

Note: In addition to the late penalty, marks will also be deducted under the different categories for other reasons, eg. bad programming practices, uncooperativeness, etc.

Table of Contents

<i>Chapter</i>	<i>Description</i>	<i>Page No</i>
1	Introduction	5
2	Overall System - Module Structure Chart	6
3	Main Screen Design	7-8
4	System Modules	
4.1	Staff Information Module	9-27
4.2	Train Schedule Module	28-35
4.3	Member Information Module	36-41
4.4	Ticket Booking Module	42-60

1.0 Introduction

What a train ticketing system is is a useful instrument that helps the burden of purchasing train tickets! It's similar to traveling by train with your very own personal helper. These solutions are designed to streamline and simplify the entire ticketing, reservation management, and train boarding process.

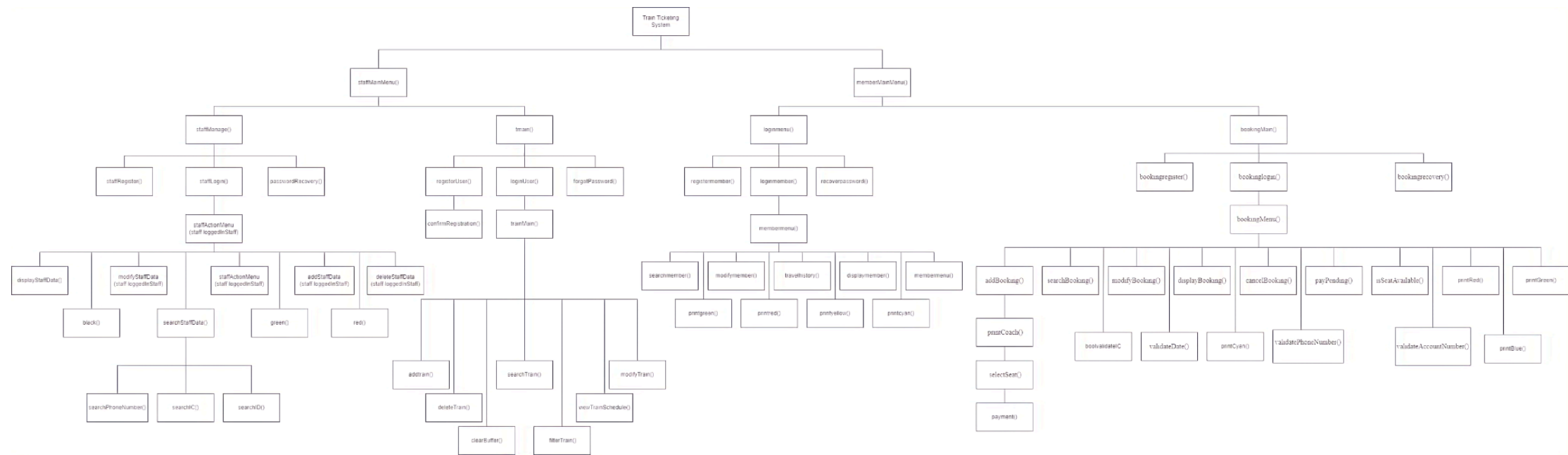
Train ticketing systems provide you control, which is one of their best features. You can use your computer or smartphone to purchase your tickets from the convenience of your home or while on the go, reducing the need to walk to the train station and wait in long lines. You may avoid standing in line because everything is done online.

Train ticketing systems still do more than only make life easier for travelers; they also simplify operations for train operators. They manage schedules, calculate fares, and sell tickets in addition to assigning seats. Train employees will have less paperwork and headaches as a result of this technology, freeing them up to focus on giving passengers a better experience.

Additionally, these systems frequently have useful features that improve the trip experience in general. Do you wish to select your seat in advance? Not a problem! Do you need to order any food or drinks for the trip? Simple as pie! Based on your tastes and previous travels, some systems can provide personalized travel recommendations.

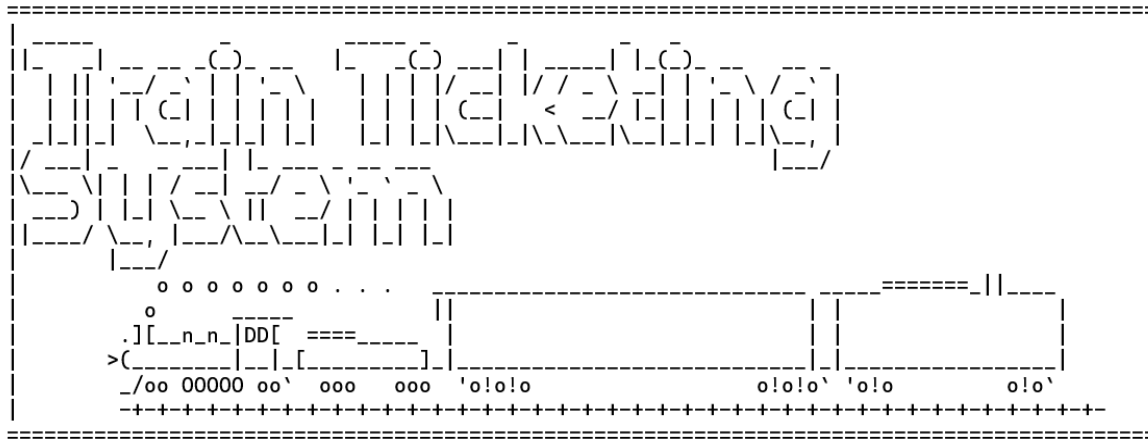
Train ticketing systems are simply about simplifying, streamlining, and improving the overall experience of train travel for all parties concerned. They make sure that your trip is easy from beginning to end by using technology to expedite the booking process, offer superior service, and guarantee an enjoyable journey. The Train Ticketing System made it all possible, so keep that in mind the next time you're organizing a train excursion!

2.0 Overall System – Module Structure Chart



3.0 Main Screen Design

This screen shows the main screen of our train ticketing system. It lets the user choose whether they want to enter member mode or staff mode.



Welcome to Ticketing System!!!

- 1. Member mode
- 2. Staff mode
- 0. Exit

Select your choice > |

After the user key in the value '1', the system will bring the user to the member hub and let the user choose whether they want to manage their member information or ticket booking.



After the user key in the value '2', the system will bring the user to the staff operation hub and let the user choose whether they want to manage train schedules or manage the staff information.

```
=====
|                                     |
|  S t a f f   O p e r a t i o n   H u b  |
|                                     |
|=====|
```

```
-----
1. Manage Schedule
2. Manage Staff
0. Exit
Enter your choice:
```

4.0 System Modules

4.1 Staff Information Module by Low Wen Kai

4.1.1 Brief Description

1. void red() = print the text in red color
2. void green() = print the text in green color
3. void black() = print the text in black color
4. void staffManage() = shows menu bar such as register, login and password recovery
5. void staffRegister() = allows user to register so that able to login to the system
6. void staffLogin() = allows user to login to the system
7. void staffActionMenu(staff loggedInStaff) = shows staff management such as add, modify, search, delete, display staff data and staff action history.
8. void addStaffData(staff loggedInStaff) = allows admin to add new staff
9. void searchStaffData() = allows admin to search data based on the staff id, phone number or IC
10. void modifyStaffData(staff loggedInStaff) = allows admin to modify staff data
11. void displayStaffData() = allows admin to display all the staff's data in the system
12. void deleteStaffData(staff loggedInStaff) = allows admin to delete staff
13. void displayActionHistory() = allows admin to display the staff action history which means who did what to who
14. void searchID() = allows admin to search staff data based on staff's ID
15. void searchIC() = allows admin to search staff data based on staff's IC
16. void searchPhoneNumber() = allows admin to search staff data based on staff's phone number
17. void passwordRecovery() = allows all staff to reset their password if their forget their original password

4.1.2 Outputs & File Contents

After the user key in the value '2' and enter the staff management. The system shows the user enter '1' to register an account, '2' to login their existing account or '2' to reset their password if they forget their password.

Staff Menu Bar

1.Register

2.Login

3.Password Recovery (IF YOU FORGET YOUR PASSWORD)

0.Exit

Enter your choice > |

If the user wants to register a new account, the system prompts them to enter a staff id based on the format "STFXXX". If the user enters the wrong format no matter if it is too long or too short, or the existing staff id, it will ask the user to enter again.

Staff Register

Enter staff ID in (STFXXX): A

Invalid staff ID format. Please enter in STFXXX format.

Enter staff ID in (STFXXX): STF

Invalid staff ID format. Please enter in STFXXX format.

Enter staff ID in (STFXXX): STF0001

Invalid staff ID format. Please enter in STFXXX format.

Enter staff ID in (STFXXX): STF001

Staff ID has been registered.

Please enter again.

Name, password and password recovery can be entered without any validation. Gmail key in by the user must be in "@gmail.com" format. If not, the system prompts the user to enter again.

