Tunku Abdul Rahman University of Management & Technology

AACS2204

Object-Oriented Programming Techniques

Assignment

2023/2024

Programme	:	Diploma In Computer Science
Tutorial Group	:	DCS 2 G8
Date Submitted to Tutor	:	28/9/2023

Team Members:

No	Student Name	Student ID
1.	Ang Wen Yee	2208802
2.	Chan Chee Hein	2208466
3.	Yap Kah Yong	2208522
4.	Tay Tem Hoe	2208594

No.	Team Member	Task(s) Allocated
1.	Yap Kah Yong	Class Related 1. Customer Class 2. Flight Class 3. Person Class Feature in-charge - Login - Register - Search Flight - Display Customer Information
2.	Chan Chee hein	Class Related 1. Staff class 2. Plane class 3. Flight class Feature in-charge - Staff Log in - Add Flight - Modify Flight - Delete Flight - View All Flight
3.	Ang Wen Yee	Class Related 1. Staff class 2. Seat Class 3. Ticket Class 4. Passenger Class 5. Customer Class Feature in-charge - Staff Sales Report - Seat Definition and display - Booking ticket proses - Display Ticket
4.	Tay Tem Hoe	Class Related 1. Payment Class Features in charge - Making Payment - Main menu - Combine

Coursework Declaration

We confirm that we have read and shall comply with all the terms and conditions of TAR University College's plagiarism policy.

We declare that this assignment is free from all forms of plagiarism and for all intents and purposes is our own properly derived work.

Signature	:	wenyee	Hein	KYYAP	Tay
Name	:	Ang Wen Yee	Chan Chee Hein	Yap Kah Yong	Tay Tem Hoe
Date	:	28/9/2023	28/9/2023	28/9/2023	28/9/2023

AACS2204 Object-Oriented Programming Technique – Assignment Feedback Form

	Student Names	**Total Marks**	**Contribution**	**Final Mark**
A	Ang Wen Yee		**25%**	
B	Chan Chee Hein		**25%**	
C	Yap Kah Yong		**25%**	
D	Tay Tem Hoe		**25%**	

Programme of study: D(DCS**2)**
Tutorial Group: Group 8

Note: • The maximum differences after contribution shall be capped at 10m. Refer to assignment specification for more detail.

CLO 2	Demonstrate an object-oriented program using appropriate programming fundamentals with regards to arrays, methods and exception handling. (P4, PLO3)

Section A: Program Output & Correctness (25 marks) – Individual Marks

Criteria	Weight	Max Marks	Excellent	Good	Fair	Poor	Very Poor	Marks (Point x Weight)	Remarks
			5	4	3	2	1		
Completeness of the program	**2.0**	**10m**	Completed 100% of the functional requirements. All operations are implemented correctly.	Completed all of the functional requirement but implemented with minor errors.	Completed most of the functional requirement but implemented with errors.	Completed < 50% of the functional requirement and < 50% of the operations implemented correctly	Did not complete any of the functional requirement at all	**Student Marks** A B C D	
Exception Handling	**1.0**	**5m**	Output is correct with comprehensive exception handling.	Output is correct with appropriate exception handling.	Output is correct with little exception handling.	Output is somewhat correct with little proper exception handling	Output is totally wrong with no proper exception handling.	**Student Marks** A B C D	

Design of the Output	**1.0**	**5m**	Excellent formatted output. Program displays more than expected	Good formatted output and program displays as expected.	Appropriate output design and display as expected.	Poorly designed output.	Minimum to no formatted output with messy display.	**Student Marks** A B C D	
Program Code Quality & Standard	**1.0**	**5m**	All identifiers strictly conform to the standard Java naming convention and all are meaningful	Most of the identifiers conform to the standard Java naming convention and are meaningful	Some of the identifiers conform to the standard Java naming convention and some are meaningful	Limited numbers of the identifiers conform to the standard Java naming convention or barely meaningful	All of the identifiers conform to the standard Java naming convention or not meaningful	**Student Marks** A B C D	
						Total Marks (25 marks):	A		
							B		
							C		
							D		

CLO 3	Analyse the concepts of encapsulation, inheritance and polymorphism based on programming problems. (C4, PLO2)

Section B: Object-Oriented Concept (45 marks) – Group Marks

Criteria	Weight	Max Marks	Excellent	Good	Fair	Poor	Very Poor	Marks (Point x Weight)	Remarks
			5	4	3	2	1		
Class Implementation	**1.0**	**5m**	Identified the proper classes, methods and attributes to solve particular problem.	Identified appropriate classes, methods and attributes to solve particular problem with minor errors.	Able to identify only some classes, methods and attributes to solve particular problem.	Inappropriate classes, methods and attributes are used.	Unable to show understanding on the usage of classes, methods and attributes.		
Object Implementation	**1.0**	**5m**	Able to create a structure of object collaborating among themselves to carried out task properly.	Able to create a structure of object collaborating among themselves to carried out task properly with little minor mistakes	Structure of collaborating object created with some mistakes	Structure of collaborating object created are barely correct.	Wrong structure of object collaboration like one object doing everything itself.		
Abstraction	**1.0**	**5m**	Define the class at the proper level of abstraction (abstract classes and methods).	Define the class at the proper level of abstraction with minor mistake	Classes defined at the proper level of abstractions with some mistakes	< 50% of correct abstraction is used	Lack of abstraction (abstract classes and methods).		

