Fly With Indigo
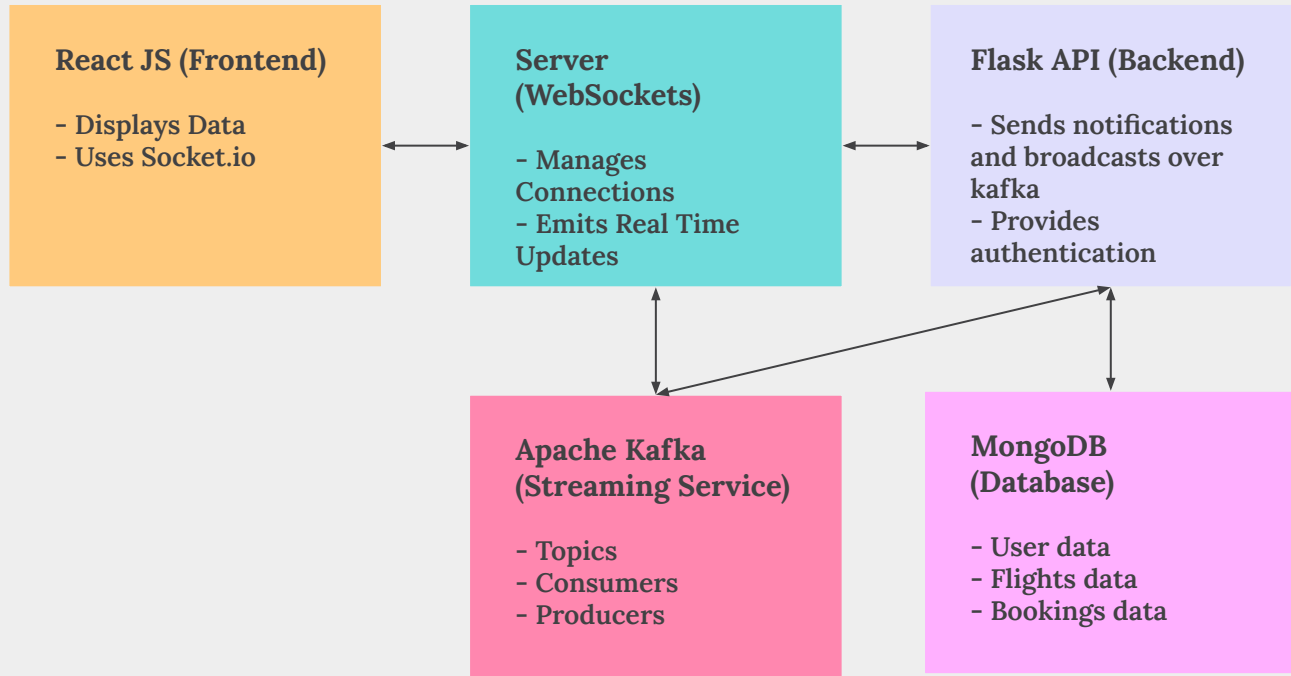
All in one portal for fulfilling customer needs

Link

Description

This project is a comprehensive flight maintenance and notification system designed for an airport, featuring a React-based frontend, a Python Flask API backend, and Kafka for real-time updates. This system aims to streamline communication between airport staff and customers, ensuring timely updates and efficient management of flight-related information. Administrators and staff can send notifications and broadcast messages, while customers can view real-time updates regarding their flight status, boarding passes, seat numbers, and more. The integration of Kafka ensures that these updates are promptly pushed to the frontend, providing a seamless and responsive user experience. Additionally, the system incorporates secure authentication protocols for both staff and customers, with the backend leveraging MongoDB for data storage and Node.js for socket management. This robust setup not only enhances operational efficiency but also significantly improves the customer experience by keeping them well-informed and engaged.