Enter staff ID in (STFXXX): STF003

Enter Name: LOW WEN KAI

Enter password: abcxyz

Enter password recovery: 12345

Enter email (must in @gmail.com): wenkai

Invalid email format

Enter email (must in @gmail.com): wenkai@hotmail.com

Invalid email format

Enter email (must in @gmail.com): wenkai@gmail.com

During the IC session, the user have to key in their IC based on the format (YYMMDD-PB-###G). If the IC does not reach 14 lengths or does not put '-' at the seventh position and tenth position, it will prompt the user to enter again.

```
Enter IC in (YYMMDD-PB-###G): 1
Invalid IC format. Please enter in YYMMDD-PB-###G format.
Enter IC in (YYMMDD-PB-###G): 12345678912345
Invalid IC format. Please enter in YYMMDD-PB-###G format.
Enter IC in (YYMMDD-PB-###G): 121212-12-1234
```

When the user enters a religion that is not between in islam, buddhism, christianity, hinduism and none, the system prompts the user to enter again until get a correct religion.

```
Enter religion (Islam/Buddhism/Christianity/Hinduism/None): a
Invalid religion. Please enter one of the valid options.
Enter religion (Islam/Buddhism/Christianity/Hinduism/None): 1
Invalid religion. Please enter one of the valid options.
Enter religion (Islam/Buddhism/Christianity/Hinduism/None): islam
```

When the user enters a phone number that is not a number, it will prompt the user to enter again until the system get number from the user and users are not limited to entering phone numbers.

```
Enter phone number (No need to put '-'): A
Invalid input. Please enter a numeric phone number without '-'.
Enter phone number (No need to put '-'): 012345678
```

In the age session, the system only accepts the age of number from 18 years old until 60 years old and it must be integer.

```
Enter age (18-60): A
Invalid input. Please enter an age between 18 and 60.
Enter age (18-60): 1
Invalid input. Please enter an age between 18 and 60.
Enter age (18-60): 20
```


After finishing the registration, the system prompts the user to enter -1 to exit. If the user does not enter -1, the system will ask the user to key in again.

Register Successfully.
Staff information saved to file.

Enter (-1) to exit: |

This is a sample of staff information for further utilization.

Staff Register

```
-----
Enter staff ID in (STFXXX): STF001
Enter Name: LOW WEN KAI
Enter password: ABCXYZ
Enter password recovery: LOW
Enter email (must in @gmail.com): wenkai@gmail.com
Enter position (ADM for ADMIN, STF for STAFF): ADM
Enter IC in (YYMMDD-PB-###G): 050505-10-1234
Enter religion (Islam/Buddhism/Christianity/Hinduism/None): BUDDHISM
Enter phone number (No need to put '-'): 0123456789
Enter age (18-60): 19
```

Register Successfully.
Staff information saved to file.

Enter (-1) to exit: |

Now the staff data that i created just now is stored in the txt file called staff_information.txt.

```
STF001|LOW WEN KAI|ABCXYZ|LOW|wenkai@gmail.com|ADM|050505-10-1234|buddhism|123456789|19
```

Before users login, if users forgets their password. They are able to enter a password recovery session to reset their password. In this page, they will be asked to enter their staff id. If the system found that the staff id does not exist, it will prompt users to exit and enter again.

Password Recovery

```
-----
Enter your Staff ID: STF002
Staff ID not found. Please try again.
```

Enter -1 to exit: |

Let's say if users enter the correct staff id but wrong password recovery, the system will prompt users to exit and enter again.

Password Recovery

Enter your Staff ID: STF001

Enter your Password Recovery: A

Password Recovery Not Match.

Enter -1 to exit: |

If all is correct, the system shows the password updated successfully and prompts users enter -1 to exit.

Password Recovery

Enter your Staff ID: STF001

Enter your Password Recovery: LOW

Enter new password: 123

Password updated successfully.

Enter -1 to exit: |

Now the password inside the txt file will be changed.

```
STF001|LOW WEN KAI|123|LOW|wenkai@gmail.com|ADM|050505-10-1234|buddhism|123456789|19
```

In the staff login session, users will be asked to enter a staff id, if the system found that id does not exist, it will prompt the user to exit and enter again.

Staff Login

Enter your ID: STF002

ID not found.

Please try again

Enter -1 to exit: |

If users enter the wrong password, the system will prompt users enter -1 to exit.

Staff Login

Enter your ID: STF001

Enter password: A

Incorrect password.

Enter -1 to exit: |

If the user enters the correct id and password, the system brings them to the staff action menu, which allows them to add, search, modify ,display, delete staff, watch the staff action history and enter the menu of another module.

Staff Login

Enter your ID: STF001

Enter password: 123

Login Successful!

Staff Management System

1. Add staff
2. Search staff
3. Modify staff
4. Display staff
5. Delete staff
6. Staff Action History
7. Enter Train Schedule Menu
0. Exit

Select your choice >

I have created a new staff account which is a normal staff. If the staff is not an admin, it should be able to enter the staff action menu to manage the staff information.

Staff Login

Enter your ID: STF002

Enter password: LEE

You don't have permission to access this function.

Enter -1 to exit: |

After the admin key in '1' to enter the staff add function, this function allows the admin to add other staff. On the other hand, the system will record who adds a new staff or admin.

Staff ADD

Enter staff ID in (STFXXX): STF001

Staff ID has been registered.

Please enter again.

Enter staff ID in (STFXXX): STF002

Enter Name: LEE WEN BIN

Enter password: LEE

Enter password recovery: WEN

Enter email (must in @gmail.com): wenbin@gmail.com

Enter position (ADM for ADMIN, STF for STAFF): STF

Enter IC in (YYMMDD-PB-###G): 050501-10-1234

Enter religion (Islam/Buddhism/Christianity/Hinduism/None): iSLAM

Enter phone number (No need to put '-'): 0123412344

Enter age (18-60): 20

Staff Added Successfully.

Staff information saved to file.

Enter (-1) to exit: |

When the admin key in '2' enters the search staff function, they are able to key in the number whether they want to search the staff data by id, IC or phone number.

Search Staff Data

What do you want to search for ?

1. Staff ID
2. IC
3. Phone Number
4. Exit

Enter your choice > |

If an admin enters the search function by using staff id, they will be asked to enter a staff id that exists in the system. If the system cannot be found, it will prompt the admin whether they still want to search. If admin enters 'Y' or 'y', the system will run again and prompt admin to enter staff id. If the admin enters 'N' or 'n', the system will bring them back to the previous page.

Enter Staff ID to search: STF005

ID NOT FOUND!

Do you still want to search? (Y/N): |

If the system can find the staff id, it will show all the data of that staff excluding password and password recovery. Then, the system prompts admin whether they still want to search. Same as above, yes means to search again and no means to exit.

Enter Staff ID to search: STF002

ID FOUND

Staff Name : LEE WEN BIN
Email : wenbin@gmail.com
Position : STF
IC : 050501-10-1234
Religion : islam
Phone Number: 123412344
Age : 20

Do you still want to search? (Y/N): |

If an admin wants to search staff data by using an IC, they have to key in the IC of that staff. Wrong IC or not existing IC will be noticed to the admin and prompt the admin whether still wants to search. If the admin enters 'Y' or 'y', the system will run again and prompt the admin to enter the IC. If the admin enters 'N' or 'n', the system will bring them back to the search staff page.

```
Enter IC to search: 0
IC NOT FOUND!
Do you still want to search? (Y/N):
```

If the system can find the IC, it will show the data of the staff. Then, the system prompts admin whether they still want to search. Same as above, yes means to search again and no means to exit.

```
Enter IC to search: 050505-10-1234

IC FOUND

Staff ID           : STF001
Name               : LOW WEN KAI
Email              : wenkai@gmail.com
Position           : ADM
Religion            : buddhism
Phone Number       : 123456789
Age                : 19
Do you still want to search? (Y/N): |
```

If an admin wants to search staff data by using a phone number, they have to key in the phone number of that staff. Wrong phone number or not existing phone number will be noticed to the admin and prompt the admin whether still wants to search. If the admin enters 'Y' or 'y', the system will run again and prompt the admin to enter the phone number. If the admin enters 'N' or 'n', the system will bring them back to the search staff page.

```
Enter Phone Number to search: 1
PHONE NUMBER NOT FOUND!
Do you still want to search? (Y/N): |
```

If the system can find the phone number, it will show the data of the staff. Then, the system prompts admin whether they still want to search. Same as above, yes means to search again and no means to exit.

Enter Phone Number to search: 123412344

NUMBER FOUND

Staff ID : STF002
Name : LEE WEN BIN
Email : wenbin@gmail.com
IC : 050501-10-1234
Position : STF
Religion : islam
Age : 20
Do you still want to search? (Y/N): |

When the admin key in '3' in the staff action menu to enter the staff modification function, the system prompts admin to enter staff id to modify, if the staff does not exist, then system prompts whether the admin still wants to modify anyone. If the admin enters 'Y' or 'y', the system will run again and prompt the admin to enter the id. If the admin enters 'N' or 'n', the system will bring them back to the search staff page.

Enter Staff ID to modify: STF003

ID NOT FOUND!

Do you still want to modify anyone? (Y/N): |

If a staff id is found, the system will show the data of the staff and then prompt the admin whether they want to modify name,password,password recovery,email, IC , religion, age, position or phone number.

