

Phase 2
Become a
Back-end expert

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Summer 2023

FlyAway (An Airline Booking Portal)

End of Phase 2

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Full Stack Java Developer Master's Program
Summer 2023

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Overview

Objective:

FlyAway is an airline ticket-booking portal that lets people book flights on their website. They decided to hire a Full Stack Developer to design and develop the portal. The goal of the company is to deliver a high-end quality product as early as possible.

This project focuses on developing a backend project using JDBC, JSP, and Servlets, although a minimal frontend should be implemented. You can create frontend forms on your own or use online resources. It should include a search form to allow entries of travel details, list the available flights with ticket prices, and a confirmation of ticket and the journey details.

Technical Components – Backend & Database Management

- IDE - Eclipse
- Java Programming Language
- Java Server Pages
- Java Servlet
- JDBC
- MySql
- Hibernate

Problem statement:

FlyAway is a ticket-booking portal that lets people book flights on their website.

Core Concepts -

JSPs, Servlets, and JDBC to implemented a fully connected application to a MySQL Database

- Implement frontend Form Design
- Implement Database CRUD features using JDBC
- Database design and scripting
- Designed a normalized database structure
- Created a database initialization script
- Populated tables via script

Project Management

Project Overview :

- Client - Simplilearn
- Consultant - Swapnil Devkar (Full Stack Java Developer)
- Application Name - FlyAway

- Application Phase - Prototype

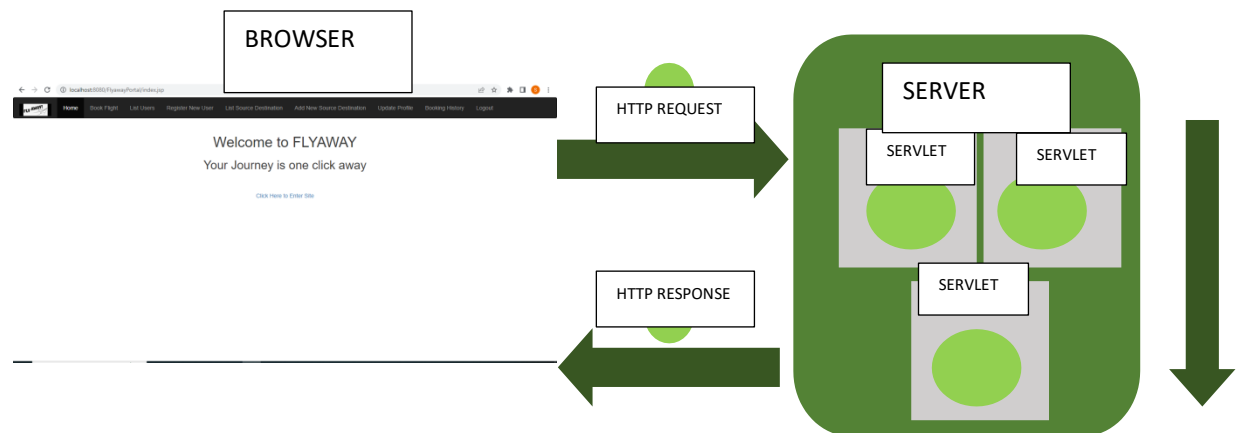
Phase 2 Project Deliverable - Flyaway is a ticket-booking portal that lets people book flights on their website.

Project Planning Management :

- Project Duration - 28 Days
- Number of Sprints - 4
- Planned Sprint Duration - 4 Week

