | |
|  | 1. Staff clicks word-cloud button. | |  | |
|  |  | | 2. System displays the most frequently occurring words by word cloud. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD18: View the word-cloud of data

图片包含 文字, 地图

描述已自动生成

Figure 26: View the word-cloud of data

## 5.2.4 View the heatmap of data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-19 | | | |
| Use Case Name | View the heatmap of data | | | |
| Actors | Staff | | | |
| Description | Staff can view data presented in a heatmap. | | | |
| Trigger | Staff clicks heatmap button | | | |
| Preconditions | Staff login to dashboard | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Staff views the heatmap | | | |
| Normal Flows | User | | System | |
|  | 1. Staff clicks heatmap button. | |  | |
|  |  | | 2. System displays data in a heatmap. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must have an individual account. | | | |

## AD19: View the heatmap of data

图片包含 文字, 地图

描述已自动生成

Figure 27: View the heatmap of data

## 5.2.5 View the comments by sentiment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-20 | | | |
| Use Case Name | View the comments by sentiment | | | |
| Actors | Admin | | | |
| Description | Admin can view comments by sentiment. | | | |
| Trigger | Admin click sentiment button | | | |
| Preconditions | Admin login to dashboard | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin views comments by sentiment | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks sentiment button | |  | |
|  |  | | 2. System displays data by sentiment. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must have an individual account. | | | |

## AD20: View the comments by sentiment

图片包含 文字, 地图

描述已自动生成

Figure 28: View the comments by sentiment

## 5.2.6 All users view comments (Admin, Staff, Normal user).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-21 | | | |
| Use Case Name | View the hotel list | | | |
| Actors | Users | | | |
| Description | Users can view the hotel list in the homepage. | | | |
| Trigger | Users access homepage | | | |
| Preconditions | Users must connect to internet | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Users can view the hotel list in the homepage. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays hotel list. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | User must open website page. | | | |

## AD21: View the hotel list

图片包含 文字, 地图

描述已自动生成

Figure 29: View the hotel list

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-22 | | | |
| Use Case Name | Click to view a hotel page. | | | |
| Actors | Users | | | |
| Description | Users can click to view a hotel page. | | | |
| Trigger | Users click a hotel picture | | | |
| Preconditions | Users must connect to internet | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Users can access to the hotel page. | | | |
| Normal Flows | User | | System | |
|  | 1. User clicks a hotel picture. | |  | |
|  |  | | 2. System redirects to hotel page. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: Refresh and back to homepage. | | | |
| Assumption | User must open website page. | | | |

## AD22: Click to view a hotel page.

图片包含 屏幕截图

描述已自动生成

Figure 30: Click to view a hotel page.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-23 | | | |
| Use Case Name | View all comments | | | |
| Actors | Users | | | |
| Description | Users can view all comments of a hotel. | | | |
| Trigger | Users access a hotel page | | | |
| Preconditions | Users must select a hotel to view | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Users can view all comments of a hotel | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays the comments list. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: Refresh and back to homepage. | | | |
| Assumption | Users must open website page. | | | |

## AD23: View all comments

图片包含 屏幕截图

描述已自动生成

Figure 31: View all comments

## 5.2.7 Staff writes comments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-24 | | | |
| Use Case Name | Write hotel comments | | | |
| Actors | Staff | | | |
| Description | Staff can write hotel comments. | | | |
| Trigger | Staff types comments and clicks “submit” button. | | | |
| Preconditions | Staff login to system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
| Comments | String | - More than 1 character.  - Not more than 120 characters. | | Good place |
| Post conditions | Staff can write hotel comments. | | | |
| Normal Flows | User | | System | |
|  |  | | 1. System displays the view comment page. | |
|  | 2. Staff clicks write comments. [A1] | |  | |
|  |  | | 3. system displays the page for inputting. | |
|  | 4. Staff inputs comments. | |  | |
|  | 5. Staff clicks submit button. [E1] | |  | |
|  |  | |  | |
| Alternative Flow | A1: User didn’t login to system.  1: Display: “You must login before typing” | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Staff must open website page. | | | |

## AD24: Write hotel comments

图片包含 文字, 地图

描述已自动生成

Figure 32: Write hotel comments

## 5.2.8 Admin views system log.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use Case ID | UC-25 | | | |
| Use Case Name | View system log (Time, type of log, creator, info) | | | |
| Actors | Admin | | | |
| Description | Admin can view system log (Time, type of log, creator, info) | | | |
| Trigger | Admin clicks system log button | | | |
| Preconditions | Admin login to system. | | | |
| Use Case Input Specification | | | | |
| Input | type | Constraint | | Example |
|  |  |  | |  |
| Post conditions | Admin can view system log information. | | | |
| Normal Flows | User | | System | |
|  | 1. Admin clicks system log button. | |  | |
|  |  | | 2. System displays log information. [E1] | |
| Alternative Flow |  | | | |
| Exception | E1: Cannot connect to database.  1: Display: “Cannot connect to database.”  2: System provides a button to refresh/cancel. | | | |
| Assumption | Admin must understand English. | | | |

## AD25: View system log (Time, type of log, creator, info)

图片包含 文字, 地图

描述已自动生成

Figure 33: View system log (Time, type of log, creator, info)

# 6.System Requirements Specification

## 6.1 System Requirements Specification List

SRS-01: The system shall provide the admin login page.