Implementation Details - Diagram

React JS (Frontend)

- Displays Data
- Uses Socket.io

Server (WebSockets)

- Manages Connections
- Emits Real Time Updates

Flask API (Backend)

- Sends notifications and broadcasts over kafka
- Provides authentication

Apache Kafka (Streaming Service)

- Topics
- Consumers
- Producers

MongoDB (Database)

- User data
- Flights data
- Bookings data

The pillars of strength- Tech stack

Flask Backend

The app uses a flask API based backend which connects to **MongoDB** and at the same time, provides routes for broadcasting over **Apache Kafka.**
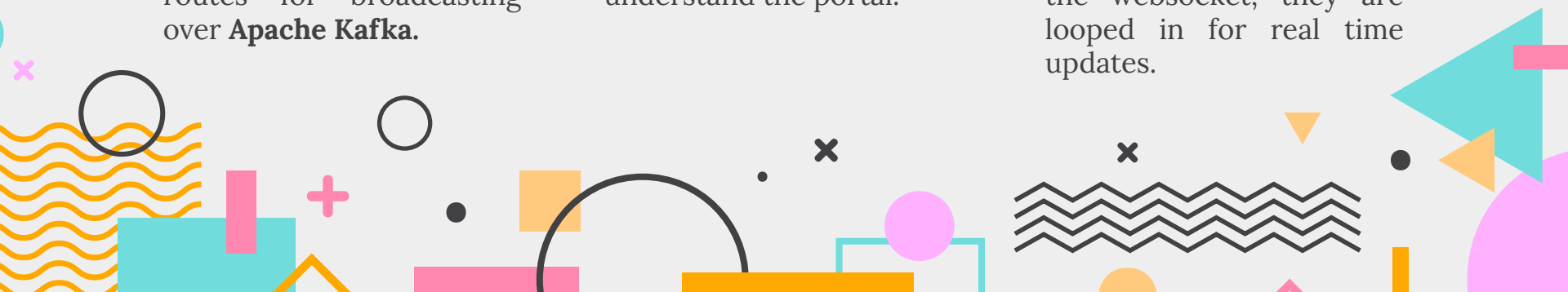
React Frontend

The app uses React and Tailwind for providing a dynamic front-end for users to easily access and understand the portal.

Node.js Websockets

The **socket.io** library helps bridge the **Apache Kafka** to React based front end. Once the user connects to the websocket, they are looped in for real time updates.

List of features provided by the portal

User Sign Up

Any customer can easily sign up by entering their email address and setting up a password

User Log In

Any customer, staff person or admin can easily log in via the same form and still end up on respective dashboards.

Dashboard

For each person, their dashboard has been customised to cater to their needs.

Book a flight

Any customer can easily search and book a flight. The flight can be searched by arrival or departure too.

Real Time Updates

The admin can easily send either a notification to particular set of people, or can broadcast to all the customers in the database

Boarding

The staff can board or cancel the passenger as per their own request. An email notification for the same will be sent too.

The "Role" based division

Admin

Assigns other employees the role of admin or staff. Sends notifications to particular flights and broadcasts announcement to whole user database.

Staff

Registers new flights to database and boards passengers. Allows passengers to cancel their boarding.

Customers

Register themselves on the portal to search flights and book tickets. They receive updates both by email and on the portal, keeping them informed about their flight.
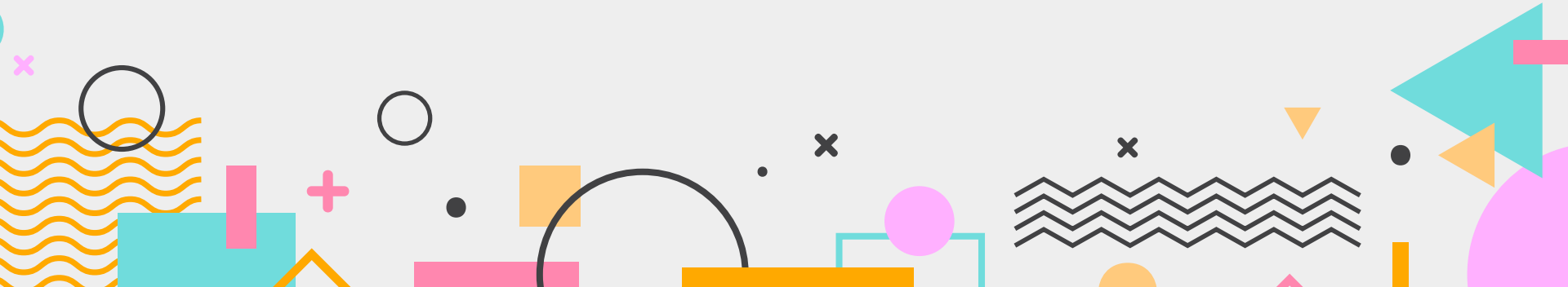
Apache Kafka & Websockets

Apache Kafka, which is massively scalable, as it allows the data to be distributed across multiple servers, is the best choice for sending out notifications and broadcasts.

