

# Criterion B: Design

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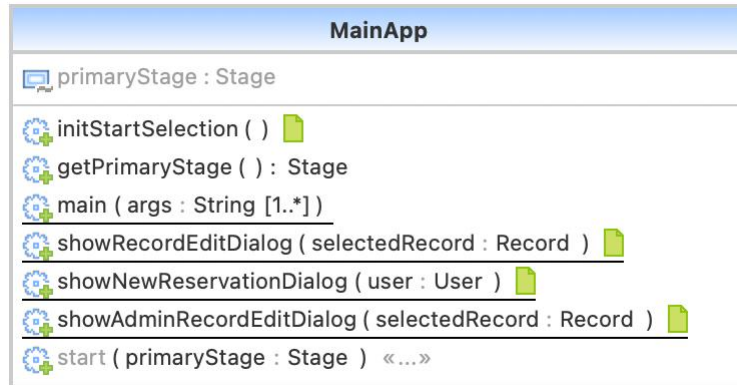
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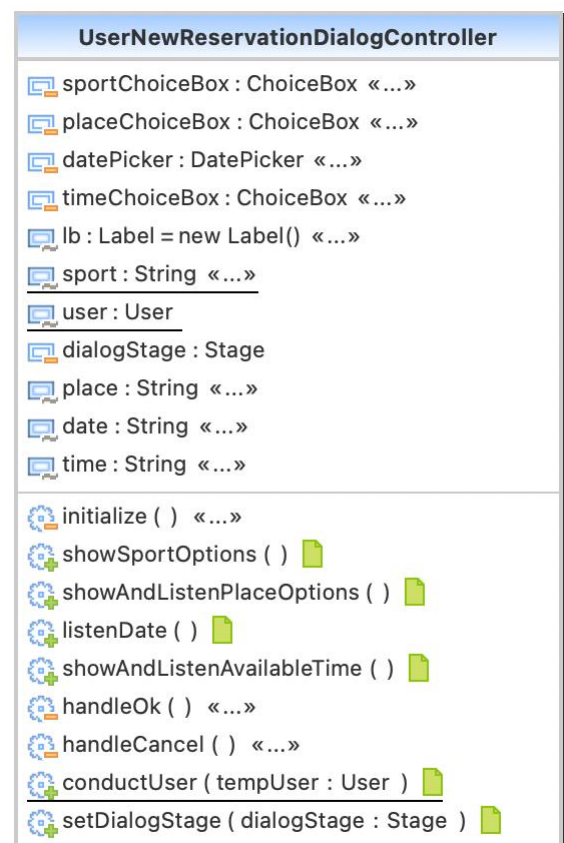
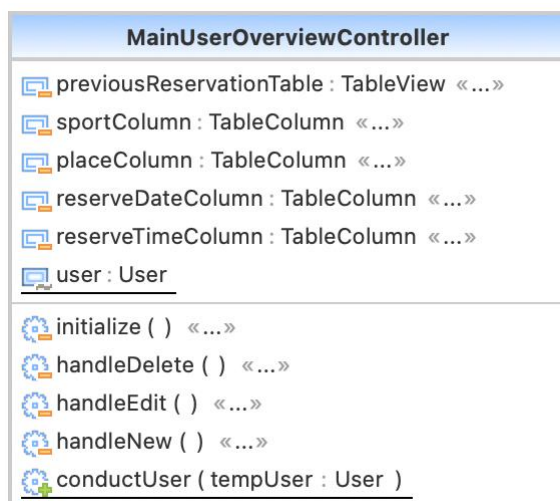
## 5.Test Plan

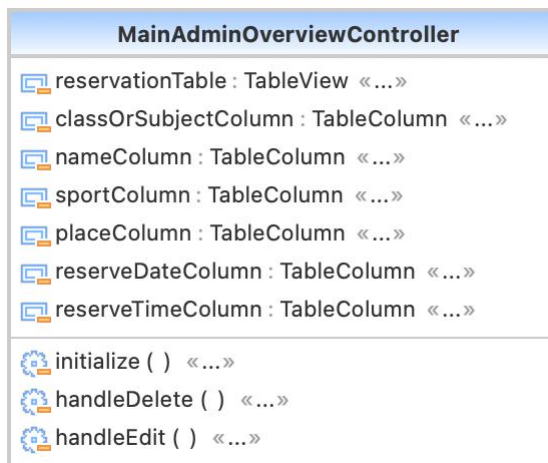
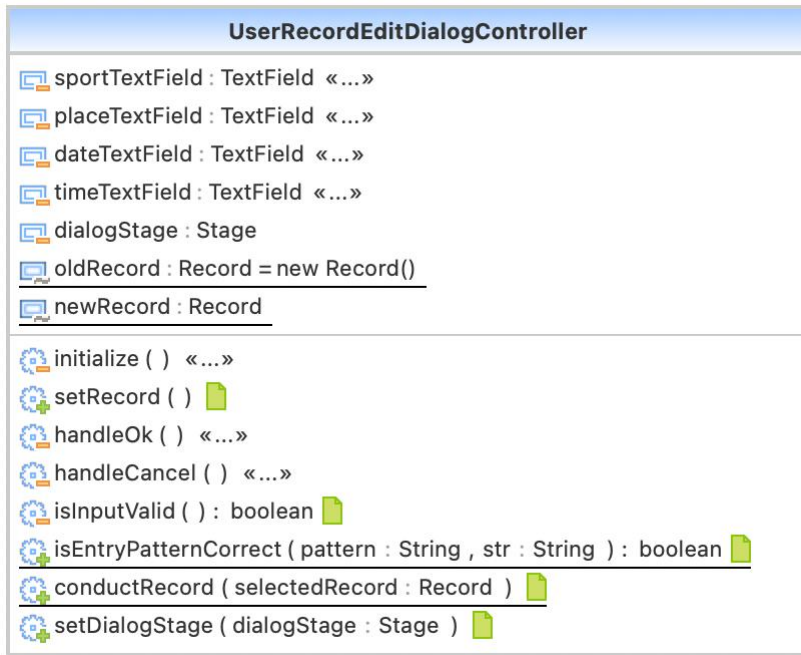
# 1. UML Diagram

