



# Internship Project Presentation

## Topic – Flight Management System

Mentor - Sanjeev G



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Java Technology Stack



# Technologies Used



- **Backend** – Spring Boot REST , Spring Data JPA , Spring Security, Spring JavaMailSender , Thymeleaf
- **Database** – PostgreSQL
- **Frontend** – HTML, CSS, JavaScript
- **API Documentation** – Swagger
- **API Testing** – Postman
- **Version Control** – GitHub



# Registration and Login

- Implemented **JWT** token based **authentication** and **role based authorization**.
- Admin can add ,modify a flight , schedule flight and also modify/cancel a scheduled flight.
- Normal User can search available flights, book tickets, cancel tickets.
- All new registrations from frontend are directly assigned normal user permissions , admins can be added from backend only.
- Only after **verification of the Email Id** the account will be activated and can be used for Login .

## Registration Process Demo

**POST** /registration

### Register

Username

saikatmoi

Password

.....

Email

saikatmoi2@gmail.com

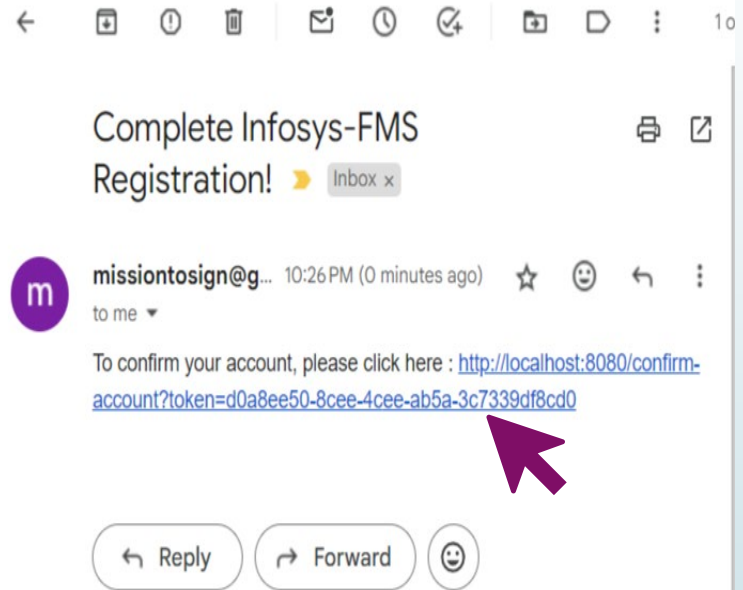
Phone Number

9876543210

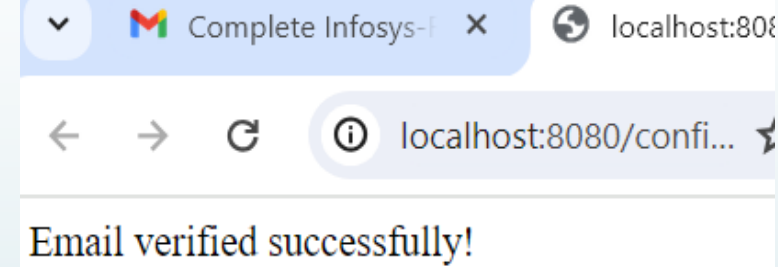
Register

Success ! Check Email for Verification

[Already Registered! Click Here](#)



**GET** /confirm-account



## Login Process Demo (USER)

POST

/genToken

### Login Page

Username

saikatmoi

Password

.....

Login

[Not Registered ! SignUp Now](#)

Normal User Login

### Search Flight to Book

Source Airport

Select Source Ai ▾

Destination Airport

Select Destinatic ▾

Travel Date

dd - mm - yyyy



Search Flights

[Show My Bookings](#)



# Booking Process Features

- Used **Optimistic Locking Strategy** to handle the concurrency issue
- After successful booking ticket will be send to Email Id and also can be downloaded . Used **Thymeleaf** to generate ticket .
- In case of cancellation of the booking by the user , a email notification will be send .
- In case of modification/cancellation of a scheduled flight by the admin , notifications will be send to the affected users.

Booking Process Demo

GET /airports

POST /getflightsbydate

POST /booktickets

Search Flight to Book

Source Airport  
Indira Gandhi Int

Destination Airport  
Chhatrapati Shi

Travel Date  
04-06-2024

Search Flights

Show My Bookings

**Flight 52** - AirlineDemo (AirbusDemo A330)  
**Departure Time:** 6/4/2024, 3:47:00 PM  
**Arrival Time:** 6/4/2024, 1:50:00 PM  
**Available Seats:** 138  
**Ticket Price:** 8000 INR  

Book Now

**Flight 10** - AirlineX (Airbus A320)  
**Departure Time:** 6/4/2024, 8:46:00 PM  
**Arrival Time:** 6/4/2024, 7:48:00 PM  
**Available Seats:** 198  
**Ticket Price:** 7500 INR  

Book Now

127.0.0.1:5500 says

Booking successful!