Encapsulation	**2.0**	**10m**	Completely correct implementation of encapsulation (private modifier, setter and getter methods).	Correct implementation of encapsulation with only some minor mistakes	Acceptable amount of correct implementation of encapsulation is applied in program	< 50% of correct implementation for encapsulation applied in program	Completely incorrect implementation of encapsulation (private modifier, setter and getter methods)		
Inheritance	**2.0**	**10m**	Completely correct use of inheritance (correct use of extends keyword, super & sub class)	Correct implementation of inheritance with only some minor mistakes	Acceptable amount of correct implementation of inheritance is applied in program	< 50% of correct implementation for inheritance applied in program	Completely incorrect use and implementation of inheritance		
Polymorphism	**2.0**	**10m**	Completely correct use and implementation of polymorphism. Methods toString() & equals() correctly overridden.	Correct implementation of polymorphism with only some minor mistakes	Acceptable amount of correct implementation of polymorphism is applied in program	< 50% of correct implementation for polymorphism applied in program	Completely incorrect use and implementation of polymorphism.		
							Total Marks (45 marks):		

CLO 3	Analyse the concepts of encapsulation, inheritance and polymorphism based on programming problems. (C4, PLO2)

Section C: Object-Oriented Design (30 marks) – Group Marks									
Criteria	**Weight**	**Max Marks**	**Excellent**	**Good**	**Fair**	**Poor**	**Very Poor**	**Marks (Point x Weight)**	**Remarks**
			5	**4**	**3**	**2**	**1**		
Cohesion	**1.0**	**5m**	The code demonstrates exceptional cohesion with all modules, classes, or functions have a clear and single responsibility.	The code demonstrates good cohesion overall where most modules, classes, or functions have a clear and single responsibility	Some modules, classes, or functions have a clear and single responsibility, but others may be slightly ambiguous	Few modules, classes, or functions have a clear and single responsibility.	Modules, classes represent more than one entity and lack of clear responsibility. Poor class cohesion.		
Coupling	**1.0**	**5m**	Minimal or no direct dependency between modules, classes, or functions. Coupling is effectively managed, resulting in highly maintainable and modular code	Most modules, classes, or functions have minimal direct dependencies.	Some modules, classes, or functions have moderate direct dependencies.	Many modules, classes, or functions have significant direct dependencies.	Modules, classes, or functions have excessive and tightly coupled dependencies which make module be harder to reuse or test.		
Association, Aggregation and Composition	**2.0**	**10m**	Associations between classes are accurately identified and properly established.	Associations between classes are generally identified and properly established.	Some associations between classes may be missing or improperly	Several associations between classes are missing or improperly established.	Completely incorrect use and implementation of association,		

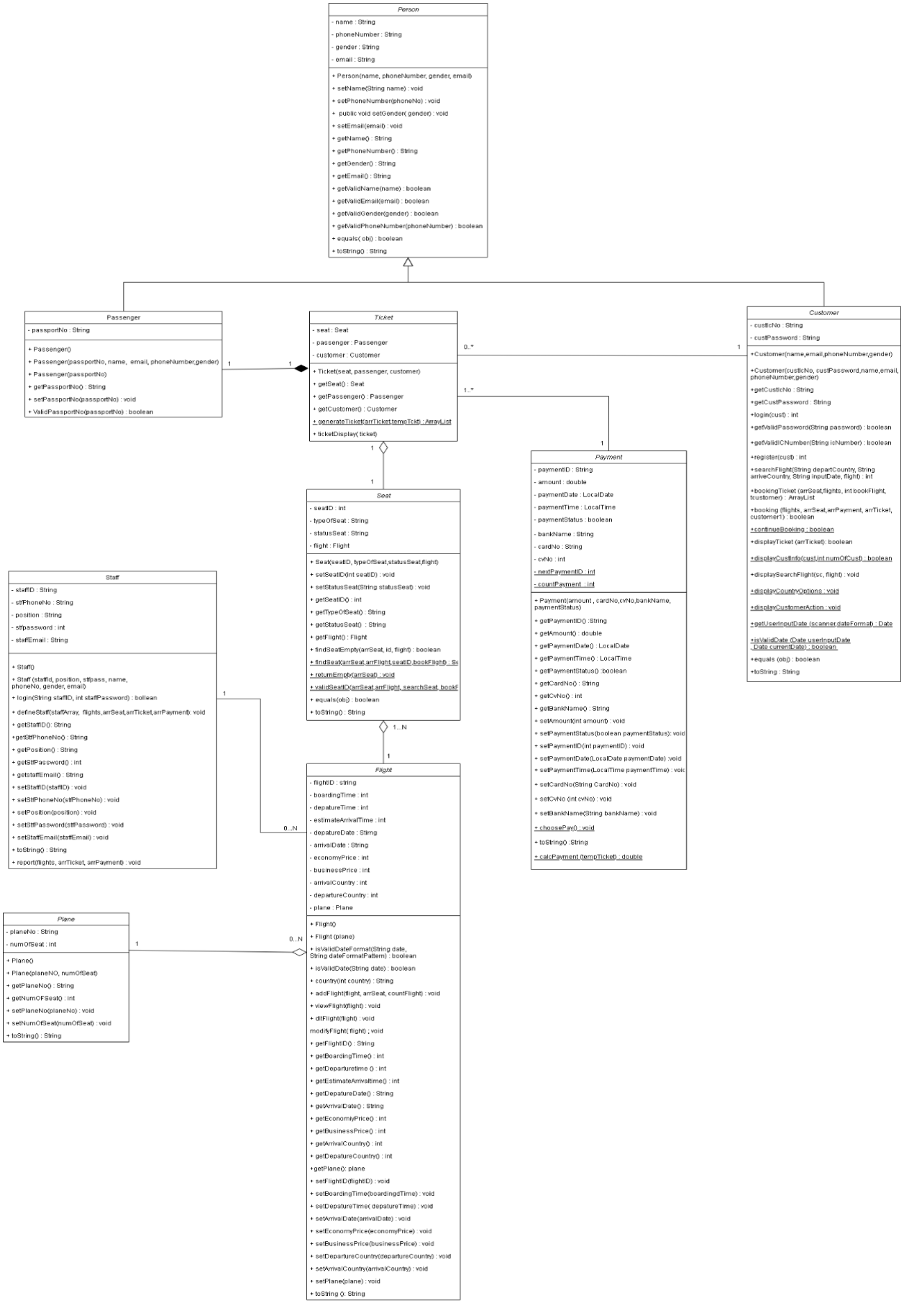
					established.		aggregation and composition relationship.		
UML Class Diagram	**2.0**	**10m**	The UML class diagram demonstrates excellent understanding and implementation. All classes, attributes, and methods are accurately represented with appropriate visibility, data types, and associations.	Most classes, attributes, and methods are accurately represented with appropriate visibility, data types, and associations.	Some classes, attributes, and methods may be missing or inaccurately represented, with visibility, data types, or associations not fully defined.	Many classes, attributes, and methods are missing or inaccurately represented, with visibility, data types, or associations not adequately defined.	Classes, attributes, and methods are missing or inaccurately represented, with visibility, data types, or associations lacking clarity or definition.		
							Total Marks (30 marks):		