## 1.1 Main Class

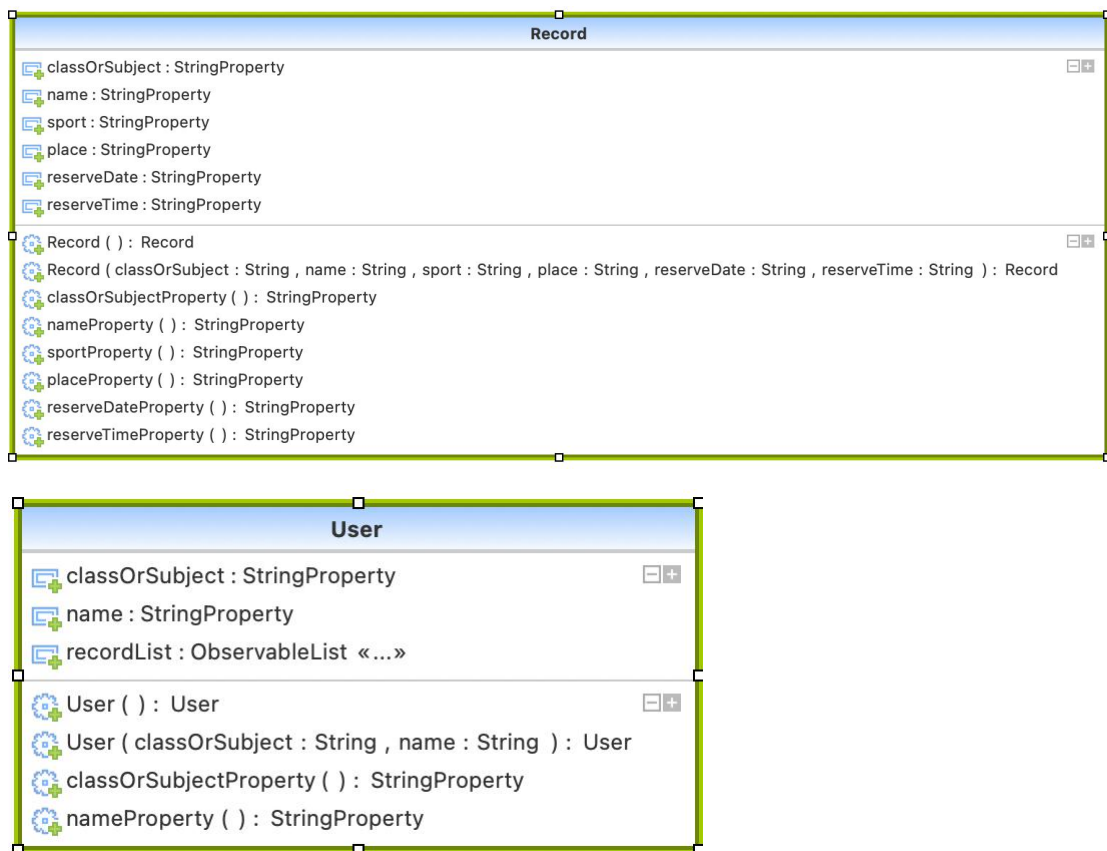


## 1.2 View Package

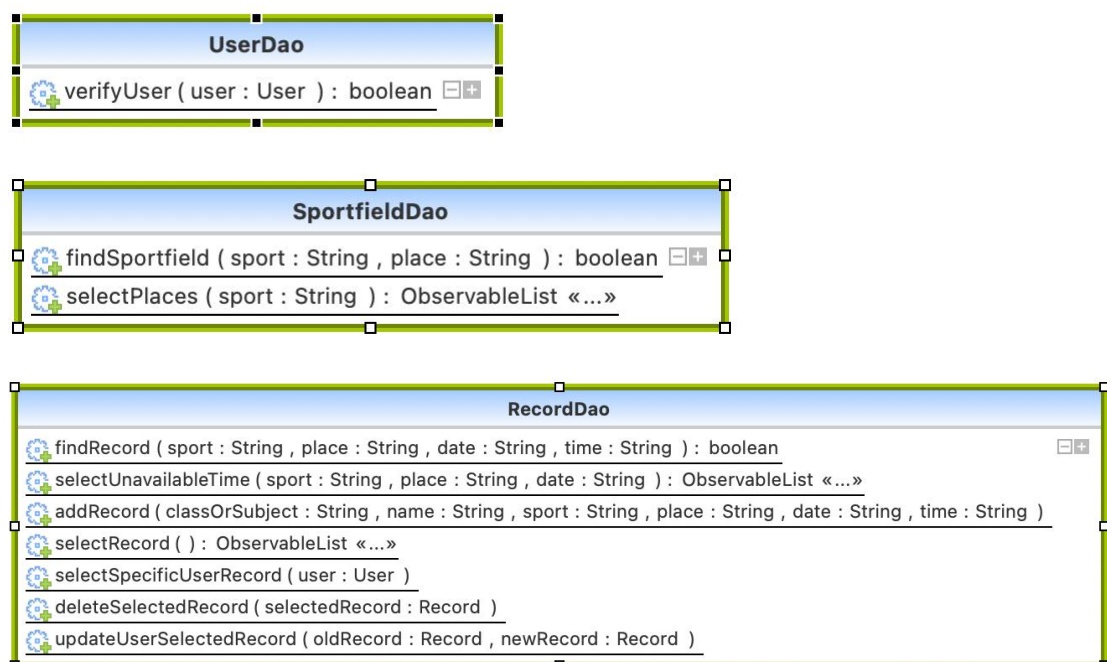




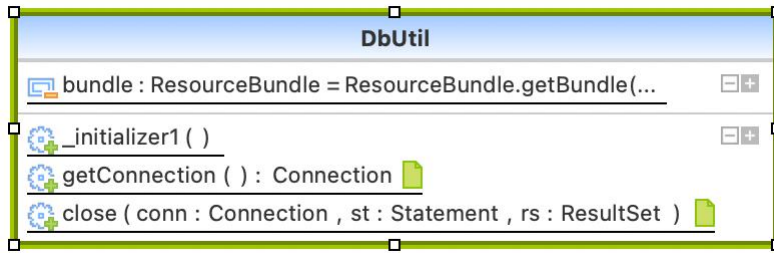
## 1.3 Model Package



## 1.4 Dao Package



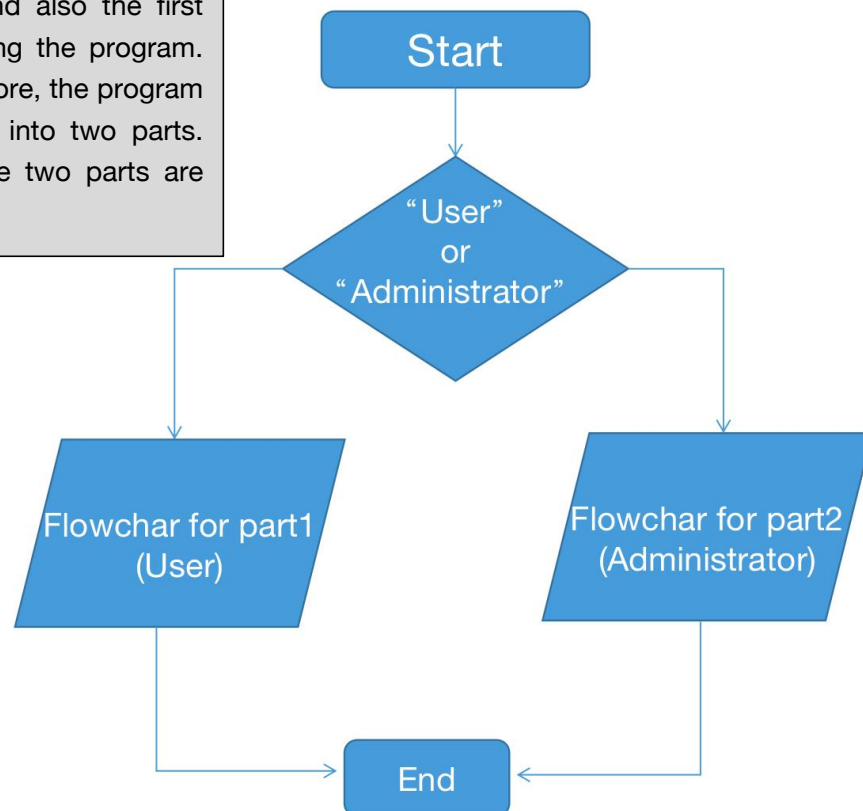
