

INSTITUTE OF SPACE TECHNOLOGY, ISLAMABAD



Flight Management System (FMS)

Submitted To:

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Introduction:

Flight Management System (FMS) is basically a Graphical User Interface (GUI) website. It includes OOP in python, Pandas, HTML, JavaScript and CSS. We use Flask to combine python with HTML. The main purpose of FMS is to allow user to login as an admin or member. Once done as an admin you can handle administrative tasks like show ticket, update ticket, check routes etc. and as a member you can buy tickers, refund tickets etc.

Backend:

We use local server to demonstrate our project. Use HTML to create the website and then make multiple CSS files to design it. Once done we use Flask to connect HTML with our main program written in Python. To make an animation of fight flying over a map we use JavaScript.

Objective:

The program can perform the following tasks:

- ❖ Sell and buy tickets.
- ❖ Refund the tickets.
- ❖ Date and time of flights.
- ❖ GUI representation of routes.
- ❖ Displaying flight data.

Implementation:

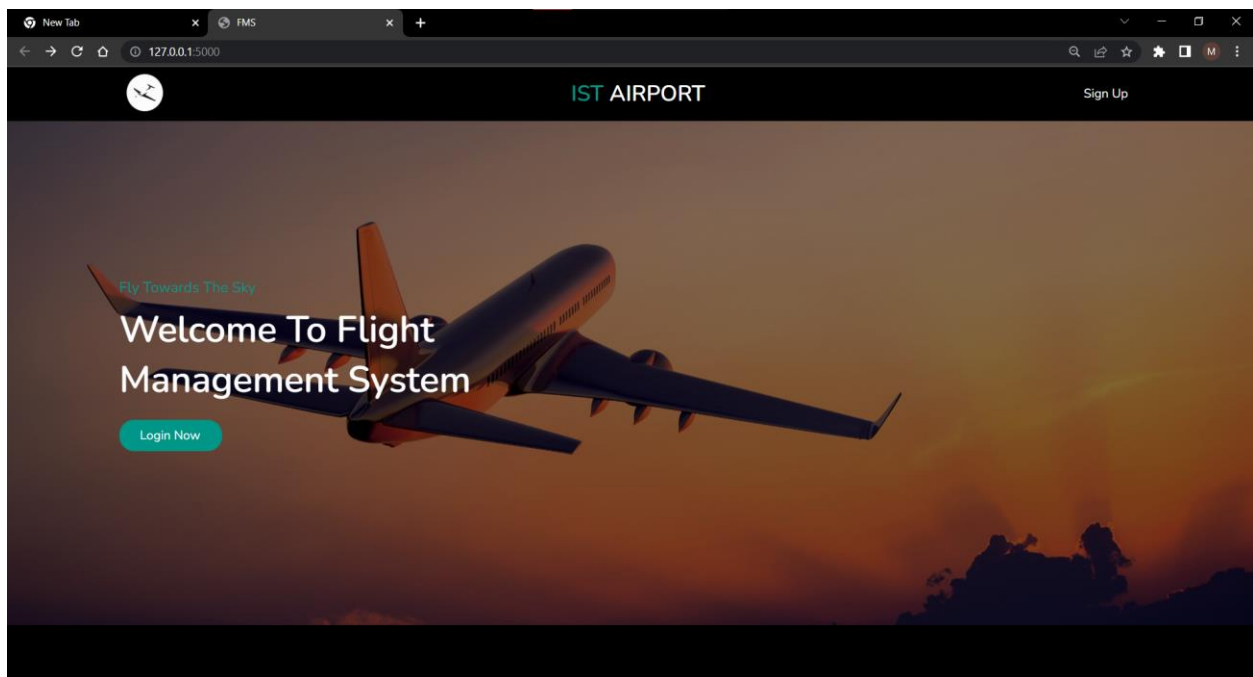
We implemented Object Oriented Programming by using methods (i.e., instance etc), classes and added several libraries like Pandas, Numpy, Pickle and Flask.

We used concepts like:

- ❖ Inheritance.
- ❖ Encapsulation.
- ❖ Exception Handling.
- ❖ Built-in Functions.