Enter Staff ID to modify: STF002

ID FOUND

Staff Name : LEE WEN BIN
Email : wenbin@gmail.com
Position : STF
IC : 050501-10-1234
Religion : islam
Phone Number: 123412344
Age : 20

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

After the admin key in value '1' to modify the name, it will ask admin to enter a new name to the system. Then, it prompts admin that modification is successful and asks admin for other data that admin wants to modify.

```
Enter new name: CHEON JIE HAN
Modification successful!
```

```
What do you want to modify?
```

- 1. Name
- 2. Password
- 3. Password Recovery
- 4. Email
- 5. Position
- 6. IC
- 7. Religion
- 8. Phone Number
- 9. Age
- 0. Exit

```
Enter your choice: |
```

After the admin key in value '2' to modify the password, it will ask admin to enter a new password to the system. Then, it prompts admin that modification is successful and asks admin for other data that admin wants to modify.

```
Enter new password: ABC
Modification successful!
```

```
What do you want to modify?
```

- 1. Name
- 2. Password
- 3. Password Recovery
- 4. Email
- 5. Position
- 6. IC
- 7. Religion
- 8. Phone Number
- 9. Age
- 0. Exit

```
Enter your choice: |
```

After the admin key in value '3' to modify the password recovery, it will ask admin to enter a new password recovery to the system. Then, it prompts admin that modification is successful and asks admin for other data that admin wants to modify.

```
Enter new password recovery: LWA
Modification successful!
```

```
What do you want to modify?
```

```
1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit
Enter your choice: |
```

After the admin key in value '4' to modify the email, it will ask the admin to enter a new email to the system. An error message will appear when the admin did not follow the email format. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter new email (must in @gmail.com): A
Invalid email format
Enter new email (must in @gmail.com): 1D
Invalid email format
Enter new email (must in @gmail.com): JIEHAN@gmail.com
Modification successful!
```

```
What do you want to modify?
```

```
1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit
Enter your choice: |
```

After the admin key in value '5' to modify the position, it will ask the admin to enter a new position to the system. An error message will appear when the admin did not enter a valid position. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter new position (ADM for ADMIN, STF for STAFF): a
Please enter a valid position!
Enter new position (ADM for ADMIN, STF for STAFF): 3
Please enter a valid position!
Enter new position (ADM for ADMIN, STF for STAFF): a4
Please enter a valid position!
Enter new position (ADM for ADMIN, STF for STAFF): ADM
Modification successful!
```

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

After the admin key in value '6' to modify the IC, it will ask the admin to enter a new IC to the system. An error message will appear when the admin did not follow the IC format. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter new IC in (YYMMDD-PB-###G): 1212
Invalid IC format. Please enter in YYMMDD-PB-###G format.
Enter new IC in (YYMMDD-PB-###G): A41
Invalid IC format. Please enter in YYMMDD-PB-###G format.
Enter new IC in (YYMMDD-PB-###G): 101010-10-1234
Modification successful!
```

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

After admin key in value '7' to modify the religion, it will ask the admin to enter a new religion to the system. An error message will appear when the admin did not enter a valid religion. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter new religion (Islam/Buddhism/Christianity/Hinduism/None): A
Invalid religion. Please enter one of the valid options.
Enter new religion (Islam/Buddhism/Christianity/Hinduism/None): 3
Invalid religion. Please enter one of the valid options.
Enter new religion (Islam/Buddhism/Christianity/Hinduism/None): NONE
Modification successful!
```

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

After the admin key in value '8' to modify the phone number, it will ask the admin to enter a new phone number to the system. An error message will appear when the admin did not enter the numeric

phone. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter new phone number (No need to put '-'): A
Invalid input. Please enter a numeric phone number without '-'.
Enter new phone number (No need to put '-'): 12121212
Modification successful!
```

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

After the admin key in value '9' to modify the age, it will ask the admin to enter a new age to the system. An error message will appear when the admin did not enter a numeric age. If successful, it prompts admin that modification is successful and asks admin for other data I want to modify.

```
Enter age: A
Invalid input. Please enter a numeric age.
Enter age: 30
Modification successful!
```

What do you want to modify?

1. Name
2. Password
3. Password Recovery
4. Email
5. Position
6. IC
7. Religion
8. Phone Number
9. Age
0. Exit

Enter your choice: |

Now the staff_information.txt shows that admin added a staff before and modified the staff to change their data.

```
LOW WEN KAI|STF001|added|LEE WEN BIN|STF002
LOW WEN KAI|STF001|modified|CHEON JIE HAN|STF002
```

After finishing the modification, the admin can key in the value '4' to display all the staff data excluding the password and password recovery inside the system. The system prompts admin to enter -1 to exit.

STAFF DATA							
Staff ID	Name	Email	Position	IC	Religion	Phone Number	Age
STF001	LOW WEN KAI	wenkai@gmail.com	ADM	050505-10-1234	buddhism	123456789	19
STF002	CHEON JIE HAN	JIEHAN@gmail.com	ADM	101010-10-1234	NONE	12121212	30

```
Enter (-1) to exit: 1
Invalid. Please enter again!!!
```

```
Enter (-1) to exit: 2
Invalid. Please enter again!!!
```

```
Enter (-1) to exit: |
```

When the admin wants to delete the staff, they have to key in the value '5' to enter this function in the staff action menu. After entering this function, the admin will be asked to enter a staff id to be deleted. If the staff id cannot be found, it will prompt the admin to enter again.

```
Enter Staff ID to delete: STF003
```

```
ID not found.
Please try again
```

```
Enter -1 to exit: 1
```

```
Enter again.
Enter -1 to exit: A
```

```
Enter again.
Enter -1 to exit: |
```

If the id is keyed in without showing any problems, the system will show the data of that staff that wants to be deleted and prompt the admin whether it is sure to be deleted. If the admin enters another value that is not 'Y', the system automatically means that the admin does not want to delete anymore, then it will bring the admin back to the staff action menu.

Enter Staff ID to delete: STF002

Staff ID STF002 found.

Staff Information:

Name : CHEON JIE HAN
Email : JIEHAN@gmail.com
Position : ADM
IC : 101010-10-1234
Religion : NONE
Phone Number: 12121212
Age : 30

Are you sure you want to delete this staff (Y/N)?

If admin enter 'Y' means confirm to delete, the system will show that id has been deleted and prompt the admin to enter -1 to exit.

Enter Staff ID to delete: STF002

Staff ID STF002 found.

Staff Information:

Name : CHEON JIE HAN
Email : JIEHAN@gmail.com
Position : ADM
IC : 101010-10-1234
Religion : NONE
Phone Number: 12121212
Age : 30

Are you sure you want to delete this staff (Y/N)? Y

Staff ID STF002 deleted.

Enter (-1) to exit: |

If the admin key in value '6' enters staff action history, this function will show the action of who did it to who. For example, the admin 'LOW WEN KAI' with staff id 'STF001' added, modified and deleted the 'CHEON JIE HAN' with id 'STF002'.

Staff Action History				
Name	ID	Action	Staff Name Affected	Staff ID Affected
LOW WEN KAI	STF001	added	LEE WEN BIN	STF002
LOW WEN KAI	STF001	modified	CHEON JIE HAN	STF002
LOW WEN KAI	STF001	deleted	CHEON JIE HAN	STF002

Enter (-1) to exit: 1
Invalid. Please enter again!!!

Enter (-1) to exit: 2
Invalid. Please enter again!!!

Enter (-1) to exit: |

4.2 Train Schedule Module by Cheon Jie Han

4.2.1 Brief Description

1. 'registerUser()': Creates a new user by getting their information and placing it in a file.
2. 'confirmRegistration()': Confirms the successful registration of a user and directs them to the main menu.
3. 'loginUser()': Enables users to log in by comparing their credentials to stored data.
4. 'forgotPassword()': Users can retrieve their password by entering their userID and phone number.
5. 'addTrain()': Allows users to add new train schedules by prompting them for details such as train ID, stations, and times.
6. 'viewTrainSchedule()': Displays all train timetables currently saved in the system.
7. 'deleteTrain()': Users can delete a specific train schedule from the system.
8. 'searchTrain()': Users can search for a train schedule by entering its unique ID.
9. 'modifyTrain()': Allows users to change details about an existing train schedule, such as prices, available seats, and times.
10. 'filterTrain()': Filters train schedules by specifying departure and arrival stations.
11. 'trainMain()': Serves as the primary menu interface for accessing various train management system features.
12. 'clearBuffer()': Clears the input buffer to remove any remaining characters, enabling a clean input stream for future user inputs.
13. 'tmain()': Displays the main menu options for user interaction, including registration, login, password recovery, and program exit.

4.2.2 Outputs & File Contents

```

===== Main Menu =====
1. Register
2. Login
3. Forgot Password
0. Exit
=====
Enter your choice: |

```

(Figure 4.2.1 Login Main Screen)

Figure 4.2.1 presents a user login and registration system. Users can input 1 to register, 2 to log in, or 3 to recover passwords, and the system checks user details to confirm their identity.

```

===== Main Menu =====
1. Register
2. Login
3. Forgot Password
0. Exit
=====
Enter your choice: 1
Enter userID (adminxxx format): adminWenBin
Enter password (integer only): 12345
Enter phone number: 1234567
Registration successful! Do you want to go back to the main menu to login? (y/n): |

```

(Figure 4.2.2 Register)

(Figure 4.2.2 Register) shows the registerUser function enables users to create new accounts by inputting a user ID, password, and phone number. It ensures that the user ID follows the format "adminxxx" and accepts only integer passwords, after registration successfully, it will ask whether the user wants to login or not.

```

=====
Enter your choice: 1
Enter userID (adminxxx format): adminCheon
UserID already exists. Please choose a different one.
Enter userID (adminxxx format): adm
UserID must start with 'admin'. Please try again.
Enter userID (adminxxx format): |

```

The registration function enforces the "adminxxx" format for user IDs and prevents duplicate IDs by checking existing records in the text file.

```
===== Main Menu =====
1. Register
2. Login
3. Forgot Password
0. Exit
=====
Enter your choice: 3
Enter userID: adminCheon
Enter phone number: 0106565195
Your password is: 316786
```

(Figure 4.2.3 Password Recovery)

(Figure 4.2.3 Password Recovery) shows if a user entering '3' allows the user to input their userID and phone number. If successful verification of the userID and phone number combination, the system displays the user's password.

If you enter '2' to log in to your account at the login main screen (Figure 4.2.1 Login Main Screen), the system will allow you to enter your user ID and user password, after user successfully login, accessing the Train Schedule Module Main Screen (Figure 4.2.4 Train Schedule Module Main Screen)

[illegible]

(Figure 4.2.4 Train Schedule Module Main Screen)

After successfully logging in, (Figure 4.2.4 Train Schedule Module Main Screen) show all the function of train schedule module, users can input '1' to add a new train schedule, '2' to search for a train schedule, '3' to view all train schedules, '4' to modify stock, '5' to delete a train schedule, '6' to filter train, and '0' to exit the program.