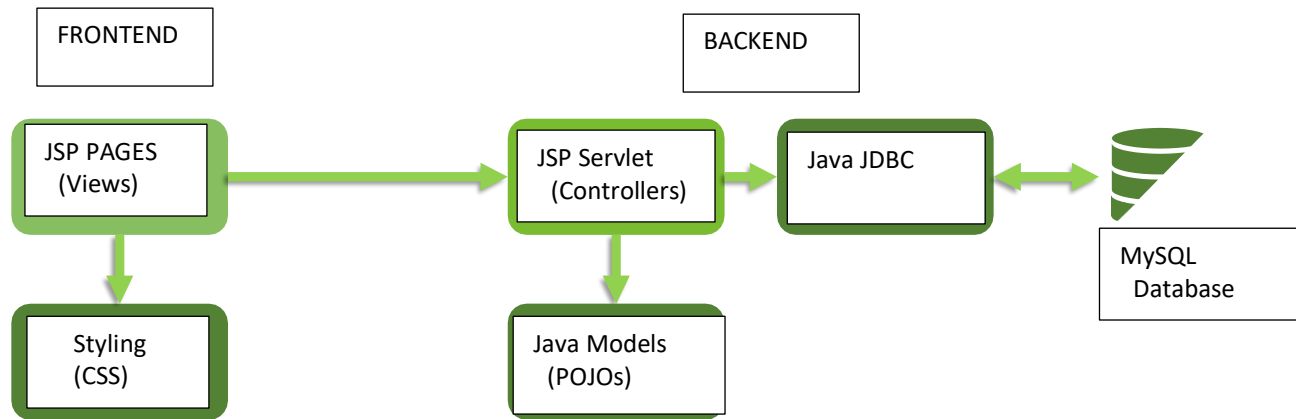
Project Design :

1. User wants to load the Flyaway application. The Browser will send an HTTP request over to the server for the Flyaway landing page.
2. Servlet will execute and generate HTML code on the fly (dynamically), and
3. Servlet will send the HTML file back to the browser as a HTTP response.