Table of Contents

Assignment Idea Description

In this assignment, our group has developed an airline ticketing system named TWCY Airline Ticketing System. This system is designed to handle online ticketing operations. In our system, all the flights would be updated by staff; staff could modify the flight time, delete any flight, and view all the flight details as well. Following up with the customer module, customers will first register an account if they haven't, or they can directly log in if they have an account. After logging in, customers can view their information to secure themselves. They can search for any flight they want to book by following key points such as departure country, arrival country, and departure date. After searching, the customer can book the flight ticket by keying in the flight ID, and the system will show all the available seats, such as economy and business seats, with status on the flight. The customer can insert the seat number to book the seat and then key in their details, such as their name, passport number, and phone number. After booking a ticket, the system will ask if the customer wants to book another or not. If yes, continue booking. If not, the system will ask the user to confirm the booking. If yes, the system will jump to the payment part. In the payment, we will let the customer choose the bank that they want to use, the card number, and the CV number. After the customer confirms the payment, we will generate the ticket for them, and the customers can view the details of the ticket. The system will generate a report that can only be viewed by the staff, and the report will show the total number of ticket sales on each flight, the total number of ticket sales, and the company's total earnings on all flights.

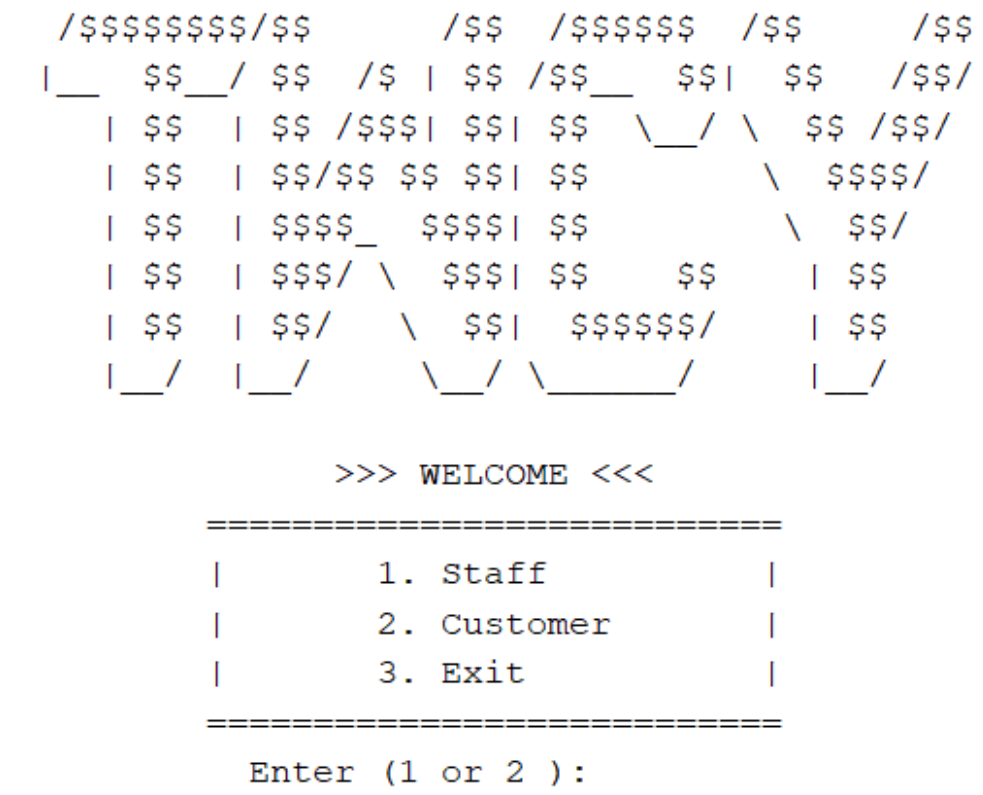
System UML Class Diagram



Sample Screenshot and Description of the system

Main Menu

Main Menu Design - Tay Tem Hoe



In the main menu, it will show the logo of our airline company “TWCY" The system will request that the user choose their identity from inputs 1 or 2 that are keyed in by the user. 1 is staff, 2 is customer, and 3 is exit.

Staff

Staff Login Module - Chan Chee Hein

```
>> Enter E to Exit <<
 ====================
 |    STAFF LOG IN   |
 ====================
Enter Staff ID: S001
Enter Password (5-digit): 11111

====================================
|            STAFF DETAILS          |
====================================
 Staff ID: S001
 Staff Position: Manager
 Staff name: Apple Doe
 Phone No: 015-5555555
 Gender: MALE
 Email: john@example.com
====================================
```

If a user enters number 1 at the main page the system will run the staff module. So if the user is a staff of the Airline organization he/she will have their own staff ID and password. In this part staff just key in their correct ID and password to log in the system. For example, like the picture above the staff enter “S001” and the correct password for the ID is “11111”. If the password is successfully validated the system will first show the staff details (staff id, position, name, phone number, gender, email). Besides, if the users wrongly prompt at the main page, they are not staff but if they accidentally went into the staff log in page they can enter “E” to back to the main page.

Staff Add Flight Module - Chan Chee Hein

```
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                    |          |STAFF MENU|          |
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                    |1. Add Flight                  |
                    |2. Delete Flight               |
                    |3. Modify Flight Time          |
                    |4. View All Flight             |
                    |5. View Sales Report           |
                    |0. To Exit                     |
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                    Enter your option: 1

                  ==================================
                  |              ADD FLIGHT          |
                  ==================================

                      Choose Country:
                       1.Japan
                       2.Malaysia
                       3.England
                       4.China
                       5.Australia
                  Departure Country: 1
                  Arrival Country: 2
                  Boarding Time(0100-2300): 0100
                  Departure Time(0100-2300): 0200
                  Estimate Arrival Time(0100-2300): 0900
                  Departure Date(dd/MM/yyyy): 12/12/2023
                  Arrival Date (dd/MM/yyyy): 12/12/2023
                  Economic Price: RM500
                  Business Price: RM1000
                  Plane No: PL008
                  Number of Seat: 36
Confirm to update this Flight?(Y=yes, N=no): Y
                    [Flight Updated...]
                  Need to Add Flight? (Y/N):
```

