

# Project Description

## Airline Registration

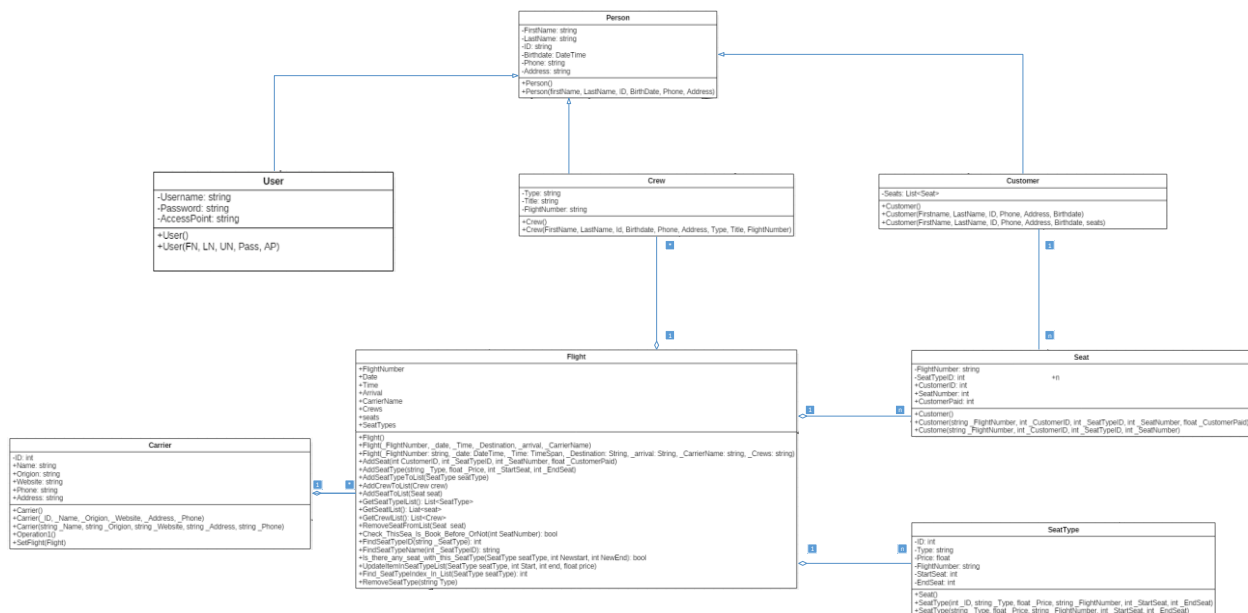
In this project I tried to implements everything that you specified in the project in the desire deadline. For me it was important to implement according to object oriented architecture, implement every things that we learned in the class, and design forms simple and user friendly because I believe that the program is for users if it be complicate and sophisticate that users cannot work with it makes the program useless although there are a lot of programming behind it.

I describe my class diagram, program, and add balsamiq design.

## Class Diagram Description

Airline registration as it is defined in our project Flight, Carrier, Crew, Seat, Customer, and user are the base classes but it needs some classes for more efficiency. As Customer, Crew, and User have common attributes I make the person class that they inherit from this class. Moreover, the project mention that each flight has three type of seat (Economy, Economy Plus, Business) and we know that each of them has its own price and their seat start and end from specific place. We can consider an inheritance relationship but as child class just have one attribute of type I prefer to consider as association relationship and make just one class of SeatType. SeatType like Crew strongly depends on flight so that its relation is aggregation.

One thing remains, the relation between Customer and flight. I consider customer as a person who can ask a ticket from the agency a lot. If I connect it to the flight their relation will be many to many, that it shows that I do not consider one class between them and this class is a Seat or Ticket.

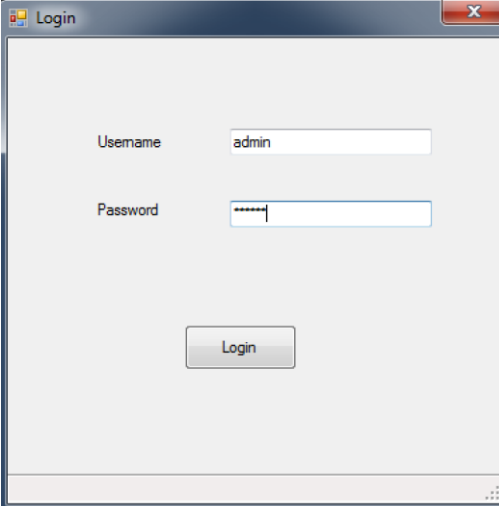


## Program Description

For developing this project I tried to implement a program in both 3-Tier and Object-oriented Architectural style. It means that I do everything with objects that they instantiate from my class diagram classes and use 3-tier architecture for store and retrieve data from database. Therefore, there are four group of classes. First group are UI classes for contracting with user for this demand I chose WinForms. Second group is my objects. They communicate through interfaces, by calling methods or accessing properties in other objects, and by sending and receiving messages. The third is classes that get object and send its information to DB or take data from DB and fill the relevant object with that information I called them Business layer classes. The last one are data access layer classes that they use for connecting program to DB.

