



# **SE 202.3 Development of Enterprise Applications**

## **Group Assignment – Final Report**

**Module Leader – Dr. Chaminda Wijesinghe**



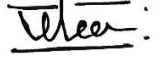



**Submitted By : R B W M S U R Bandara**

A handwritten signature in black ink, appearing to read "R B W M S U R Bandara".

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# Group Members

Name	Student ID	Email Address	Part Done	Signature
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M K V I Medhani	23583	<a href="mailto:mkvimedhani@students.nsbm.ac.lk">mkvimedhani@students.nsbm.ac.lk</a>	Manage Tickets	
D T Mannapperuma	23669	<a href="mailto:dtmannapperuma@students.nsbm.ac.lk">dtmannapperuma@students.nsbm.ac.lk</a>	Manage User Accounts	
D M D M Dissanayaka	23850	<a href="mailto:dmdmdissanayaka@students.nsbm.ac.lk">dmdmdissanayaka@students.nsbm.ac.lk</a>	Manage Staff Members	
S K Samarasinghe	22705	<a href="mailto:sksamarasinghe@students.nsbm.ac.lk">sksamarasinghe@students.nsbm.ac.lk</a>	Users	

# 1. Introduction

This group assignment is a project that we must design and develop a web-based application to manage Airline Service. This Airline's name was Pheonix Airlines PVT.

In here, There are three types of users: Staff, Users, and Admin. Users and Staff can create their accounts by themself. But Staff accounts must be approved by the admin also the admin can add staff members to the system. Grade two staff members can view information and only add new flight details. Every activity of the staff and users should be monitored by their ID or email. The admin dashboard can only be accessed by the admin, only staff members can access the staff dashboard, and the user's dashboard can be accessed by users and staff members. The admin can monitor every activity of the staff and users. Users can update their profiles and reservations. The last login time and IP of all users should be monitored. All users can search flights through the flight ID.

Therefore, we started to develop web application related to above facts by dividing into 6 parts.

## ❖ GitHub Repository link :

<https://github.com/SanduniUpekha/DEA-Project---Flight-booking-system>

**Repository Name :** [SanduniUpekha/DEA-Project---Flight-booking-system](https://github.com/SanduniUpekha/DEA-Project---Flight-booking-system)

## 2. Methodology

We used html, CSS, JavaScript, PHP, and bootstrap frameworks to create this website and also we used JSP and java enterprise edition to design patterns and got ideas for create this project from W3 School, YouTube, lecture slides and senior students at the university.

- **Tech stacks**

Front – end : **JSP , CSS , Bootstrap , etc.**

Back – end : **J2EE**

Server : **Tomcat Server**

Database : **MySQL**

- **Tools**

UI , UX : **Adobe XD**

Front – end : **Visual Studio Code**

Back – end : **NetBeans**

MySQL : **MySQL Workbench**

- **Architecture**

MVC Architecture

We used J2EE to cookies and sessions.

It took about more than one month to complete this project. While creating the project, we created a GitHub Repository and implemented the relevant updates of six parts of the project to GitHub. We did this website collectively and collaboratively by sharing the six parts including front – end and back – end of website one by one among the team members.

The parts we have done have been uploaded as parts of each member. Finally, on the day of submission due date, we have uploaded the complete project to our GitHub repository.

❖ **GitHub Repository link :**

<https://github.com/SanduniUpekha/DEA-Project---Flight-booking-system>

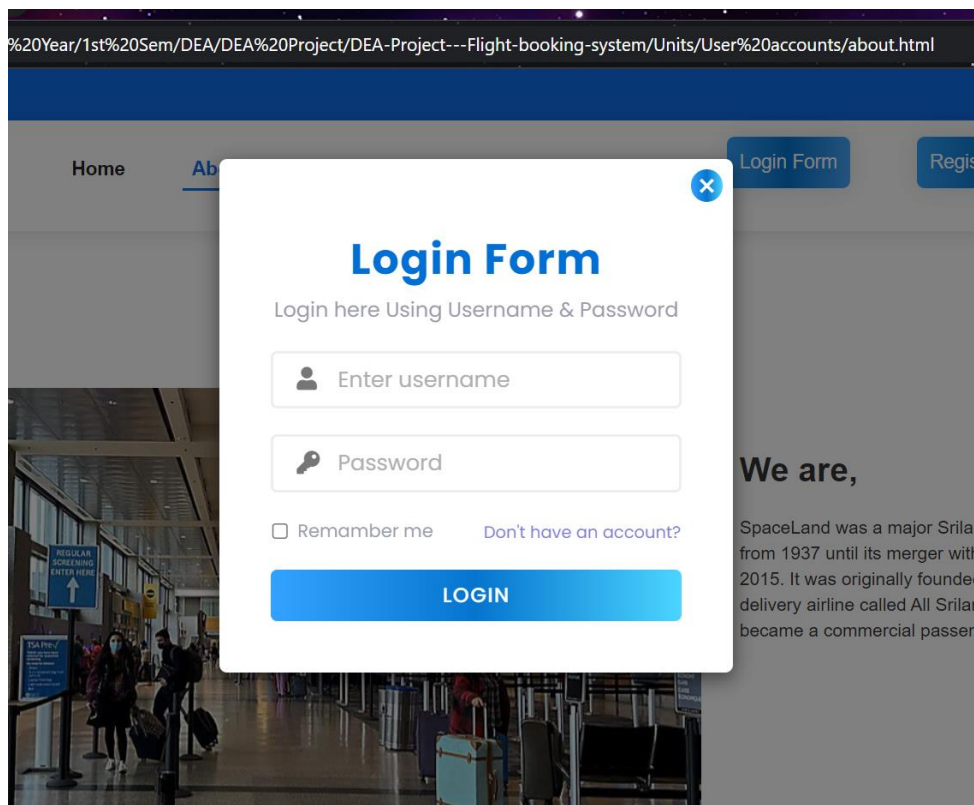
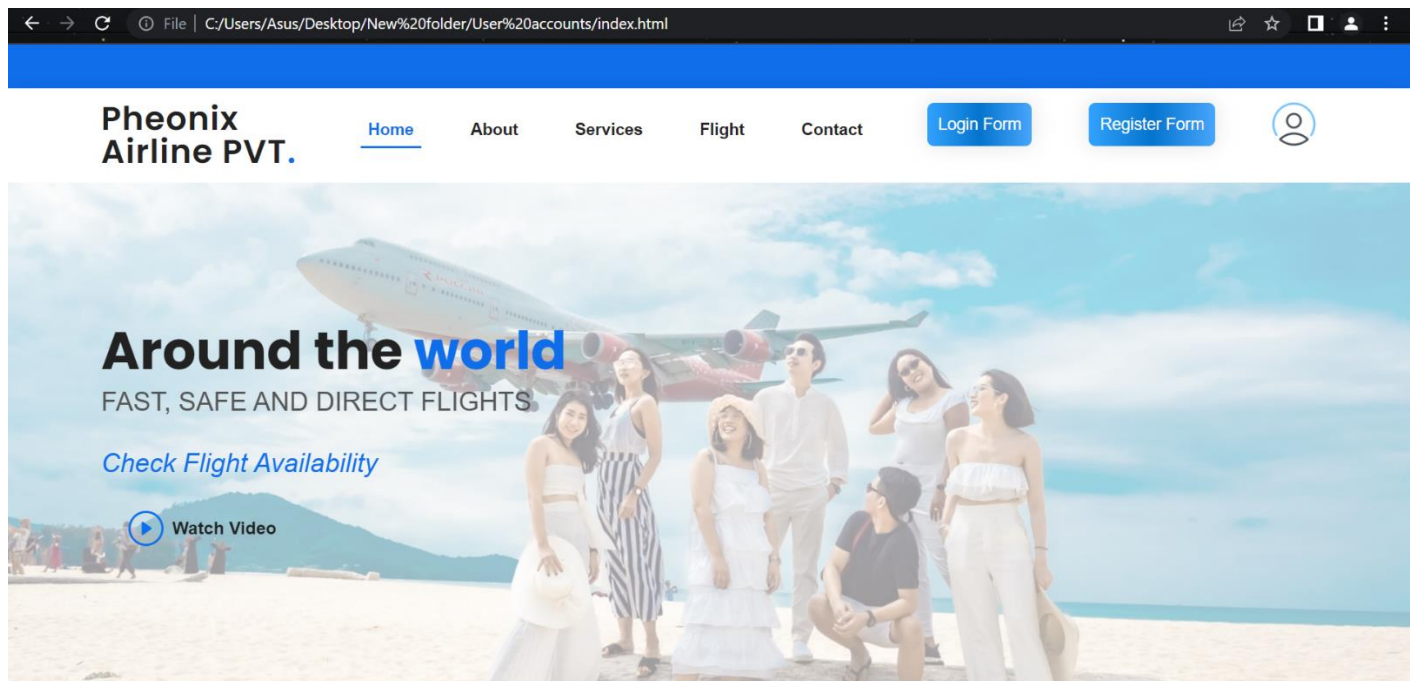
**Repository Name :** [SanduniUpekha/DEA-Project---Flight-booking-system](https://github.com/SanduniUpekha/DEA-Project---Flight-booking-system)

## 2.1 Front – End of the website

Here we have the all the screenshots of our websites and explanations of how we done those parts.