```
Enter Train details
-----
Train ID: train01
Train departure station: KK
Destination: KLIA
Departure Time (HH:MM AM/PM): 12:05 AM
Arrival Time (HH:MM AM/PM): 12:05 PM
Date (MM-DD): 04-05
Available seat: 100
Economy Class Price: 17
First Class Price: 38
-----
Confirm Train details (y/n):
Train ID: train01
Departure Station: KK
Destination: KLIA
Departure Time: 12:05
Arrival Time: 12:05
Date: 04-05
Available Seats: 100
Economy Class Price: 17.00
First Class Price: 38.00
-----
```

(Figure 4.2.5 Add Train)

In Figure 4.2.5 (Add Train), users input details like the train ID, departure and destination stations, departure and arrival times, date, available seats, and ticket prices for economy and first class, at the last it will have a confirmation.

```
Enter your Choice: 1

Enter Train details
-----
Train ID: train01
Checking existing IDs...
Existing ID read from file: train01
Train ID already exists!!
Please enter another Train ID.

Enter Train details
-----
Train ID: |
```

After users input the train ID, the system validates whether the same train ID already exists in the text file to prevent duplicates.

```
-----
Enter your Choice: 2
Enter the train ID to search: train01

Train found:
ID: train01
Departure Station: KK
Arrival Station: KLIA
Departure Time: 12:05
Arrival Time: 12:05
Date: 04-05
Available Seats: 100
Economy Class Price: 14.00
First Class Price: 55.00
Do you want to go back to the main menu? (y/n): |
```

(Figure 4.2.6 Search Train)

At (Figure 4.2.6 Search Train), after selecting option 2 to search for a train, the system prompts the user to input the train ID they wish to search for. If the ID is located in the text file, the system displays all of the train's information, including its ID, departure and arrival stations, departure and arrival times, dates, available seats, economy and first class prices. If the train fails to be identified, the system informs the user.

Enter your Choice: 3

<<<TRAIN SCHEDULE>>>								
ID	Departure Station	Arrival Station	Departure Time	Arrival Time	Date	Available Seats	Economy Price	First Class Price
train01	KK	KLIA	12:05	12:05	04-05	100	14.00	55.00

Do you want to go back to the main menu? (y/n): |

(Figure 4.2.7 View All Train)

At (Figure 4.2.7 View All Train), the system displays all train IDs, as well as their corresponding departure and arrival stations, departure and arrival times, dates, available seats, economy and first class prices.

```
=====
Enter your Choice: 4
Enter the train ID to modify: train01

Current train details:
ID: train01
Departure Station: KK
Arrival Station: KLIA
Departure Time: 12:05
Arrival Time: 12:05
Date: 04-05
Available Seats: 100
Economy Price: 14.00
First Class Price: 55.00

Enter new details:
Enter new departure time (HH:MM AM/PM) (enter 0 to keep current value): 0
Enter new arrival time (HH:MM AM/PM) (enter 0 to keep current value): 0
Enter new date (MM-DD) (enter 0 to keep current value): 0
Enter new available seats (enter 0 to keep current value): 50
Enter new economy class price (enter 0 to keep current value): 0
Enter new first class price (enter 0 to keep current value): 0

Train details modified successfully!
Do you want to go back to the main menu? (y/n): |
```

(Figure 4.2.8 Modify Train Details)

At (Figure 4.2.8 Modify Train Details), if the user input option '4', users are able to modify the first and economy class prices, available seats, date, arrival time, and departure time of a train. They can enter '0' to maintain the current record unchanged.

```

=====
1. Add New Train Schedule
2. Search Train Schedule
3. View All Train Schedule
4. Modify stock
5. Delete Train Schedule
6. Filter Train
0. Exit
=====
Enter your Choice: 5
Enter the train ID to delete: train01
Train details deleted successfully!
Do you want to go back to the main menu? (y/n): |

```

(Figure 4.2.9 Delete Train Details)

In (Figure 4.2.9 Delete Train Details), users can delete train details by selecting option '5'. This feature allows users to remove old or unnecessary train entries from the system, ensuring that only reliable and current data is stored in the database.

```

=====
Enter your Choice: 6
Enter filter criteria:
Departure Station: KK
Arrival Station: KLIA
Filtered Train Schedule:
-----
| Train ID | Departure Station | Arrival Station | Departure Time | Arrival Time | Date |
-----
| train01 | KK                | KLIA            | 12:05          | 12:05        | 04-05 |
-----
Do you want to go back to the main menu? (y/n): |

```

(Figure 4.2.10 Filter Train)

Users can narrow down the displayed train schedules by specifying filter criteria such as departure and arrival stations (Figure 4.2.10 Filter Train). This feature allows users to focus on certain routes of interest, which improves the efficiency of finding relevant train information.

4.3 Member Information Module By Rafael Hon Zhong Hang

4.3.1 Brief Description

- 1.void printred() = print the text in red color
- 2.void printcyan() = print the text in cyan color
- 3.void printyellow() = print the text in yellow color
4. void printgreen() = print the text in green color
- 5.void registermember() = allow user to register into the system
- 6.void loginmember() = let user to login into the system
- 7.void recoverpassword() = allow user to recover their password when they forget
- 8.void loginmenu() = menu bar such as login and register.
- 9.void membermenu() = menu bar that such as search,modify
- 10.void searchmember() = search for member id to display
- 11.void modifymember() = allow user to change password and contact
- 12.void displaymember() = display the member information
- 13.void travelhistory() = display member past travels

4.3.2 Outputs & File Contents

```
-----  
Login Menu  
-----  
1.Register  
2.Login  
3.Exit  
select one of the above:1|
```

(Figure 4.3.1 Member Main Screen)

In (Figure 4.3.1 Member Main Screen) , it prompts a menu to ask the user to input 1, for registration.2 for login and 3 to exit.

```
-----  
member registration  
-----  
Enter your member id(M2305XXX):m1234567890  
Invalid member format.  
Enter your member id(M2305XXX):M2305419  
Enter your name (20 max): AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA  
Name too long,Enter a shorter name  
Enter your name (20 max): Rafael  
Enter your password: 1234  
Password Too Weak, please use atleast 5 character  
Enter your password: 12345  
Enter your recovery password(3 max):12345  
Password too long,please enter a shorter password  
Enter your recovery password(3 max):123  
Enter your IC(XXXXXX-XX-XXXX):1234567-12-12345  
Invalid format  
Enter your IC(XXXXXX-XX-XXXX):050721-14-1301  
Gender:M  
Enter your phone num(01XXXXXXXX):012345678905678  
invalid phone num  
Enter your phone num(01XXXXXXXX):0123456789|
```

(Figure 4.3.2 Registration Screen)

During the registration process, the user will have to input according to the format.Any invalid format, the system will prompt the user to input their information again.The member id needs to be capitalized on 'M' on the first character.For the name, password and recovery password user will have

to enter information according to their length. The gender will be automatically determined by the IC of the user during the prompt.

After registration the user will be brought back to the prompt In (Figure 4.3.1 Member Main Screen)

```
Enter your member id (M2305XXX): M2305419
Member ID found
Enter your password: 12345
Login successful
```

(Figure 4.3.3 Login)

Then the user will be able to login with their registered information such as (Figure 4.3.3 Login). Where it will prompt Member ID found and login successfully when the user entered the correct member id and password.

If the user were to enter the wrong password, Such as (Figure 4.3.4 Incorrect password)

```
Enter your member id (M2305XXX): m2305419
Member ID found
Enter your password: 12345678
Invalid password
Enter 1 to try again
Enter 2 to recover password
Enter your choice: |
```

(Figure 4.3.4 Incorrect password)

The system will prompt invalid passwords and prompt the user to enter either 1 or 2. The user will have to choose either 1 to reenter the password or 2 to recover their password. The user will have to enter both their member id and their password correctly to enter the menu. (Figure 4.3.6 Member Menu).

```
Enter your recovery password: 123
Password recovery successful
Enter your new password: 12345
```

(Figure 4.3.5 recovery)

(Figure 4.3.5 recovery) will be shown when users were to enter 2 as their choice on (Figure 4.3.4 Incorrect password). Here the user will have to input their recovery password that has been entered during the registration (Figure 4.3.2 Registration Screen) and will be able to enter their new password that will be used to login next time. After the user enters their new password. They will be prompted to (Figure 4.3.6 Member Menu)

```
-----
Member Menu
-----
1.Search
2.Change Information
3.Sign out
select one of the above:|
```

(Figure 4.3.6 Member Menu)

On (Figure 4.3.6 Member Menu) The system will prompt the user to search, change information or to sign out.

by entering 1,2 or 3. 1 will bring the user to the (Figure 4.3.7 Search and display).

Enter the member ID to search: M2305419

Member Information

ID: M2305419
name: Rafael
password: *****
gender: M
IC: 050721-14-1301
Contact: 0123456789

bookingID: MAX7

1. Search for another
2. Travel history
3. Back to menu

Enter your choice: 1

Enter the member ID to search: M2305100

M2305100 does not exist

Do you want to search again? (y/n): y|

(Figure 4.3.7 Search and display)

Here the system will prompt the user to enter the member id of what they want to search for and will be displayed on their screen. The system will display the ID, name, password, gender, IC contact and bookingID. The user will be able to search for another member id by choosing 1, search for travel history by pressing 2 or go back to menu.

Bookings:

Booking ID	Member ID	Booking Date	Departure Date	Coach	Quantity	Amount	Seats
MAX7	123	30/04/2024	123	E	2	180.00	1 3

Member Menu

1. Search
 2. Change Information
 3. Sign out
- select one of the above:|

(Figure 4.3.8 Travel history)

The travel history shows information such as the one on (Figure 4.3.8 Travel history). The booking Id during their past travels, their member id, booking date , the departure date , the coach, quantity, the price and the seat.

If the user were to choose 2 on (Figure 4.3.6 Member Menu) they will be brought to (Figure 4.3.9 Change Information)

```
-----  
Change Information  
-----  
1.Change Password  
2.Change Contact  
What do you want to change?: 1  
Change password selected  
Enter your current password: 12345  
Enter your new password: 123456  
Password updated successfully.
```

(Figure 4.3.9 Change Information)

The system will prompt either to change password or to change contact information and the user will have to pick either 1 or 2. When the user input 1 change password , it will prompt user to enter their old password then the new password they want to change it to. If password were to be incorrect, the system will prompt incorrect password.