## 1.5 Util Package



## 2. Flowchart

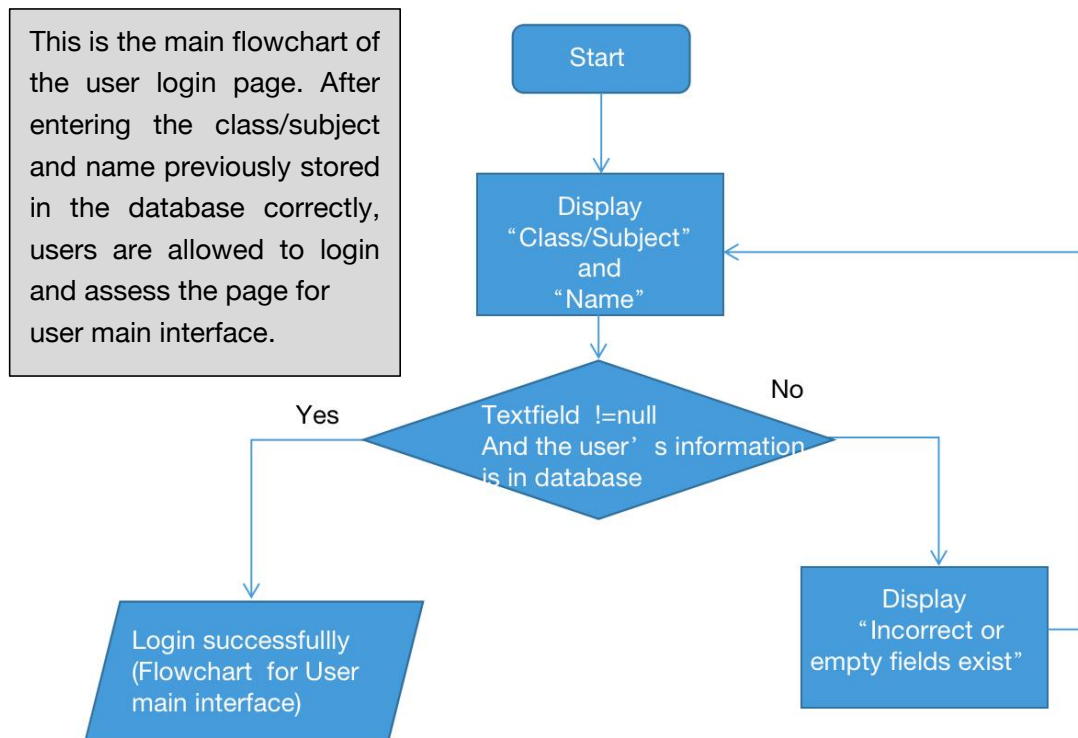
### 2.1 Main Flowchart

This is the main flowchart of the whole system, and also the first page when running the program. As mentioned before, the program is mainly divided into two parts. Here is where the two parts are separated.