Staff menu number 1, after staff successfully log into the system they will come into the staff menu page. In this page they can simply use any function they want to. In this part is add flight, staff enter number 1 to go for add flight function. First of all, the system will let staff choose the departure and arrival country by using 1 to 5 selection staff just need to enter an integer. Next, the system will ask staff to enter the boarding, departure and estimate arrival time by using integer 100-2300. 100 meaning 1a.m. and 2400 meaning 11p.m., and staff cannot enter numbers that are not in the range of 100-2300. Next is the departure date and arrival date, staff must enter the correct date following the format given dd/mm/yyyy and can only enter the date after the current date. For example, today's date is 28/09/2023 staff can enter 29/09/2023 or the date after this date. Next is the economy and business seat pricing staff should enter a larger amount for business seat pricing if not not the system will show errors. Next is to enter the plane number. The staff should enter the correct plane number that is in the airport. Lastly enter the number of seats of the plane for this flight.

After entering all the flight details staff should enter “Y” to confirm the flight for customers to buy it.

If staff need to continue to add another flight, staff can enter “Y” after the updated confirmation, else the system will go back to the staff menu page.

Staff Delete Flight Module - Chan Chee Hein

```
Need to Add Flight? (Y/N): N
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  |          |STAFF MENU|        |
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  |1. Add Flight                 |
  |2. Delete Flight              |
  |3. Modify Flight Time         |
  |4. View All Flight            |
  |5. View Sales Report          |
  |0. To Exit                    |
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  Enter your option: 2
Enter the Flight ID : F011

=============== Flight =============

^^==================================^^
||               F011               ||
^^==================================^^
    Flight ID: F011
    Departure Country: Malaysia
    Arrival Country: Japan
    Boarding Time: 100
    Departure Time: 200
    Estimate Arrival Time: 900
    Departure Date: 12/12/2023
    Arrival Date: 12/12/2023
    Economy Price: RM 500.0
    Business Price: RM 1000.0
    Plane No: PL008
    Number of Seat: 36

   ==================================
Confirm delete?(Y=yes, N=no): y
  ![Flight have been deleted]!
```

Staff menu number 2, in this delete function staff can enter any flight they want to cancel. For example, if staff want to delete a flight of F011, staff will enter F011 after entering the system and will show all the details of the flight to let the staff check whether this flight is the one that the staff want to delete. After staff checked and confirmed the flight showing is the one he wanted to delete, staff should enter “Y” for the confirmation for delete. If successful, the delete system will show a successful message.

Staff Modify Flight Time Module - Chan Chee Hein

```
            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            |         |STAFF MENU|          |
            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            |1. Add Flight                  |
            |2. Delete Flight               |
            |3. Modify Flight Time          |
            |4. View All Flight             |
            |5. View Sales Report           |
            |0. To Exit                     |
            ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            Enter your option: 3
          Enter the Flight ID : F001

          =============== Flight =============

       ^^===================================^^
       ||                F001               ||
       ^^===================================^^
           Flight ID: F001
           Departure Country: Japan
           Arrival Country: Malaysia
           Boarding Time: 1200
           Departure Time: 1300
           Estimate Arrival Time: 2000
           Departure Date: 11/11/2023
           Arrival Date: 12/11/2023
           Economy Price: RM 200.0
           Business Price: RM 400.0
           Plane No: PL04
           Number of Seat: 32

          ====================================
            What you want to modify:
            1. Boarding Time
            2. Departure Time
            3. Estimate Arrival Time

          Select modify Time: 1

       => Current Boarding Time(0100-2300): 1200
          Enter New Boarding Time(0100-2300): 1230


          ========== Modified Flight ========

       ^^===================================^^
       ||                F001               ||
       ^^===================================^^
           Flight ID: F001
           Departure Country: Japan
           Arrival Country: Malaysia
           Boarding Time: 1230
           Departure Time: 1300
           Estimate Arrival Time: 2000
           Departure Date: 11/11/2023
           Arrival Date: 12/11/2023
           Economy Price: RM 200.0
           Business Price: RM 400.0
           Plane No: PL04
           Number of Seat: 32

          ====================================
       [Flight Boarding Time have been modify...]
Do you want to modify another Flight?(Y/y=yes, N/n=no): y
Enter the Flight ID : F001

          =============== Flight =============

       ^^===================================^^
       ||                F001               ||
       ^^===================================^^
           Flight ID: F001
           Departure Country: Japan
           Arrival Country: Malaysia
           Boarding Time: 1230
           Departure Time: 1300
           Estimate Arrival Time: 2000
           Departure Date: 11/11/2023
           Arrival Date: 12/11/2023
           Economy Price: RM 200.0
           Business Price: RM 400.0
           Plane No: PL04
           Number of Seat: 32

          ====================================
            What you want to modify:
            1. Boarding Time
            2. Departure Time
            3. Estimate Arrival Time

          Select modify Time: 2

          => Current Departure Time(0100-2300): 1300
             Enter New Departure Time(0100-2300): 1330


             ========== Modified Flight ========

          ^^===================================^^
          ||                F001               ||
          ^^===================================^^
              Flight ID: F001
              Departure Country: Japan
              Arrival Country: Malaysia
              Boarding Time: 1230
              Departure Time: 1330
              Estimate Arrival Time: 2000
              Departure Date: 11/11/2023
              Arrival Date: 12/11/2023
              Economy Price: RM 200.0
              Business Price: RM 400.0
              Plane No: PL04
              Number of Seat: 32

             ====================================
          [Flight Departure Time have been modify...]
Do you want to modify another Flight?(Y/y=yes, N/n=no): y
```

```
   Enter the Flight ID : F001

   =============== Flight =============

^^==================================^^
||               F001               ||
^^==================================^^
    Flight ID: F001
    Departure Country: Japan
    Arrival Country: Malaysia
    Boarding Time: 1230
    Departure Time: 1330
    Estimate Arrival Time: 2000
    Departure Date: 11/11/2023
    Arrival Date: 12/11/2023
    Economy Price: RM 200.0
    Business Price: RM 400.0
    Plane No: PL04
    Number of Seat: 32

   ==================================
     What you want to modify:
     1. Boarding Time
     2. Departure Time
     3. Estimate Arrival Time

   Select modify Time: 3

   => Current Estimate Arrival Time(0100-2300): 2000
      Enter New Estimate Arrival Time(0100-2300): 2030
```

Staff menu number 3, this is a modified function staff will enter the flight ID to modify their boarding time, departure and estimated arrival time. After entering the flight ID staff can choose to modify each of the times. After modification it will be updated to the system.