OK

Raktim Chatterjee

Passenger Age 1

44

Passenger UIN 1

454545454545

Passenger Name 2

Rohan Mandal

Passenger Age 2

47

Passenger UIN 2

545454545454

Add Another Passenger

Book Flight

Booking Confirmation

User Information

Name: saikatmoi  
Email: saikatmoi2@gmail.com

Booking Details

Booking ID: 12  
Booking Date: Sun Jun 02 23:52:25 IST 2024  
Ticket Cost: \$15000

Flight Details

Flight Number: 10  
Flight Carrier Name: AirlineX  
Flight Model: Airbus A320

Schedule Details

Arrival Time: 2024-06-04 19:48:00.0  
Departure Time: 2024-06-04 20:46:00.0

Source Airport: Indira Gandhi International Airport  
Destination Airport: Chhatrapati Shivaji Maharaj International Airport

Passenger List

PNR Number	Name	Age	UIN
3	Raktim Chatterjee	44	454545454545
4	Rohan Mandal	47	545454545454

View Bookings

GET /viewbookings

My Bookings

Booking ID	Booking Date	Actions
11	6/2/2024, 11:45:51 PM	Show Details Delete
12	6/2/2024, 11:52:25 PM	Show Details Delete

GET /viewbooking/{id}

Booking Details

Booking ID: 12  
Booking Date: 6/2/2024, 11:52:25 PM  
Ticket Cost: 15000

User Information

Name: saikatmoi  
Email: saikatmoi2@gmail.com

Flight Information

Flight Number: 10  
Carrier Name: AirlineX  
Model: Airbus A320

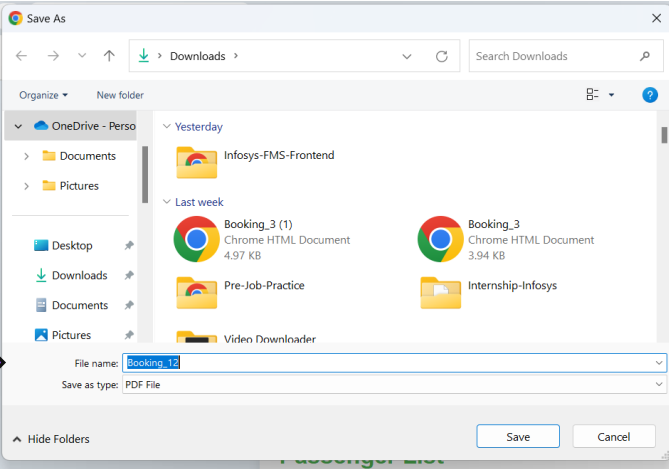
Schedule Information

Departure: 6/4/2024, 8:46:00 PM  
Arrival: 6/4/2024, 7:48:00 PM  
Source Airport: Indira Gandhi International Airport  
Destination Airport: Chhatrapati Shivaji Maharaj International Airport

Passenger List

PNR Number	Name	Age	UIN
3	Raktim Chatterjee	44	454545454545
4	Rohan Mandal	47	545454545454

Download Ticket Back



Booking Ticket

Booking ID: 12  
Booking Date: 6/2/2024, 11:52:25 PM  
Ticket Cost: 15000  
Flight Number: 10  
Flight Carrier Name: AirlineX  
Flight Model: Airbus A320  
Source Details  
Departure: 6/4/2024, 8:46:00 PM  
Arrival: 6/4/2024, 7:48:00 PM  
Source Airport: Indira Gandhi International Airport  
Destination Details  
Destination Airport: Chhatrapati Shivaji Maharaj International Airport  
Passenger List  
PNR Number: 3, Name: Raktim Chatterjee, Age: 44, UIN: 454545454545  
PNR Number: 4, Name: Rohan Mandal, Age: 47, UIN: 545454545454



# Cancel Bookings

GET /viewbookings

## My Bookings

Booking ID	Booking Date	Actions
11	6/2/2024, 11:45:51 PM	<a>Show Details</a> <a>Delete</a>
12	6/2/2024, 11:52:25 PM	<a>Show Details</a> <a>Delete</a>

DELETE /deletebooking/{id}

127.0.0.1:5500 says  
Booking deleted successfully.

