A Real Time and Interactive Dashboard in Tourism Industry

Design Document

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# 1. Document History

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| History | Status | Date | Viewable | Editable | Responsible |
| Project-DesignDocument\_v1.docx  Create:  - Document History  - Introduction  - System Architecture  - Detail Design  - User Interface Design | Draft | 17, July 2019 | ZJY, LYW,  AJP | ZJY, LYW | ZJY,  LYW |
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ZJY = Junyu Zhou

LYW = Yawei Li

AJP = Dr. Pree Thiengburanathum

# 2. Introduction

## 2.1 Purpose

The purpose of the software design document (SDD) is to design the detailed structure of the system according with the software requirement specification (SRS). It intended to help stakeholders in the project understands the detailed design of the system using class diagrams, sequence diagrams, and user interface designs.

## 2.2 Intended Audience and Reading Suggestions

**2.2.1 Intended Audience**

This software requirement specification will benefit to audiences as followed:

**Development Team**

The software requirement specification will help everyone in developer team has the same understanding or overall scope of the project.

The software requirement specification will help the developer to verify and validate the software product that match with the requirements in this document or not.

The software requirement specification will help developers to develop project more efficiency.

The software requirement specification will be required when some changing occur. Developer will know where get effect and know where to change.

**User**

The software requirement specification will help the user to know the process of the software product.

User can check that the requirements in software requirement specification match with their requirement or not.

The software requirement specification can help the user to discuss with developers easier.

## 2.3 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.

## 2.4 Acronyms

SRS = Software Requirement Specification SDD Software Design Document

UI = User Interface

DD = Development Diagram

# 3. System Architecture

图片包含 屏幕截图

描述已自动生成

Figure ：System Architecture

The system consists of clients and server. For the client, there is a part, the web application. The web application that used by users will send and receive data from web-server in JSON format. The server itself store and retrieve data from the database.

We are using pusher components, which could transfer the data two-way duplex.

# 4. Detail Design (UML Diagram)

## 4.1 Component Diagram

## 图片包含 屏幕截图 描述已自动生成

Figure ： Component Diagram

## 4.2 Class Diagram

**Overview**

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Figure ： Class Diagram

**CD-01 Main**

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Figure ：Main class

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | connectToDb () |
| **Parameters** | str url |
| **Description** | It is used to connect to database |
| **Returns** | - |

|  |  |
| --- | --- |
| **ID** | 2 |
| **Name** | adminSystem () |
| **Parameters** | str user |
| **Description** | It is used to access admin system |
| **Returns** | - |

|  |  |
| --- | --- |
| **ID** | 3 |
| **Name** | superAdminSystem () |
| **Parameters** | str spadmin |
| **Description** | It is used to access super admin system |
| **Returns** | - |

**CD-02 DataProvider**

图片包含 屏幕截图

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Figure ：DataProvider class

**Field Summary:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Modifier | Type | Field | Description |
| 1 | Default | Int | numOfComment | The number of comments |
| 2 | Default | Int | numOfHotel | The number of hotels |

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | showChart () |
| **Parameters** | str type, list data |
| **Description** | It is used to get number of comments and hotels |
| **Returns** | list, list of data that include value of x axis, y axis, title of chart, data series and legends |

**CD-03 SuperAdmin**

**图片包含 屏幕截图

描述已自动生成**

Figure ： SuperAdmin class

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | deleteAccount () |
| **Parameters** | int id – the id of the account |
| **Description** | It is used to delete admin account |
| **Returns** | Return status of deleting |

|  |  |
| --- | --- |
| **ID** | 2 |
| **Name** | addAccount () |
| **Parameters** | str username, str password |
| **Description** | It is used to add admin account |
| **Returns** | Return status of adding |

|  |  |
| --- | --- |
| **ID** | 3 |
| **Name** | getAccount () |
| **Parameters** | - |
| **Description** | It is used to get account information |
| **Returns** | list, list of user account information |

|  |  |
| --- | --- |
| **ID** | 4 |
| **Name** | getAccountById () |
| **Parameters** | int id- the id of the account |
| **Description** | It is used to get user account information by username |
| **Returns** | list, list of user account information |