- **Website**

This is the home page of our website. We have a logo and we included navigation bar to go to other subpages in the website and go back to previous pages. There two login form and register form to users in the right side of the navigation bar.



ear/1st%20Sem/DEA/DEA%20Project/DEA-Project---Flight-booking-system/Units/User%20accounts/about.html

[Home](#) [About](#) [Login Form](#) [Register](#)

## Registration Form

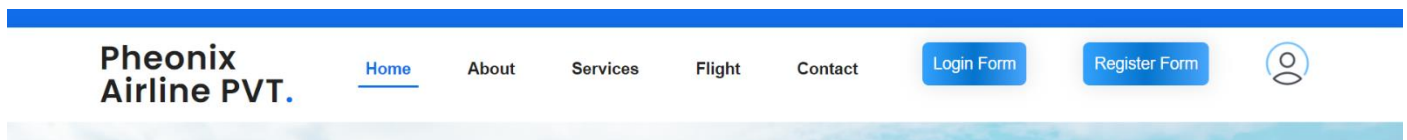
☐ Remember me [Already have an account](#)

REGISTER

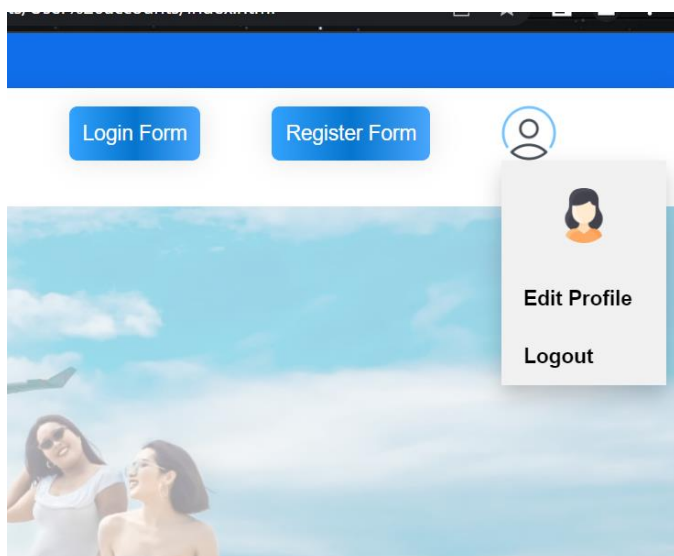
### We are,

SpaceLand was a major Srilankan from 1937 until its merger with Sri It was originally founded in Katuna airline called All Srilankan Aviation commercial passenger airline.

## Navigation bar



In the corner of the navigation bar, we have added option to view user profile and edit details of profile. It has the logout option too.



**Pheonix Airline PVT.**

Home About Services Flight Contact Login Form Register Form

### Edit Profile

**Name**  
Your name

**Age**  
Your age

**NIC**  
Your NIC

**Email**  
Your Email

**Username**  
Your username

**Password**  
Your password

submit

We added flight availability link and when you click on it, it pops up a form named as flight and there are options and blanks to fill and then you can check the availability of a flight.

### Flights

**From (select)**  
country

**To (select)**  
country

**Ticket Class (select)**  
Economy Class

**Flight type (select)**  
Round Trip

**Day (select)**  
Monday

**Flight Time (select)**  
6.30 A.M

**Flight Date (select)**  
dd/mm/yy

CHECK AVAILABILITY

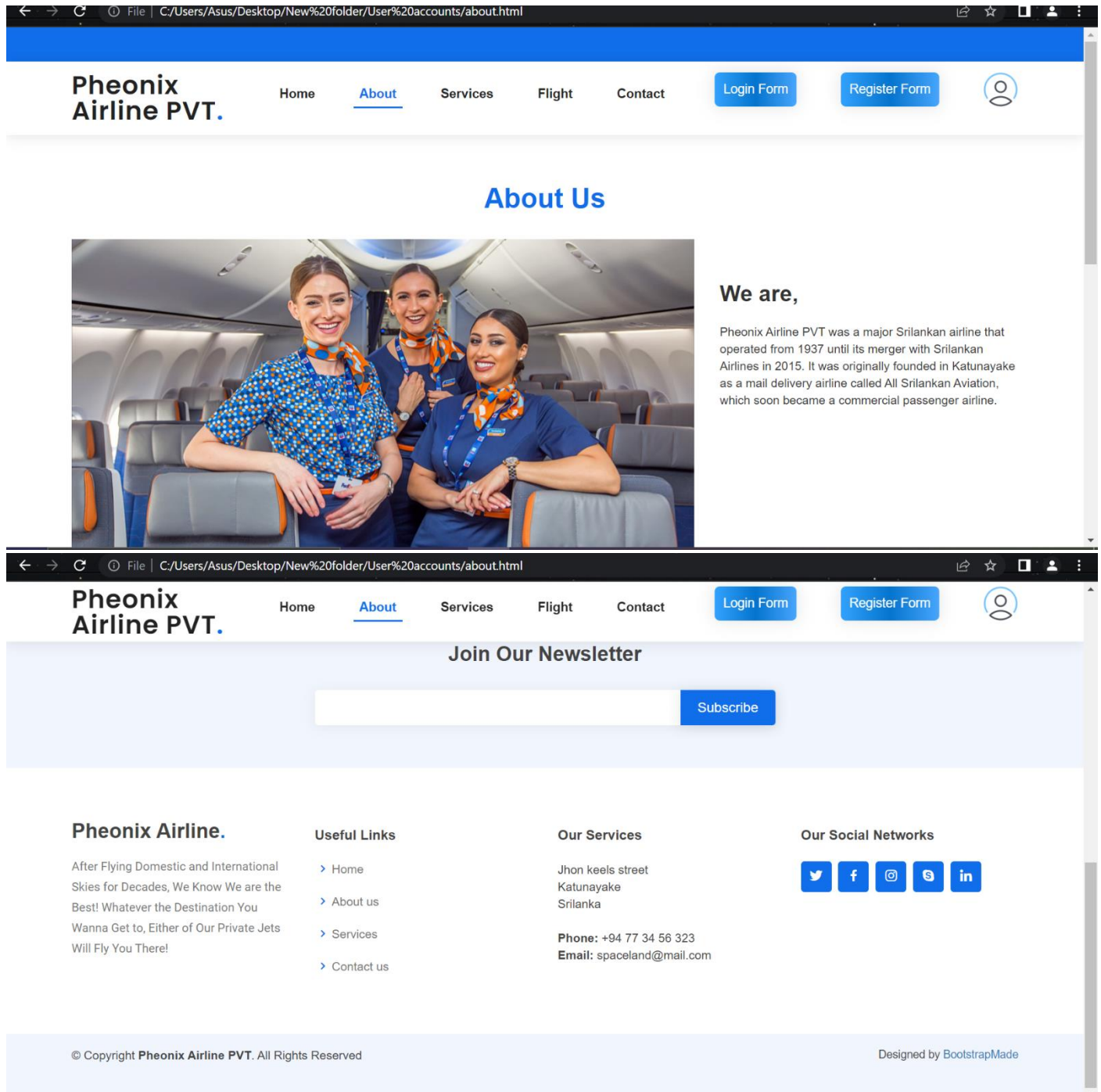
We also added a small video clip about this airline. We took it from YouTube.





We used Html, CSS, JavaScript, PHP and Bootstrap templates create this webpage and forms.

In About Us page, we added some pictures related to airline, some paragraphs and some box to submit anything in users minds.