Thus using Flask API, the routes are configured to send out data over Kafka topics named 'notifications' and 'broadcasts'.

These events are then listened for by websockets, which are capable of reading the data from Kafka topic and further sending it over the websocket to React based frontend.

Emailing notifications and updates

The Email.js is a powerful library, which allows us to customize our own templates and setting up our own email service. The portal uses email.js to send mails to all passengers whenever announcements are made related to their particular flights. Other than that, whenever the staff marks the passenger as "boarded" or "cancelled", the passenger received a mail, conveying the updated status of their travel booking.

[Click here for video link](#)

Project Demo

A slideshow of screenshots from the portal

Landing Page

HOME   SEARCH FLIGHT   LOGIN   REGISTER

Indigo Airlines

Your one-stop destination for all your journeys. Be it domestic or abroad, we've got you covered!

Awarded Airlines

...

Safety first

...

Customer centric

...
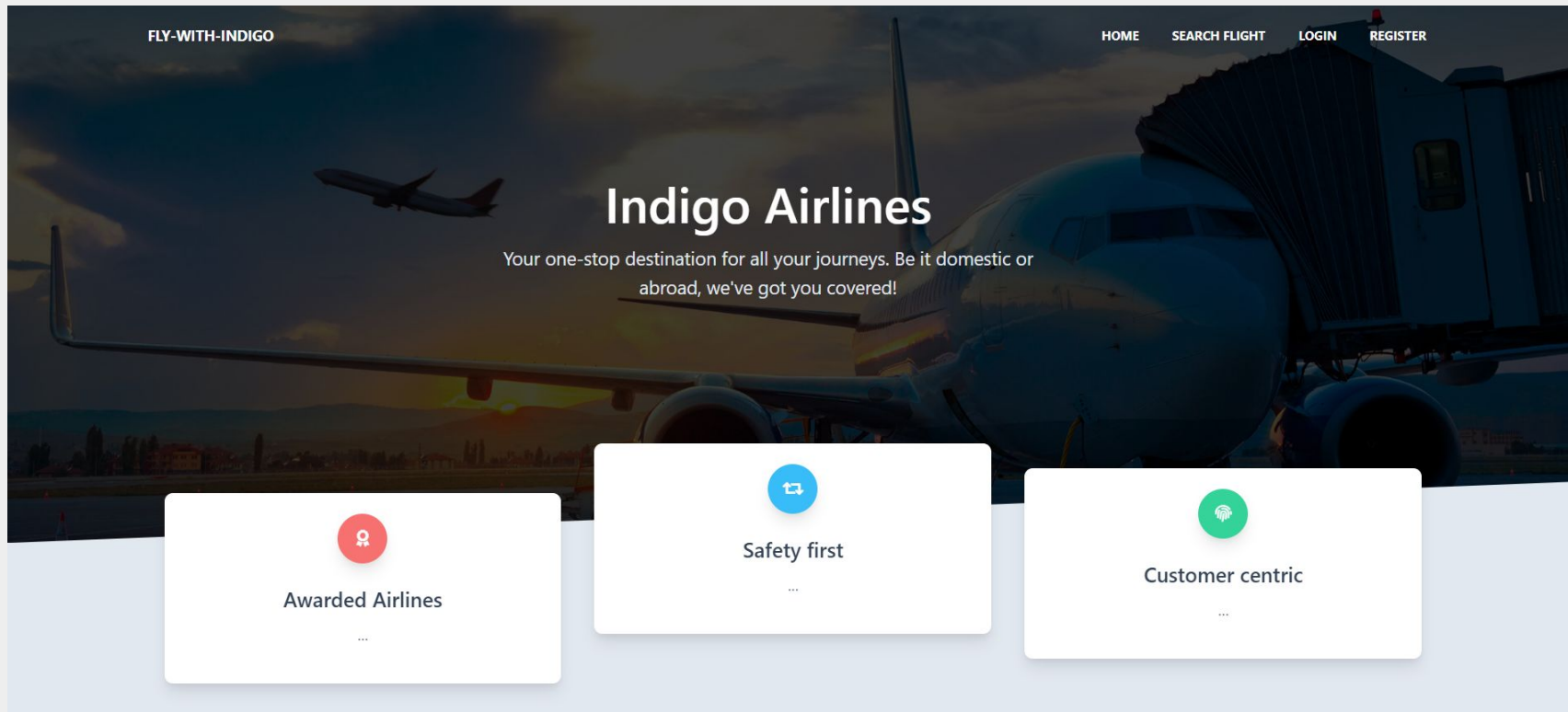
Sign in with

USERNAME

Username

PASSWORD

Password

SIGN IN

Sign up with

NAME

Name

USERNAME

Username

EMAIL

Email

PASSWORD

Password

CREATE ACCOUNT

LOGOUT

Welcome - Administrator

👤 **USERNAME - ADMIN**

✉ Email Address - ayushb6732@gmail.com

Update Roles

USERNAME

Username

ROLE

Select Role

UPDATE ROLE!

Announcements

BROADCAST

FLIGHT NUMBER

F001

SUBJECT

Announcement - Boarding

TYPE YOUR MESSAGE HERE

Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!

SEND ANNOUNCEMENT

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- BROADCAST
- SETTINGS