**CD-04 Admin**

图片包含 屏幕截图

描述已自动生成

Figure ：Admin class

**Field Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Modifier | Type | Field | Description |
| 1 | Default | str | username | The username of account |
| 2 | Default | str | password | The password of account |

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | editInformation () |
| **Parameters** | str content, str filed |
| **Description** | It is used to edit account information |
| **Returns** | list, list of data that include user information |

|  |  |
| --- | --- |
| **ID** | 2 |
| **Name** | logout () |
| **Parameters** | str content, str filed |
| **Description** | It is used to log out from dashboard |
| **Returns** | - |

|  |  |
| --- | --- |
| **ID** | 3 |
| **Name** | login () |
| **Parameters** | str username, str password |
| **Description** | It is used to login to dashboard |
| **Returns** | - |

|  |  |
| --- | --- |
| **ID** | 4 |
| **Name** | register () |
| **Parameters** | str username, str password |
| **Description** | It is used to register new account |
| **Returns** | Return if information sends to waiting list |

|  |  |
| --- | --- |
| **ID** | 5 |
| **Name** | viewCharts () |
| **Parameters** | - |
| **Description** | It is used to view charts |
| **Returns** | list, list of data that include All the summary sparkline chart, Positive comments rate line chart, Word frequency bar chart, Number of comments bar chart, Types of comments stacked column chart. |

**CD-05 Authorization**

**图片包含 屏幕截图

描述已自动生成**

Figure : Authorization class

**Field Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Modifier | Type | Field | Description |
| 1 | Default | str | username | The username of account |
| 2 | Default | str | password | The password of account |

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | login () |
| **Parameters** | str username, str password |
| **Description** | It is used to login to the system |
| **Returns** | Return if login successful |

**CD-06 DataService**

**图片包含 屏幕截图

描述已自动生成**

Figure : DataService

**Method Detail:**

|  |  |
| --- | --- |
| **ID** | 1 |
| **Name** | validateUser () |
| **Parameters** | str username, str password |
| **Description** | It is used to validate user information |
| **Returns** | Return username and password matched |

|  |  |
| --- | --- |
| **ID** | 2 |
| **Name** | updateAccount () |
| **Parameters** | str content, str field |
| **Description** | It is used to update account information |
| **Returns** | Return status of account update |

|  |  |
| --- | --- |
| **ID** | 3 |
| **Name** | addAccount () |
| **Parameters** | str username, str password |
| **Description** | It is used to add admin account. |
| **Returns** | Return status of adding |

|  |  |
| --- | --- |
| **ID** | 4 |
| **Name** | deleteAccount () |
| **Parameters** | int id – the id of the account |
| **Description** | It is used to delete admin account |
| **Returns** | Return status of deleting |

|  |  |
| --- | --- |
| **ID** | 5 |
| **Name** | getComments () |
| **Parameters** | str type |
| **Description** | It is used to get type of comments |
| **Returns** | list, list of comments type |

|  |  |
| --- | --- |
| **ID** | 6 |
| **Name** | getComments () |
| **Parameters** | str name |
| **Description** | It is used to get name of hotels |
| **Returns** | list, list of hotel comments |

|  |  |
| --- | --- |
| **ID** | 7 |
| **Name** | getComments () |
| **Parameters** | int id |
| **Description** | It is used to get id of comments |
| **Returns** | str, the id of the comments |

|  |  |
| --- | --- |
| **ID** | 8 |
| **Name** | getComments () |
| **Parameters** | - |
| **Description** | It is used to get comments |
| **Returns** | list, the list for saving all comments. |

|  |  |
| --- | --- |
| **ID** | 9 |
| **Name** | generateChart () |
| **Parameters** | - |
| **Description** | It is used to generate charts |
| **Returns** | - |

|  |  |
| --- | --- |
| **ID** | 10 |
| **Name** | dataService () |
| **Parameters** | str url |
| **Description** | It is used to |
| **Returns** | - |

## 4.3 ER Diagram

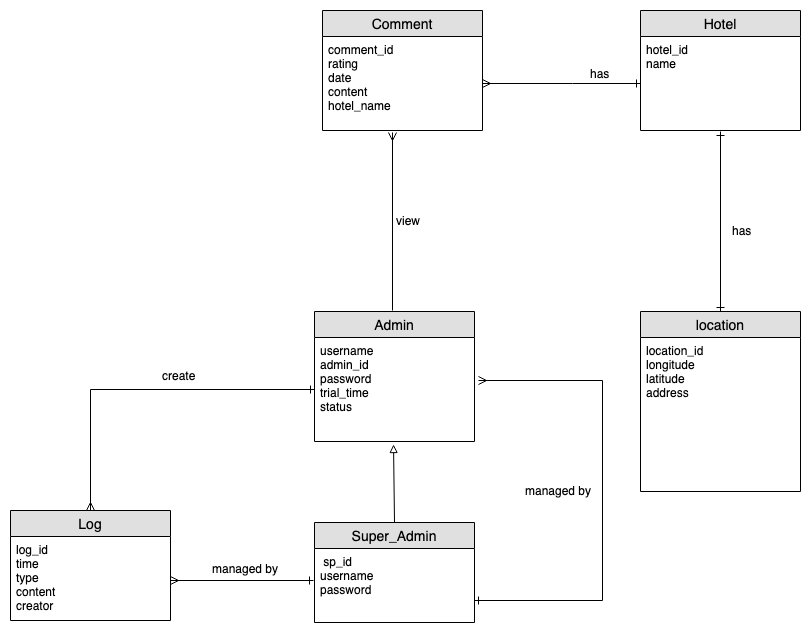


Figure : ER Diagram

## 4.4 Sequence Diagram

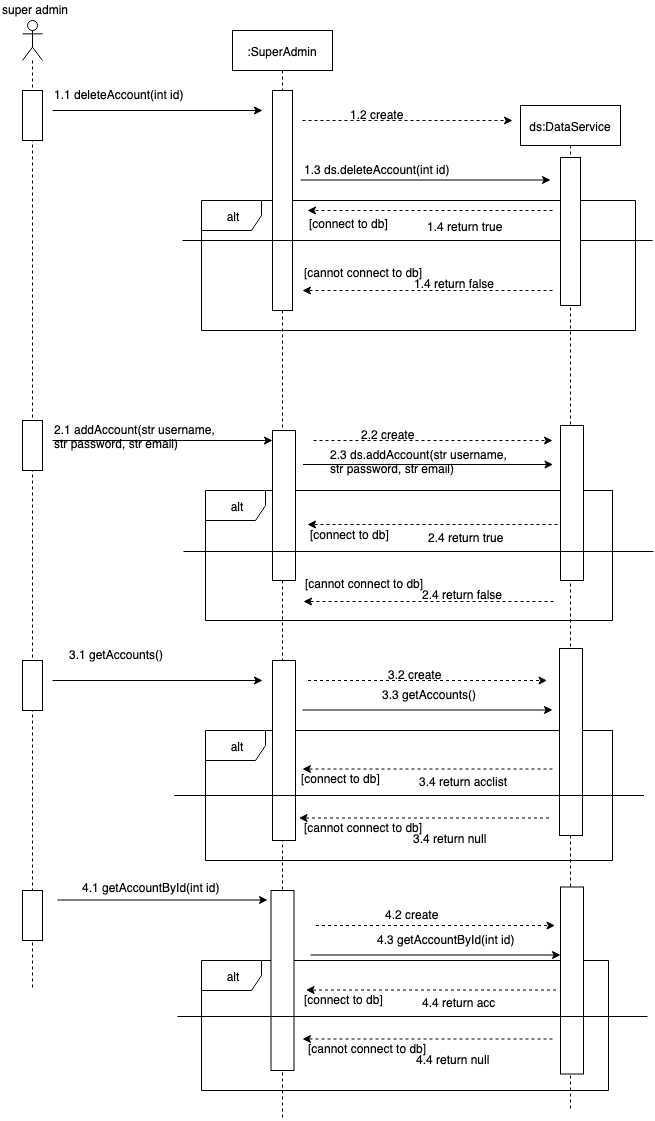


Figure : Sequence Diagram

This sequence diagram including URS-02: Super admin can view account management page, URS-03: Super admin can edit account information, URS-05: Super admin can add admin account directly.