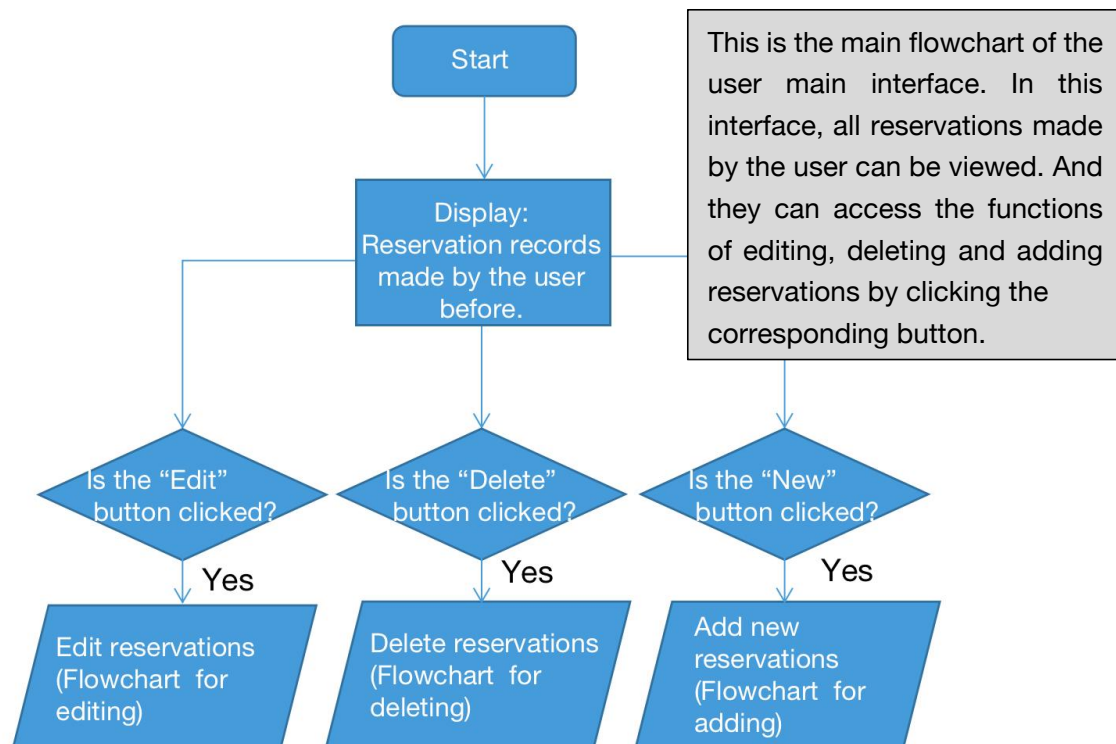


## 2.2 Flowchart for Part1 (User)

### 2.2.1 Flowchart for User Login

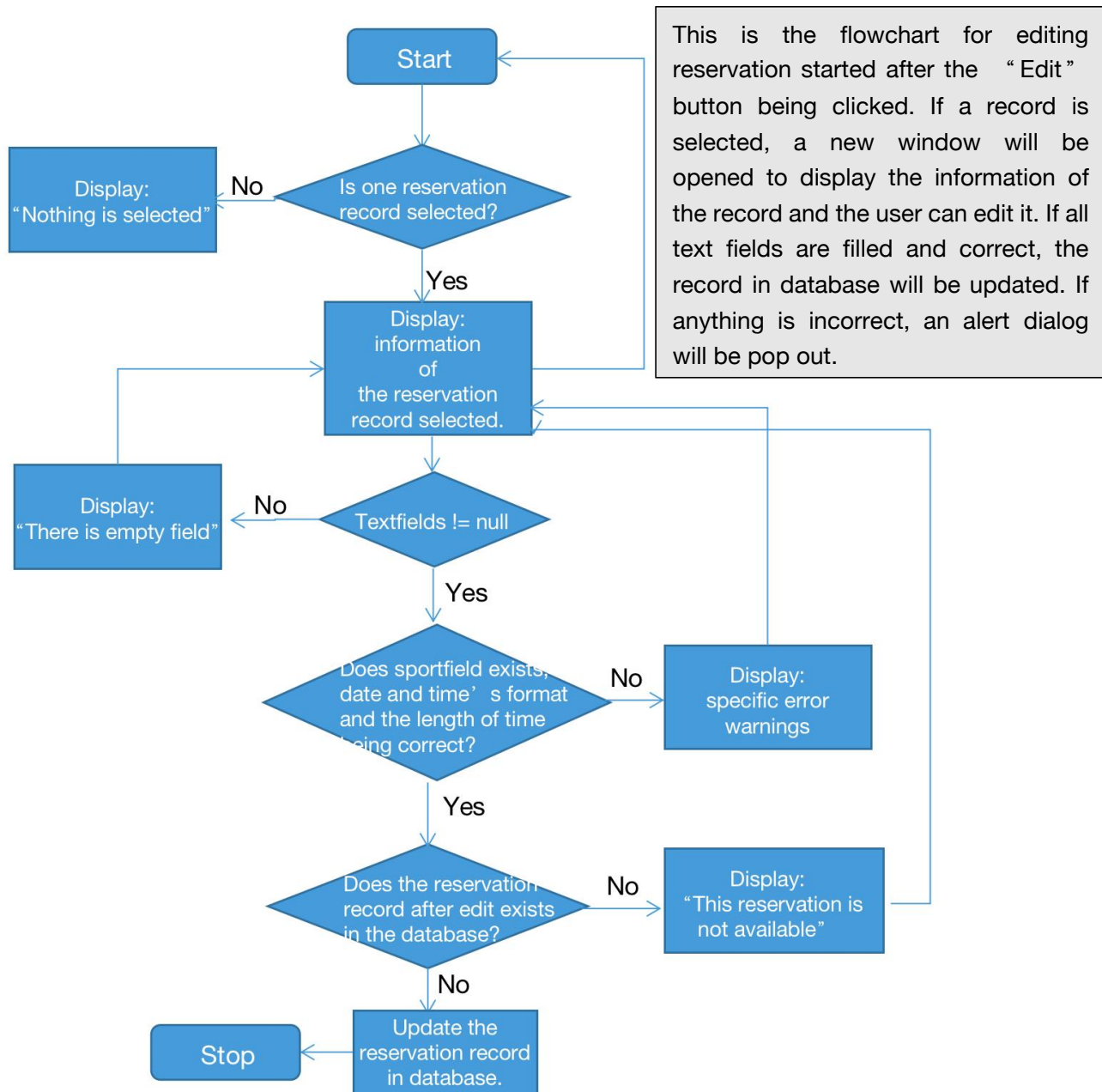


### 2.2.2 Flowchart for User Main Interface

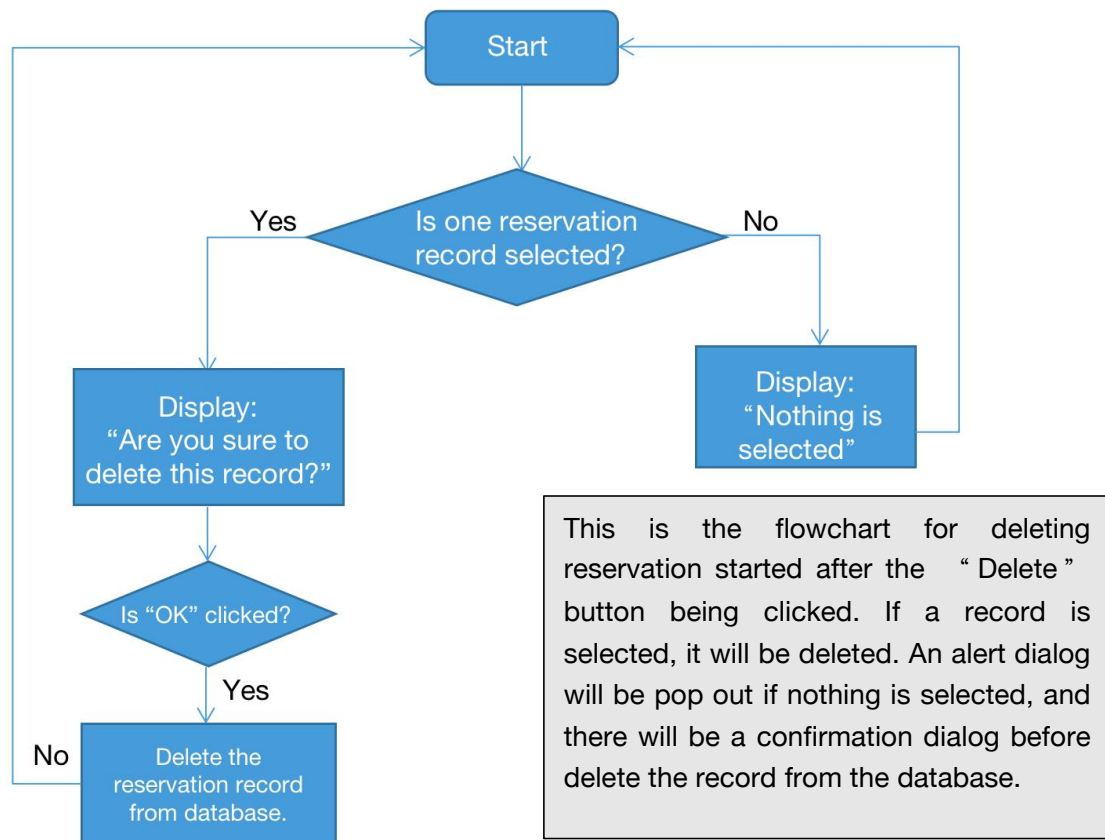