SRS-02: The system shall provide the register column.

SRS-03: The system shall provide the login column.

SRS-04: The system shall provide the username textbox.

SRS-05: The system shall provide the password textbox.

SRS-06: The system shall provide the login button.

SRS-07: The system shall provide the cancel button.

SRS-08: The system shall check input format.

SRS-09: The system shall validate that the username and password.

SRS-10: The system shall direct to admin system.

SRS-11: The system shall provide the all accounts information**.**

SRS-12: The system shall provide the accounts status column.

SRS-13: The system shall provide edit information page.

SRS-14: The system shall store account to database.

SRS-15: The system shall delete account.

SRS-16: The System shall provide add account page.

SRS-17: The system shall display: “Add account successful.”

SRS-18: The system shall display all waiting list accounts information.

SRS-19: The system shall return result to admin.

SRS-20: The system shall provide register information page.

SRS-21: The system shall provide the admin login column.

SRS-22: The system shall send account information to waiting list.

SRS-23: The system shall display: “register information was recorded, please wait for the result.”

SRS-24: The system shall provide the login page.

SRS-25: The system shall direct to dashboard.

SRS-26: The system shall provide edit information page.

SRS-27: The system shall provide Change Username button.

SRS-28: The system shall provide Change Password button.

SRS-29: The system shall provide the New Username textbox.

SRS-30: The system shall provide the Confirm button.

SRS-31: The system shall provide the Back button.

SRS-32: The system shall log out from dashboard.

SRS-33: The system shall provide the summary page.

SRS-34: The system shall display a summary sparkline chart.

SRS-35: The system shall provide the Word-Cloud column.

SRS-36: The system shall provide the Heatmap column.

SRS-37: The system shall display a positive comments rate line chart.

SRS-38: The system shall display a word frequency bar chart.

SRS-39: The system shall display a number of comments bar chart.

SRS-40: The system shall display types of comments stacked column chart.

SRS-41: The system shall provide the summary page column.

SRS-42: The system shall display the most frequently occurring words by word cloud.

SRS-43: The system shall display data in a Heatmap.

SRS-44: System shall display data by sentiment

SRS-45: System shall display hotel list.

SRS-46: The system shall redirect to hotel page.

SRS-47: The system shall display the comments list.

SRS-48: The system shall provide the Clear button.

SRS-49: The system shall provide the Submit button.

SRS-50: The system shall provide the Show More button.

SRS-51: The system shall provide the Show Less button.

SRS-52: The system shall display the view comment page.

SRS-53: The system shall provide the Back to Home button.

SRS-54: The system shall provide the Logout button.

SRS-55: The system shall display the hotel name box.

SRS-56: The system shall display Hello user box.

SRS-57: The system shall provide the write comments textbox.

SRS-58: The system shall provide the textbox to show comments details.

SRS-59: The system shall provide the System Logs textbox.

SRS-60: The system shall provide the Search textbox.

## 6.2 Requirements Specification

**6.2.1 Use Case: Login to the administer system**

SRS-01: The system shall provide the admin login page.

SRS-02: The system shall provide the register column.

SRS-03: The system shall provide the login column.

SRS-04: The system shall provide the username textbox.

SRS-05: The system shall provide the password textbox.

SRS-06: The system shall provide the login button.

SRS-07: The system shall provide the cancel button.

SRS-08: The system shall check input format.

SRS-09: The system shall validate that the username and password.

SRS-10: The system shall direct to admin system.

**6.2.2 Use Case: View all accounts**

SRS-11: The system shall provide the all accounts information**.**

SRS-12: The system shall provide the accounts status column.

**6.2.3 Use Case:** **Admin edits account information**

SRS-13: The system shall provide edit information page.

SRS-08: The system shall check input format.

SRS-14: The system shall store account to database.

**6.2.4 Use Case:** **Delete account**

SRS-11: The system shall provide the all accounts information**.**

SRS-15: The system shall delete account.

**6.2.5 Use Case:** **Add admin account**

SRS-16: The System shall provide add account page.

SRS-08: The system shall check input format.

SRS-14: The system shall store account to database.