Website:

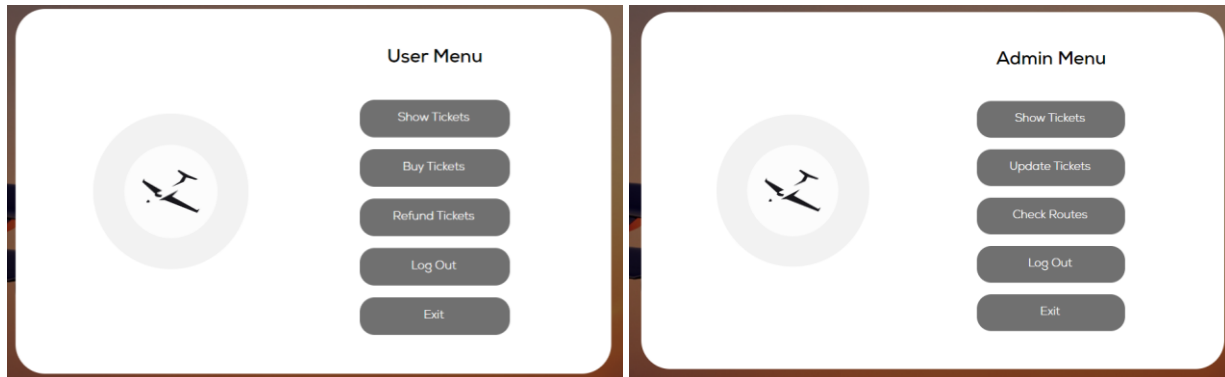
Our main page. A simple page that allows you to access the signup/login options:



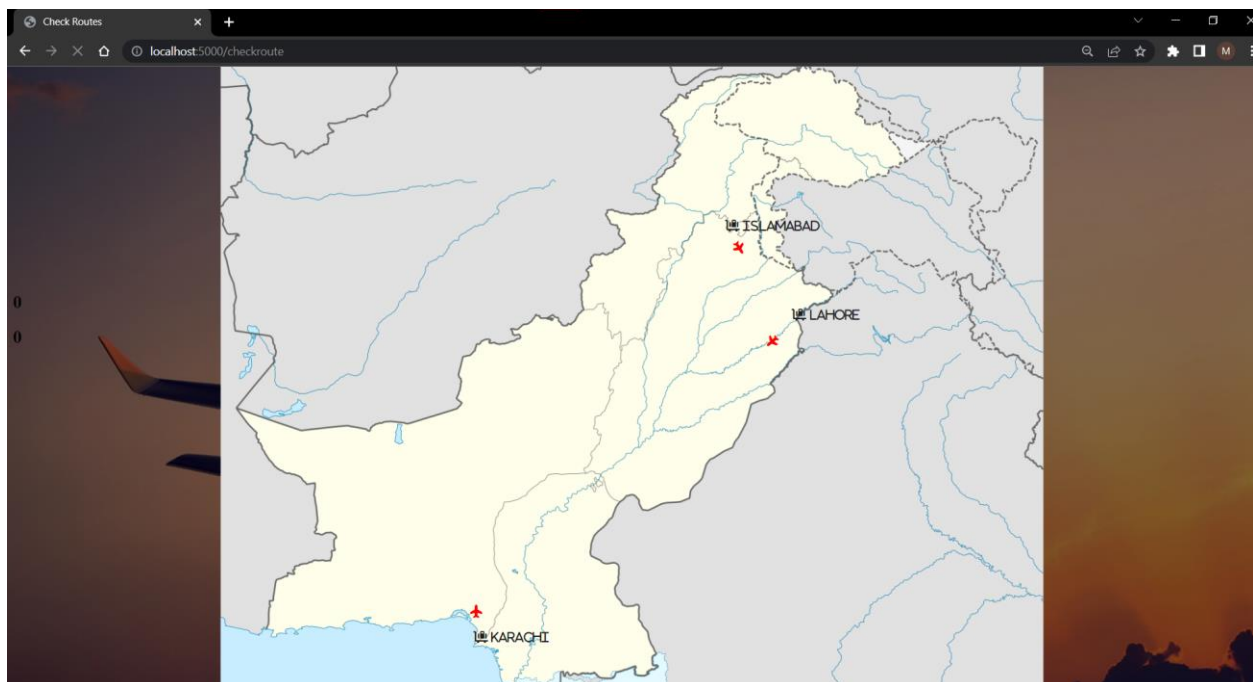
Login/Signup option. You can login as a member or admin, and you can sign up as a member. When signed up your data will be stored in the .csv database using DataFrame which is made by python library called Pandas:

Two side-by-side screenshots of the application's login and signup forms. The left screenshot shows the 'Member Login' form, which includes a circular logo with an airplane icon, input fields for 'Email' and 'Password', a 'Login' button, and links for 'Login as Admin' and 'Create your account'. The right screenshot shows the 'Sign Up' form, which includes input fields for 'Full Name', 'Email', 'Date of Birth' (with a 'DD/MM/YYYY Format' hint), 'Phone Number' (with a 'Starts with 0' hint), 'Password', and 'Confirm Password', a 'Sign Up' button, and a 'Back to Login' link.

User Side/Administrative side. In user side you can buy, refund and check the flight schedule or tickets you have bought. In admin side we get access to administrative commands such as update tickets and check routes. All of this is made with Flask acting as a framework to link Html and Python together:



Airplane routes. If we click the “Check Routes” button in administrative side, we get the map of pakistan where we show routes of planes traveling in a smooth animation. This was done with the help of JavaScript:



1) User Side:

This is what each button displays, in user side.

1) Show tickets:

Shows you the tickets that you have bought.



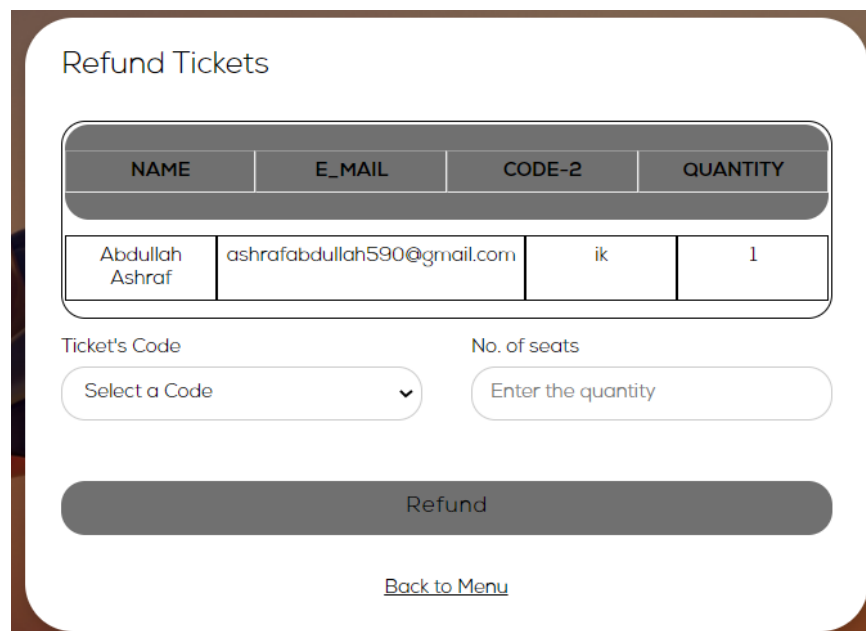
Your Tickets

NAME	E_MAIL	CODE-2	QUANTITY
Abdullah Ashraf	ashrafabdullah590@gmail.com	ik	1

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2) Refund ticket:

Allows you to refund the tickets that you have bought.



Refund Tickets

NAME	E_MAIL	CODE-2	QUANTITY
Abdullah Ashraf	ashrafabdullah590@gmail.com	ik	1

Ticket's Code: No. of seats:

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[Refund](#)

3) Buy tickets:

Shows you the option to buy tickets and as well as the schedule of different flights, there timing, destination, price, code etc.

Buy Tickets

ROUTE	DEPARTURE	ARRIVAL	AVAILABILITY	PRICE	CODE
Islamabad to Lahore	09:00am	10:00am	16	2000	il
Islamabad to Karachi	10:00am	12:10pm	7	8000	ik
Lahore to Karachi	01:00pm	02:30pm	21	5000	lk
Lahore to Islamabad	03:00pm	04:00pm	26	2000	li
Karachi to Islamabad	06:00pm	08:10pm	10	8000	ki
Karachi to Lahore	08:00pm	09:30pm	19	5000	kl

Ticket's Code

Select a Code

No. of Tickets

Enter the quantity

Buy

[Back to Menu](#)

4) Logout:

Let's you logout of your account.