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描述已自动生成

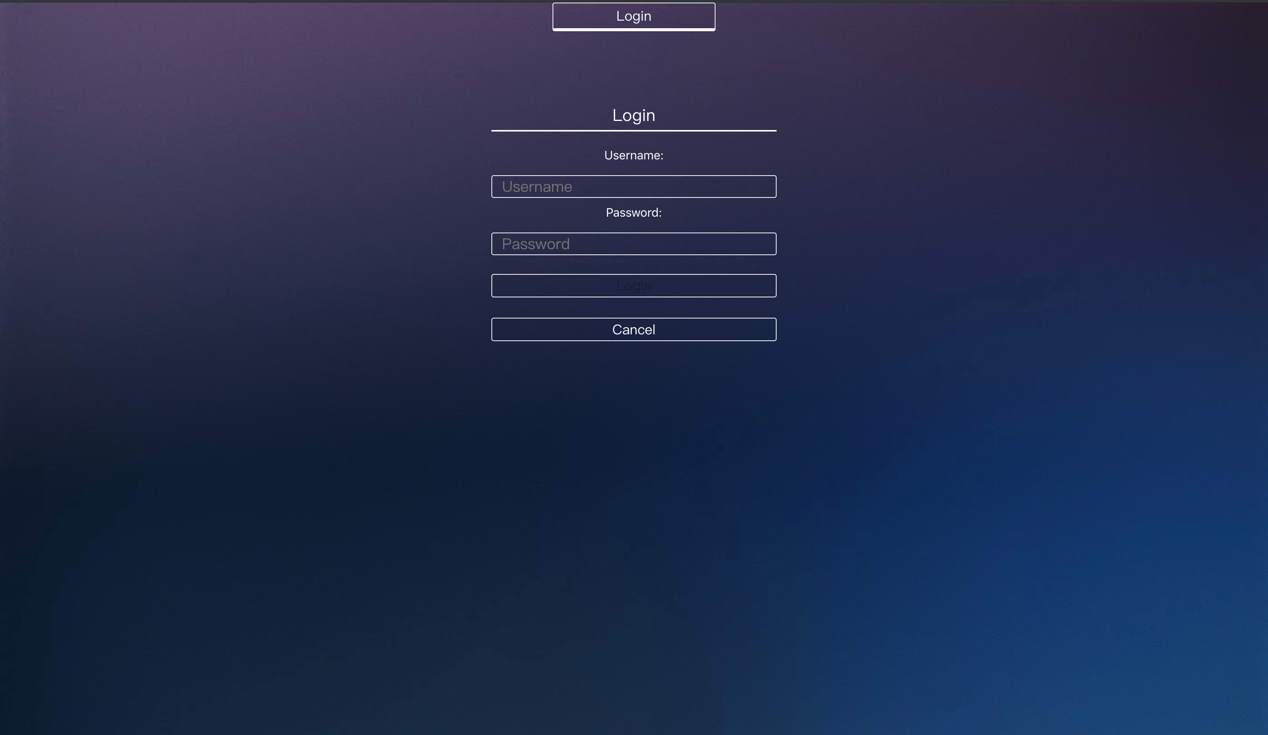
Figure : Sequence Diagram

This sequence diagram including URS-08: Admin can register account, URS-09: Admin can login to dashboard. URS-12: Admin can edit account information.URS-13: Admin can logout, URS-14: Admin can view all the summary sparkline chart, URS-15: Admin can view positive comments rate line chart, URS-16: Admin can view word frequency bar chart, URS-17: Admin can view number of comments bar chart, URS-18: Admin can view types of comments stacked column chart.

# 5. User Interface Design

## 5.1 Web Application UI

**5.1.1 W-UI01-Login**



This page is using for decision maker to login to dashboard, it consists of:

1. Text flied used for input username and password.
2. “Login” button for login to dashboard.
3. “Cancel” button for going to previous page.

**5.1.2 W-UI02-View Summary & W-UI03-Logout**

图片包含 监视器, 屏幕, 室内, 墙壁

描述已自动生成

This page displays data visualization summaries after decision maker login successful, it consist of:

1. “Summary” button for showing all data visualization summaries which have:

1.1 All the summary sparkline chart

1.2 Positive comments rate line chart

1.3 Word frequency bar chart

1.4 Number of comments bar chart

* 1. Types of comments stacked column chart

1. “Word-Cloud” button for showing the word cloud.
2. “Heatmap” button for showing the heatmap.
3. “Logout” button for decision maker to logout from dashboard.

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