```
-----  
Change Information  
-----  
1.Change Password  
2.Change Contact  
What do you want to change?: 2  
Change contact selected  
Enter your new contact (01XXXXXXXX): 0123456789|
```

When entering the 2nd option of the (Figure 4.3.9 Change Information), It will prompt the user to enter their new contact information.

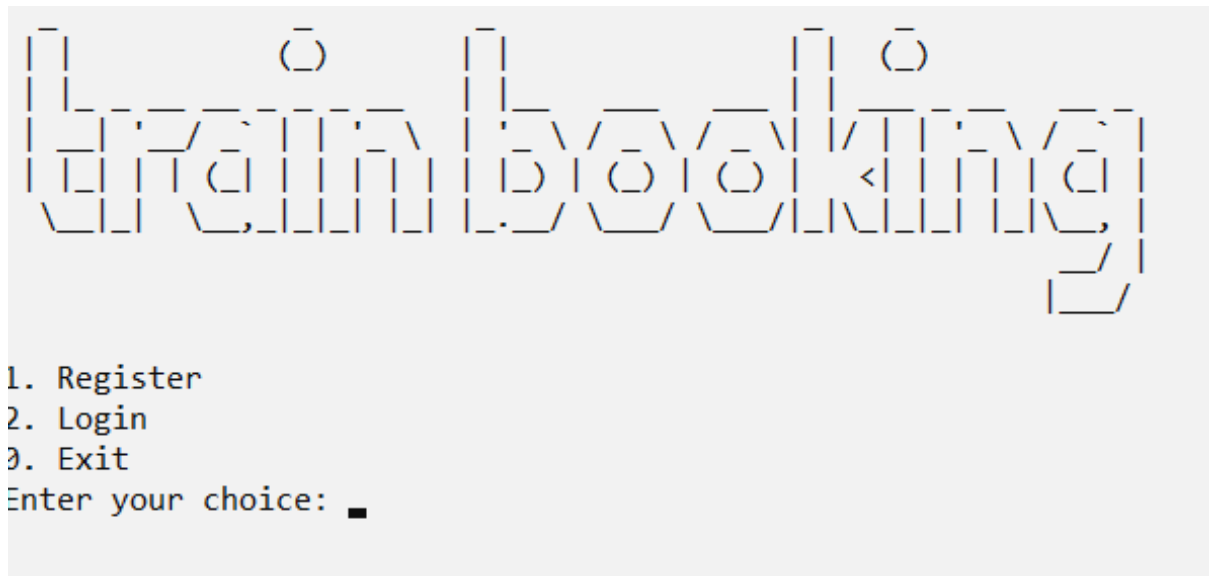
4.4 Ticket Booking Module by Lee Wen Bin

4.4.1 Brief Description

1. void printGreen(const char* text) = print the text in green color
2. void printRed(const char* text) = print the text in red color
3. void printCyan(const char* text) = print the text in cyan color
4. void printBlue(const char* text) = print the text in blue color
5. bool validateIC(const char* ic) = Check if the IC number length is 12 digits or not.
6. bool validatePhoneNumber(const char* phoneNumber) = Check if this phone number consists of 9 or 10 digits, and whether it starts with 01.
7. bool isSeatAvailable(const char(*seatNumbers)[5], int quantity, const char* newSeat) = check if a new seat number is available or not.
8. void bookingregister() = allow user to register into the system
9. void bookinglogin() = allow user to login into the system
10. int bookingrecovery(const char* memberID) = Allow users to recover their password if they forget it.
11. int bookingMain() = show menu bar such as register,login or exit.
12. void printCoach(int seats) = displays layouts for different types of seats, and it indicates which ones are economy class and which ones are first class.
13. bool validateAccountNumber(const char* accountNumber) = Check whether the length of the account number is 10 or not.
14. void selectSeat(struct Booking* bookings, const char* trainID) = Allow users to select their seat, quantity, and coach.
15. void payment(struct Booking* bookings, double price01, double price02, int quantity) = Display booking details and allow users to provide their bank details.
16. void payPending(const char* memberID) = Check if there are any booking statuses pending. If there are, allow users to provide their bank details.
17. void addBooking(const char* memberID) = Allow users to add a booking.
18. void displayBooking(const char* memberID) = Display all the booking details of the user.
19. void modifyBooking(const char* memberID) = After entering the booking ID, display a menu bar to allow users to modify their seats or coach.
20. void cancelBooking(const char* memberID) = After entering the booking ID, allow users to cancel their booking or not.
21. void searchBooking(const char* memberID) = Display a menu bar to allow users to search bookings by booking ID or train ID.
22. int bookingMenu(const char* memberID) = Display a menu bar with options such as add booking, search booking, modify booking, display all bookings, payment, cancel booking, and exit.
23. bool validateDate(const char* date) = checks the length, format, and validity of a date string.

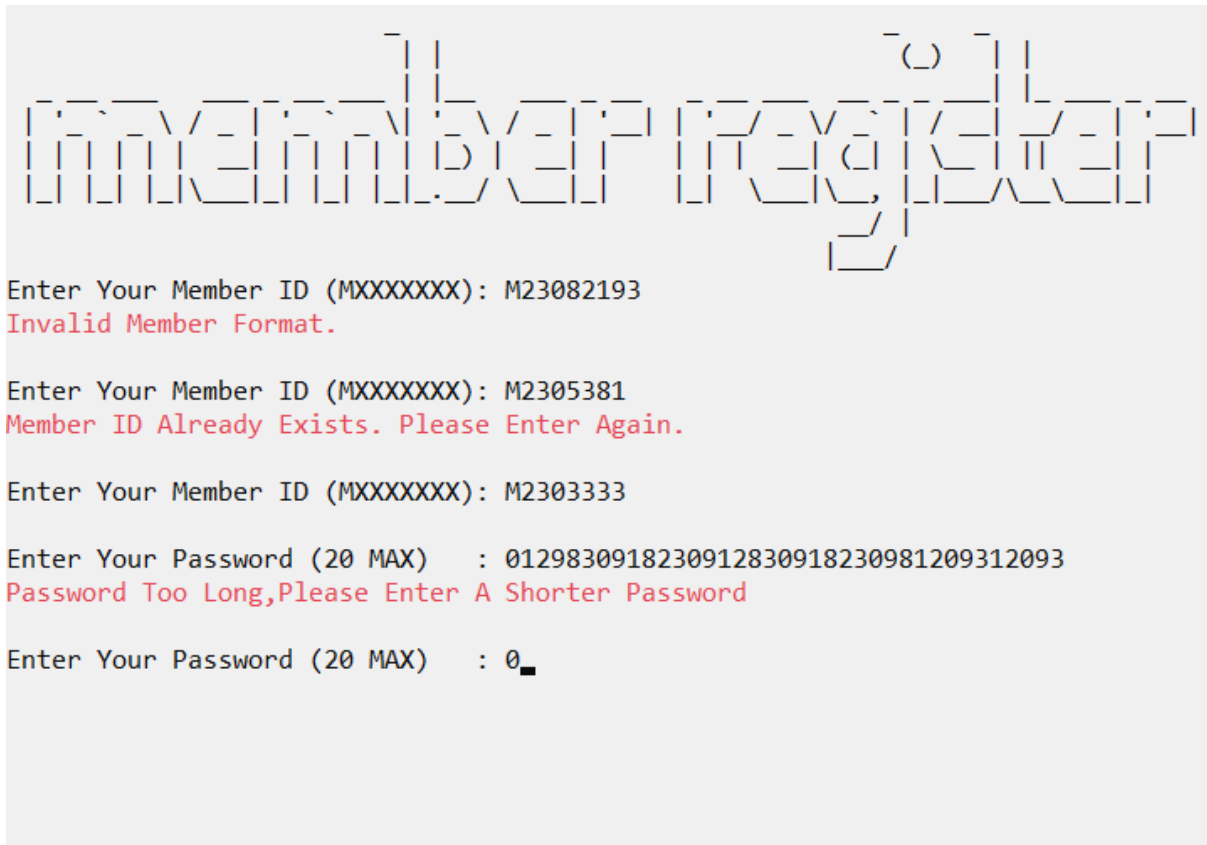
4.4.2 Outputs & File Contents