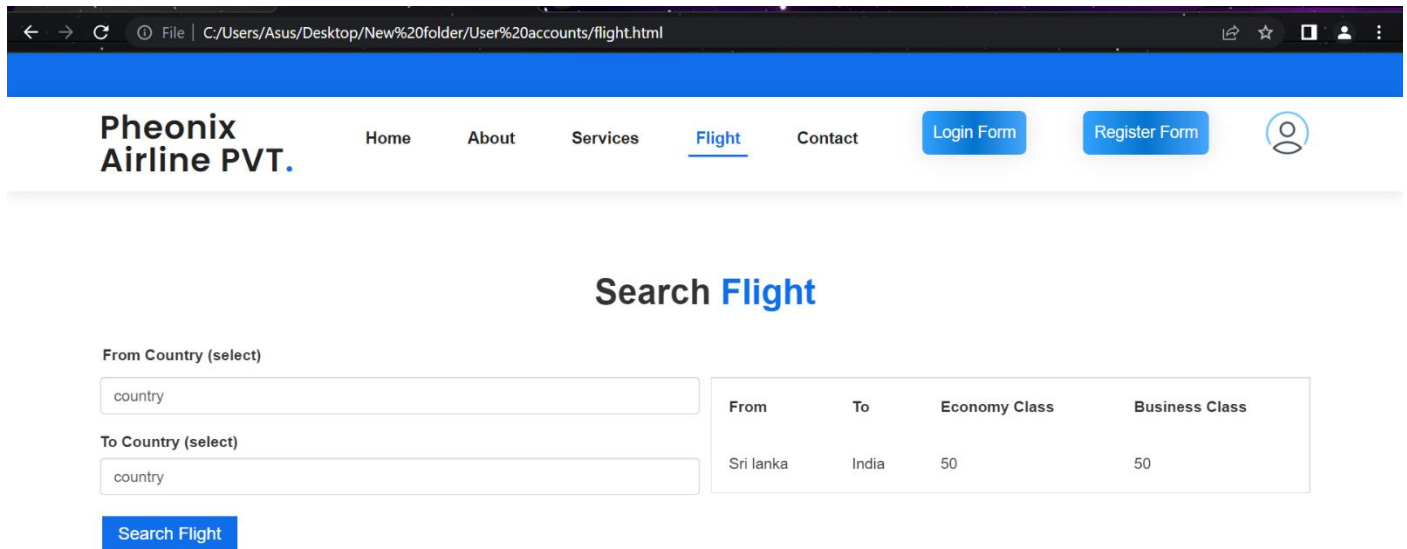


There are links to go to the options in navigation bar, contact details and social media details in the bottom of this page. We also added a footer.

In here we used Html, CSS, JavaScript, PHP and bootstrap templates to design the page, forms and boxes too.

We done another page names services.

In flight page, we added two boxes called to country and from country to search flights users have to select two countries from that and click the search button. In right side there is a box that displaying searched flight details.

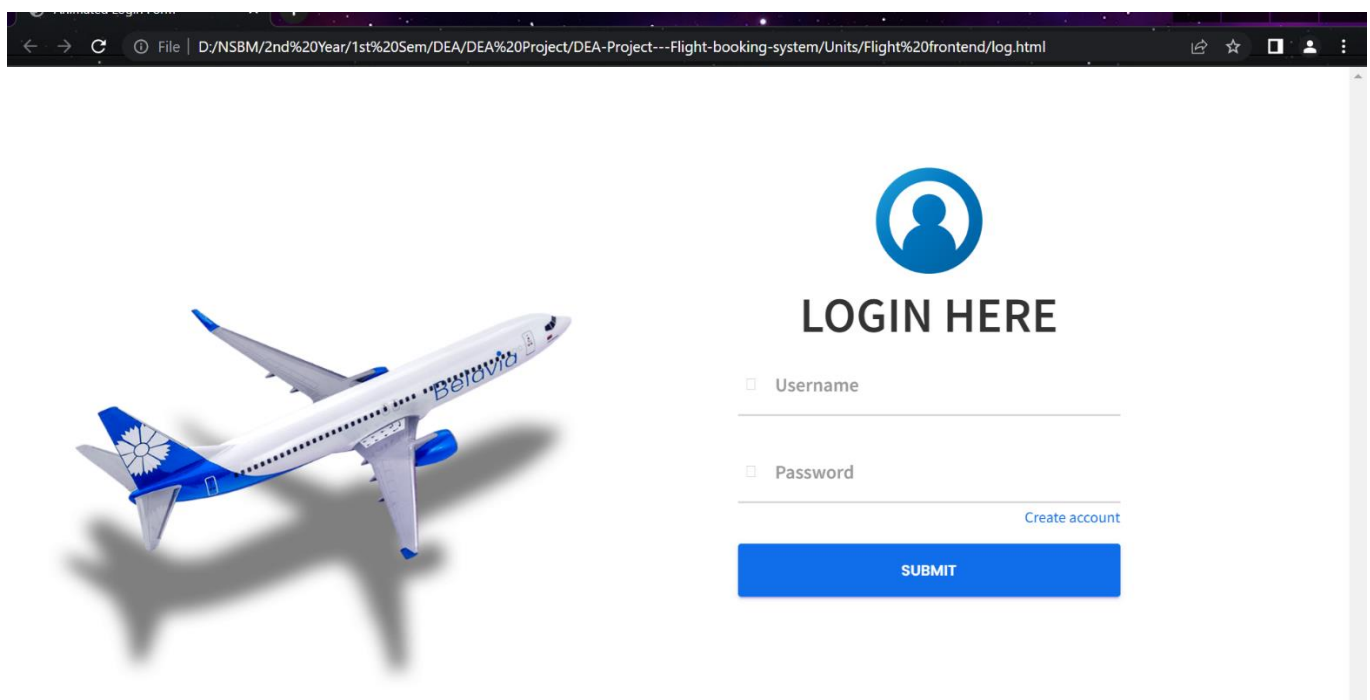


From	To	Economy Class	Business Class
Sri lanka	India	50	50

In here also Html, CSS, JavaScript, PHP and bootstrap templates have been used.


In Contact page there are contact details of flight details.


Given below is the login and registration forms for admin. Html, CSS, JavaScript, PHP and bootstrap templated are used.








## REGISTER HERE


 Name

 Age

 NIC

 Email

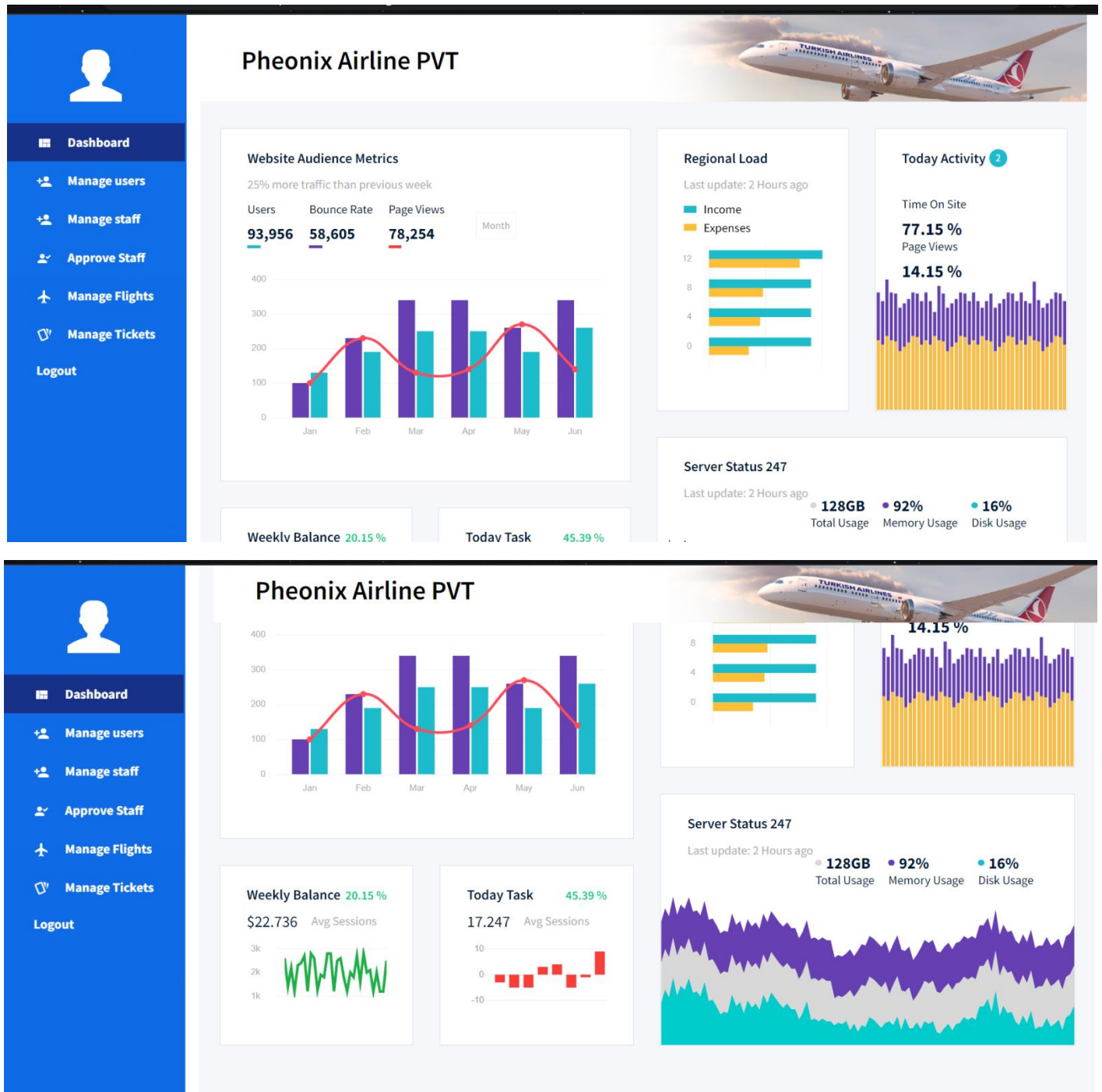
 Username

 Password




- **Dashboard**

We used html, CSS and JSP to create the dashboard. In this dashboard, we have included a chart showing the bounce rates and rates of the number of times users visit the site. Also, the rates of daily tasks, weekly balance rates, and server status are shown here. Dashboard is connected to manage users, manage staff, approve staff, manage flight, manage tickets tabs and logout tab.