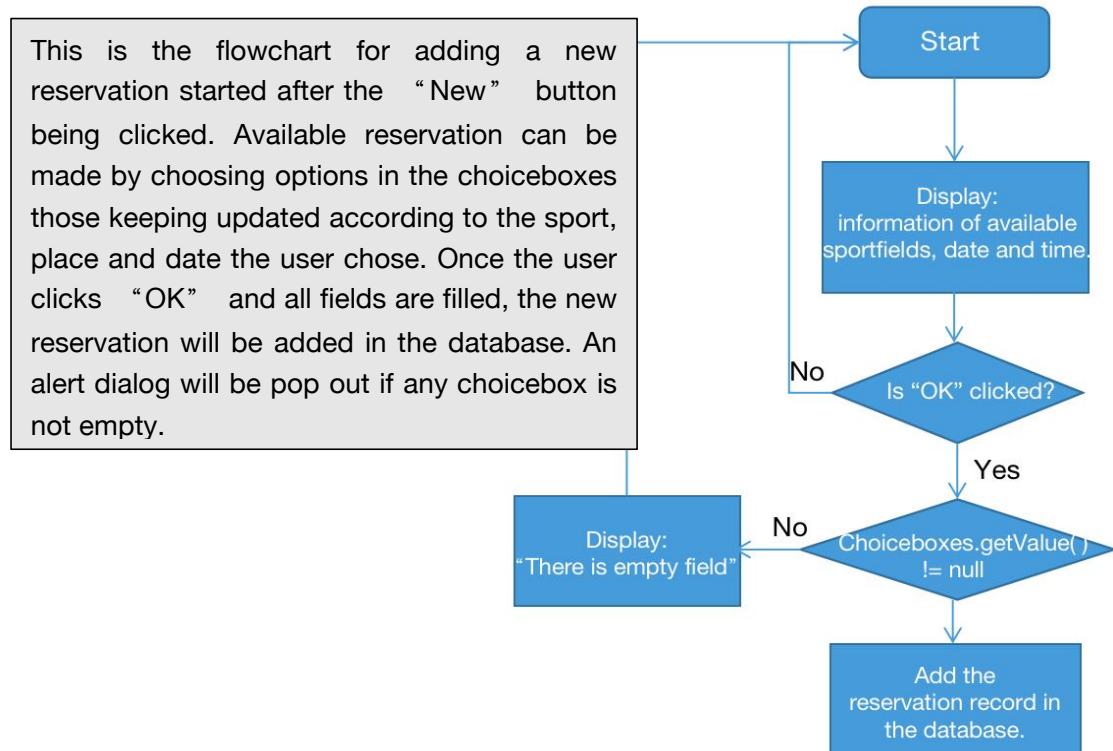
### 2.2.3 Flowchart for Editing Reservations



### 2.2.4 Flowchart for Deleting Reservations



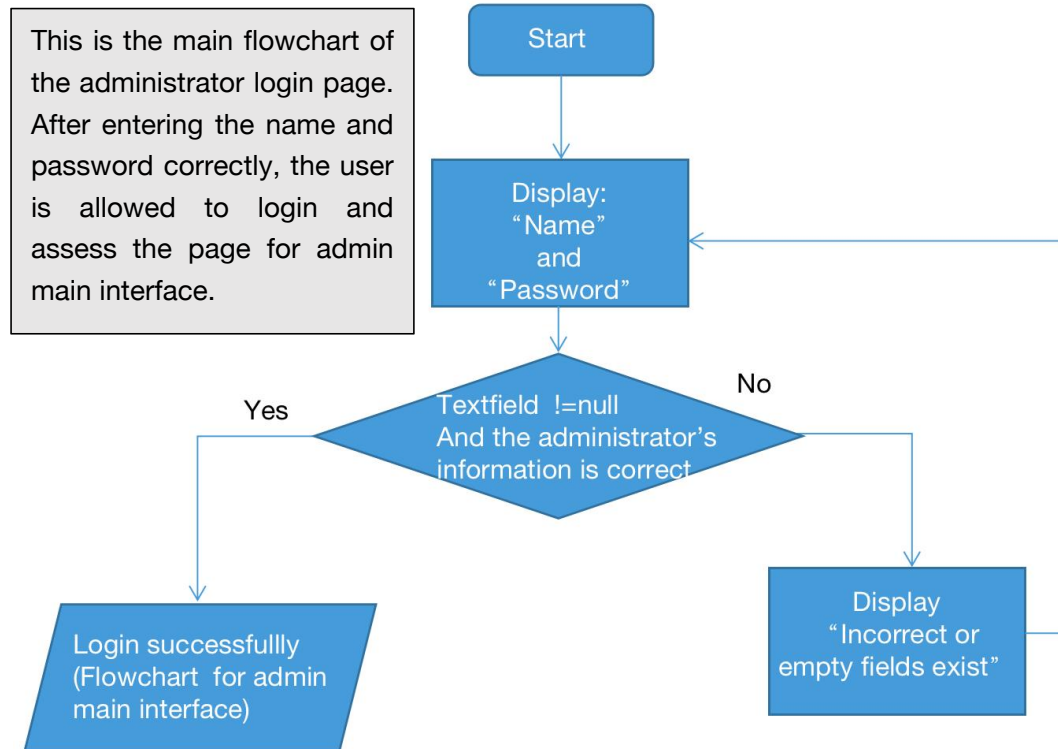
### 2.2.5 Flowchart for Make new Reservations