Staff View All Flight Module - Chan Chee Hein

```
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                |          |STAFF MENU|          |
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                |1. Add Flight                   |
                |2. Delete Flight                |
                |3. Modify Flight Time           |
                |4. View All Flight              |
                |5. View Sales Report            |
                |0. To Exit                      |
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                Enter your option: 4

=============== View All The Flight ===============


            ^^=====================================^^
            ||                F001                 ||
            ^^=====================================^^
                Flight ID: F001
                Departure Country: Japan
                Arrival Country: Malaysia
                Boarding Time: 1230
                Departure Time: 1330
                Estimate Arrival Time: 2030
                Departure Date: 11/11/2023
                Arrival Date: 12/11/2023
                Economy Price: RM 200.0
                Business Price: RM 400.0
                Plane No: PL04
                Number of Seat: 32

            ^^=====================================^^
            ||                F002                 ||
            ^^=====================================^^
                Flight ID: F002
                Departure Country: Japan
                Arrival Country: Malaysia
                Boarding Time: 1300
                Departure Time: 1400
                Estimate Arrival Time: 1800
                Departure Date: 11/11/2023
                Arrival Date: 14/11/2023
                Economy Price: RM 300.0
                Business Price: RM 600.0
                Plane No: PL05
                Number of Seat: 32

            ^^=====================================^^
            ||                F003                 ||
            ^^=====================================^^
                Flight ID: F003
                Departure Country: Japan
                Arrival Country: Malaysia
                Boarding Time: 1400
                Departure Time: 1500
                Estimate Arrival Time: 1900
                Departure Date: 11/11/2023
                Arrival Date: 13/11/2023
                Economy Price: RM 400.0
                Business Price: RM 700.0
                Plane No: PL03
                Number of Seat: 36
```

```
^^==================================^^
||              F004                ||
^^==================================^^
    Flight ID: F004
    Departure Country: Australia
    Arrival Country: England
    Boarding Time: 1200
    Departure Time: 1300
    Estimate Arrival Time: 2100
    Departure Date: 14/11/2023
    Arrival Date: 15/11/2023
    Economy Price: RM 500.0
    Business Price: RM 800.0
    Plane No: PL09
    Number of Seat: 32

^^==================================^^
||              F005                ||
^^==================================^^
    Flight ID: F005
    Departure Country: China
    Arrival Country: Australia
    Boarding Time: 1300
    Departure Time: 1600
    Estimate Arrival Time: 2300
    Departure Date: 15/11/2023
    Arrival Date: 16/11/2023
    Economy Price: RM 600.0
    Business Price: RM 900.0
    Plane No: PL02
    Number of Seat: 32

^^==================================^^
||              F006                ||
^^==================================^^
    Flight ID: F006
    Departure Country: Australia
    Arrival Country: Japan
    Boarding Time: 1400
    Departure Time: 1500
    Estimate Arrival Time: 1900
    Departure Date: 16/12/2023
    Arrival Date: 17/12/2023
    Economy Price: RM 700.0
    Business Price: RM 1000.0
    Plane No: PL01
    Number of Seat: 36

^^==================================^^
||              F007                ||
^^==================================^^
    Flight ID: F007
    Departure Country: China
    Arrival Country: England
    Boarding Time: 1200
    Departure Time: 1400
    Estimate Arrival Time: 2000
    Departure Date: 17/12/2023
    Arrival Date: 18/12/2023
    Economy Price: RM 100.0
    Business Price: RM 400.0
    Plane No: PL05
    Number of Seat: 32

^^==================================^^
||              F008                ||
^^==================================^^
    Flight ID: F008
    Departure Country: Australia
    Arrival Country: Japan
    Boarding Time: 1300
    Departure Time: 1400
    Estimate Arrival Time: 2200
    Departure Date: 10/12/2023
    Arrival Date: 11/12/2023
    Economy Price: RM 300.0
    Business Price: RM 600.0
    Plane No: PL11
    Number of Seat: 36

^^==================================^^
||              F009                ||
^^==================================^^
    Flight ID: F009
    Departure Country: Japan
    Arrival Country: Australia
    Boarding Time: 1200
    Departure Time: 1500
    Estimate Arrival Time: 2100
    Departure Date: 13/12/2023
    Arrival Date: 14/12/2023
    Economy Price: RM 200.0
    Business Price: RM 500.0
    Plane No: PL01
    Number of Seat: 36

^^==================================^^
||              F010                ||
^^==================================^^
    Flight ID: F010
    Departure Country: Malaysia
    Arrival Country: Malaysia
    Boarding Time: 1100
    Departure Time: 1200
    Estimate Arrival Time: 2100
    Departure Date: 20/12/2023
    Arrival Date: 21/12/2023
    Economy Price: RM 100.0
    Business Price: RM 400.0
    Plane No: PL07
    Number of Seat: 32

======= End View Flight =================
```

Staff menu number 4, in this function staff can view all the flights that have been updated by any of the staff. The system will display all the updated information of the flight in this function.