This is the manage user part. It has a forum to fill data about user and user details table to edit or delete data.



Dashboard

Manage users

Manage staff

Approve Staff

Manage Flights

Manage Tickets

Logout

## Phoenix Airline PVT

### User Details

Staff ID

Name

Age

Age

Passport Number

NIC

Email

Email

Username

Username


Password

Password

Add User

Cancel

Same as the manage user, this is the manage staff part to fill data about staff members and staff details to edit and delete data.



Dashboard

Manage users

Manage staff

Approve Staff

Manage Flights

Manage Ticket

Logout

## Phoenix Airline PVT

### Staff Details

Staff ID

Name

Username

Username

Password

Password

Staff Grade

Grade 1

Add staff



Cancel

Manage Flights

Manage Ticket

Logout

### Staff Details

Staff ID	Username	Password	Grade	Actions
John Doe	Administration	(171) 555-2222	(171) 555-2222	 

This is the approve staff page shown below, this has staff details and approve button option to approve the staff member.

**Pheonix Airlines PVT**

### Approve Staff

ID	Username	Password	Stage	Approval
John Doe	Administration	(171) 555-2222	Stage 1	<input checked="" type="checkbox"/> <input type="checkbox"/>

Given below is the manage flight page. It has a forum to enter the details of the flight.

### Flight Details

Flight ID

Name

Flight Name

Age

Country

UK

Airport

Katunayake

Flight Shedule ID

Schedule ID

[Manage Flights](#)
[Manage Tickets](#)
[Logout](#)

### Flight Details

FlightID	Flight Name	Country	Airport	Flight Shedule ID	Actions
John Doe	Administration	(171) 555-2222	(171) 555-2222	(171) 555-2222	

In here has the tickets details and edit and delete options.

[Dashboard](#)
[Manage users](#)
[Manage staffs](#)
[Approve Staff](#)
[Manage Flights](#)
[Manage Tickets](#)
[Logout](#)

## Pheonix Airline PVT

### Ticket Details

TicketID	UserID	FlighID	Date & Time	Price	Actions
John Doe	Administration	(171) 555-2222	(171) 555-2222	(171) 555-2222	

In the bottom of the navigation bar there is the logout option to log out from the dashboard.

## LOGIN HERE

[Create account](#)

All those forums and pages are done by using Html, CSS, JavaScript, PHP and Bootstrap templates.



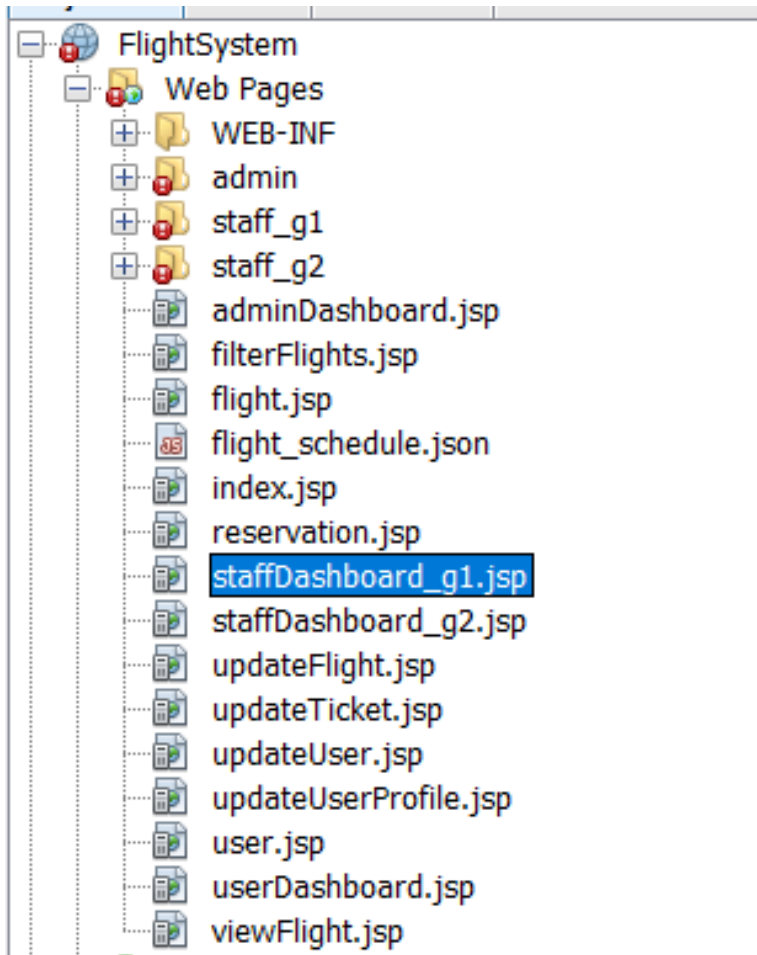
## 2.2 Back – End of the website

We done most of back – end works using NetBeans. We have used multiple connected jsp files too.