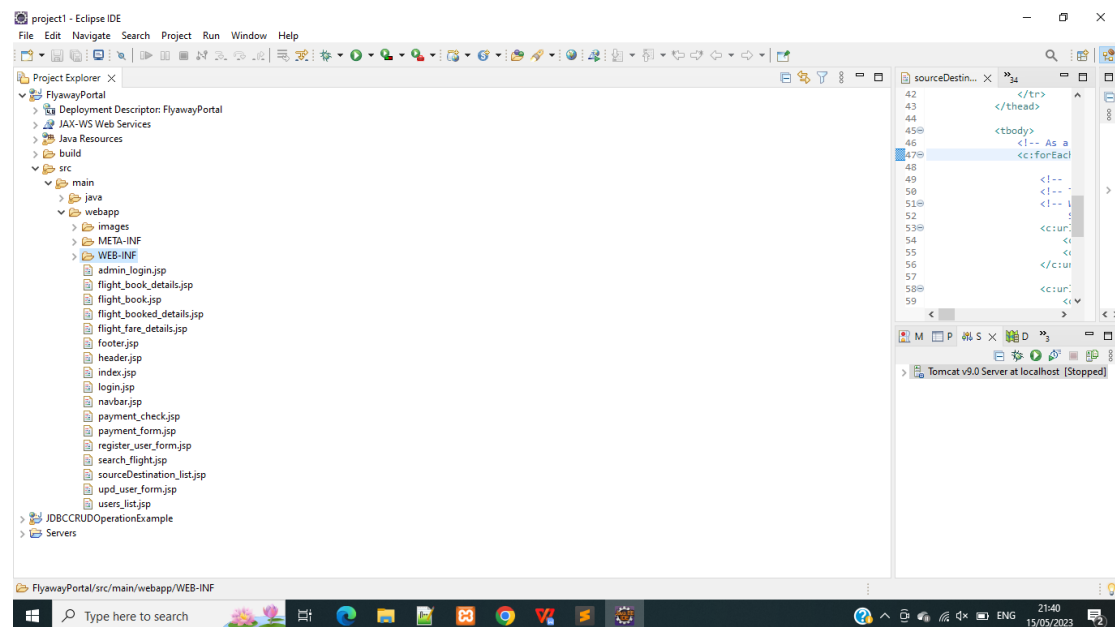


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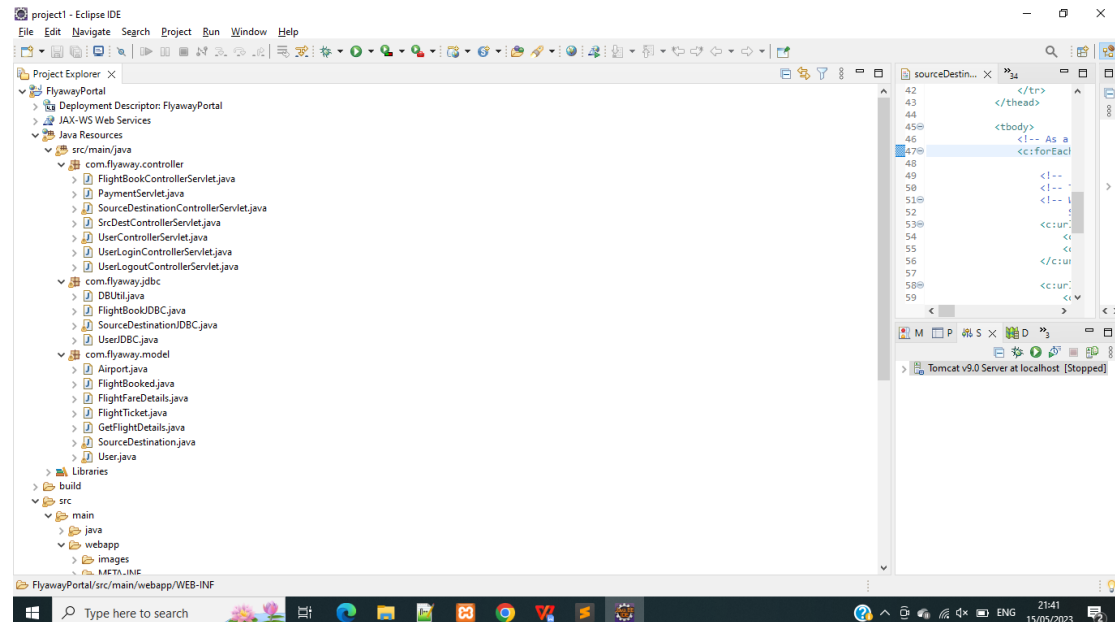
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FRONTEND -



BACKEND FILES -



List Users

1. Create **User.java**
2. Update **UserControllerServlet.java** to handle the request to add a User (using **LIST** command)
3. Create **DbUtil.java** to add a JDBC getUsers() method.
4. Create JSP page: **users_list.jsp**

Add New User

1. Update **users_list.jsp** to add the "Add User" button
2. Update Landing Page to include a link to the "Add User/Register" form
3. Create Form (JSP page) : **register_user_form.jsp**
4. Update **UserControllerServlet.java** to handle the request to add a User (using **ADD** command)
5. Update **DbUtil.java** to add a

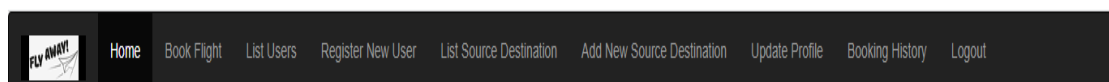
JDBC addUser() method

Update Existing User

1. Update **list-users.jsp** to add
“Update” link
2. Create Form (JSP page) : **upd_user_form.jsp**
3. Update **UserControllerServlet.java** to handle the update request
 - Pre-populate the **upd_user_form** with existing database information (using **LOAD** command)
 - Add logic to update the requestedUser, using the form data (using **UPDATE** command)
4. Update **DbUtil.java** to add a JDBC method for updating a User

Delete Existing User

1. Update **users_list.jsp** to add
“Delete” link
 - Add logic to display a confirmation window
2. Update **UserControllerServlet.java** to handle the request to delete a User (using **DELETE** command)
3. Update **DbUtil.java** to add a JDBC deleteUser() method



User List

Add User

Full Name	User Name	Role	Email	Phone Number	Action
admin	root	Admin	admin@gmail.com	8118805086	Update Delete
swapnil devkar	swap13	Customer	swapnil@gmail.com	8118805065	Update Delete

Book Flight

New Tab x Flyaway Portal x +

localhost:8080/FlyawayPortal/FlightBookControllerServlet

FLY AWAY! Home Book Flight Update Profile Booking History Logout

Journey Details

☒ Round Trip ☐ One Way

Departure City: BOM | Mumbai Arrival City: DEL | New Delhi

Depart Date: 27/05/2023

Return Date: 28/05/2023

Number of Travelers: 4

Search Flights

Windows Taskbar: Type here to search, 15/05/2023 22:02

Flight lists -

New Tab x Flyaway Portal x +

localhost:8080/FlyawayPortal/FlightBookControllerServlet?command=SEARCH&flightDirection=roundtrip&departureCity=BOM+%7C+Mumbai&arrivalCity=DEL+...