Update Roles

USERNAME

Username

ROLE

Select Role

UPDATE ROLE!

Announcements

BROADCAST

FLIGHT NUMBER

F002

SUBJECT

Announcement - Flight Delay

TYPE YOUR MESSAGE HERE

The flight has been delayed due to bad weather conditions!

SEND ANNOUNCEMENT

FLY-WITH-INDIGO

QUICK ACCESS

🖥 **DASHBOARD**

🎙 **BROADCAST**

🔧 **SETTINGS**

Update Roles

USERNAME

Username

ROLE

Select Role ▾

UPDATE ROLE!

Announcements

BROADCAST ✔

FLIGHT NUMBER

Flight Number

SUBJECT

New flight schedules announced!

TYPE YOUR MESSAGE HERE

Please search for flight number F001 and F002 to check out the new flights which have been scheduled from DEL to BOM and BLR to make travelling for people working inter-state more convenient.

SEND ANNOUNCEMENT

Fly-With-Indigo   About Us   Blog

QUICK ACCESS

DASHBOARD

BROADCAST

SETTINGS

My account

SETTINGS

USER INFORMATION

USERNAME

admin

EMAIL ADDRESS

ayushb6732@gmail.com

FIRST NAME

Administrator

LAST NAME

LOGOUT

Welcome - Staff

USERNAME - STAFF

Email Address - staff@indigo.com

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- FLIGHT ENTRY
- BROADCAST
- SETTINGS

Commence Boarding

FLIGHT NUMBER

F001

BOARD PASSENGERS

Passengers List

NAME	USERNAME	EMAIL ADDRESS	SEAT NUMBER	STATUS	ACTION PANEL
Anusha Yadav	anushayadav	anushayadav1401@gmail.com	S01	CONFIRMED	⋮
Ayush Bansal	ayushboff	ayushbofficial@gmail.com	S02	CONFIRMED	⋮

FLY-WITH-INDIGO

QUICK ACCESS

- 🖥 **DASHBOARD**
- 🗔 **FLIGHT ENTRY**
- 📡 **BROADCAST**
- 🛠 **SETTINGS**

Commence Boarding

FLIGHT NUMBER

Flight Number

BOARD PASSENGERS

Passengers List

NAME	USERNAME	EMAIL ADDRESS	SEAT NUMBER	STATUS	ACTION PANEL
Ayush Bansal	ayushboff	ayushbofficial@gmail.com	S02		⋮

