DBIS Project: Airline Management System

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Overview of the project

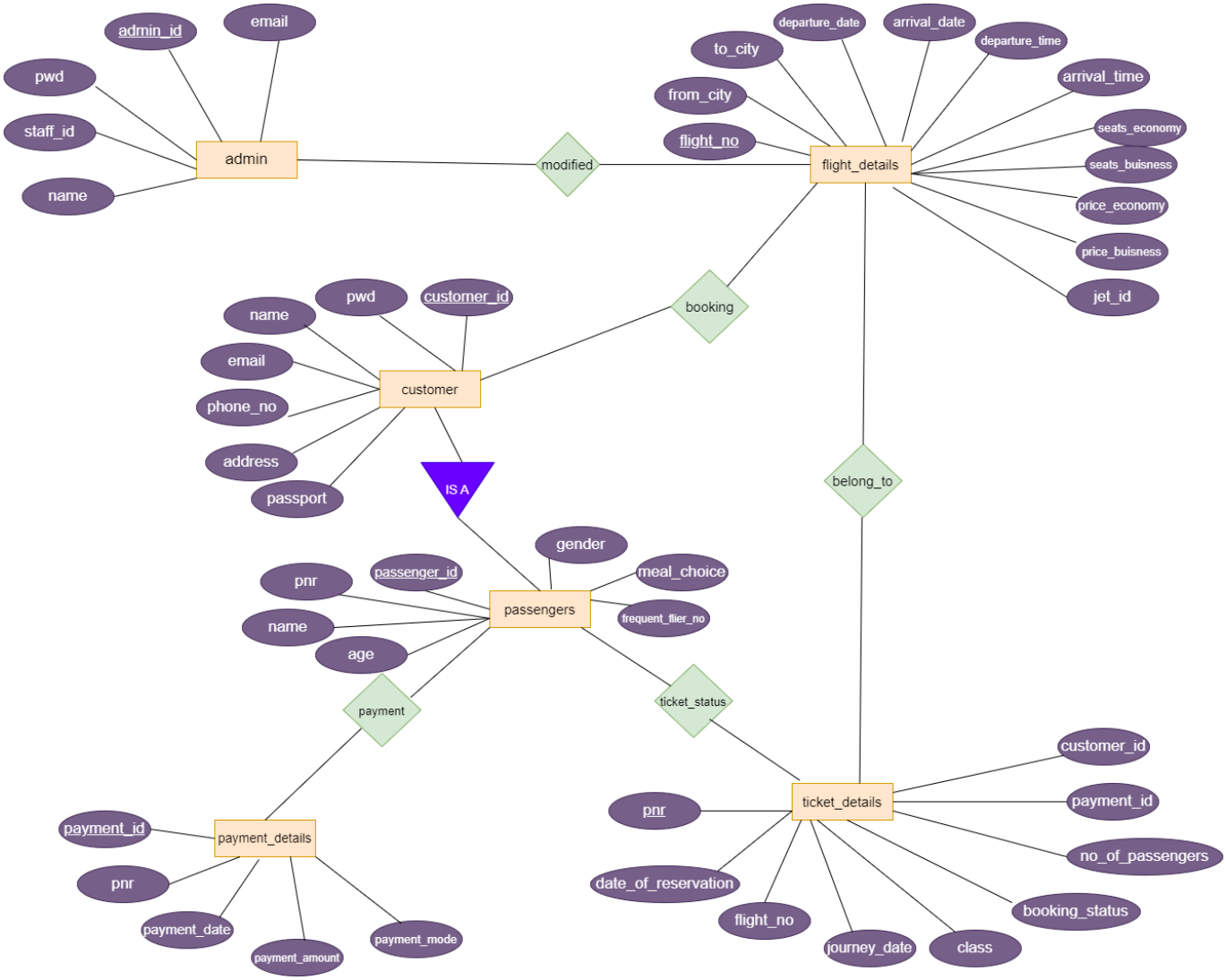
Airline Management System is a dedicated and highly configurable system for all airlines, which can be easily accessed by all users. It helps the users to book flights without visiting offline booking counters. This system can be accessible by any user from any location at any time. So in this project we will make such a system in which a passenger would be able to view the availability of flights' details, as per their requirement as well as they can book the flights online and can also cancel the reservation. The administrator manages the passenger booking system and updates the reservation status.