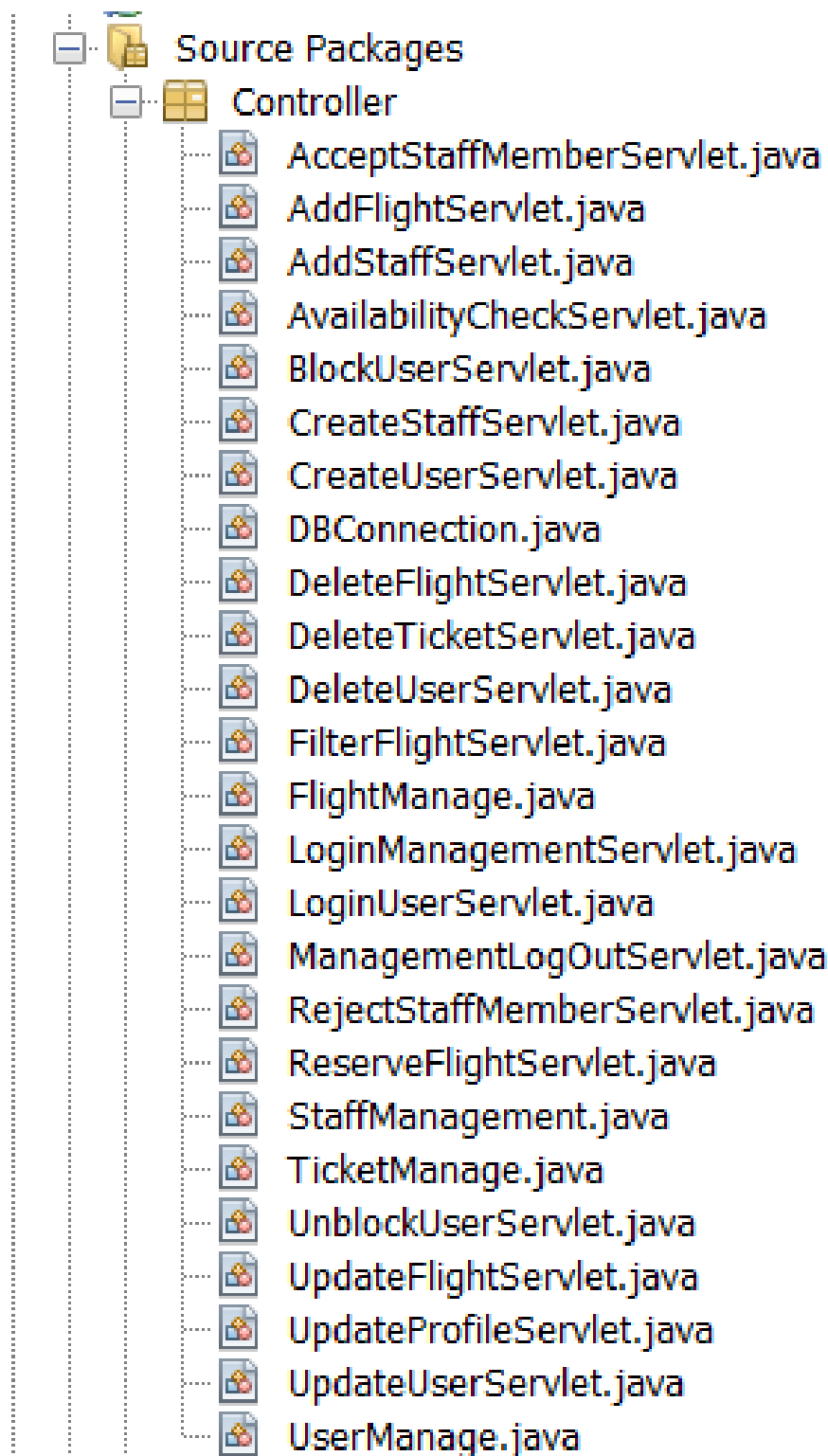
- **MVC Architecture**

These are the screenshots of architectures

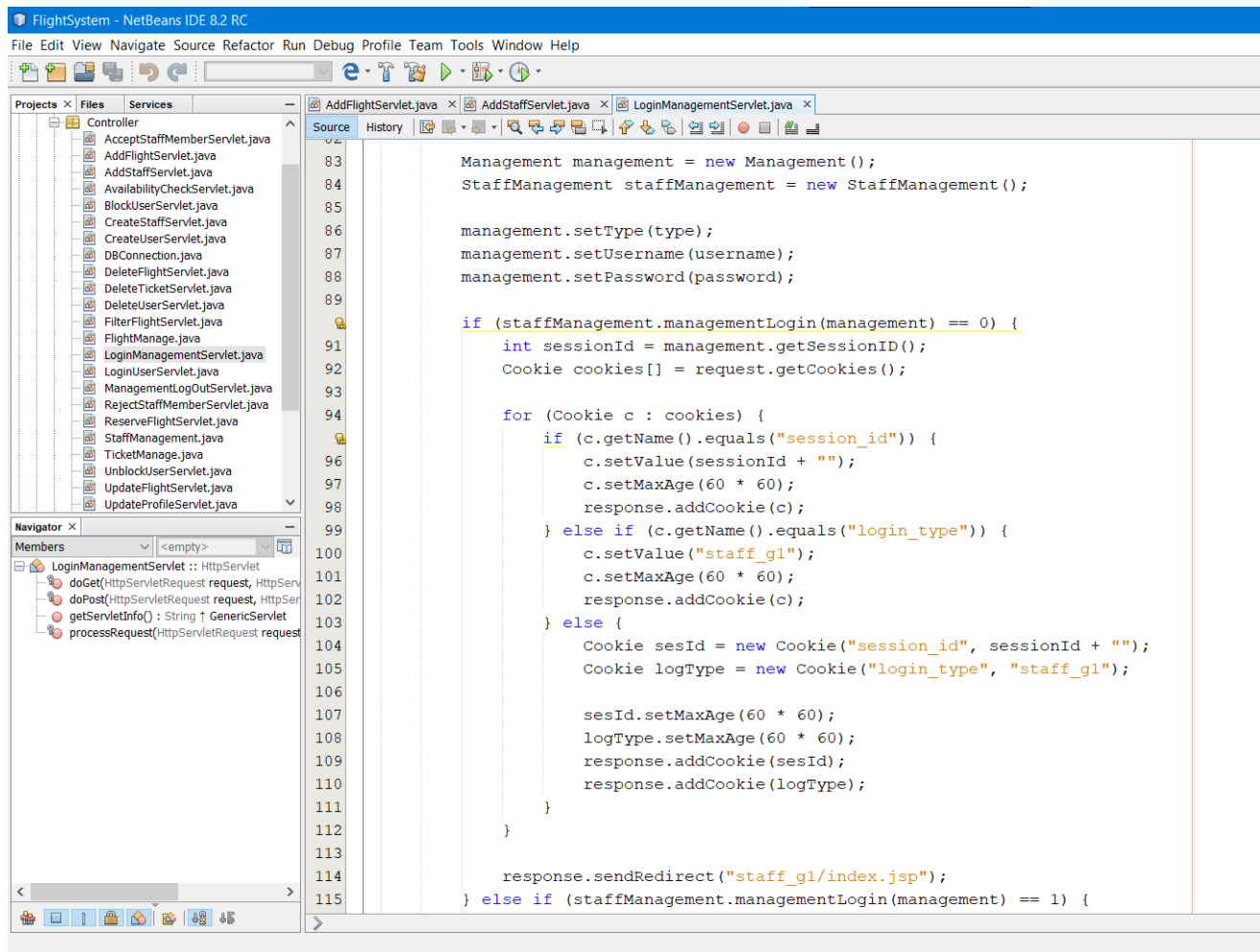
MVC





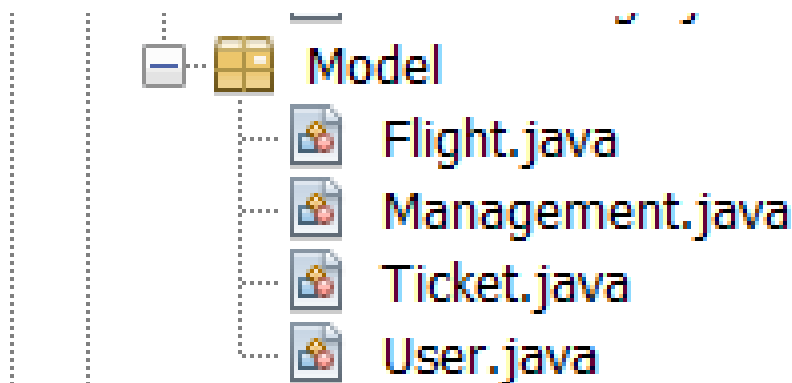


Here is the sample code for controller.

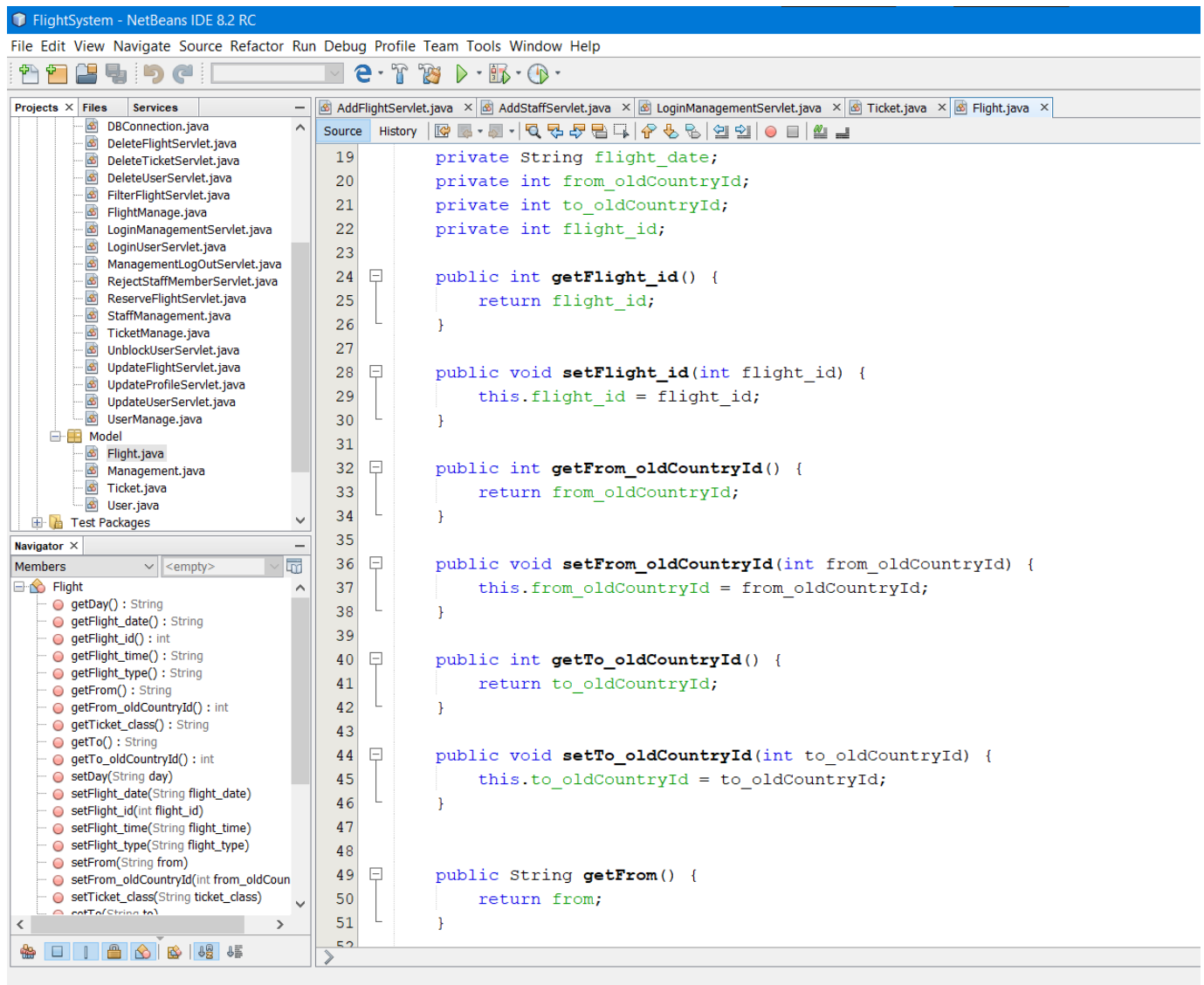


```
82 import Management;
83 import StaffManagement;
84 import java.util.*;
85
86 Management management = new Management();
87 StaffManagement staffManagement = new StaffManagement();
88
89 management.setType(type);
90 management.setUsername(username);
91 management.setPassword(password);
92
93 if (staffManagement.managementLogin(management) == 0) {
94     int sessionId = management.getSessionID();
95     Cookie cookies[] = request.getCookies();
96
97     for (Cookie c : cookies) {
98         if (c.getName().equals("session_id")) {
99             c.setValue(sessionId + "");
100             c.setMaxAge(60 * 60);
101             response.addCookie(c);
102         } else if (c.getName().equals("login_type")) {
103             c.setValue("staff_g1");
104             c.setMaxAge(60 * 60);
105             response.addCookie(c);
106         } else {
107             Cookie sesId = new Cookie("session_id", sessionId + "");
108             Cookie logType = new Cookie("login_type", "staff_g1");
109
110             sesId.setMaxAge(60 * 60);
111             logType.setMaxAge(60 * 60);
112             response.addCookie(sesId);
113             response.addCookie(logType);
114         }
115     }
116
117     response.sendRedirect("staff_g1/index.jsp");
118 } else if (staffManagement.managementLogin(management) == 1) {
```

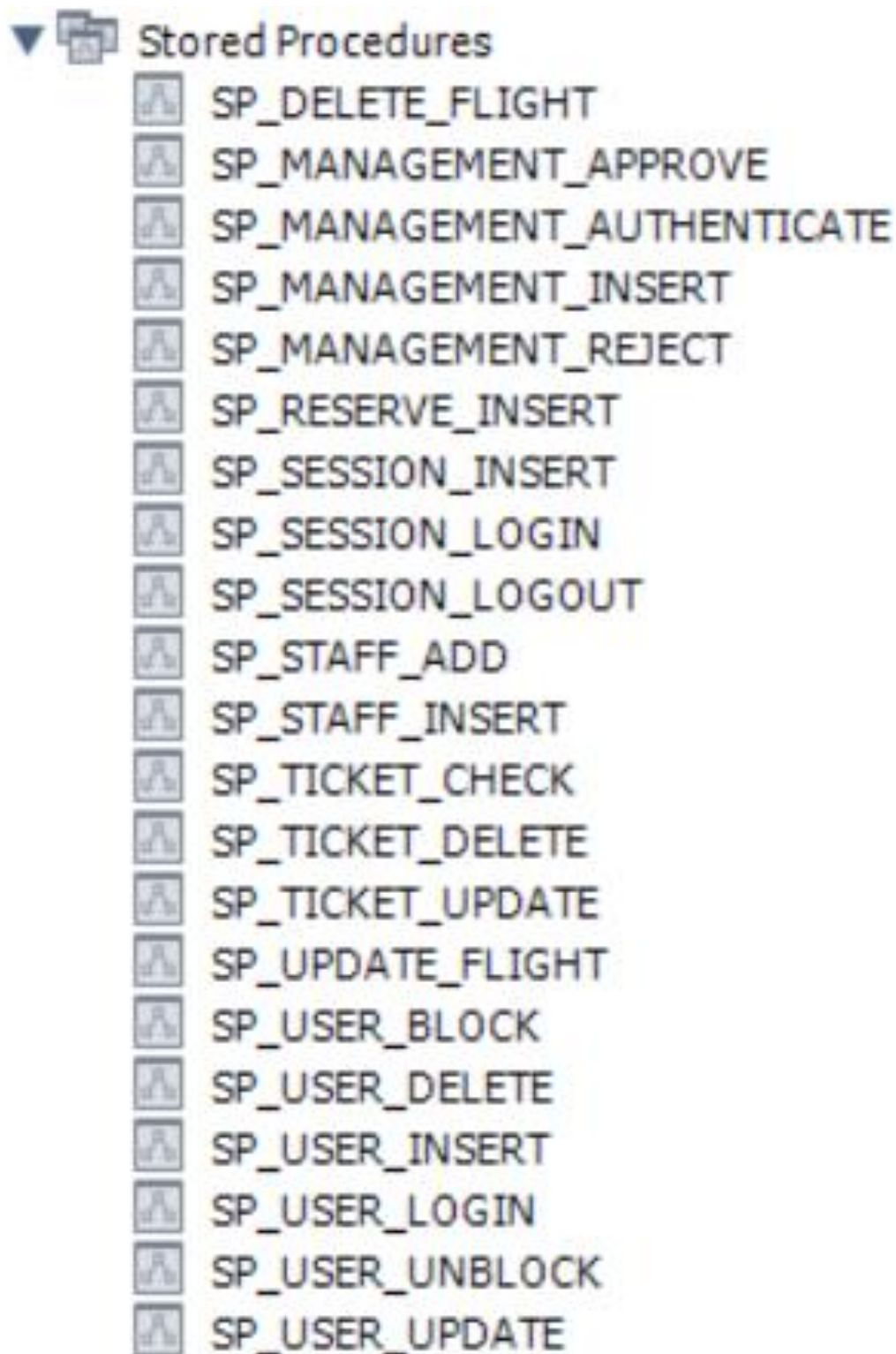
## Architecture – Model



Here is the sample code for model.