Staff View Sales Report Module - Ang Wen Yee

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
|         |STAFF MENU|            |
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
|1. Add Flight                    |
|2. Delete Flight                 |
|3. Modify Flight Time            |
|4. View All Flight               |
|5. View Sales Report             |
|0. To Exit                       |
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter your option: 5

                ===================================
                |            SALES REPORT          |
                ===================================


 Flight ID           Total Seat       Ticket Sales     From       -----> To
================================================================================
 F001                32               0                Japan      -----> Malaysia
--------------------------------------------------------------------------------
 F002                32               0                Japan      -----> Malaysia
--------------------------------------------------------------------------------
 F003                36               0                Japan      -----> Malaysia
--------------------------------------------------------------------------------
 F004                32               0                Australia  -----> England
--------------------------------------------------------------------------------
 F005                32               0                China      -----> Australia
--------------------------------------------------------------------------------
 F006                36               0                Australia  -----> Japan
--------------------------------------------------------------------------------
 F007                32               0                China      -----> England
--------------------------------------------------------------------------------
 F008                36               0                Australia  -----> Japan
--------------------------------------------------------------------------------
 F009                36               0                Japan      -----> Australia
--------------------------------------------------------------------------------
 F010                32               0                Malaysia   -----> Malaysia
--------------------------------------------------------------------------------
 Total Number of Ticket Sales :     0


 Payment ID   Amount           Payment Date     Bank Name
============================================================

    Dont have any payment be made by the customer.....
```

If the staff input 5 in the staff menu, the system will go into display sales report module.This module will display the details of every flight including the flight id, total seat, total number of ticket sold , departure and arrival country.At the end, the system will display the total number of ticket sales.This module also display the payment details such as payment id ,amount of each payment,payment date and bank that the customer used.Because of there are not any payment be made yet,so the system display the “Dont have any payment be made by the customer….” to represent there are not any payment be made.

```
                    ====================================
                    |            SALES REPORT          |
                    ====================================
```

Flight ID	Total Seat	Ticket Sales	From	----->	To
F001	32	3	Japan	----->	Malaysia
F002	32	0	Japan	----->	Malaysia
F003	36	0	Japan	----->	Malaysia
F004	32	0	Australia	----->	England
F005	32	0	China	----->	Australia
F006	36	1	Australia	----->	Japan
F007	32	0	China	----->	England
F008	36	0	Australia	----->	Japan
F009	36	0	Japan	----->	Australia
F010	32	0	Malaysia	----->	Malaysia

Total Number of Ticket Sales : 4

Payment ID	Amount	Payment Date	Bank Name
1001	800.00	2023-09-28	MayBank
1002	200.00	2023-09-28	Hong Leong Bank
1003	700.00	2023-09-28	MayBank

The total Sales are RM 1700.00

This image above shows the sales report after the customer has booked the flight ticket. As normal,the system will display the details of each flight and total number of ticket sales.

For payment, the system displays the details of every payment that has been made by the customer and displays the total sales in the end.

Customer

Customer Login Module - Yap Kah Yong

```
          ==================
          |    CUSTOMER    |
          ==================
Do you have any Account?(y=Yes/n=No) > y
  ^^=======================^^
  ||     Log In Module     ||
  <<=======================>>
Enter I/C number : 030908-10-1983
Enter password to Log In: 13579138
    -->Log In Successful<--

[...Kim Ho Welcome back to Airline System....]
```

When a customer enters our airline ticketing system, the customer has to answer whether they have an existing account or not. If they already have an account they may use their previous registered ic number and password to login our airline ticketing system. If they decide to logout they are also able to login again to our airline ticketing system

Customer Registration Module - Yap Kah Yong

```
                  Enter (1 or 2 ):2
                     ==================
                     |    CUSTOMER    |
                     ==================
               Do you have any Account?(y=Yes/n=No) > n
                 ^^=======================^^
                 ||    REGISTER Module    ||
                 <<=======================>>
>>*=**==**==**==**==**==[Register Your Name]=**==**==**==**==**==**==**<<
          Enter your name (Only Letter and Space): Tay Tem Hoe

>>=**==**==**==**==**==[Register I/C Number]=**==**==**==**==**==**==**<<
          Enter I/C number (Format: XXXXXX-XX-XXXX): 040616-14-9094

>>=**==**==**==**==**==[Register Your Gender]=**==**==**==**==**==**==*<<
          Enter your gender (Male/Female): Male

>>**==**==**==**==**==[Register Email Address]=**==**==**==**==**==**==<<
          Enter your email address (e.g: 123@gmail.com): tayth@gmail.com

>>=**==**==**==**==**==[Register Phone Number]=**==**==**==**==**==**==<<
          Enter your phone number (e.g: XXX-XXXXXXXX): 011-14143434

>>=**==**==**==**==**==[Register With Password]=**==**==**==**==**==**=<<
          Enter your password(8 digit): 87654321

>>*==**==**==**==**==[Glad To Become Part Of Us]=**==**==**==**==**==**<<
              -->Successfully Register Account...<--
               ^^=======================^^
               ||     Log In Module     ||
               <<=======================>>
              Enter I/C number : 040616-14-9094
              Enter password to Log In: 87654321
                  -->Log In Successful<--

          [...Tay Tem Hoe Welcome back to Airline System....]

              ^^==============================^^
              ||        Customer Action       ||
              ^^==============================^^
              ||  1. Search Flight            ||
              ||  2. View Customer Infomation ||
              ||  3. Book Flight Ticket       ||
              ||  4. Display Flight Ticket    ||
              ||  5. Logout to main menu      ||
              ^^==============================^^
             Choose one action from the list >
```

When a customer enters our airline ticketing system, the customer has to answer whether they have an existing account or not. If they don't have an account they have to register an account to login to our system. After they successfully register an account, they can use their registered ic number and password to login to our airline ticketing system.

Customer Search Flight Module - Yap Kah Yong

```
^^==============================^^
||        Customer Action       ||
^^==============================^^
||  1. Search Flight            ||
||  2. View Customer Infomation ||
||  3. Book Flight Ticket       ||
||  4. Display Flight Ticket    ||
||  5. Logout to main menu      ||
^^==============================^^
Choose one action from the list > 1

  ^^========================^^
  ||  Search Flight Module  ||
  <<========================>>
^^==========*****==^^        ^^==========*****==^^
|| Departure Country || -----> ||  Arrival Country  ||
^^==========*****==^^  Both  ^^==========*****==^^
||   1) Japan        <> Choose <>   1) Japan        ||
<>   2) Malaysia     || -----> ||   2) Malaysia     <>
||   3) England      <>  One   <>   3) England      ||
<>   4) China        || Contry ||   4) China        <>
||   5) Australia    <> -----> <>   5) Australia    ||
^^==========*****==^^        ^^==========*****==^^
                    <====^^====>
                    || Step 1 ||
                    <====^^====>
     Select one departure country to search (1-5) : 1
Confirm [Japan] As Departure Country?(y=Yes/n=No) : y

                    <=====**====>
                    <> Step 2 <>
                    <=====**====>
       Select one arrival country to search (1-5) : 2
Confirm [Malaysia] As Arrival Country?(y=Yes/n=No) : y