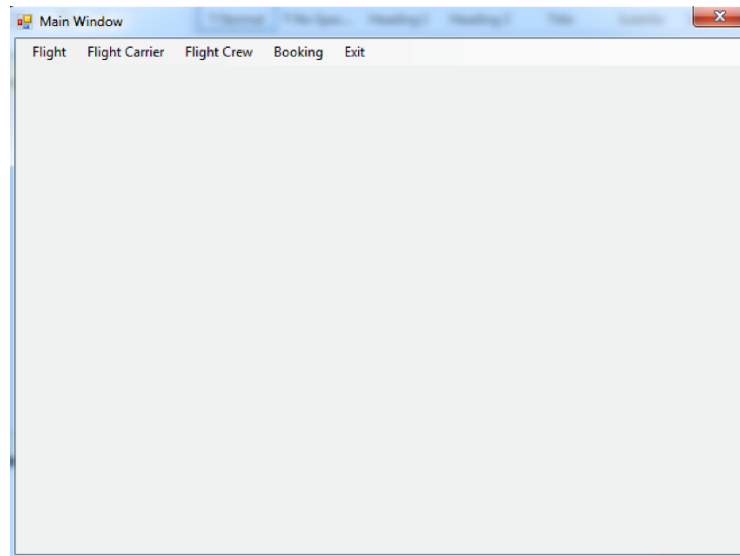
### Specific features of each form:

Login Form: there are two type of user can access to the program one of them is admin and one of the is regular user, admin user can access to all of forms but regular user can just book and unbook flight, see flights information.

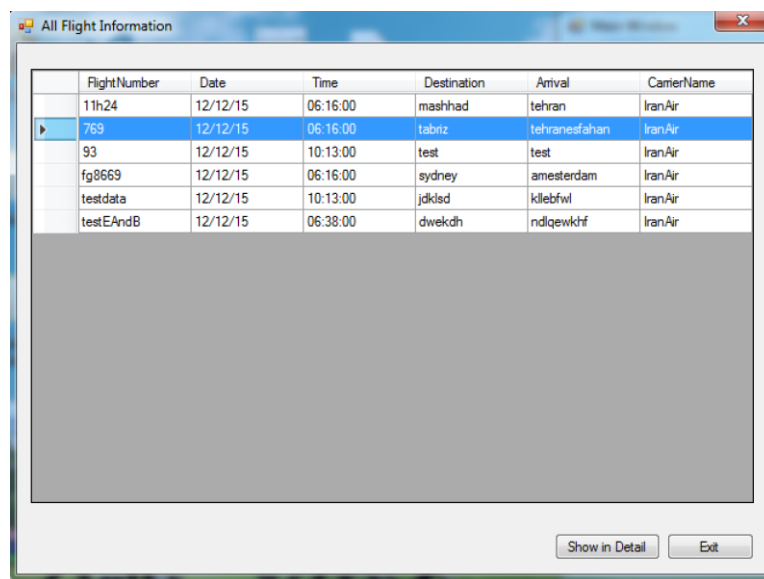


The image shows a screenshot of a Windows Forms application window titled "Login". The window has a standard Windows XP-style title bar with a close button (X) in the top right corner. The main area of the window is light gray and contains two text input fields. The first field is labeled "Username" and contains the text "admin". The second field is labeled "Password" and contains a series of asterisks "\*\*\*\*\*". Below these fields is a single button labeled "Login". The window is centered on the screen.

**Main Window:** This form is parent of all forms all the things are accessible through manuscript of this form.



**Show all Flight:** this form show information of all flight and by clicking the one row and click "Show In Detail" can see all the information of the flight



Detailed information about flight

Flight Number:  Date:  Time:

Destination:  Arrival:

Flight carrier information

Name	Origin	Website	Phone	Address
IranAir	Iranian	www.IranAir.com	6176500744	111 norway street

Seat Types

ID	Type	Price	FlightNumber	StartSeat	EndSeat
93	Business	6778	769	1	2
75	Economy Plus	60	769	40	50

Crews

Type	Title	FlightNumber	FirstName	LastName	ID
Daily_Hire	Navigator	769			356

Passengers

Passenger ID	First Name	Last Name	Phone	Address	Birthdate
14	samira	mansouri	6176500744	111norway street	5/31/91 12:00:00...