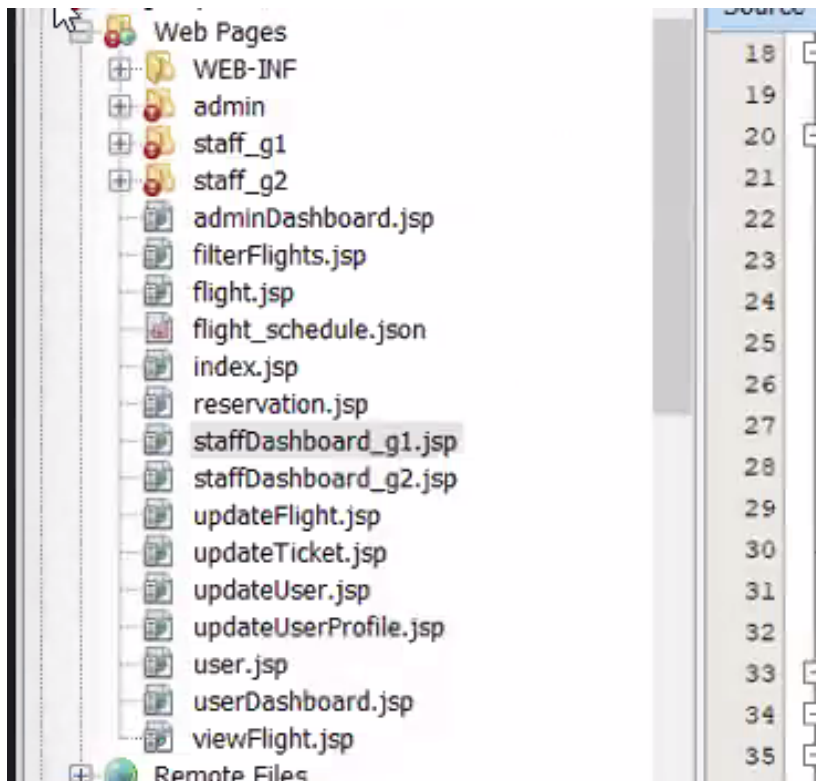


- Stored Procedures

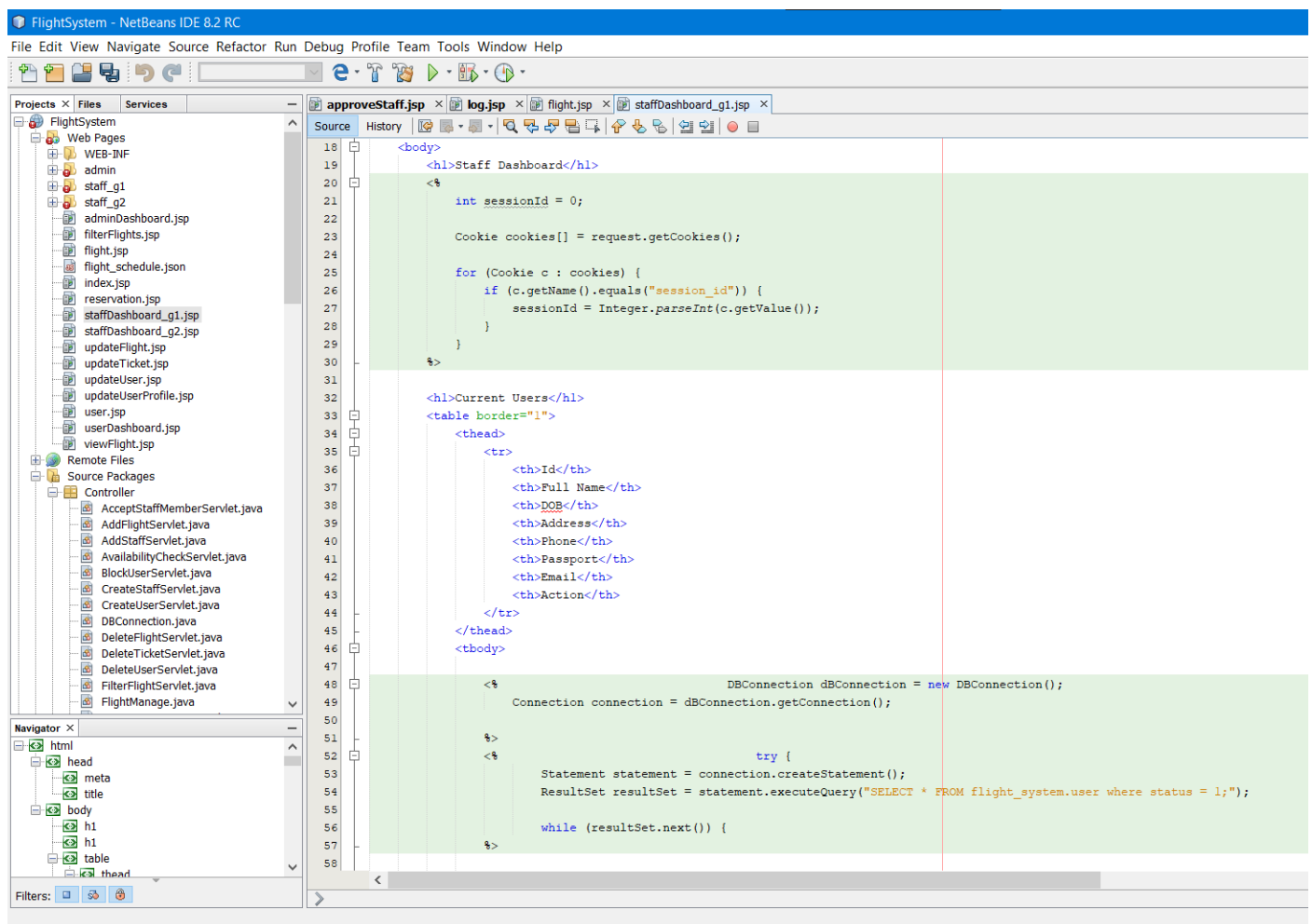


- Views

We coded front end with Html, CSS, JavaScript, and PHP. Then we converted all files into .jsp files.



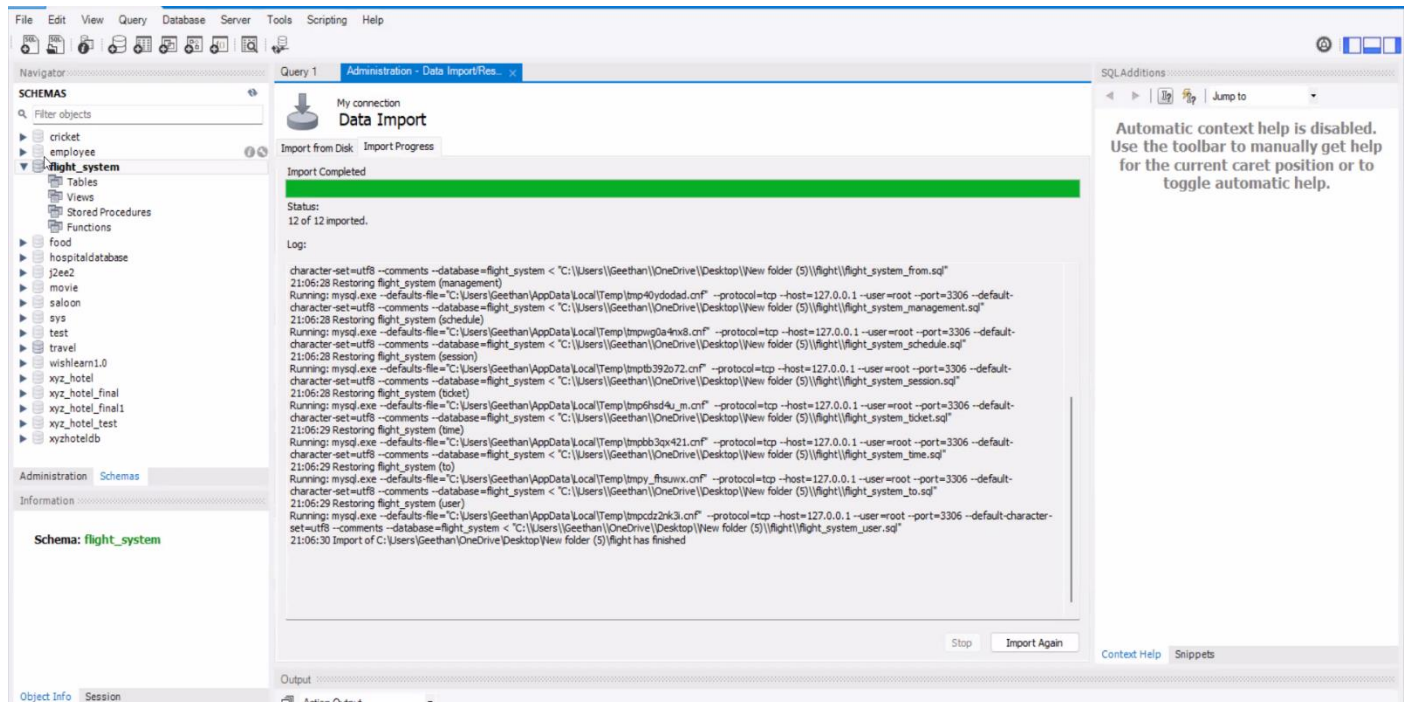
Here is the sample JSP file in views.



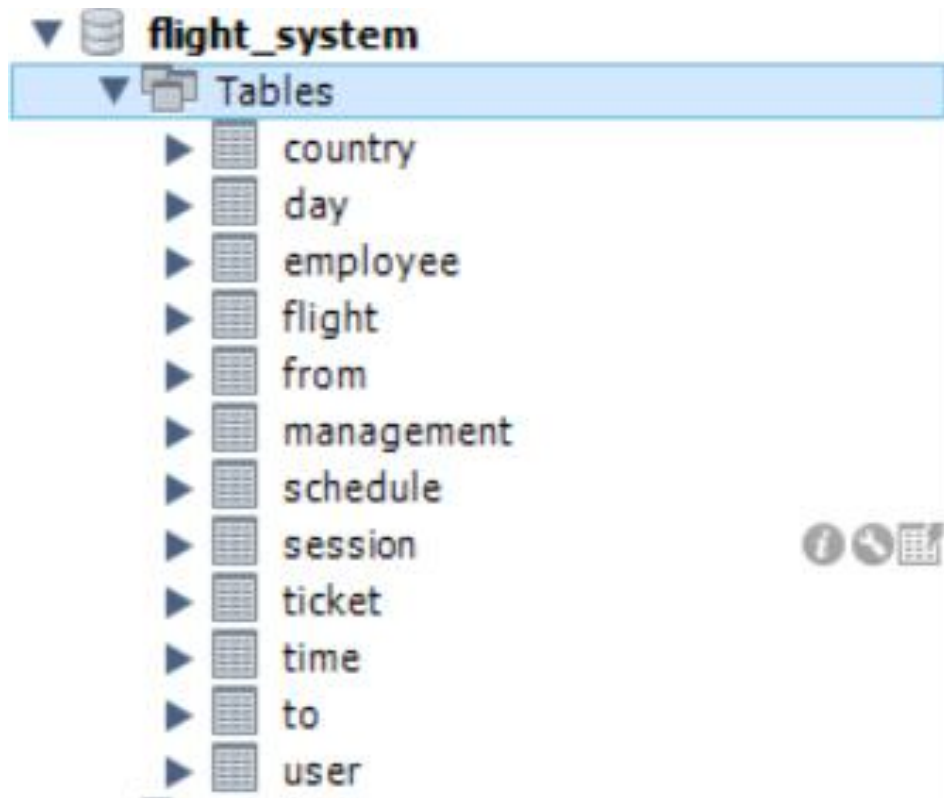
- **Databases**

We have uploaded database backup codes into GitHub repository.

As shown in below this is how we imported database codes into MySQL workbench. Database name is flight\_system.



These are the tables in the database.