                    <====::====>
                    <> Step 3 <>
                    <====::====>
          ==================================
          || Current Date Time: 28/09/2023  ||
          ==================================
      Input a Departure Date to search :11/11/2023
         Input Date is Valid.
```

```
<>==********======<^_^_^_^_^_^>==========<>
|||        Flight Search Result       |||
<>==********======<^_^_^_^_^_^>==========<>
=========================================
||          Flight ID : F001           ||
=========================================
||  DepartTime     --->    ArriveTime  ||
||    1330                    2030     ||
||                 --->                ||
|| DepartCountry         ArriveCountry ||
||    Japan        --->     Malaysia   ||
=========================================
||      Economy Price : 200.00         ||
=========================================
||     Business Price : 400.00         ||
=========================================

=========================================
||          Flight ID : F002           ||
=========================================
||  DepartTime     --->    ArriveTime  ||
||    1400                    1800     ||
||                 --->                ||
|| DepartCountry         ArriveCountry ||
||    Japan        --->     Malaysia   ||
=========================================
||      Economy Price : 300.00         ||
=========================================
||     Business Price : 600.00         ||
=========================================

=========================================
||          Flight ID : F003           ||
=========================================
||  DepartTime     --->    ArriveTime  ||
||    1500                    1900     ||
||                 --->                ||
|| DepartCountry         ArriveCountry ||
||    Japan        --->     Malaysia   ||
=========================================
||      Economy Price : 400.00         ||
=========================================
||     Business Price : 700.00         ||
=========================================


 3 flight record  successfully found on [11/11/2023]
       Continue Search Flight(y=Yes/n=No) :
```

After login to our airline ticketing system, it will lead customers to choose an action from the action list. If the customer selects 1 (search flight) from the action list, it will start prompting the customer to input departure country, arrival country, and departure date. After that, the system will generate a list of flight details (including the staff added flight) based on the customer requirement. End of this module, it will also display the total record that has been found in the flight information (including the staff added flight).

Customer View Information Module - Yap Kah Yong

```
^^==============================^^
||        Customer Action       ||
^^==============================^^
||  1. Search Flight            ||
||  2. View Customer Infomation ||
||  3. Book Flight Ticket       ||
||  4. Display Flight Ticket    ||
||  5. Logout to main menu      ||
^^==============================^^
Choose one action from the list > 2

  ^^============================^^
  || Customer Infomation Module ||
  <<============================>>
  Name : Tay Tem Hoe
  Gender : Male
  Email Address : tayth@gmail.com
  Phone Number : 011-14143434
  Customer I/C Number : 040616-14-9094
  Customer Password : 87654321
```

Attempting to reach this module, customers have to choose 2 (Customer information) from the customer action list. Therefore, the system will generate the related recorded customer information to them.

Customer Display Seat Module - Ang Wen Yee

```
                +=======================================+
                |                                       |
                |              BOOKING TICKET           |
                |                                       |
                +=======================================+


              Enter the Flight ID : F001

                   o = Economy Seat    x = Booked Seat  * = Business Seat
            ============================================================
                  0    1        2    3
                 ------------------------
              1|   *    *        *    *
              2|   o    o        o    o
              3|   o    o        o    o
              4|   o    o        o    o
              5|   o    o        o    o
              6|   o    o        o    o
              7|   o    o        o    o
              8|   o    o        o    o
            ============================================================
Continue to book ticket on this flight?(Y=yes/N=no) :y
                 Example :
                 Seat ID = 10(1 = row , 0 = column)
```

```
Are you continue to booking ? (Y = yes / N = no) : y
  +=========================================+
  |                                         |
  |               BOOKING TICKET            |
  |                                         |
  +=========================================+


  Enter the Flight ID : F006

       o = Economy Seat    x = Booked Seat  * = Business Seat
=================================================================
     0    1        2    3
    -------------------------
 1|   *    *        *    *
 2|   o    o        o    o
 3|   o    o        o    o
 4|   o    o        o    o
 5|   o    o        o    o
 6|   o    o        o    o
 7|   o    o        o    o
 8|   o    o        o    o
 9|   o    o        o    o
=================================================================
Continue to book ticket on this flight?(Y=yes/N=no) :y
    Example :
    Seat ID = 10(1 = row , 0 = column)
```

```
Are you continue to booking ? (Y = yes / N = no) : y
  +========================================+
  |                                        |
  |               BOOKING TICKET           |
  |                                        |
  +========================================+


  Enter the Flight ID : F001

       o = Economy Seat    x = Booked Seat  * = Business Seat
=============================================================
     0    1        2    3
    ------------------------
 1|   *    x        x    *
 2|   o    o        o    o
 3|   o    o        o    o
 4|   o    o        o    o
 5|   o    o        o    o
 6|   o    o        o    o
 7|   o    o        o    o
 8|   o    o        o    o
=============================================================
Continue to book ticket on this flight?(Y=yes/N=no) :y
    Example :
    Seat ID = 10(1 = row , 0 = column)
```

In the first, customer will input the flight id to book the seat of the flight.Then the system will display all the seat status (o for economy seat,* for business seats and x for booked seats).The third image shows the seat(seat id = 11 and 12) has been booked in the first booking.
After displaying the seat status, the system will ask confirmation for the customer to select another flight to book a flight ticket.If customer input y , the system will continue to book a ticket module.

Customer Booking Ticket Module - Ang Wen Yee

```
Enter your Seat ID                  : 11
Enter the Passenger Name            : Tay
Enter the Passenger Passport Number : M12345678
Enter the Passenger Phone Number    : 011-13133434


Are you want to buy another ticket in the same Flight?(Y/N) :y
  Example :
  Seat ID = 10(1 = row , 0 = column)

Enter your Seat ID                  : 12
Enter the Passenger Name            : Hoe
Enter the Passenger Passport Number : M87654321
Enter the Passenger Phone Number    : 012-2323233


Are you want to buy another ticket in the same Flight?(Y/N) :n
```

```
Enter your Seat ID                  : 21
Enter the Passenger Name            : Yang
Enter the Passenger Passport Number : M98765432
Enter the Passenger Phone Number    : 016-5765666