SRS-17: The system shall display: “Add account successful.”

**6.2.6 Use Case:** **Accept admin account register request**

SRS-18: The system shall display all waiting list accounts information.

SRS-14: The system shall store account to database.

SRS-19: The system shall return result to admin.

**6.2.7 Use Case:** **Reject admin account register request**

SRS-18: The system shall display all waiting list accounts information.

SRS-19: The system shall return result to admin.

**6.2.8 Use Case:** **Register account**

SRS-20: The system shall provide register information page.

SRS-03: The system shall provide the login column.

SRS-21: The system shall provide the admin login column.

SRS-04: The system shall provide the username textbox.

SRS-05: The system shall provide the password textbox.

SRS-06: The system shall provide the login button.

SRS-07: The system shall provide the cancel button.

SRS-08: The system shall check input format.

SRS-22: The system shall send account information to waiting list.

SRS-23: The system shall display: “register information was recorded, please wait for the result.”

**6.2.9 Use Case:** **Login to dashboard**

SRS-24: The system shall provide the login page.

SRS-02: The system shall provide the register column.

SRS-21: The system shall provide the admin login column.

SRS-04: The system shall provide the username textbox.

SRS-05: The system shall provide the password textbox.

SRS-06: The system shall provide the login button.

SRS-07: The system shall provide the cancel button.

SRS-08: The system shall check input format.

SRS-09: The system shall validate that the username and password.

SRS-25: The system shall direct to dashboard.

**6.2.10 Use Case: Admin edits account information**

SRS-26: The system shall provide edit information page.

SRS-27: The system shall provide Change Username button.

SRS-28: The system shall provide Change Password button.

SRS-04: The system shall provide the username textbox.

SRS-29: The system shall provide the New Username textbox.

SRS-30: The system shall provide the Confirm button.

SRS-07: The system shall provide the Cancel button.

SRS-08: The system shall check input format.

SRS-14: The system shall store account to database.

SRS-31: The system shall provide the Back button.

**6.2.11 Use Case: Log out**

SRS-32: The system shall log out from dashboard.

**6.2.12 Use Case: View all the summary by using sparkline chart**

SRS-33: The system shall provide the summary page.

SRS-34: The system shall display a summary sparkline chart.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.13 Use Case: View positive comments rate by using line chart**

SRS-33: The system shall provide the summary page.

SRS-37: The system shall display a positive comments rate line chart.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.14 Use Case: View word frequency by using bar chart**

SRS-33: The system shall provide the summary page.

SRS-38: The system shall display a word frequency bar chart.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.15 Use Case: View number of comments by using bar chart**

SRS-33: The system shall provide the summary page.

SRS-39: The system shall display a number of comments bar chart.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.16 Use Case:** **View types of comments by using stacked column chart**

SRS-33: The system shall provide the summary page.

SRS-40: The system shall display types of comments stacked column chart.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.17 Use Case:** **View the Word-Cloud of data**

SRS-41: The system shall provide the summary button.

SRS-42: The system shall display the most frequently occurring words by word cloud.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

**6.2.18 Use Case:** **View the Heatmap of data**

SRS-41: The system shall provide the summary button.

SRS-35: The system shall provide the Word-Cloud button.

SRS-43: The system shall display data in a Heatmap.

SRS-31: The system shall provide the Back button.

**6.2.19 Use Case: View the comments by sentiment**

SRS-41: The system shall provide the summary page button.

SRS-35: The system shall provide the Word-Cloud button.

SRS-36: The system shall provide the Heatmap button.

SRS-31: The system shall provide the Back button.

SRS-44: System displays data by sentiment

**6.2.20 Use Case:** **All users view comments**

SRS-45: System shall display hotel list.

SRS-46: The system shall redirect to hotel page.

SRS-47: The system shall display the comments list.

SRS-48: The system shall provide the Clear button.

SRS-49: The system shall provide the Submit button.

SRS-50: The system shall provide the Show More button.

SRS-51: The system shall provide the Show Less button.

**6.2.21 Use Case: Write hotel comments**

SRS-52: The system shall display the view comment page.

SRS-48: The system shall provide the Clear button.

SRS-49: The system shall provide the Submit button.

SRS-53: The system shall provide the Back to Home button.

SRS-54: The system shall provide the Logout button.

SRS-55: The system shall display the hotel name box.

SRS-56: The system shall display Hello user box.

SRS-57: The system shall provide the write comments textbox.

SRS-58: The system shall provide the textbox to show comments details.

SRS-50: The system shall provide the Show More button.

SRS-51: The system shall provide the Show Less button.

**6.2.22 Use Case: Admin views system log.**

SRS-59: The system shall provide the System Logs textbox.

SRS-60: The system shall provide the Search textbox.

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