## Flight table

Navigator

SCHEMAS

Filter objects

- full\_name
- age
- nic
- email
- username
- password
- grade
- session\_id
- status
- Indexes
- Foreign Keys
- Triggers
- flight**
  - Columns
  - Indexes
  - Foreign Keys
  - Triggers
- from
  - Columns
  - Indexes
  - Foreign Keys
  - Triggers

Query 1 Administration - Data Import/Res... flight

1 • `SELECT * FROM flight_system.flight;`

Result Grid

	id	from_id	to_id	type	date
▶	1	2	3	one	2022-10-26
	2	3	4	round	2001-08-23
*	NULL	NULL	NULL	NULL	NULL

## From table

Navigator

SCHEMAS

Filter objects

- full\_name
- age
- nic
- email
- username
- password
- grade
- session\_id
- status
- Indexes
- Foreign Keys
- Triggers
- flight**
  - Columns
  - Indexes
  - Foreign Keys
  - Triggers
- from**
  - Columns
  - Indexes
  - Foreign Keys
  - Triggers

Query 1 Administration - Data Import/Res... flight

1 • `SELECT * FROM flight_system.from;`

Result Grid

	id	country_id
▶	3	1
	1	2
	2	14
	4	213
*	NULL	NULL

## Schedule table

The screenshot shows a database management tool interface. On the left, the 'SCHEMAS' pane displays a tree view of the 'flight\_system' database. The 'schedule' table is selected under the 'flight' schema. The 'Columns' pane shows the table structure: 'id' (int), 'day\_id' (int), and 'flight\_id' (int). The 'Query 1' pane shows the SQL query: `SELECT * FROM flight_system.schedule`. The 'Result Grid' pane displays the query results:

	id	day_id	flight_id
1	1	5	2
2	2	2	3
*	NULL	NULL	NULL

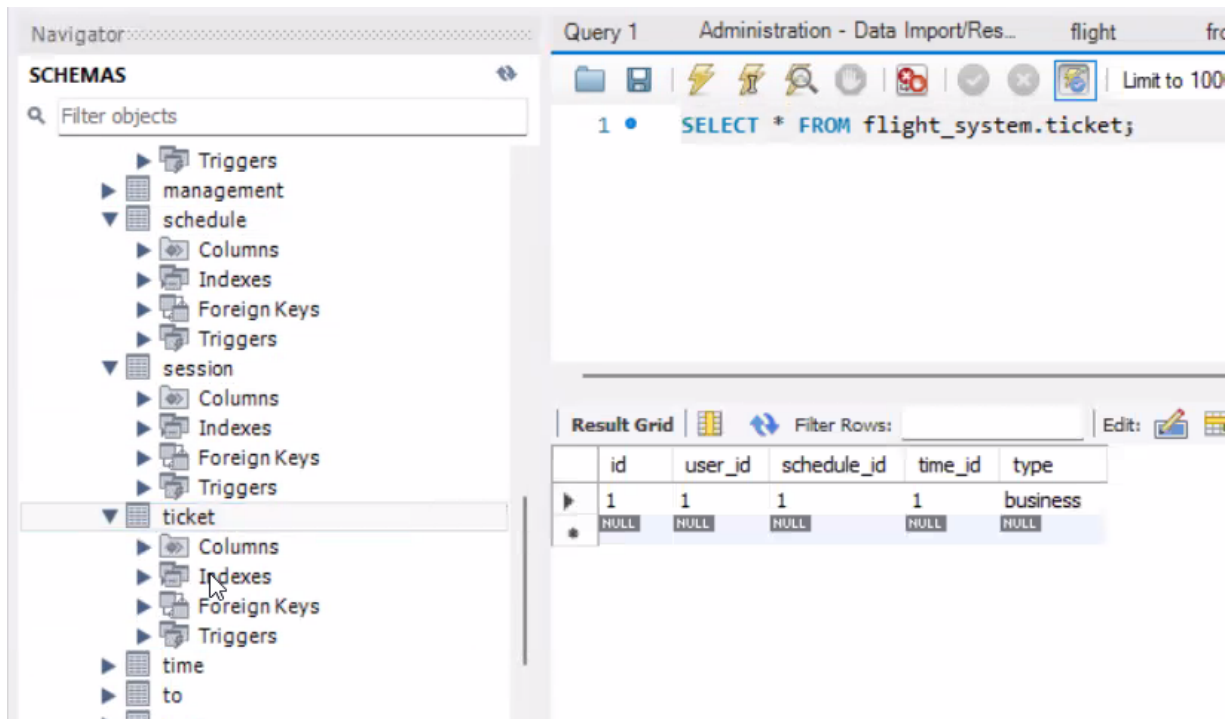
## Session table

The screenshot shows a database management tool interface. On the left, the 'SCHEMAS' pane displays a tree view of the 'flight\_system' database. The 'session' table is selected under the 'flight' schema. The 'Columns' pane shows the table structure: 'id' (int), 'name' (varchar), and 'status' (int). The 'Query 1' pane shows the SQL query: `SELECT * FROM flight_system.session`. The 'Result Grid' pane displays the query results:

	id	name	status
2	session 1	1	
3	session 2	0	
4	session 3	0	
5	session 5	0	
6	Wf{nsiz%Imfszmpf%wf{nsiz=78	1	
7	xioimkopximkqmpxiomop%sj xyfkd678	1	
8	mjqqt% twqj%mqjqt<:6	1	
9	mjqqt% twqj%mqjqt<:6	1	
10	Wf{nsiz%Imfszmpf%wf{nsiz<:6	1	
11	sj %xyfkd%yfx<:6	1	
12	Ljjymfs%ljjymfs<:6	1	
13	sj %xyfkd%7%xyfkd<:6	1	
14	mjqqt% twqj%mqjqt<:6	1	
15	Mfxnsiz%Fszmpf%mfnsiz<:6	1	
16	Rfwpxfi%Tyytbf%Tyytbf<:6	1	
17	Wf{nsiz%Imfszmpf%jv ljv	1	
18	Wf{nsiz%Imfszmpf%jv ljv	1	
19	Wf{nsiz%Imfszmpf%v ljv	1	
20	Wf{nsiz%Imfszmpf%v ljv	1	
21	Wf{nsiz%Imfszmpf%76v lj	1	
*	NULL	NULL	NULL



## Tickets table



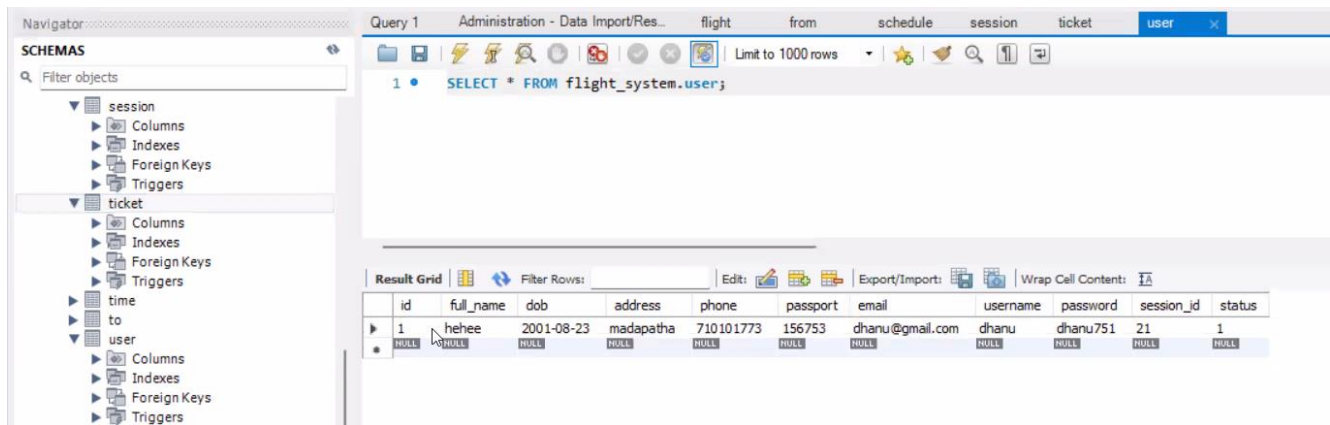
Query 1 Administration - Data Import/Res... flight

```
1 • SELECT * FROM flight_system.ticket;
```

Result Grid

	id	user_id	schedule_id	time_id	type
▶	1	1	1	1	business
*	NULL	NULL	NULL	NULL	NULL

## User table



Query 1 Administration - Data Import/Res... flight from schedule session ticket user

```
1 • SELECT * FROM flight_system.user;
```

Result Grid

	id	full_name	dob	address	phone	passport	email	username	password	session_id	status
▶	1	hehee	2001-08-23	madapatha	710101773	156753	dhanu@gmail.com	dhanu	dhanu751	21	1
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Other than these tables there are country, day, employee, management, to and time tables.

.....