**AddFlight:** gives the opportunity for adding a flight by considering all possible exception and data validation such as entering correct integer or string data, check overlapping of the seats, seats price that business class is expensive than Economy plus and Economy plus expensive than Economy, and etc.

Add Flight

Flight Number:

Date:

Time:  :  HH:MM

Destination:

Arrival:

Carrier:

☐ Economy Start Seat:  End Seat:  Price:

☐ Economy Plus Start Seat:  End Seat:  Price:

☐ Business Start Seat:  End Seat:  Price:

Reset Cancel Submit

**Update Flight:** this form for updating data. As use may not consider the flight number I provide a table of the flight information and to help her/him to choose its flight, fill the information by clicking on one row, and sorting data by clicking on specific column.

**For deleting** it checks whether is there any data that affect by deleting this flight if yes it does not allow user to delete flight. It is for data protection and avoid the unwanted deleting. User can unbook tickets and then delete flight.

**For Updating** like deleting it consider data protection and does not allow user to change range of the seat if there is any tickets that was booked in the previous type. Moreover, it considers all the data validations of the add flight. In addition, it does not allow user to enter the new flight in this form, in other words, if the user enter the FlightNumber that does not exist before it gives the error because it is adding a flight and adding flight should be done in Addflight form.

Flight Number	Date	Time	Destination	Arrival	Carrier Name	Se
11h24	12/12/15	06:16:00	mashhad	tehran	IranAir	Ecc
769	12/12/15	06:16:00	tabriz	tehranesfahan	IranAir	Bus
93	12/12/15	10:13:00	test	test	IranAir	
fg8669	12/12/15	06:16:00	sydney	amsterdam	IranAir	Ecc
testdata	12/12/15	10:13:00	jklad	kllebfwl	IranAir	Ecc
testEAndB	12/12/15	06:38:00	dwekdh	ndlgewkdf	IranAir	

**AddCarrier:** We know that name of each flight carrier is different from others therefore user should fill this field and for adding Flight carrier we should know at least its address and its phone.

The screenshot shows a Windows application window titled "frmAddFlightCarrier". It contains a form with five text input fields labeled "Name", "Origion", "WebSite", "Telephone", and "Address". At the bottom right of the form are two buttons: "Exit" and "Submit".

UpdateCarrier: user can enter the flight name by its self, searching in table, or add automatically by selecting one row. Flight name phone and address should be filled like add carrier and name should not be a new because it is considering as a new carrier.

The screenshot shows a Windows application window titled "Update Flight Carrier Information". It contains a form with five text input fields labeled "Name", "Origion", "WebSite", "Telephone", and "Address". Below the form is a table with the following data:

ID	Name	Origion	WebSite	Phone	Address
19	IranAir	Iranian	www.IranAir.com	6176500744	111 norway street

At the bottom right of the form are three buttons: "Exit", "Delete", and "Submit".

**Add Flight Crew:** for adding flight crew user should at least fill FlightNumber and EmployeeID. FlightNumber should be in the flightNumbers that submitted in the system, this table of the flights exists for this reason and help user to search its desired flight and fill the the flightNumber by selecting one row.

FlightNumber	Date	Time	Destination	Arrival	CarrierName
11h24	12/12/15	06:16:00	mashhad	tehran	IranAir
769	12/12/15	06:16:00	tabriz	tehranesfahan	IranAir
93	12/12/15	10:13:00	test	test	IranAir
fg8669	12/12/15	06:16:00	sydney	amsterdam	IranAir
testdata	12/12/15	10:13:00	jdklad	kliebfwl	IranAir
testEAndB	12/12/15	06:38:00	dwekdh	ndlgewkhf	IranAir

**Update Crew information:** like other update forms this form checks the data validation and check the specific crew that the user want to update or delete was added before to that flight.