5) Exit:

Returns you to the main page.

2) Administrative Side:

Here's what each button displays, at administrative side.

1) Tickets Info:

Shows us the schedule of different flights, there timing, destination, price, code etc.

All Tickets

ROUTE	DEPARTURE	ARRIVAL	AVAILABILITY	PRICE	CODE
Islamabad to Lahore	09:00am	10:00am	16	2000	il
Islamabad to Karachi	10:00am	12:10pm	7	8000	ik
Lahore to Karachi	01:00pm	02:30pm	21	5000	lk
Lahore to Islamabad	03:00pm	04:00pm	26	2000	li
Karachi to Islamabad	06:00pm	08:10pm	10	8000	ki
Karachi to Lahore	08:00pm	09:30pm	19	5000	kl

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2) Show Tickets:

Allows to admin to see the amount, code, name and email of the people that bought tickets.

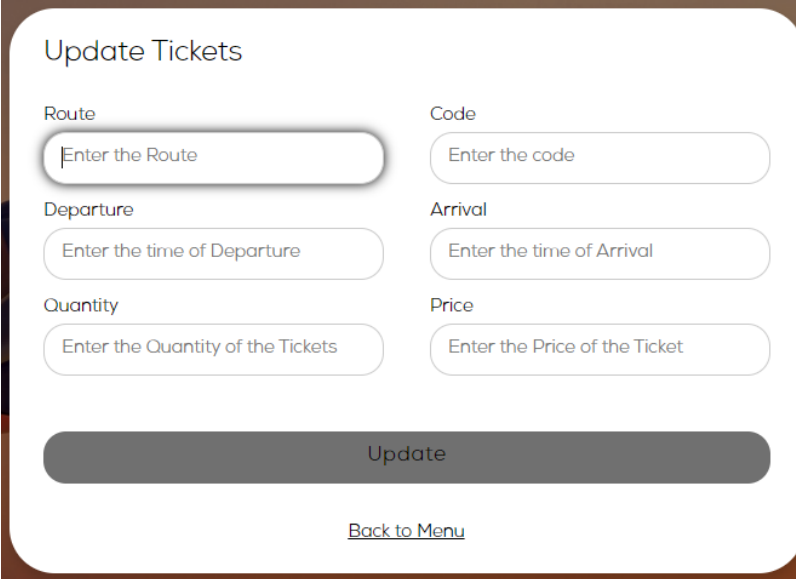
All Tickets

NAME	E_MAIL	CODE-2	QUANTITY
Muhammad Zaryab	muhammadzaryab002@gmail.com	lk	8
Muhammad Zaryab	muhammadzaryab002@gmail.com	li	1
Muhammad Zaryab	muhammadzaryab002@gmail.com	il	2
Abdullah Ashraf	ashrafabdullah590@gmail.com	ik	1
Muhammad Zaryab	muhammadzaryab002@gmail.com	kl	38

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3) Update tickets:

Allows us to create new flight routes, destination with its timing, departure, arrival price etc. Then it is saved in .csv file

A screenshot of a web form titled "Update Tickets". The form is enclosed in a rounded rectangle with a dark brown border. It contains six input fields arranged in two columns. The left column has fields for "Route", "Departure", and "Quantity", each with a placeholder text starting with "Enter the". The right column has fields for "Code", "Arrival", and "Price", each with a placeholder text starting with "Enter the". Below the input fields is a large, dark grey "Update" button. At the bottom center of the form is a link labeled "Back to Menu".

Update Tickets	
Route	Code
<input type="text" value="Enter the Route"/>	<input type="text" value="Enter the code"/>
Departure	Arrival
<input type="text" value="Enter the time of Departure"/>	<input type="text" value="Enter the time of Arrival"/>
Quantity	Price
<input type="text" value="Enter the Quantity of the Tickets"/>	<input type="text" value="Enter the Price of the Ticket"/>
<input type="button" value="Update"/>	
Back to Menu	

4) Check routes:

Shows you the routes of plane on Pakistan's map. Figure Already shown.

5) Log out:

The admin can logout of his account.

6) Exit:

Returns you to main page.

Flow chart:

