

# **Software Requirements Specification**

for

## **Virtual Room Reservation Assistant**

Version 2.0 approved

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# 1. Introduction

## 1.1 Purpose

This document describes the system's features, interface and interaction, functional or non-functional requirements, and the underlying system description. This document is applicable to both developers and stakeholders, and is used to outline the system.

## 1.2 Overview

Coworking space is a new type of working style and is very different from traditional or SOHO styles. In the previous years, coworking space has benefited people who want to start a business, which everyone knows that it is hard to establish a company at the beginning. It is stricted that a small group of new graduates to gain plenty of money to establish the company. On the contrary, coworking space is more affordable to them. This project is designed specifically for use by the new graduates not merely to make their dreams come true but also have a good start.

This application is a web base system. Like the normal website, it tells us where and when the coworking space is available. Using the popular applications, Google Calendar and Gmail, to send messages and notifications to notice users.

Navigation of the website will be easy and trivial, all the users have to do is like booking a hotel, choosing your available time, how big the room is needed, then send out the requirements. Back to the system, the server will send a notification to users Gmail and also the Google Calendar application.

## 1.3 Product Scope

Nowadays, there are several new graduates feel like to operating their own business without acting like a regular person. Since the main issue is the lack of funds, coworking space has been implemented for about two years. It is a place where they can rent with a little money for having a place to work, establishing the human relationship and finding mutual coworkers to build the business together. And since the requirements are growing every year, finding a coworking space is not that easy like before. Therefore, providing a website to unify the availables are vital.

## 1.4 Definition

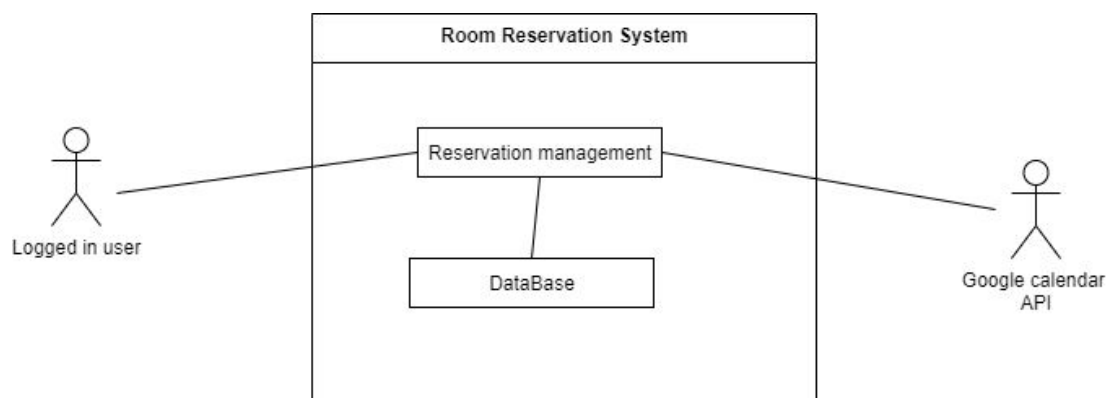
Term	Definition
Coworking space	A place where is office-like, but there is a variety of people that have different kinds of knowledge.
SOHO	The abbreviation of “Small Office Home Office”, which means that the person works at home.
Google Calendar	An application from Google. It is a digital calendar on smartphone and can put different kinds of functions to the user.
Gmail	An application from Google which let people send and receive emails.

## 1.5 Reference

<https://youyi.com.tw/what-is-coworking-space/>

## 2. Overall Description

### 2.1 System Environment



The Room Reservation System has one active actor and one API. The logged in user accesses the Room Reservation System through the Internet. An Google Calendar API communication with the system is through system

calls. The database stores the reservation connected with the Reservation management subsystem instead of directly connected to other entities.

## 2.2 Functional Requirements Definition

This section outlines the use cases for each of the active users separately. We thought that those who had entered our system had already logged in Google's account.

### 2.2.1 General User Use Case

**Use case:** User Sign In

**Diagram:**



#### **Brief Description**

User login to Google account. This use case will be automated due to the platform's restriction.