The interface instructs the user to input "1" to register an account, "2" to log in to an already-existing account, or "0" to go back to the main screen.

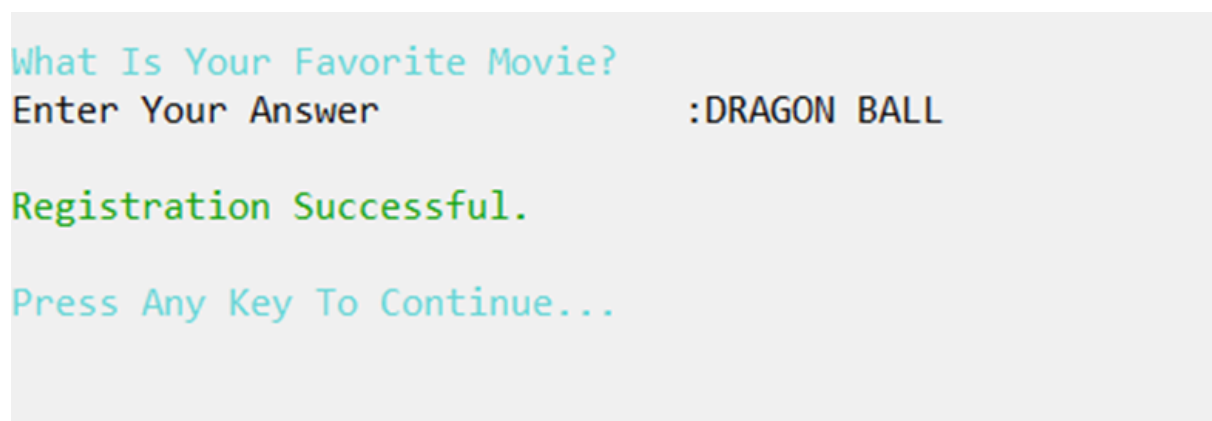


(Figure 4.4.1 Booking Main Screen)

The system allows users to enter their member ID. If the user enters a wrong format or if the member ID already exists, it will ask the user to enter it again. For the password, they cannot exceed 20 characters. If they do, an error message will be displayed, prompting the user to enter them again until valid inputs are provided.



The system allows the user to enter the answer for the security question when you forgot your password and need to recover it. Please enter the answer. After successful registration, a message will be displayed: 'Registration Successful.' You can press enter to return to the booking main screen (Figure 4.4.1).

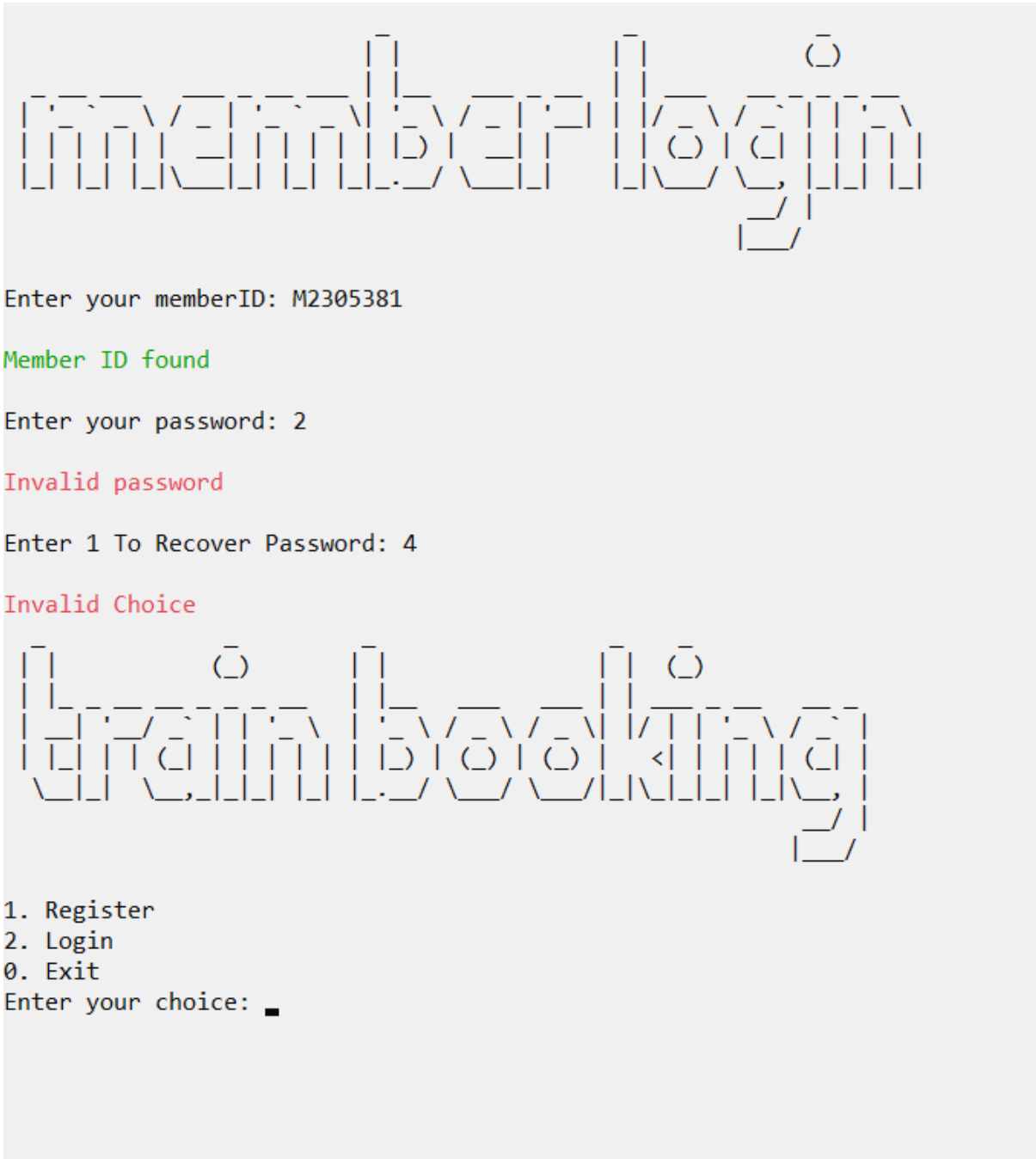


(Figure 4.4.2 Security Question)

If you enter '2' to log in to your account at the booking main screen (Figure 4.4.1), the system will allow you to enter your member ID. If the user enters a member ID that does not exist or is in an invalid format, the system will prompt 'Invalid member ID' and press enter to return to the booking main screen (Figure 4.4.1).



If you enter the wrong password, the system will allow the user to enter '1' to recover their password. If the user enters a number other than '1', I will display an invalid choice message, and return to the booking main screen (Figure 4.4.1).



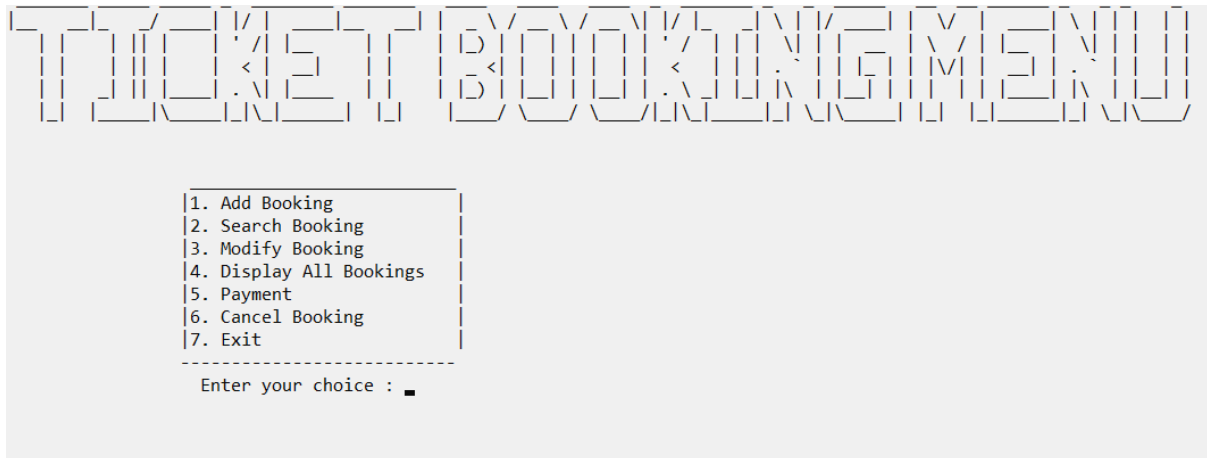
After entering '1', the user needs to input the answer based on the security question (Figure 4.4.2). If the entered answer is wrong, an 'Invalid Recovery Password or Member ID' message will be displayed, and the user can press enter to return to the booking main screen (Figure 4.4.1).



If the user enters the correct answer based on the security question (Figure 4.4.2), the system allows users to enter their new password. After that, it shows that the password recovery was successful and returns to the booking main screen.

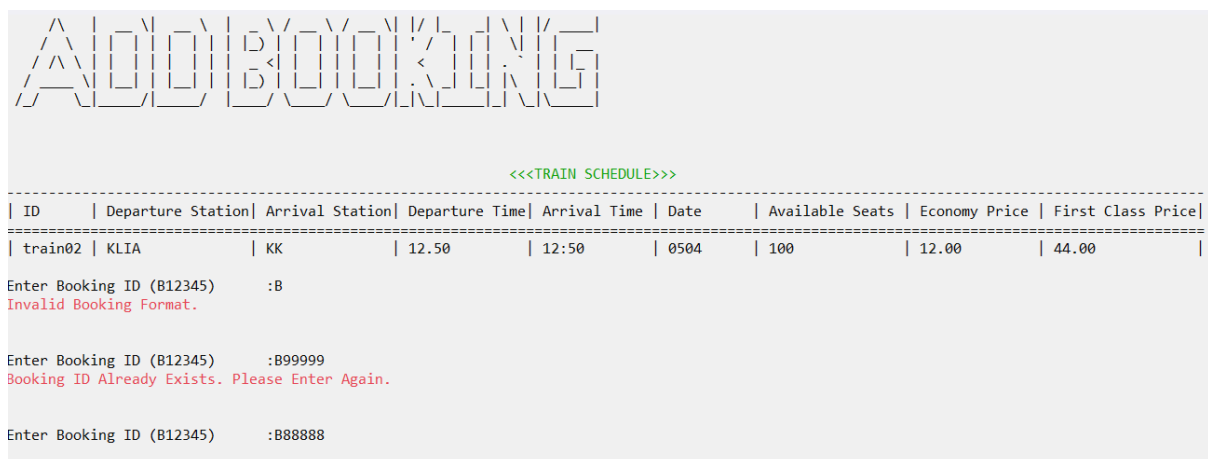


After logging in successfully, the system allows the user to input '1' to add a booking, '2' to search for a booking, '3' to modify a booking, '4' to display all of the user's bookings, '5' to proceed to payment, '6' to cancel the booking, or '7' to go back to the booking main screen (Figure 4.4.1).



(Figure 4.4.3 Booking Main Menu)

After the user inputs '1', the system will show the train schedule details. The user needs to enter the booking ID. If this booking ID already exists, the system will display 'Booking ID already exists, please enter again.' After that, the user needs to enter the train ID based on the train schedule. If the entered train ID is invalid, the system will display 'Invalid Train ID, please enter again.' The user's name cannot be longer than 20 characters, and the user's IC must be 12 digits long. If not, the user should enter them again. The phone number must start with '01' and be 9 to 10 digits long. The booking date must follow the specified format.