FLY AWAY! Home Book Flight Update Profile Booking History Logout

Search Flights

Departing Flights:

BOM to DEL
BOM | Mumbai to DEL | New Delhi

Flight Number	Airline	Departure Travel Day	Departure Travel Date	Source Airport	Destination Airport	Action
101	Air India	Saturday	2023-05-27	BOM Mumbai	DEL New Delhi	Book Tickets
103	Air India	Saturday	2023-05-27	BOM Mumbai	DEL New Delhi	Book Tickets

Returning Flights:

DEL to BOM
DEL | New Delhi to BOM | Mumbai

Flight Number	Airline	Departure Travel Day	Departure Travel Date	Source Airport	Destination Airport	Action
101	Air India	Sunday	2023-05-28	DEL New Delhi	BOM Mumbai	Book Tickets
104	Air India	Sunday	2023-05-28	DEL New Delhi	BOM Mumbai	Book Tickets

[Back to Search Page](#)

Windows Taskbar: Type here to search, 15/05/2023 22:03

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Book Flight -

The screenshot displays a web browser window with a single tab titled 'Flyaway Portal'. The address bar shows the URL: `localhost:8080/FlyawayPortal/FlightBookControllerServlet?command=LOAD&flightNumber=101&airline=Air+India&day=Saturday&date=2023-05-27&src=BOM...`. The application's navigation bar includes links for Home, Book Flight, Update Profile, Booking History, and Logout. The main content area is titled 'Fare Details' and contains a table with the following data:

Flight Number	Airline	Travel Class	Fare	Action
101	Air India	First/Premium Class	1550.0	Book Now
101	Air India	Business	750.0	Book Now
101	Air India	Economy	550.0	Book Now

Below the table, there is a link labeled 'Back to Search Results'. The Windows taskbar at the bottom shows the system clock as 22:03 on 15/05/2023.

Booking Details -

Booking Details

Flight Number	101
Airline	Air India
Travel Class	First/Premium Class
Source	BOM Mumbai
Destination	DEL New Delhi
Travel Day	Saturday
Travel Date	2023-05-27
No. of Passengers	4
Total Amount to be Paid	6200.0
Passenger Details	
Customer Id:	1
Customer Name:	swapnil devkar
Email Address:	swapnil@gmail.com
Phone Number:	8118805065

[Go to Payment Back to Fare Details](#)

Payment Details -

Payment Form

CardHolder Name

Card Number

Total Amount to be Paid

[Confirm Payment Back to Booking Details](#)

Payment Success -

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The screenshot shows a web browser window with the URL `localhost:8080/FlyawayPortal/PaymentServlet?command=PAYMENT_SUCCESS`. The page displays a green box with the text "Payment Successful". Below this, there is a section titled "Payment Confirmation" containing a table with flight details.

Booking Id	9
Customer	swapnil devkar
Flight Number	101
Source	BOM Mumbai
Destination	DEL New Delhi
Travel Day	Saturday
Travel Date	2023-05-27
No. of Passengers	4
Total Amount to be Paid	6200

Below the table, there is a link labeled "Back to Payment Form". The Windows taskbar at the bottom shows the date as 15/05/2023 and the time as 22:06.