#### **Initial Step-By-Step Description**

Before this use case can be initiated, the user has already in the state that Google account is not logged in(in Google system).

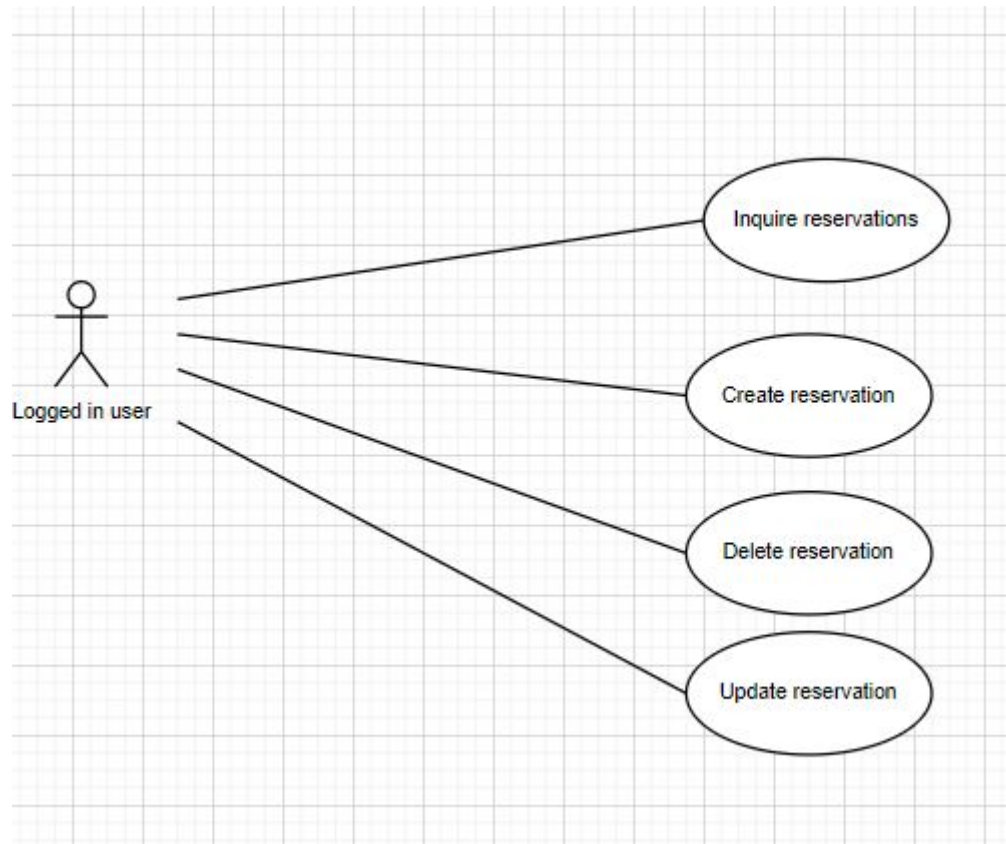
1. The Google non logged user enters his account and password.
2. User selects the "sign in" link.
3. The account checked by Google. If it's valid then transfer users to our homepage. Otherwise he will be blocked by Google.

**Xref:** Section 3.2.1, User Sign In

### 2.2.2 Logged-In User Use Case

The logged-in user here are those who have already entered our system.

Logged-in user has the following sets of use cases:



**Use case:** User Inquire Reservations

**Diagram:**



**Brief Description**

The user sets the query conditions to query the reservation status (the non logged user case is same)

**Initial Step-By-Step Description**

Before this use case can be initiated, the logged-in user has already been in Inquire Reservation page.

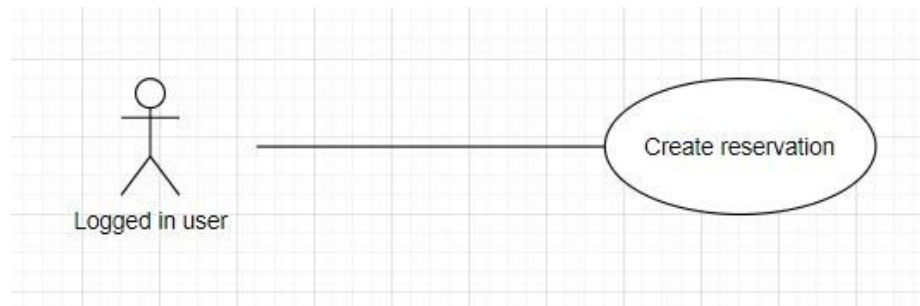
1. The logged-in user enters the required conditions for the query and presses the “query” button.

2. The system filters the matched data according to the queried conditions and returns the queried results to the result area at the bottom of the page

**Xref:** Section 3.2.2, User Inquire Reservations

**Use case:** User Create A Reservation

**Diagram:**



#### **Brief Description**

The user adds a reservation

#### **Initial Step-By-Step Description**

Before this use case can be initiated, the logged-in user is already in Create Reservation page.

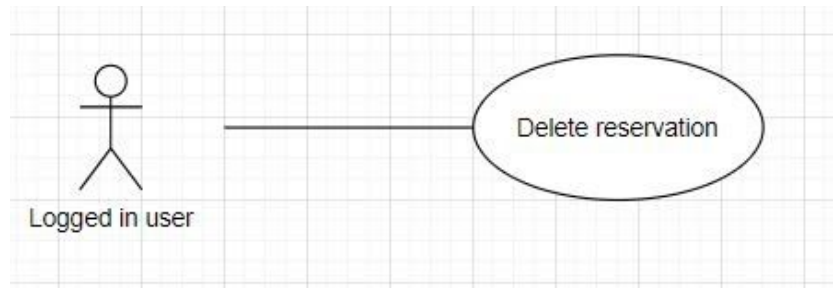
1. The logged-in user enters the reservation information, including host, time, room number, participants, etc.
2. The system judges whether the time and room number are repeated with the existing reservation based on the input data. If not, the user will be redirected to the Homepage and the message of successful reservation will be displayed. Otherwise, the reservation has been used.

**Xref:** Section 3.2.3, User Create A Reservation

**Use case:** User Cancel The Reservation

**Diagram:**



**Brief Description**

User deletes a reservation.

**Initial Step-By-Step Description**

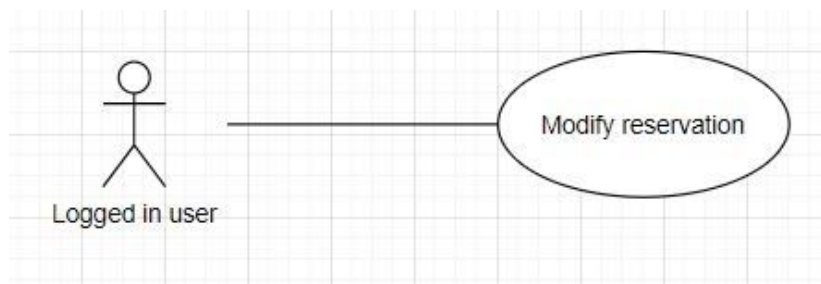
Before this use case can be initiated, the logged in user is already at Reservation Management page.

1. Logged-in user presses the button which is next to the reservation he wants to delete.
2. System will delete the record and notification for all people who participate in the meeting.
3. System refreshes Homepage.

**Xref:** Section 3.2.4, User Cancel The Reservation

**Use case:** User Modify The Reservation

**Diagram:**

**Brief Description**

User modifies the reservation which belongs to himself about time, room number, etc.

**Initial Step-By-Step Description**

Before this use case can be initiated, the logged in user has already been in Reservation Management page.

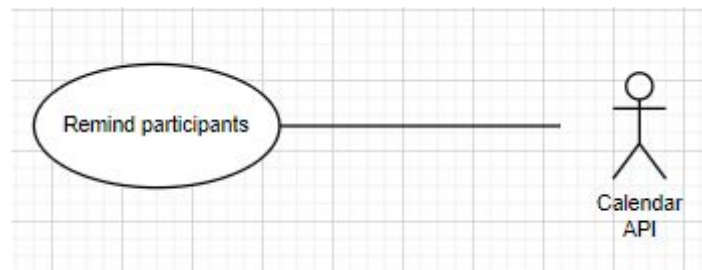
1. The logged-in user presses the “edit” button next to the reservation to modify it.
2. The system directs the user to Modify Reservation page.
3. The logged-in user edits the meeting information and submit it.
4. The system judges whether the modified time or room number conflicts with the existing reservation. If not, modify the reservation information and show the “modification is successful” message . At the same time, the meeting information of the participants will be updated. Otherwise, it shows the “reservation conflict” message and does not modify the data of reservation Information.

**Xref:** Section 3.2.5, User Modify The Reservation

### 2.2.3 Other Use Case

**Use case:** System Notification

**Diagram:**



#### **Brief Description**

The system informs the participants that the reservation is coming soon, and attaches the time, location ,etc. This will automate by Calendar API.

#### **Initial Step-By-Step Description**

Before this use case can be initiated, the registered user has already had the reservation which is coming soon.

1. The system checks the participants who are about to start the meeting and sends them an email to informing them that the reservation is about to start.

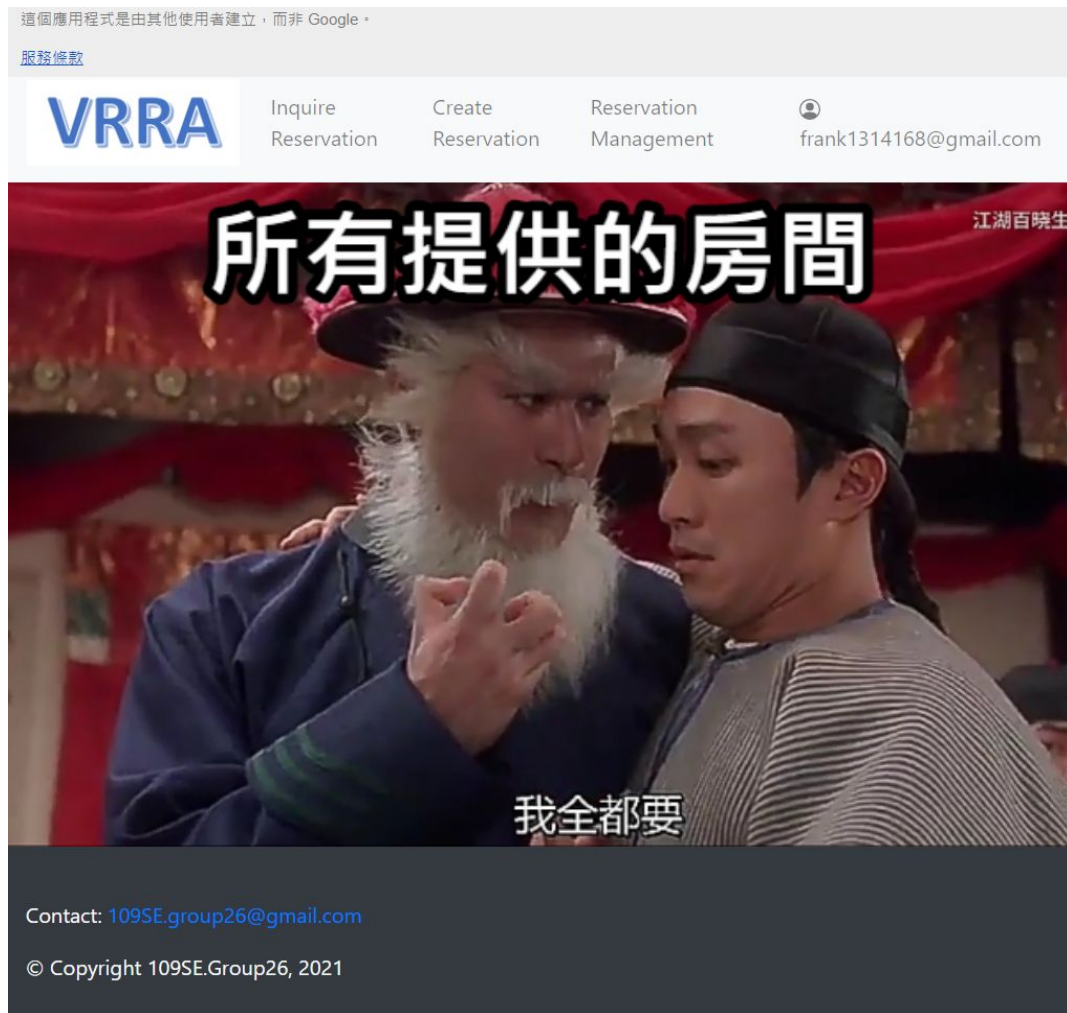
**Xref:** Section 3.2.6, System Notification