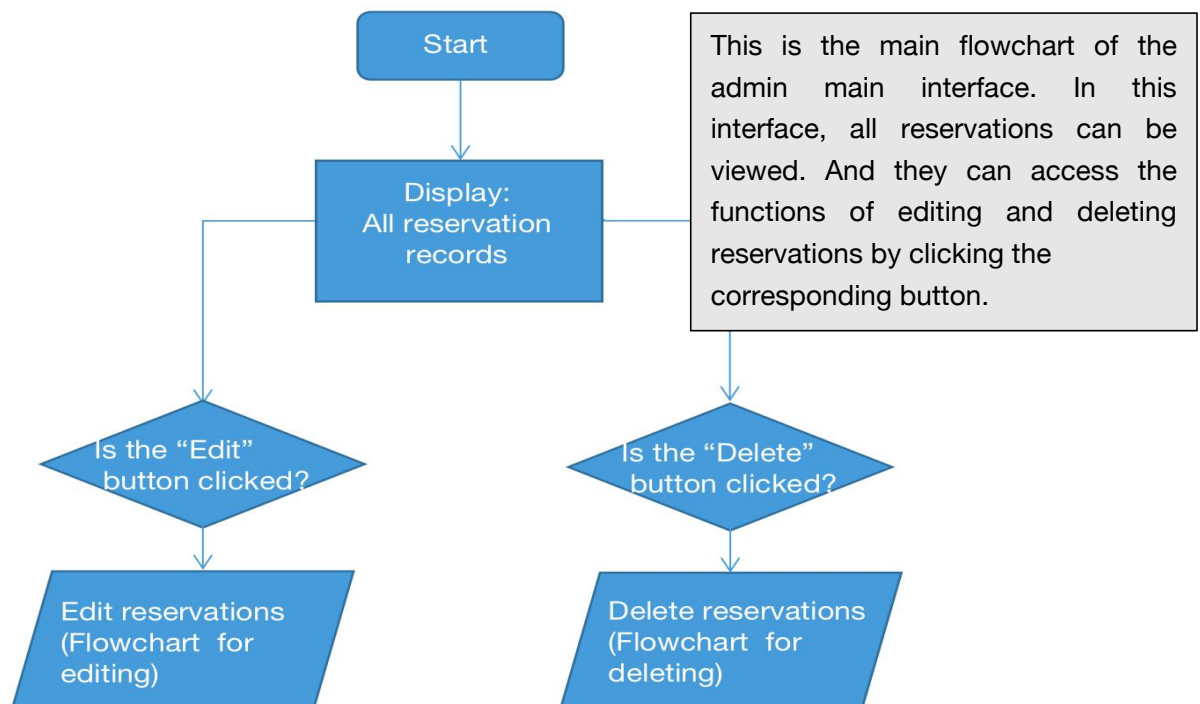


## 2.3 Flowchart for Part2 (Administrator)

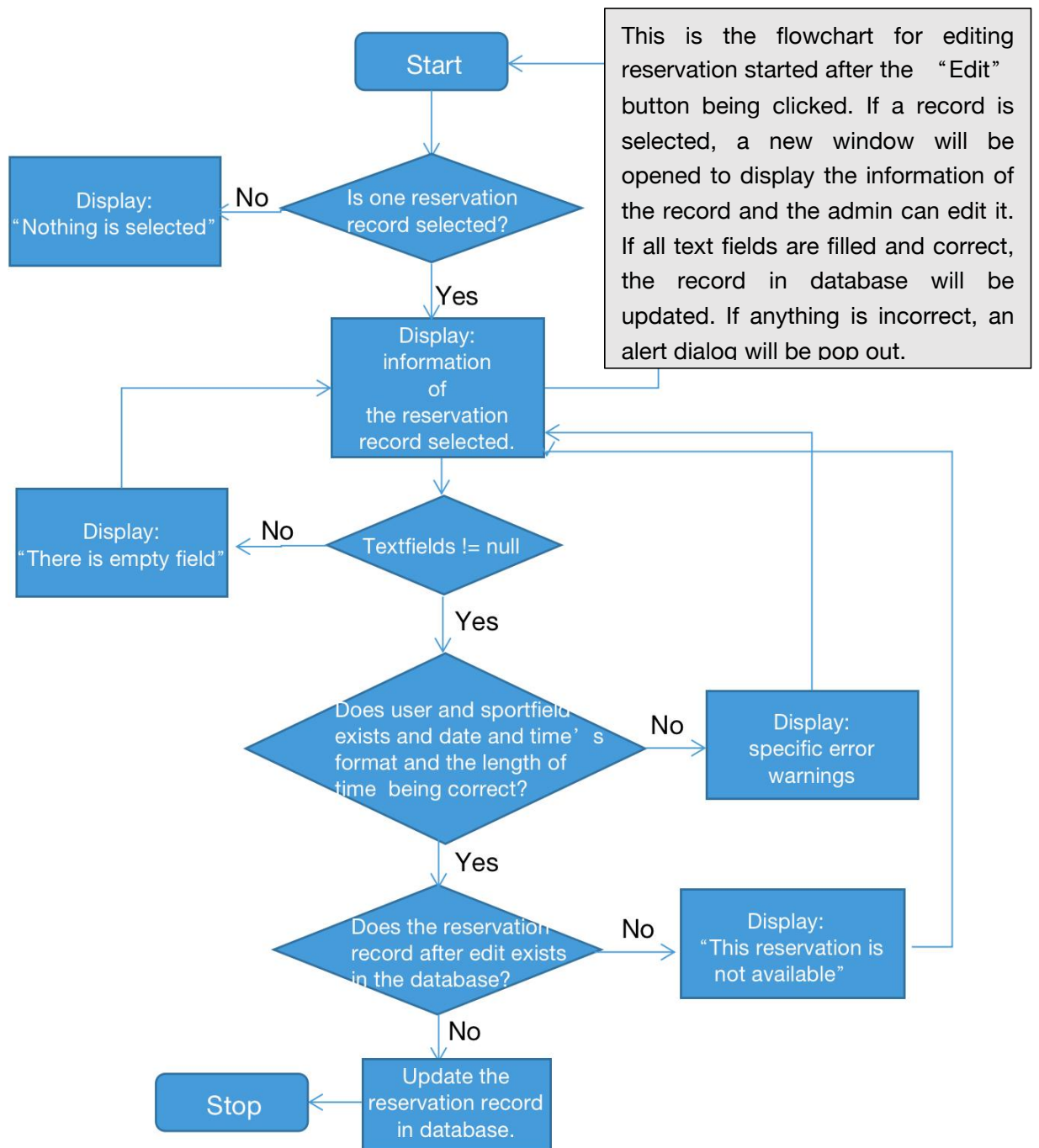
### 2.3.1 Flowchart for Administrator Login