Are you want to buy another ticket in the same Flight?(Y/N) :n
```

```
Enter your Seat ID                  : 90
Enter the Passenger Name            : yu
Enter the Passenger Passport Number : K12345678
Enter the Passenger Phone Number    : 012-6776767


Are you want to buy another ticket in the same Flight?(Y/N) :N
```

In the booking ticket module, the system will ask customer to input the seat id that want to book,if the seat is selected in the same booking or booked already in the previous flight, the system will show error message.If the seat id is a available seat, the system will continue and ask customer to input the passenger information.After input all the required information,the

system will ask customer to book another ticket in the same flight.If yes,it will loop the booking ticket(1st image).If not, the system will continue to the payment module.

Customer Payment Module - Tay Tem Hoe

```
Confirm Booking(yes=Y /no=N) :y


Total Payment Amount: RM 800.00

        ============================
        ||          Bank          ||
        ============================
        ||  1. Public Bank        ||
        ||  2. MayBank            ||
        ||  3. Hong Leong Bank    ||
        ============================
        Chosee Bank(1 to 3) :2
        Enter the card number :1234567812345678
        Enter the CV Num :123
Confirm Payment(yes=y /no=n) :y

================================
       MayBank
       Payment Success!!!
|Payment ID: 1001              |
|Date: 2023-09-28              |
|Time: 20:22:48.242525900      |
|Total Amount: RM 800.0        |
|Card Number: 1234567812345678|
|CV number: 123                       |
================================


Confirm Booking(yes=Y /no=N) :y


Total Payment Amount: RM 200.00

        ============================
        ||          Bank          ||
        ============================
        ||  1. Public Bank        ||
        ||  2. MayBank            ||
        ||  3. Hong Leong Bank    ||
        ============================
        Chosee Bank(1 to 3) :3
        Enter the card number :1234567812345678
        Enter the CV Num :456
Confirm Payment(yes=y /no=n) :y

================================
       Hong Leong Bank
       Payment Success!!!
|Payment ID: 1002              |
|Date: 2023-09-28              |
|Time: 20:25:59.532029100      |
|Total Amount: RM 200.0        |
|Card Number: 1234567812345678|
|CV number: 456                      |
================================
```

```
Confirm Booking(yes=Y /no=N) :Y


Total Payment Amount: RM 700.00

        ==========================
        ||         Bank          ||
        ==========================
        ||  1. Public Bank       ||
        ||  2. MayBank           ||
        ||  3. Hong Leong Bank    ||
        ==========================
         Chosee Bank(1 to 3) :2
         Enter the card number :8765432187654321
         Enter the CV Num :567
Confirm Payment(yes=y /no=n) :y

================================
       MayBank
       Payment Success!!!
|Payment ID: 1003             |
|Date: 2023-09-28             |
|Time: 20:27:34.531956 |
|Total Amount: RM 700.0       |
|Card Number: 8765432187654321|
|CV number: 567                       |
================================
```

Payment will exist when the customer finishes booking the ticket. Before payment starts, we will ask the customer to confirm the booking. If not, the booking is canceled. If yes, the payment will start and display the total amount of all tickets that he or she booked. Then, we will ask the customer to choose the bank that he wants to use to make payments by keying in 1 to 3, and that has 3 options, such as 1 (PublicBank), 2 (MayBank), and 3 (Hong Leong Bank). The second will ask the customer to key in their card number and CV number. After that, we will ask the customer to confirm the payment. If yes, the system will generate a receipt for the customer. If not, the payment will be canceled.

The Booking cancelled

```
Confirm Booking(yes=Y /no=N) :n
Booking was cancelled...
```

The Payment cancelled

```
Confirm Payment(yes=y /no=n) :n
Payment Cancelled,see you next time. Thank you
```

Customer Display Ticket Module - Ang Wen Yee

```
Choose one action from the list > 4
   +=========================================+
   |                                         |
   |               DISPLAY TICKET            |
   |                                         |
   +=========================================+


                        Ticket No. 1
<<---------------------------(1)---------------------------->>
     Name       : Tay
     Passport   : M12345678
     From - To  : Japan          --------->    Malaysia
     Date       : 11/11/2023     --------->    12/11/2023
     Time       : 1330           --------->    2030

     Flight    Seat    Class          Board Till
     --------  -----   ----------     ----------
     F001      11      business       1230

<<---------------------------(1)---------------------------->>


                        Ticket No. 2
<<---------------------------(2)---------------------------->>
     Name       : Hoe
     Passport   : M87654321
     From - To  : Japan          --------->    Malaysia
     Date       : 11/11/2023     --------->    12/11/2023
     Time       : 1330           --------->    2030

     Flight    Seat    Class          Board Till
     --------  -----   ----------     ----------
     F001      12      business       1230

<<---------------------------(2)---------------------------->>
```

```
                        Ticket No. 3
<<--------------------------(3)--------------------------->>
     Name       : Yang
     Passport   : M98765432
     From - To  : Japan          --------->    Malaysia
     Date       : 11/11/2023     --------->    12/11/2023
     Time       : 1330           --------->    2030

     Flight    Seat    Class          Board Till
     --------  -----   ----------     ----------
     F001      21      economy        1230

<<--------------------------(3)--------------------------->>


                        Ticket No. 4
<<--------------------------(4)--------------------------->>
     Name       : yu
     Passport   : K12345678
     From - To  : Australia      --------->    Japan
     Date       : 16/12/2023     --------->    17/12/2023
     Time       : 1500           --------->    1900

     Flight    Seat    Class          Board Till
     --------  -----   ----------     ----------
     F006      90      economy        1400

<<--------------------------(4)--------------------------->>


Enter any key to back to main menu : 1
              ^^==============================^^
              ||        Customer Action       ||
              ^^==============================^^
              ||  1. Search Flight            ||
              ||  2. View Customer Infomation ||
              ||  3. Book Flight Ticket       ||
              ||  4. Display Flight Ticket    ||
              ||  5. Logout to main menu      ||
              ^^==============================^^
              Choose one action from the list >
```

Customer Display Ticket module will display all the flight ticket that has been book by the this customer.The system will display the passenger name,passport number, their departure and destination,date and time of the flight,flight id,seat id,seat class and boarding time.In the last,the customer need to input any character to back to the customer main menu page.