Boarded Successfully

Cancel boarding

Fly-With-Indigo   About Us   Blog

localhost:3000/admin/dashboard#pablo

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- FLIGHT ENTRY
- BROADCAST
- SETTINGS

Flight Information

FLIGHT NUMBER

F003

ARRIVAL

PUN

DEPARTURE

DEL

DEPARTURE TIME

2024/07/31 1200

ARRIVAL TIME

2024/07/31 1420

SUBMIT

QUICK ACCESS

DASHBOARD

FLIGHT ENTRY

BROADCAST

SETTINGS

DASHBOARD

My account

SETTINGS

USER INFORMATION

USERNAME

staff

EMAIL ADDRESS

staff@indigo.com

FIRST NAME

Staff

LAST NAME

Fly-With-Indigo   About Us   Blog

QUICK ACCESS

DASHBOARD

FLIGHT ENTRY

BROADCAST

SETTINGS

DASHBOARD

My account

SETTINGS

USER INFORMATION

USERNAME

staff

EMAIL ADDRESS

staff@indigo.com

FIRST NAME

Staff

LAST NAME

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LOGOUT

Welcome - Ayush Bansal

👤 USERNAME - AYUSHBOFF

✉ Email Address - ayushbofficial@gmail.com

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- BROADCAST
- SETTINGS

General Channel

TIMESTAMP	SUBJECT	MESSAGE
30/07/2024, 16:40:30	New flight schedules announced!	Please search for flight number F001 and F002 to check out the new flights which have been scheduled from DEL to BOM and BLR to make travelling for people working inter-state more convenient.

Fly-With-Indigo   About Us   Blog

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- SEARCH FLIGHTS
- BROADCAST
- SETTINGS

LOAD ALL BOOKINGS

LOAD ACTIVE BOOKINGS

LOAD BOARDED BOOKINGS

Booking Details

FLIGHT NUMBER	DEPARTURE	ARRIVAL	SEAT NUMBER	BOOKING STATUS
F001	DEL | 2024/09/31 09:00	BOM | 2024/09/21 11:00	S02	CONFIRMED

Notifications and Updates

TIMESTAMP	FLIGHT NUMBER	SUBJECT	MESSAGE

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FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- SEARCH FLIGHTS
- BROADCAST
- SETTINGS

LOAD ALL BOOKINGS

LOAD ACTIVE BOOKINGS

LOAD BOARDED BOOKINGS

Booking Details

FLIGHT NUMBER	DEPARTURE	ARRIVAL	SEAT NUMBER	BOOKING STATUS
F001	DEL | 2024/09/31 09:00	BOM | 2024/09/21 11:00	S02	CONFIRMED

Notifications and Updates

TIMESTAMP	FLIGHT NUMBER	SUBJECT	MESSAGE
30/07/2024, 16:36:57	F001	Announcement - Boarding	Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- SEARCH FLIGHTS
- BROADCAST
- SETTINGS

LOAD ALL BOOKINGS

LOAD ACTIVE BOOKINGS

LOAD BOARDED BOOKINGS

Booking Details

FLIGHT NUMBER	DEPARTURE	ARRIVAL	SEAT NUMBER	BOOKING STATUS
F001	DEL	2024/09/31 09:00	BOM	2024/09/21 11:00	S02	CANCELLED

Notifications and Updates

TIMESTAMP	FLIGHT NUMBER	SUBJECT	MESSAGE
30/07/2024, 16:36:57	F001	Announcement - Boarding	Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!

Announcement - Boarding Inbox ×

ayushbofficial@gmail.com

to me

16:36 (1 minute ago)

To - ayushbofficial@gmail.com

Subject - Announcement - Boarding

> *Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!*

Best wishes,
Team Fly-With-Indigo

Reply   Forward

Successfully cancelled flight - F001! Inbox ×

ayushbofficial@gmail.com

to me

16:48 (0 minutes ago)

To - ayushbofficial@gmail.com

Subject - Successfully cancelled flight - F001!