```
Enter Train ID          :t
Invalid Train ID, please enter again!

Enter Train ID          :train02

Enter Your Name (20 MAX) :LEE WEN BIN

Enter IC                : 0
Invalid IC. IC must be 12 digits. Please enter again.

Enter IC                :890890980890

Enter Phone             :1234567890
Invalid phone number. Must be 9 to 10 digits long and start with '01'.

Enter Phone             :0123456789

Enter Booking Date (YYYY-MM-DD):2222-22-22
Invalid date format. Please enter the date in YYYY-MM-DD format.

Enter Booking Date (YYYY-MM-DD):
```

If the train id you enter has more than 50 available seats, it will show the seats like (Figure 4.4.4). If the user enters one of the coaches A, B, C, or D, they can only enter a quantity of 1 or 4. If not, it will show 'Invalid quantity' and prompt the user to enter a value between 1 and 4.

```

<<< TRAIN SCHEDULE >>>
=====
| ID | Departure Station | Arrival Station | Departure Time | Arrival Time | Date | Available Seats | Economy Price | First Class Price |
=====
| train01 | KUALA LUMPUR | PAHANG | 08:00 AM | 11:00 AM | 30-4-2024 | 100 | 17.00 | 38.00 |
=====

=====
| SEAT NUMBER : | 01 02 03 04 05 06 07 08 09 10 | 11 12 13 14 15 16 17 18 19 20 |
|-----|-----|
| A | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
| B | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
| C | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
| D | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
| E | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
| F | 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 0 0 0 0 0 |
|-----|-----|

A - D is ECONOMY CLASS
E - F is FIRST CLASS

Enter Coach (A/B/C/D/E/F) : A

Enter Quantity : 5

Invalid quantity. Please enter a value between 1 and 4.

Enter Quantity : 2

Enter Seat Number 1 : 1

Enter Seat Number 2 : 2

```

(Figure 4.4.4)

If the train ID you enter has more than 50 available seats, the user can enter one of the coaches E or F. They can only enter a quantity of 1 or 2. If not, it will show 'Invalid quantity' and prompt the user to enter a value between 1 and 2. If the seat number is not an odd number, it will show 'Invalid number' and prompt the user to enter an odd number between 1 and 20.

```

<<< TRAIN SCHEDULE >>>
=====
| ID | Departure Station | Arrival Station | Departure Time | Arrival Time | Date | Available Seats | Economy Price | First Class Price |
=====
| train01 | KUALA LUMPUR | PAHANG | 08:00 AM | 11:00 AM | 30-4-2024 | 100 | 17.00 | 38.00 |
=====

SEAT NUMBER : 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20
|A| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
|B| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
|C| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
|D| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
|E| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
|F| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
=====
A - D is ECONOMY CLASS
E - F is FIRST CLASS

Enter Coach (A/B/C/D/E/F) : F
Enter Quantity : 3
Invalid quantity. Please enter a value between 1 and 2.
Enter Quantity : 2
Enter Seat Number 1 : 1
Enter Seat Number 2 : 4
Invalid seat number. Please enter an odd number between 1 and 20.
Enter Seat Number 2 : 3

```

If the train ID you enter has less than or equal to 50 available seats, it will display the seats like in Figure 1.5. If the user selects one of the coaches A, B, C, or D, they can only enter a quantity of 1 or 4. Otherwise, it will display 'Invalid quantity' and prompt the user to enter a value between 1 and 4. If the seat number is not between 1 and 10, it will display 'Invalid seat number' and prompt the user to enter a number between 1 and 10.

```

<<< TRAIN SCHEDULE >>>
=====
| ID | Departure Station | Arrival Station | Departure Time | Arrival Time | Date | Available Seats | Economy Price | First Class Price |
=====
| train02 | PAHANG | KUALA LUMPUR | 09:00 AM | 12:00 PM | 02-5-2024 | 50 | 17.00 | 38.00 |
=====

SEAT NUMBER : 01 02 03 04 05 06 07 08 09 10
|A| 0 0 0 0 0 0 0 0 0 0
|B| 0 0 0 0 0 0 0 0 0 0
|C| 0 0 0 0 0 0 0 0 0 0
|D| 0 0 0 0 0 0 0 0 0 0
|E| 0 0 0 0 0 0 0 0 0 0
|F| 0 0 0 0 0 0 0 0 0 0
=====
A - D is ECONOMY CLASS
E - F is FIRST CLASS

Enter Coach (A/B/C/D/E/F) : A
Enter Quantity : 2
Enter Seat Number 1 : 11
Invalid seat number. Please enter a number between 1 and 10.

```

(Figure 4.4.5)

If the train ID you enter has less than or equal to 50 available seats, it will display the seats like in Figure 4.4.5. If the user selects one of the coaches E or F, they can only enter a quantity of 1 or 2. Otherwise, it will display 'Invalid quantity' and prompt the user to enter a value between 1 and 2. If the seat number is not an odd number between 1 and 10, it will display 'Invalid seat number' and prompt the user to enter an odd number between 1 and 10.

ID	Departure Station	Arrival Station	Departure Time	Arrival Time	Date	Available Seats	Economy Price	First Class Price
train02	PAHANG	KUALA LUMPUR	09:00 AM	12:00 PM	02-5-2024	50	17.00	38.00


```

=====
|SEAT NUMBER : 01 02 03 04 05 06 07 08 09 10|
|A      | 0 0 0 0 0 0 0 0 0 0|
|B      | 0 0 0 0 0 0 0 0 0 0|
|C      | 0 0 0 0 0 0 0 0 0 0|
|D      | 0 0 0 0 0 0 0 0 0 0|
|E      | 0 0 0 0 0 0|
|F      | 0 0 0 0 0|
=====
A - D is ECONOMY CLASS
E - F is FIRST CLASS

Enter Coach (A/B/C/D/E/F) : F
Enter Quantity : 2
Enter Seat Number 1 : 11
Invalid seat number. Please enter an odd number between 1 and 10.
Enter Seat Number 1 :
  
```

If the user does not enter A, B, C, D, E, or F, display 'Invalid coach' and prompt the user to enter again.

ID	Departure Station	Arrival Station	Departure Time	Arrival Time	Date	Available Seats	Economy Price	First Class Price
train03	PENANG	IPOH	12:00 AM	04:00 PM	03-5-2024	100	17.00	38.00


```

=====
|SEAT NUMBER : 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20|
|A      | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0|
|B      | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0|
|C      | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0|
|D      | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0|
|E      | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0|
|F      | 0 0 0 0 0 0 0 0 0 0 0|
=====
A - D is ECONOMY CLASS
E - F is FIRST CLASS