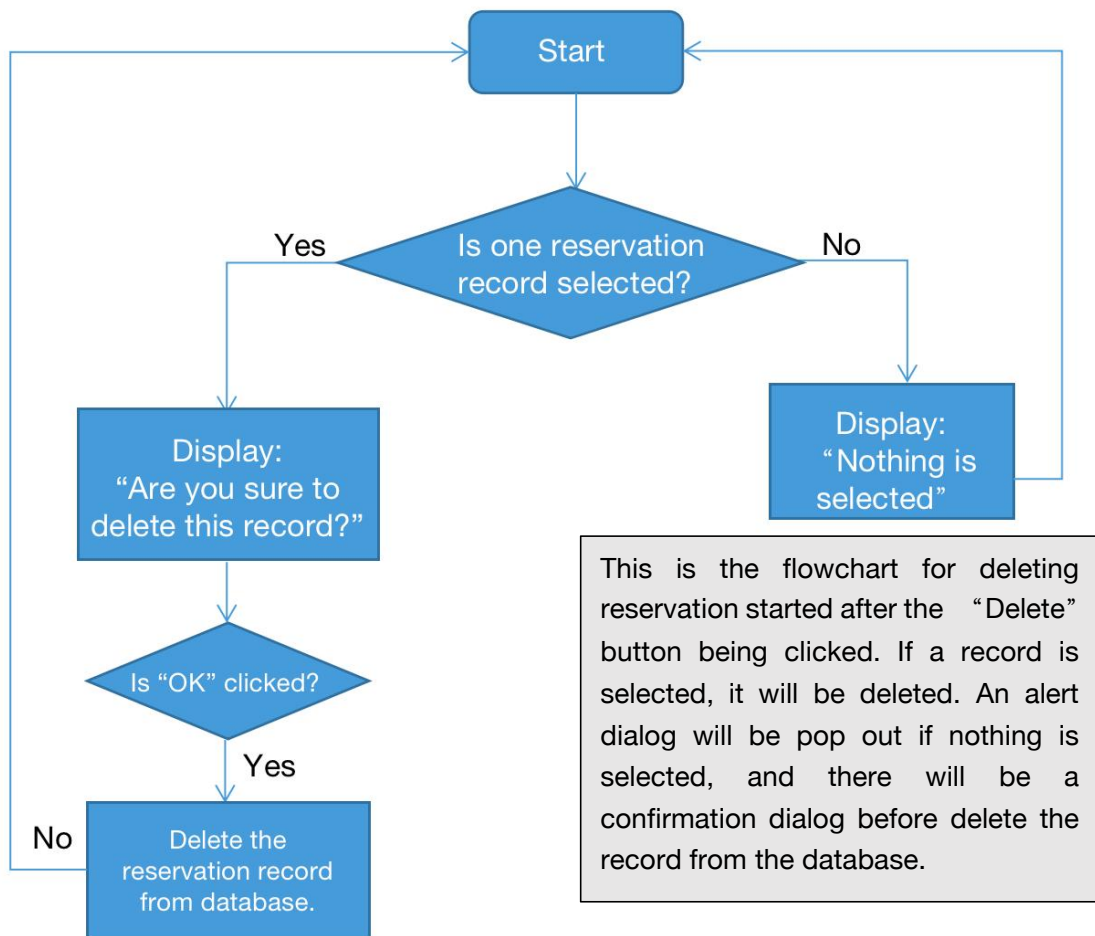
### 2.3.2 Flowchart for Administrator Main Interface



### 2.3.3 Flowchart for Editing Reservations

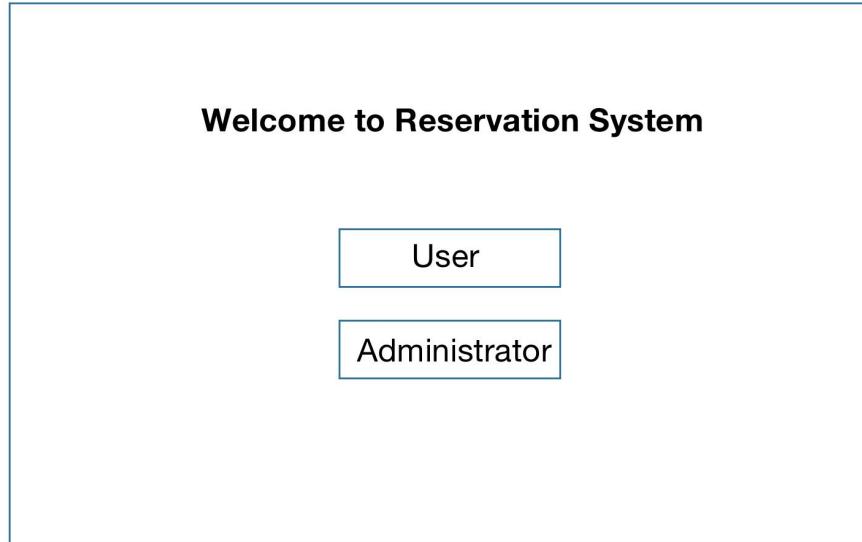


### 2.3.4 Flowchart for Deleting Reservations



### 3. Interface Design

#### 3.1 Start Interface

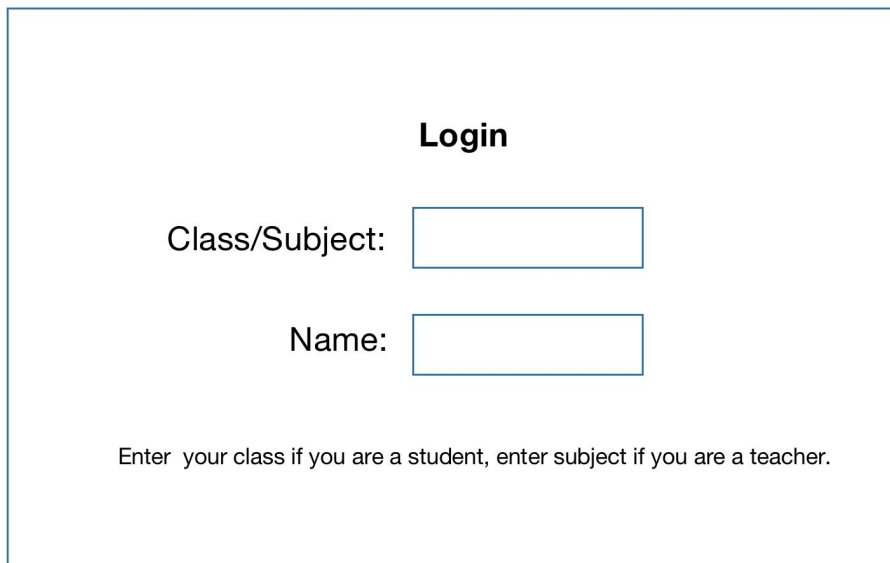


A rectangular window with a blue border. At the top center, the text "Welcome to Reservation System" is displayed in bold. Below this text, there are two rectangular buttons stacked vertically. The top button is labeled "User" and the bottom button is labeled "Administrator". Both buttons have a blue border and a light gray background.

This is a preliminary version of the main interface of the whole program. The whole system is divided into two parts (one for users and one for the administrator), both can be accessed by clicking corresponding button.

#### 3.2 User Interfaces

##### 3.2.1 User Login Interface



A rectangular window with a blue border. At the top center, the text "Login" is displayed in bold. Below this text, there are two labels with corresponding input fields. The first label is "Class/Subject:" followed by a rectangular input field. The second label is "Name:" followed by a rectangular input field. At the bottom of the window, there is a line of text: "Enter your class if you are a student, enter subject if you are a teacher."

This is the user login page. The user has to type in their class or subject and name to access the reservation system.

### 3.2.2 Main User Interface

Sport	Place	Date	Time
sport1	1	2022-09-23	14:00-15:00
sport2	2	2022-10-23	15:00-16:00
sport3	3	2022-11-23	16:00-17:00
<div>EditDeleteNew</div>			

This is the main page for users, which can be divided into two parts—the top part is for previous reservation records display and the bottom part is for functions select.

In the display area, the user can check all reservations they made before, they can view the sport, place, date and time of the reservations. In the functions select area, the user can choose the function they want by clicking the button, including the function of edit, delete and make a new reservation. One record need to be selected before using the functions of edit and delete.