> *Congratulations. You have successfully cancelled your flight! Please leave a feedback for us.*

Best wishes,
Team Fly-With-Indigo

Email sent via EmailJS.com

↩ Reply   → Forward

FLY-WITH-INDIGO

QUICK ACCESS

DASHBOARD

SEARCH FLIGHTS

BROADCAST

SETTINGS

My account

SETTINGS

USER INFORMATION

USERNAME

ayushboff

EMAIL ADDRESS

ayushbofficial@gmail.com

FIRST NAME

Ayush

LAST NAME

Bansal

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LOGOUT

Welcome - Anusha Yadav

👤 **USERNAME - ANUSHAYADAV**

✉️ Email Address - anushayadav1401@gmail.com

FLY-WITH-INDIGO

QUICK ACCESS

🖥 **DASHBOARD**

✈ **SEARCH FLIGHTS**

🌐 **BROADCAST**

⚒ **SETTINGS**

DEPARTURE

DEL

ARRIVAL

Arrival city

SEARCH

Flight Search Results

FLIGHT NUMBER	DEPARTURE (FROM)	ARRIVAL (TO)	DEPARTURE TIMINGS	ARRIVAL TIMINGS	ACTION PANEL
F001	DEL	BOM	2024/09/31 09:00	2024/09/21 11:00	BOOK TICKET
F002	DEL	BLR	20204/07/30 13:00	2024/07/30 17:00	BOOK TICKET
F003	DEL	PUN	2024/07/31 1200	2024/07/31 1420	BOOK TICKET

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FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- SEARCH FLIGHTS
- BROADCAST
- SETTINGS

LOAD ALL BOOKINGS

LOAD ACTIVE BOOKINGS

LOAD BOARDED BOOKINGS

Booking Details

FLIGHT NUMBER	DEPARTURE	ARRIVAL	SEAT NUMBER	BOOKING STATUS
F001	DEL | 2024/09/31 09:00	BOM | 2024/09/21 11:00	S01	CONFIRMED
F003	DEL | 2024/07/31 1200	PUN | 2024/07/31 1420	S01	CONFIRMED

Notifications and Updates

TIMESTAMP	FLIGHT NUMBER	SUBJECT	MESSAGE
30/07/2024, 16:36:57	F001	Announcement - Boarding	Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!

FLY-WITH-INDIGO

QUICK ACCESS

- DASHBOARD
- SEARCH FLIGHTS
- BROADCAST
- SETTINGS

LOAD ALL BOOKINGS

LOAD ACTIVE BOOKINGS

LOAD BOARDED BOOKINGS

Booking Details

FLIGHT NUMBER	DEPARTURE	ARRIVAL	SEAT NUMBER	BOOKING STATUS
F001	DEL | 2024/09/31 09:00	BOM | 2024/09/21 11:00	S01	BOARDED

Notifications and Updates

TIMESTAMP	FLIGHT NUMBER	SUBJECT	MESSAGE
30/07/2024, 16:36:57	F001	Announcement - Boarding	Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!

Announcement - Boarding ➤ Inbox ×

ayushbofficial@gmail.com

4:36 PM (12 minutes ago)

to me ▾

To - anushayadav1401@gmail.com

Subject - Announcement - Boarding

> *Passengers are requested to move to the gate numbers presented on their boarding pass to board the flight!*

Best wishes,
Team Fly-With-Indigo

Email sent via EmailJS.com

Done.	Ok, will do that.	Noted with thanks.

Successfully boarded flight - F001! 📤 Inbox ×

ayushbofficial@gmail.com   4:46 PM (2 minutes ago

to me ▼

To - anushayadav1401@gmail.com

Subject - Successfully boarded flight - F001!

> *Congratulations. You have successfully boarded your flight! Enjoy the world class service provided by Air Indigo and do leave a feedback for us.*

Best wishes,
Team Fly-With-Indigo

Email sent via EmailJS.com

← Reply   → Forward

FLY-WITH-INDIGO

QUICK ACCESS

DASHBOARD

SEARCH FLIGHTS

BROADCAST

SETTINGS

My account

SETTINGS

USER INFORMATION

USERNAME

anushayadav

EMAIL ADDRESS

anushayadav1401@gmail.com

FIRST NAME

Anusha

LAST NAME

Yadav

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Thank You!

Contact me - ayushb6732@gmail.com