Enter Coach (A/B/C/D/E/F) : V
Invalid Coach, Please Enter A, B, C, D, E, or F
  
```

This screen shows after the user selects their seat number. It displays booking details such as train ID, coach, quantity, class, price, and total amount. The user enters their bank name and bank account number; the account number must be a 10-digit number. If not, it will display 'Invalid account number' and prompt the user to enter it again. After entering the bank account number, the user can enter 'Y' to confirm payment or 'N' to cancel.

BOOKING SUMMARY

Train ID : train02
Coach : F
Quantity : 2
Class : First
Price per Ticket : RM 44.00
Total Amount Due : RM 88.00

Payment Details:

=====

Enter Bank Name : MAYBANK
Enter Bank Account Number : 0
Invalid account number. Please enter a 10-digit number.
Enter Bank Account Number : 0123456789

Enter 'Y' to confirm payment or 'N' to cancel: Y

Payment Confirmed. Thank you!

Booking added successfully.

Press Enter To Continue...

If the user enters 'N', the payment will be canceled, and the booking will remain pending.

BOOKING SUMMARY

Train ID : train02
Coach : F
Quantity : 2
Class : First
Price per Ticket : RM 44.00
Total Amount Due : RM 88.00

Payment Details:

=====

Enter Bank Name : MAYBANK
Enter Bank Account Number : 0123456789

Enter 'Y' to confirm payment or 'N' to cancel: N

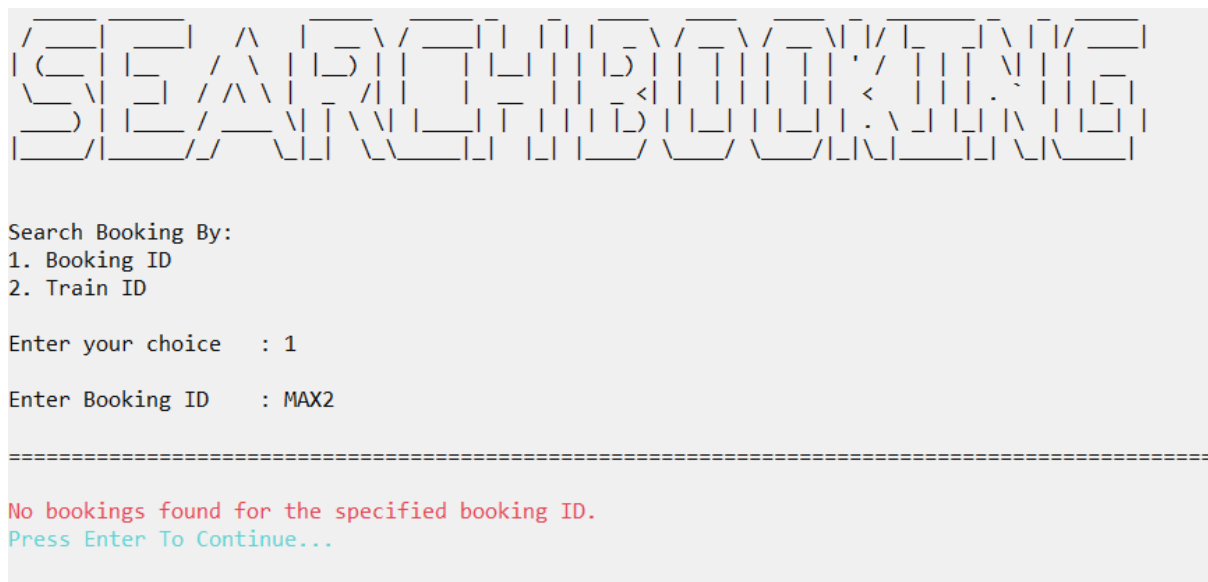
Payment Canceled. Booking Remains Pending.

Press Enter To Continue...■

If the user enters '2' in (Figure 4.4.3 Booking Main Menu), the system will show two options to the user. If the user enters '1' to search booking by Booking ID, or enters '2' to search booking by train ID.



If the user enters '1', but the booking ID they enter is wrong, it will show 'No bookings found for the specified booking ID', and the user can press Enter to return to the Booking Main Menu (Figure 4.4.3).



If the user enters '2', but the train ID they enter is wrong, it will show 'No bookings found for the specified train ID', and the user can press Enter to return to the Booking Main Menu (Figure 4.4.3).

```

SEATING
=====
Search Booking By:
1. Booking ID
2. Train ID

Enter your choice : 2

Enter Train ID : tain1

=====

No bookings found for the specified train ID.
Press Enter To Continue...

```

If the user enters the correct booking ID or train ID, the system will display booking details such as booking ID, member ID, train ID, booking date, departure date, bank name, bank number, amount, status, coach, quantity, and seat numbers.

```

SEATING
=====
Search Booking By:
1. Booking ID
2. Train ID

Enter your choice : 1

Enter Booking ID : B99999

=====
| Booking ID | Member ID | Train ID | Booking Date | Departure Date | Bank Name | Bank Number | Amount | Status | Coach | Quantity | Seat(s) |
=====
| B99999 | M2305381 | train02 | 2024-01-31 | 0504 | MAYBANK | 0123456789 | 88.00 | Booked | F | 2 | 1 3 |
=====

Press Enter To Continue...

```

SEARCHING

Search Booking By:
1. Booking ID
2. Train ID

Enter your choice : 2

Enter Train ID : train02

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B99999	M2305381	train02	2024-01-31	0504	MAYBANK	0123456789	88.00	Booked	F	2	1 3
B12345	M2305381	train02	2024-02-05	0504	MAYBANK	0123456789	88.00	Pending	F	2	1 3

Press Enter To Continue...

If the user enters '3' in (Figure 4.4.3 Booking Main Menu), the system will prompt the user to enter the booking ID to modify. If the booking ID is not found, it will display 'Booking not found', and the user can press enter to return to the booking menu screen.

MODIFY BOOKING

Enter Booking ID to modify: SLDKJA

Booking not found.

Press Enter To Continue...

If the booking ID is found, the booking details will be shown. When the user enters '1' to modify their seat number, they cannot enter a seat number that is already booked. Additionally, they can only enter a number between 1 and 10 if their coach is E or F; for coaches E or F, only odd numbers between 1 and 10 are allowed. When the user enters '2' to modify their coach, if their current coach is A, B, C, or D, they can only switch to A, B, C, or D. If their current coach is E or F, they can only switch to E or F.

MODIFY BOOKING

Booking found.

```
=====
Train ID      : train02
Member ID     : M2305381
Booking Date  : 2024-01-31
Departure Date : 0504
Seat Number(s) : 1 5
Coach        : F
Quantity     : 2
```

What do you want to modify?

1. Seat Number(s)
2. Coach

Enter your choice : 1

Enter new seat number(s) : 1

Seat is already booked. Enter a different seat number.

Enter new seat number(s) : 5

Seat is already booked. Enter a different seat number.

Enter new seat number(s) : 2

Invalid seat number. Please enter an odd number between 1 and 10.

Enter new seat number(s) : 3

Enter new seat number(s) : 7

Booking Modified Successfully.

Press any key to continue...■

MAYBOOKING

Booking found.

```
=====
Train ID           : train02
Member ID          : M2305381
Booking Date       : 2024-01-31
Departure Date     : 0504
Seat Number(s)     : 3 7
Coach              : F
Quantity           : 2
```

What do you want to modify?

1. Seat Number(s)
2. Coach

Enter your choice : 2

Enter new Coach : A

Invalid coach selection.Current coach is E or F.New coach must be E or F.Please enter a different coach.

Enter new Coach : E

Booking Modified Successfully.

Press any key to continue...

If the user enters '4' in (Figure 4.4.3 Booking Main Menu), the system will display booking details such as booking ID, member ID, train ID, booking date, departure date, bank name, bank number, amount, status, coach, quantity, and seat numbers.

ALLBOOKING

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B99999	M2305381	train02	2024-01-31	0504	MAYBANK	0123456789	88.00	Booked	E	2	3 7
B12345	M2305381	train02	2024-02-05	0504	MAYBANK	0123456789	88.00	Pending	F	2	1 3

Press Enter To Continue...

If the user enters '5' in (Figure 4.4.3 Booking Main Menu), the system will display booking details such as booking ID, member ID, train ID, booking date, departure date, bank name, bank number, amount, status, coach, quantity, and seat numbers. The user needs to enter their bank name and account number. The account number must be a 10-digit number. If not, it will display 'Invalid account number' and prompt the user to enter it again. After entering the bank account number, the user can enter 'Y' to confirm payment or 'N' to cancel. If 'Y' is entered, the user can proceed with other payments. If 'N' is entered, it will display 'Payment canceled, and booking not completed'.

PAYMENT

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B12345	M2305381	train02	2024-02-05	0504	MAYBANK	0123456789	88.00	Pending	F	2	1 3

Payment Details:

Enter Bank Name : MAYBANK

Enter Bank Account Number : 1234567890

Enter 'Y' to confirm payment or 'N' to cancel: Y

Payment Confirmed. Thank you!

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B33333	M2305381	train02	2024-07-01	0504	MAYBANK	9089089080	24.00	Pending	A	2	1 2

Payment Details:

Enter Bank Name : MAYBANK

Enter Bank Account Number : 1234567890

Enter 'Y' to confirm payment or 'N' to cancel: N

Payment Canceled. Booking not completed.

Press Enter To Continue...

If the user enters '6' in (Figure 4.4.3 Booking Main Menu), the system will prompt the user to enter the booking ID of the booking that needs to be canceled. If the user enters an invalid booking ID, it will display "Booking not found". If the booking ID is valid, it will display booking details such as booking ID, member ID, train ID, booking date, departure date, bank name, bank number, amount, status, coach, quantity, and seat numbers. The user can enter 'Y' to confirm the cancellation or 'N' to cancel the cancellation.

CANCEL BOOKING

Enter Booking ID to cancel : MAX87

Booking not found.

Press Enter To Continue...

CANCEL BOOKING

Enter Booking ID to cancel : B99999

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B99999	M2305381	train02	2024-01-31	0504	MAYBANK	0123456789	88.00	Booked	E	2	3 7

Enter 'Y' to confirm cancellation or 'N' to cancel: Y

Booking canceled.

Press Enter To Continue...

CANCEL BOOKING

Enter Booking ID to cancel : B99999

Booking ID	Member ID	Train ID	Booking Date	Departure Date	Bank Name	Bank Number	Amount	Status	Coach	Quantity	Seat(s)
B99999	M2305381	train02	2024-01-31	0504	MAYBANK	0123456789	88.00	Booked	E	2	3 7

Enter 'Y' to confirm cancellation or 'N' to cancel: N

Cancellation canceled. Booking not canceled.

Press Enter To Continue...