## 2.3 User Interface Specifications

Pages:

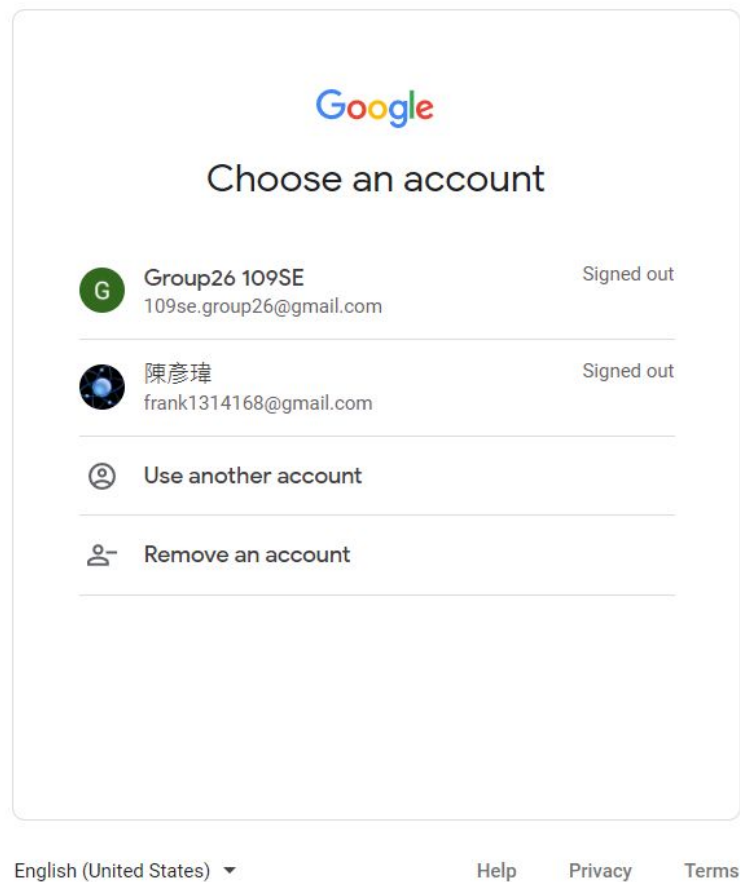
- Homepage:

Logged in user will see this:



- 1) Logo:  
Our services' logo.
- 2) Inquire Reservation button:  
If a user presses this button, he will go to Inquire Reservation page.
- 3) Our service banner:  
A banner to publicize our service.
- 4) Footer:  
Copyright notice.
- 5) Create Reservation button:  
If a user presses this button, he will go to Create Reservation page.
- 6) Reservation Management button:  
If a user presses this button, he will go to Reservation Management page.

- Login:




This page will be provided by Google. May by this.




- Inquire Reservation:  
Logged in user will see this:

這個應用程式是由其他使用者建立，而非 Google +

[服務條款](#)






[Inquire Reservation](#)
[Create Reservation](#)
[Reservation Management](#)


frank1314168@gmail.com

Room number

Host number

2021/01/08  Start
20:15  End
22:37  Search

Room number	Host name	From Time	To Time	Date
306	123	20:14	23:04	2021-01-08
123123123	123123	21:30	22:30	2021-01-08



More than Homepage components:

1) Date:

A Date selection to select when the date wanders to search reservation.

2) Room number:

If a user wants to search by room number, he can enter data.

3) Host name:

If a user wants to search by host name, he can enter data.

4) From time:

If a user wants to search by the reservation start time, he can enter data.

5) To time:

If a user wants to search by the reservation end time, he can enter data.

## 6) Search button:

If Input conditions are complete, users need to press to search data.

## 7) Room number:

The Results of Room number.