### 3.2.3 Edit Reservation Interface

If the user clicks the “Edit” button, the following page will pop out:

Sport:

Old sport

Place:

Old place

Date:

Old date

Format: YYYY-MM-DD

Time:

Old time

Format: HH:MM-HH:MM

OKCancel

The information of the selected reservation will be filled as default values and the user can view and edit base on it.

By clicking the “OK” button, it will be edited. By clicking the “Cancel” button, this edit dialog will close.

### 3.2.4 Add New Reservation Interface

If the user clicks the “New” button, the following page will pop out:

The diagram illustrates the 'Add New Reservation Interface'. It features a main form with four input fields: 'Sport:', 'Place:', 'Date:', and 'Time:'. Each field has a small icon on its right side. Below these fields are 'OK' and 'Cancel' buttons. Two callouts provide details about the icons:

- An arrow points from the inverted triangle icon on the 'Sport:' field to a list of options: 'sport1', 'sport2', 'sport3', and 'sport3'.
- An arrow points from the rectangle icon on the 'Date:' field to a mini calendar for October 2022, with the 5th highlighted.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

The information of the new reservation can be entered by choosing options shown.

By clicking the “OK” button, it will be edited. By clicking the “Cancel” button, this edit dialog will close.

## **3.3 Administrator Interfaces**

The interface for the administrator is similar to those for users, but with all records, which make the information of class/subject and name of users necessary for every record.

### 3.3.1 Administrator Login Interface



Login

Name:

Password:

This is the administrator login page. The user has to type in the name and password correctly to login successfully as an administrator.

### 3.3.2 Main Administrator Interface

Class/Subject	Name	Sport	Place	Date	Time
class1	name1	sport1	1	2022-09-23	14:00-15:00
class2	name2	sport2	2	2022-10-23	15:00-16:00
subject1	name3	sport3	3	2022-11-23	16:00-17:00
<div><div>Edit</div><div>Delete</div></div>					

This is the main page for the administrator, which can be divided into two parts: the top part is for reservation records display and the bottom part is for functions select.

In the display area, the admin can check all reservations, including class or subject and name of users, sport, place, date and time of the reservations. In the functions select area, the admin can choose the function they wants by clicking the button, including the function of edit delete. One record need to be selected before using the functions of edit and delete.

### 3.3.3 Edit Reservation Interface

If the user clicks the “Edit” button, the following page will pop out:

Class/Subject:

Old class/subject

Name:

Old name

Sport:

Old sport

Place:

Old place

Date:

Old date

Format: YYYY-MM-DD

Time:

Old time

Format: HH:MM-HH:MM

OK

Cancel

The information of the selected reservation will be filled as default values and the user can view and edit base on it.

By clicking the “OK” button, it will be edited. By clicking the “Cancel” button, this edit dialog will close.

## 4. Database Design

There are three tables in my database: `t_sportfield`, `t_user` and `t_record`. “`t_sportfield`” stores the information of sportfields, including sports and corresponding places. “`t_user`” stores the information of users, including class or subject and name. “`t_record`” stores the information of records, including the information of user, sportfield, date and time.

+-----+	
	Tables_in_reservationsys
+-----+	
	t_record
	t_sportfield
	t_user
+-----+	

### 4.1 Database for Sportfields

There are two rows in the sportfield table as shown below:

```
[mysql> desc t_sportfield;
```

Field	Type	Null	Key	Default	Extra
sport	varchar(32)	YES		NULL	
place	varchar(1)	YES		NULL	

## 4.2 Database for Users

There are two rows in the user table as shown below:

```
[mysql> desc t_user;
```

Field	Type	Null	Key	Default	Extra
class_or_subject	varchar(255)	NO	PRI	NULL	
name	varchar(255)	NO	PRI	NULL	

## 4.3 Database for Records

There are six rows in the record table as shown below:

```
[mysql> desc t_record;
```

Field	Type	Null	Key	Default	Extra
class_or_subject	varchar(255)	YES	MUL	NULL	
name	varchar(255)	YES		NULL	
sport	varchar(255)	YES		NULL	
place	int	YES		NULL	
reserve_date	varchar(32)	YES		NULL	
reserve_time	varchar(32)	YES		NULL	

## 5. Test Plan

Aspect	Test Type/Criteria of Success	Test Method
Effectiveness	<b>For users:</b> <ol style="list-style-type: none"> <li>1. All reservations made previously can be checked by users.</li> <li>2. They can edit and delete reservations they made.</li> <li>3. They can make reservations of a specific sport field for a specific time period.</li> </ol>	<b>Alpha testing:</b> <ol style="list-style-type: none"> <li>1. Run the program and login as a user to make new reservations with different sportsfields and time to see if all can be booked successfully.</li> <li>2. Log out and log in again to see if the reservation made successfully and can be viewed.</li> <li>3. Edit the sport, place, date</li> </ol>

		and time of reservations made previously and try to delete some to see if all functions can be achieved successfully.
	<b>For administrator:</b> 1. Administrator can check for all reservation information, including class/subject, name, time and sports field.  2. Administrator can edit and cancel any reservation.	<b>Alpha testing:</b> 1. Run the program and login as administrator to check if all reservation records can be viewed in details.  4. Edit the information of users and details like sport, place, date and time of reservations and delete some to see if these functions work well.
	<b>For all:</b> 1. All the information can be automatically updated.  2. All the data can be showed successfully.	<b>Observation:</b> 1. Throughout the test, check the tableview and database regularly after every action to see if the reservation updated timely.  2. Compare the table view with database to see if all are shown.
Efficiency	All functions can be achieved using few steps and costing less time.	<b>User Testing:</b> Ask Angel and other students or teachers to try out the reservation system and give some feedback on the efficiency.
Security	1. Class or subject and name are needed for a user to login.  2. Users can not view or modify any reservations made by others.  3. Name and password are verified when logging in as administrator.	<b>Alpha Testing:</b> 1. Try login with no fields filled and wrong information of user to see if it can login successfully.  2. Login as a user to see if the reservations made by others

Learnability		can be viewed and changed.
		3. Login as administrator and try with both correct username and password and the incorrerct ones.
Learnability	1. The design of system is easy to understand and use.	<b>User Testing:</b> Ask Angel and other students or teachers to try out the reservation system and give some feedback on the learnability.
	2. There are necessary reminders on the interface.	
Memorability	All pages are clear and logic, making it not complicated.	<b>User Testing:</b> Ask Angel and other students or teachers to try out the reservation system and give some feedback on the memorability.
Readability/Comprehensibility	1. The size, color and location of components are proper.	<b>User Testing:</b> Ask Angel and other students or teachers to try out the reservation system and give some feedback on the readability.
	2. The font of words is easy to recognize.	
Satisfaction	The users and administrator are satisfied with the functions provided.	<b>User Testing:</b> Ask Angel and other students or teachers to try out the reservation system and ask about their satisfaction.

Word Count: 491