Update Crew Information

Flight Number

Employee ID

First Name

Last Name

Type

Full\_Time

Title

Captain

Phone

Address

Birthdate

December 13, 2015

	Type	Title	FlightNumbe	FirstName	LastName	ID	birthdate	Phone	Address
▶	Daily_Hire	Navigator	769			356	12/13/15		
			11h24	jigar		432	12/13/15		
	lwfwlei	bflfiw	testdata	samira	mandouri	3532	12/13/15	blefbwel	blwkbflw

Delete

Submit

**Book Flight:**for booking flight user should selects its desire flight from flight table and then fill the CustomerID of the person who buy the ticket. When user select the flight the type of seat of the specific flight will be uploaded to the combo box and by selecting the type of seat the seat numbers of this seattype that is not booked before for other users and the price of that seat will be shown. As in the project specific that each user can pay each amount of money that it wants I just fill the text and I allow user to change it.

I should mention that if the user wants to fill the PassengerID by her/himself system checks whether this ID exist in system or not.

Flight Number  Passenger ID

Type of Seat  Seat Number

Price

Customers

	FirstName	LastName	ID	birthdate	Phone	Address
▶	samira	mansouri	14	5/31/91	6176500...	111nonway...
	samane	mansouri	15		0098912...	
	akram	zohal	16		0912234...	kohihs3hdi3

Flights

	Flight Number	Date	Time	Destination	Arrival	Carrier Name	Seat Type	Price	Start seat
▶	11h24	12/12/...	06:16:00	mashhad	tehran	IranAir	Economy	3	1-1
	769	12/12/...	06:16:00	tabriz	tehranesf...	IranAir	Business	6778	1-2
	93	12/12/...	10:13:00	test	test	IranAir			
	fg8669	12/12/...	06:16:00	sydney	amsterd...	IranAir	Economy Plus	67	4-5
	testdata	12/12/...	10:13:00	jdkld	kilebflw	IranAir	Economy	3	1-2
	testEAndB	12/12/...	06:38:00	dwekdh	ndiqewkhf	IranAir			

**Unbook Flight:** for this user fill passengerID and FlightNumber , things that unique tickets from each other. For user convenience I provide the Tickets table by possibility of sorting to choose its tickets easily. Each user wants to fill by her/himself that this ticket exist in system.

Unbooking Flight

Flight Number  Passenger ID

Type of Seat  Seat Number

	Flight Number	Customer ID	Date	Time	Destination	Arrival	Carrier
▶	11h24	34345	12/12/15	06:16:00	mashhad	tehran	Iran
	769	123	12/12/15	06:16:00	tabriz	tehranesfahan	Iran
	769	14	12/12/15	06:16:00	tabriz	tehranesfahan	Iran
*							

# Balsamiq:



Login

Username

Password



MainWindow

Flight Flight Carrier Flight Crew booking Exit

Show all flight  
Add new Flight  
Update a Flight

Insert  
Update

Insert  
Update

Booking  
Update

Update Flight Crew

Flight Number

Employee ID

FirstName

Last Name

Type

Title

Phone

Address

Birthdate

Type	Title	FlightNumber	First Name	Last Name	ID	BirthDate	Phone	Address

Cancel

Submit

Add Flight Crew

Flight Number

Employee ID

FirstName

Last Name

Type

Title

Phone

Address

Birthdate

FlightNumber	Date	Time	Destination	Arrival	Carrier Name

Cancel

Submit

Update Flight Carrier

Name

Origion

WebSite

Telephone

Address

Name	Origion	WebSite	Phone	Address

Exit

Delete

Submit

Add Flight Carrier

Name

Origion

WebSite

Telephone

Address

Exit


Submit

[illegible]

Add Flight

Flight Number

Date



Time

HH:MM

Destination

Arrival

Carrier

☐ Economy

StartSeat

EndSeat

Price

☐ Economy Plus

StartSeat

EndSeat

Price

☐ Business

StartSeat

EndSeat

Price

Submit

Cancel

[illegible][illegible]

Detailed information about flight

Flight Number

Date

Time

Destination

Arrival

Flight carrier information

Name

Origin

WebSite

Phone

Address

Seating

Seating

ID

Type

Price

FlightNumber

StartSeat

EndSeat

crews

Type

Title

FlightNumber

First Name

Last Name

ID

BirthDate

Phone

Address

Passengers

PassengerID

First Name

Last Name

Phone

Address

SeatType

SeatNumber

Paid

All flight information

Flight Number

Date

Time

Destination

Arrival

CarrierName

Show in Detail

Exit



Booking Flight

Flight Number

Passenger ID

Type of Seat

ComboBox

Seat Number

ComboBox

Price

Cancel

Pay

First Name	Last Name	ID	Birthdate	Phone	Address

Flight No	Do	Tin	Destin	Arr	Carrier	Seat	T	Pri	Start	Seat-E	Seat	T	Pri	Start	Seat-E	Seat	T	Pri	Start	Seat-E