## 8) Host name:

The Results of Host name.

## 9) From time:

The Results of From time.

## 10) To time:

The Results of To time.

## 11) Date:

The Results of Date.

## 12) Other Results:


Other result show like the first row

- Create Reservation:


Logged-in user will see this:

這個應用程式是由其他使用者建立，而非 Google +

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[Inquire Reservation](#)
[Create Reservation](#)
[Reservation Management](#)


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More than Homepage components:

## 1) Date:

A Date selection selects when the reservation is created.

## 2) Room number:

Enter the room number which the user wants to borrow.

## 3) Host name:

Enter the host name of reservation who wants to borrow.

## 4) From time:

Enter the start time of reservation when the user wants to borrow.

## 5) To time:

Enter the end time of reservation when the user wants to borrow.



## 6) Participants:

If the user wants to change the participants of reservation, change the participants' email.

## 7) Add Participants:

If the participant input box need more, push it.

## 8) Delete Participants:


If the participant input box so more, push it.

## 9) Create button:


If the users complete the requirement, users need to press it to create data and to create a reservation.

- Reservation Management:

Logged in user will see this:(And Non logged user can't access)



[Inquire Reservation](#)
[Create Reservation](#)
[Reservation Management](#)


frank1314168@gmail.com

Room number	Host name	From Time	To Time	Date	modify	delete
102	frank	18:14	19:14	2021-01-22	<a href="#">modify</a>	<a href="#">delete</a>
306	123	20:14	23:04	2021-01-08	<a href="#">modify</a>	<a href="#">delete</a>
2354	ffgg	19:33	19:36	2021-01-08	<a href="#">modify</a>	<a href="#">delete</a>

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More than Homepage components:

## 7) Room number:

The Reservation of Room number which belongs to the user.

## 8) Host name:

The Reservation of Host name which belongs to the user.

## 9) From time:

The Reservation of From time which belongs to the user.

## 10) To time:

The Reservation of To time which belongs to the user.

## 11) Date:

The Reservation of Date which belongs to the user.

12) Modify button:

If the users want to modify the reservation, users need to press to modify button.

13) Delete button:

If the users want to delete the reservation, users need to press to delete button.

14) Other Results:

Other Reservations show like the first row or the last row.

- Modify Reservation:

Logged in user will see this:(And Non logged user can't access)

這個應用程式是由其他使用者建立，而非 Google +

[服務條款](#)

# VRRA

Room number	Host
102	frank
306	123
2354	ffgg

## Modify

Room Number

Host Name

Date  Start  End

Participant1:

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More than Homepage components:

1) Date:

It will show the old date.

If the user wants to change the date, entering the new one.

2) Room number:

It will show the previous room number.

If the user wants to change the room number, entering the new one.

3) From time:

It will show the previous start time of reservation.

If the user wants to change the start time of reservation, entering the new one.

4) To time:

It will show the previous end time of reservation.

If the user wants to change the end time of reservation, entering the new one.

5) Participants:

If the user wants to change the participants of reservation, change the participants' email.

6) Add Participants:

If the participant input box need more, push it.

7) Delete Participants:

If the participant input box so more, push it.

8) Modify button:

If the users completely revise the data, users need to press to modify data.

## 2.4 Non-Functional Requirements

See section 4 - Other Nonfunctional Requirements.

# 3. Requirement Specifications

## 3.1 External Interface Requirements

### 3.1.1 User Interfaces

See section 2.3 - User Interface Specifications.

### 3.1.2 Hardware Interfaces

1. Require 1920\*1080 or higher of screen resolution.
2. Need Keyboard input and mouse input.

### 3.1.3 Software Interfaces

1. Require Firefox 83, Chrome 86, Edge 85, Safari 84 or higher
2. Enable JavaScript
3. We will use Google Calendar API, so ensure that you have an Google account.

### 3.1.4 Communications Interfaces

Have active internet connection(including but not limited to Ethernet, WiFi, Mobile Data).