OK

Booking ID	Booking Date	Actions
11	6/2/2024, 11:45:51 PM	<a>Show Details</a> <a>Delete</a>
12	6/2/2024, 11:52:25 PM	<a>Show Details</a> <a>Delete</a>

Booking Cancelled Inbox x

m

missiontosign@gmail.com  
to me ▾

Your Booking with Booking Id 12 has been cancelled successfully.

↩ Reply

➡ Forward

😊

## Login Process Demo (ADMIN)

### Login Page

Username

Password

Login

[Not Registered ! SignUp Now](#)

POST

/genToken

ADMIN Login

### Admin Panel

Add Flight

Modify Flight

Schedule Flight

Modify Scheduled Flight

Add and Modify Flight (ADMIN)

POST

/addflight

GET

/flights

PUT

/updateflight

# Add Flight

Seat Capacity

155

Carrier Name

AirlineDemo

Model

AirbusDemo A330

Add Flight

Flight added successfully!

[Go Back to the Admin Page](#)



# Modify Flight

Flight Number

Flight 52 - AirlineDemo

Seat Capacity

140

Carrier Name

AirlineDemo

Model

AirbusDemo A330

Modify Flight

Flight updated successfully!

[Go Back to the Admin Page](#)



## Schedule Flight (ADMIN)

GET

/flights

GET

/airports

POST

/scheduleflight

### Schedule Flight

Flight Number

Flight 5 - AirlineY -Boeing 747

Source Airport

Indira Gandhi International Airport ( Delhi)

Destination Airport

Chhatrapati Shivaji Maharaj International Airport ( Mumbai)

Arrival Time

10-06-2024 10:11

Departure Time

10-06-2024 14:14

Ticket Price

7500

Schedule Flight

Flight scheduled successfully!

## View Bookings of a Scheduled Flight (ADMIN)

GET /airports

POST /getflightsbydate

### Search Flight to Modify / View

Source Airport

Indira Gandhi Int ▾

Destination Airport

Chhatrapati Shiv: ▾

Travel Date

10-06-2024



Search Flights

Flight 5 - AirlineY (Boeing 747)

View Bookings

Update

Delete

GET /viewscheduledflightbookings/{id}

### View Bookings

**Booking ID:** 9

**Booking Date:** 6/9/2024, 9:14:36 PM

**Ticket Cost:** 15000

**User:** saikatmoi

**Passengers:**

PNR Number	Name	Age	UIN
13	Rohan	22	454545454546
14	Soham	55	875365429575

Update Scheduled Flight (ADMIN)

GET /airports

POST /getflightsbydate

GET /getscheduledflight/{scheduledFlightNumber}

PUT /modifyscheduledflight

Search Flight to Modify / View

Source Airport

Indira Gandhi Int

Destination Airport

Chhatrapati Shiv

Travel Date

10-06-2024

Search Flights

Flight 5 - AirlineY (Boeing 747) View Bookings Update Delete

Update Scheduled Flight

Arrival Time

10-06-2024 12:14

Departure Time

10-06-2024 17:18

Ticket Price

7500

Update Flight

Flight updated successfully.

1 of 3,623

Scheduled Flight with ID 5 is Modified

missiontosign@gmail.com

9:21PM (0 minutes ago)

Your Booking with Booking Id 9 has been modified.New Arrival Time : 2024-06-10T12:14and Departure Time : 2024-06-10T17:18

Reply Forward

Delete Scheduled Flight (ADMIN)

GET /airports

POST /getflightsbydate

DELETE /deletescheduledflight/{scheduledFlightNumber}

127.0.0.1:5500 says

Are you sure you want to delete this flight?

OK

Cancel

Source Airport

Indira Gandhi Int

Destination Airport

Chhatrapati Shiv

Travel Date

10 - 06 - 2024

Search Flights

Flight 5 - AirlineY (Boeing 747)

View Bookings

Update

Delete

127.0.0.1:5500 says

Flight deleted successfully.

OK

Source Airport

Indira Gandhi Int

Destination Airport

Chhatrapati Shiv

Travel Date

10 - 06 - 2024

Search Flights

Flight 5 - AirlineY (Boeing 747)

View Bookings

Update

Delete

1 of 3,624

Scheduled Flight 5 Cancelled

missiontosign@gmail.com 9:26 PM (0 minutes ago)

Your Booking with Booking Id 9 has been cancelled due to the cancellation of the scheduled Flight.

Reply Forward



# Opportunities for Improvement

- Migrating to microservice architecture to enhance scalability and maintainability
- Implementation of OAuth2 for strengthened security and simplified user authentication
- Improvement in frontend UI/UX design for better user engagement and performance.
- Integration of payment services .





# Thank You!

Project Link - <https://github.com/saikatmoi/Infosys-FMS>