

PROJECT NAME :

FLIGHT MANAGEMENT SYSTEM

OVERVIEW :

The main objective of the C++ Project on Flight Management System is to manage the details of flights and passenger reservation or cancellation.

- IDE : Visual Studio C++
- No Specific requirements to run the program

CLASSES AND ATTRIBUTES :

These are the two main classes of the project. The attributes I added to each class are mentioned below. As their names indicate, each attribute refers to a specific detail regarding either the flight or the passenger himself. The names are pretty self-explanatory.

```
class Flight
{
    public:

    string FlightID;
    string Airline;
    string TakeOffTime;
    string ArrivalTime;
    string DeparturePlace;
    string ArrivalPlace;
    Passenger* fData;
    int NumPassengers;
    int SeatsLeft;
    float Price;
```

```
class Passenger
{
    public:

    string PassengerName;
    string FlightNum;
    string CustomerID;
    int Seat;
```

FUNCTIONS AND CLASS METHODS :

Function Header	Explanation
<code>int FindPassenger(const Passenger& passenger){}</code>	This function searches for a specific passenger within a flight database to find whether he have already booked a seat or not.
<code>void AddPassenger(const Passenger& new_passenger){}</code>	This functions adds a passenger to the corresponding flight database, in both the fData array inside the object and the corresponding .txt file.
<code>bool DeletePassenger(const Passenger& passenger){}</code>	This functions deletes a passenger from the corresponding flight database, from both the fData array inside the object and from corresponding .txt file.
<code>void time() {}</code>	This function displays the current local time on the program interface
<code>void DisplayFlights() {}</code>	This function displays all the flights saved in the database(.txt file) on the program interface to boost the program's usability.

```
bool ExistantFlight(string& flightID) {}
```

```
void AddFlight(Flight& flight) {}
```

```
void DeleteFlight(string& s) {}
```

```
Flight CreateInstance(const string& ID) {}
```

This function checks whether a flight is already existant by searching for its ID in the .txt file.

This function adds the details of a new flight to .txt file.

This function deletes a flight from the .txt file.

This function opens the Flights.txt file and look for a flight with a given ID. If found, It constructs an object of type Flight using the informations related to that ID and returns it.

PROGRAM EXECUTION :

```
*****
* Welcome To Airlines Reservation System *
*****
```

Flight ID	Airline	Depart	Arrive	DepartTime	ArrivalTime	Price
93104	TEAM	ONT	LAX	MONDAY/15:00	MONDAY/17:30	432
62876	AF	NYC	ONT	THURSDAY/13:00	THURSDAY/15:00	399
30118	KLM	ONT	PHX	TUESDAY/13:00	WEDNWSDAY/15:00	655
12033	F	LAX	IST	THURSDAY/13:00	THURSDAY/15:00	540
94304	CDG	ONT	LAX	MONDAY/15:00	MONDAY/17:30	430
43876	GE	IST	BUD	THURSDAY/4:30	THURSDAY/6:00	650
60118	IST	ONT	PHX	TUESDAY/13:00	WEDNWSDAY/15:00	980
45333	F	TUN	ALG	THURSDAY/13:00	THURSDAY/15:00	540
67890	LYS	ALG	LYS	WEDNESDAY/5:00	THURSDAY/8:00	320
92337	EA	ONT	TUN	SATURDAY/8:00	SUNDAY/10:00	725
75445	TUN	ONT	LAX	MONDAY/15:00	MONDAY/17:40	432
56432	AF	TUN	TR	SATURDAY/12:00	SATURDAY/16:00	430
67849	TEAM	FRA	ITA	TUESDAY/12:00	TUESDAY/13:00	600
53463	JFK	TUN	CDG	SUNDAY/13:35	SUNDAY/16:25	560
43342	TEAM	TUN	TUR	MONDAY/12:00	TUESDAY/1:00	1200
42325	FMN	TUN	BUD	TUESDAY/12:00	TUESDAY/13:00	540
32493	KLM	TGV	IST	MONDAY/13:00	MONDAY/14:05	550
12354	GKL	DZ	HGV	MONDAY/15:00	TUESDAY/12:30	760
23789	GKL	IST	GER	MONDAY/3:00	MONDAY/12:00	450
12567	GKV	BGV	VUK	MONDAY/12:05	MONDAY/13:00	650

The Local Date And Time : Fri May 7 11:42 2021

As shown above, this is the what will be displayed on the interface once the program is executed. The user can search for the details of the flight he wants to make modifications on or he wants to reserve a seat on.

```
Airlines Reservation System Menu
1. Reserve Seat
2. Cancel Flight
3. Add Flight To The Database
4. Delete Flight From The Database
5. Change Flight Details
6. Exit Program (Press Any Key)
Choose One:
```

This is the main menu of the flight management system. The user needs to choose depending on the actions he wants to perform (reservation, cancellation, flight modification or deletion)

```
Choose One: 1
Enter The Flight ID Of Your Desired Flight 12354

The Flight Details
FlightID :12354
Airline :GKL
TakeOffTime(DD/MM/YYYY) :MONDAY/15:00
ArrivalTime(DD/MM/YYYY) :TUESDAY/12:30
From :BKK
To :HGV
Price :760 $

Passenger Name : AHMED
Customer ID : 432
Seat Number : 34
Seat Booked Successfully !
1. Go Back To The Main Menu
2. Exit Program
```

To reserve a seat, the passenger needs to enter the ID of the desired flight. If found in the database, the details of the flight will be shown and the passenger will be asked to enter his informations to finish the reservation.

```
Choose One: 2
Enter The Flight ID Of The Flight You Want To Cancel 12033
The Flight Details
FlightID :12033
Airline :F
TakeOffTime(DD/MM/YYYY) :THURSDAY/13:00
ArrivalTime(DD/MM/YYYY) :THURSDAY/15:00
From :LAX
To :IST
Price :540 $

Passenger Name : ahmed
Customer ID : 234
Seat Number : 43
Flight Canceled Successfully
1. Go Back To The Main Menu
2. Exit Program
```

To cancel an already booked flight, the passenger needs to enter the ID of the desired flight. If found in the database, the details of the flight will be shown and the passenger will be asked to enter his informations to finish the cancellation process.

```
Choose One: 3

Enter the Flight Details :
Flight ID :98567
Airline :BKK
TakeOffTime(DD/TIME) :MONDAY:10:00
ArrivalTime(DD/TIME) :MONDAY/14:00
From :TGM
To :HUN
Price :540
Flight Added Successfully To The System
1. Go Back To The Main Menu
2. Exit Program
```

If an administrator wants to add a new flight to the database, he will be asked to enter the informations about the flight. If there is already one with the same ID, it won't be accepted. The entered FlightID needs to be of length 5 and the price needs to be between 0 and 1000.

```
Choose One: 4
Enter the Flight ID : 65489
Flight Deleted Successfully
1. Go Back To The Main Menu
2. Exit Program
```

If the administrator wants to delete a flight from the system, he will need to enter its ID.

Choose One: 5

1. Change Airline
2. Change Departure Place
3. Change Arrival Place
4. Change Departure Time
5. Change Arrival Time
6. Change Price
7. Go Back To The Main Menu
8. Exit Program (Press Any Key)

Choose One: 1

Enter The Flight ID 76333

Enter The New Airline Name HKK

1. Go Back To The Main Menu
2. Exit Program

If an administrator wants to change a specific detail about a flight, he will first need to enter the type of modification he wants to perform and then he will be asked to enter the flight ID. If found, he can make the details modification.