## 3.2 Functional Requirements

### 3.2.1 User Sign In

Use Case Name	User Sign In
XRef	Section 2.2.1, User Sign In
Trigger	Non logged users select the " <i>sign in</i> " link.
Precondition	The user isn't logged in yet.
Basic Path	<ol style="list-style-type: none"><li>1. The system presents a blank grid to enter the user account and password.</li><li>2. The non logged user enters the account and password before submits the information.</li><li>3. The system checks that the account and password are valid.</li></ol>
Alternative Paths	If the user did not sign in before, the user clicks the "sign in" link.
Postcondition	The non logged user has become the logged in user.
Exception Paths	If username and password are invalid, show login failed with invalid username/password message.
Other	If the logged-in user attempts to access this page. Then redirect back to Homepage.

### 3.2.2 User Inquire Reservations

Use Case Name	User Inquire Reservations
XRef	Section 2.2.2, User Inquire Reservations
Trigger	User selects the “ <i>inquire reservation</i> ” link.
Precondition	None
Basic Path	<ol style="list-style-type: none"> <li>1. The system presents a blank grid to enter the search criteria.</li> <li>2. User enters the search criteria and submits it.</li> <li>3. The system finds matching data and returns to the result blank.</li> </ol>
AlternativePaths	None
Postcondition	The system presents the available reservations.
Exception Paths	None
Other	None

### 3.2.3 User Create A Reservation

Use Case Name	User Create A Reservation
XRef	Section 2.2.2, User Create A Reservation
Trigger	User selects the “ <b>Create Reservation</b> ” link
Precondition	User has logged in.
Basic Path	<ol style="list-style-type: none"> <li>1. The system presents a blank grid to enter the reservation information.</li> <li>2. The user enters the reservation information before submitting them.</li> <li>3. The system checks that the reservation name, date , position are not blank and not repeat, then updates the database.</li> </ol>
AlternativePaths	
Postcondition	Create the reservation from the database
Exception Paths	If the reservation name, date, position are blank or repeated, show the creation fails with invaild information message.
Other	If the logged out user attempts to access this page, show an insufficient permission message and redirect the user into

	Login page.
--	-------------

### 3.2.4 User Cancel The Reservation

Use Case Name	User Cancel The Reservation
XRef	Section 2.2.2, User Cancel The Reservation
Trigger	User selects to remove a reservation from the database.
Precondition	User has logged in. User has a reservation in his list.
Basic Path	The system checks if the host of reservation is him then removes the reservation.
AlternativePaths	
Postcondition	Removed the reservation from database
Exception Paths	If the host of reservation isn't him, show removed reservation failed with Insufficient permissions message.
Other	If the logged out user attempts to access this page, show an insufficient permission message and redirect the user into Login page.

### 3.2.5 User Modify The Reservation

Use Case Name	User Modify The Reservation
XRef	Section 2.2.2, User Modify The Reservation
Trigger	User selects to modify the reservation from his reservation list.
Precondition	User has logged in. User has a reservation in his list.
Basic Path	The system checks the rights of the reservation owner The system
AlternativePaths	
Postcondition	Modify the reservation from the database
Exception Paths	If the user is not the owner of the reservation, show "modifying reservation failed" with insufficient permissions message.
Other	If the logged out user attempts to access this page, show an

	insufficient permission message and redirect the user into Login page.
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### 3.2.6 System Notification

Use Case Name	System Notification
XRef	Section 2.2.3, System Notification
Trigger	The reservation's date is becoming.
Precondition	Users are part of the reservation.
Basic Path	<ol style="list-style-type: none"> <li>1. The system checks reservations whose date is becoming.</li> <li>2. Thes system mail the email to the people that participate in those reservations.</li> </ol>
AlternativePaths	None
Postcondition	Users who are part of reservation has gotten the mail about that the reservation's date is becoming
Exception Paths	None
Other	None

## 4. Other Nonfunctional Requirements

### 4.1 Performance Requirements

The page must respond in 1 minute.

If the system is busy. The page must respond about system busy.

### 4.2 Safety Requirements

There is no safety requirement.

### 4.3 Security Requirements

Users must login before add/remove reservation.

Users can only modify their own reservation.

Login activities must be recorded by their google account.

Any reservation activities must be logged.

#### 4.4 Privacy Requirements

Users cannot see others' email addresses.