Database -

Tables -

```
+-----+
| Tables_in_flyawaydb |
+-----+
| airlines              |
| airportcodes          |
| bookingstatus         |
| flightdays           |
| flightdetails         |
| flightfaresdetails    |
| getflightdetails      |
| ticketdetails         |
| travelclass           |
| userroles             |
| users                 |
+-----+
```

Users -

```
mysql> select * from users;
+-----+-----+-----+-----+-----+-----+-----+-----+
| userid | roleid | fullname   | username | email           | password | phoneNumber | created_date |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1      | 2      | swapnil devkar | swap13   | swapnil@gmail.com | swap13   | 8118805065 | 2023-04-16 23:51:45 |
| 2      | 1      | admin       | root     | admin@gmail.com  | admin    | 8118805086 | 2023-04-21 22:38:34 |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.03 sec)
```

Flight Details -

```
mysql> select * from flightdetails;
```

flightdetailsid	flightnumber	airlineid	src_airportCode	dest_airportCode	totalNumSeats	availFirstClassSeats	availBusinessClassSeats	availEconomySeats
1	101	1	BOM	DEL	50	10	15	25
2	102	1	BOM	DEL	60	10	15	35
3	103	1	BOM	DEL	70	10	15	45
4	104	1	DEL	BOM	70	10	15	45
5	105	1	DEL	BOM	60	10	15	35
6	101	1	DEL	BOM	60	10	15	35
7	102	1	DEL	BOM	60	10	15	35
8	104	1	BOM	DEL	70	10	15	45

Ticket Details -

```
mysql> select * from ticketdetails;
```

bookingid	userid	bookingstatusid	directionid	flightnumber	travelclassid	travelDate	totalPassengers	totalfare	purchaseDate
1	1	2	0	101	1	2023-05-01	2	1100	2023-04-21 22:02:03
2	1	2	0	101	1	2023-05-01	2	1100	2023-04-21 22:10:23
3	1	3	0	101	1	2023-05-01	2	1100	2023-04-21 22:11:10
4	1	3	0	101	1	2023-05-01	2	1100	2023-04-21 22:19:54
5	1	3	0	101	1	2023-05-01	2	1100	2023-04-21 22:25:21
6	1	3	0	101	1	2023-05-01	2	1100	2023-04-21 22:26:47
7	1	3	0	101	3	2023-05-04	3	4650	2023-04-21 22:29:21
8	1	3	0	101	2	2023-05-07	2	1500	2023-04-21 22:33:22
9	1	3	0	101	3	2023-05-27	4	6200	2023-05-15 22:05:18

Flight Fare Details -

```
mysql> select * from flightfaredetails;
```

fareid	flightnumber	travelclassid	fare
1	101	1	550
2	101	2	750
3	101	3	1550
4	102	1	650
5	102	2	800
6	102	3	1650
7	103	1	450
8	103	2	650
9	103	3	1350
10	104	1	450
11	104	2	850
12	104	3	1550

Booking Status -

```
mysql> select * from bookingstatus;
```

bookingstatusid	bookingstatusname
1	pending
2	confirmed
3	purchased

Travel Class -

```
mysql> select * from travelClass;
```

travelclassid	travelclassName
1	Economy
2	Business
3	First/Premium Class

Air lines -

```
mysql> select * from airlines
```

airlineid	companyName
1	Air India

AirPort Codes -

```
mysql> select * from airportcodes;
```

airportCodeid	airportCode	airportName	countryid
1	BOM	Mumbai	1
2	DEL	New Delhi	1
3	BLR	Bengaluru	1
4	PNQ	Pune	1
5	HYD	Hyderabad	1

Flight Days -

```
mysql> select * from flightdays;
```

flightdayid	flightnumber	dayName	dayValue
1	101	Monday	1
2	102	Monday	1
3	103	Monday	1
4	104	Monday	1
5	101	Tuesday	2
6	102	Tuesday	2
7	103	Tuesday	2
8	104	Tuesday	2
9	101	Wednesday	3
10	102	Wednesday	3
11	101	Thursday	4
12	103	Thursday	4
13	104	Thursday	4
14	101	Friday	5
15	104	Friday	5
16	101	Saturday	6
17	103	Saturday	6
18	101	Sunday	7
19	104	Sunday	7
20	103	Sunday	7

Source Code -

All code for this project can be found at the following link:

<https://github.com/swapnil130994/FlyAway-Flight-Booking-Portal>