Database schema, ER Model, Integrity Constraints and views, Users

Schemas :

admin (admin_id, name, email, pwd, staff_id)
flight_details (flight_no, from_city, to_city, departure_date, arrival_date, departure_time, arrival_time, seats_economy, seats_business, price_economy, price_business, jet_id)
customer (customer_id, pwd, name, email, phone_no, address, passport)
ticket_details (pnr, date_of_reservation, flight_no, journey_date, class, booking_status, no_of_passenger, payment_id, customer_id)
payment_details (payment_id, pnr, payment_date, payment_amount, payment_mode)
passengers (passenger_id, pnr, name, age, gender, meal_choice, frequent_flier_no)
modified (admin_id, flight_no,
    foreign key admin_id **references** admin,
    foreign key flight_no **references** flight_details)
booking(customer_id, flight_no,
    foreign key customer_id **references** customer,
    foreign key flight_no **references** flight_details)
belong_to (flight_no, pnr,
    foreign key flight_no **references** flight_details,
    foreign key pnr **references** ticket_details)
ticket_status (passenger_id, pnr,
    foreign key passenger_id **references** passengers,
    foreign key pnr **references** ticket_details)
payment(passenger_id, payment_id,
    foreign key passenger_id **references** passengers,
    foreign key payment_id **references** payment_details)

ER Model :



User and Flight information :

inputs :

- User Information
  - Passenger (Name, Email id, Password, Passport No, Passenger ID, Flight No, Source, Destination, Date, Time)
  - Administration (Admin ID, Name, Email id, Contact no, Password).
- Flight Information
  - Domestic Flight(Type of Flight, Flight No, Source, Destination, In between stations, Date, Time, Type of class, Meal, Amount)
  - International Flight(Type of Flight, Flight No, Source, Destination, In between stations, Date, Time, Type of class, Meal, Amount)

Constraints for booking system :

- All the passengers must register themselves into the system.
- Login information contains only passenger id and password.
- To view the available flight details, passenger has to give source, destination, and date and time.
- After confirmation of reservation request, passenger can see the status.

Relational Database design

The database and tables are created in PHP. The code snippets are as follows :

Database Creation

```php
//---------------------------------------------  DATABASE CREATION  ------------------------------

$sql = "CREATE DATABASE flightjet";
$x = mysqli_query($connect,$sql);
// if(!($x)){
//   echo "Database was not created successfully because of this error: ".mysqli_error($connect);
// }
$db='flightjet';
$conn =mysqli_connect($servername,$username,$password,$db);

```

Flight Table

```php

//---------------------------------------------  flight details CREATION  ------------------------------


$flightDet =" CREATE TABLE IF NOT EXISTS `flight_details` (
  `flight_no` varchar(10) NOT NULL,
  `from_city` varchar(20) DEFAULT NULL,
  `to_city` varchar(20) DEFAULT NULL,
  `departure_date` date NOT NULL,
  `arrival_date` date DEFAULT NULL,
  `departure_time` time DEFAULT NULL,
  `arrival_time` time DEFAULT NULL,
  `seats_economy` int(5) DEFAULT NULL,
  `seats_business` int(5) DEFAULT NULL,
  `price_economy` int(10) DEFAULT NULL,
  `price_business` int(10) DEFAULT NULL,
  `jet_id` varchar(10) DEFAULT NULL
  )";

  $result3 = mysqli_query($conn,$flightDet);
  if(!$result3){
    echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
  }

```

Passenger Table

```
//---------------------------------------------  passenger details CREATION  ------------------------------

$tablepassengers = "CREATE TABLE IF NOT EXISTS `passengers` (
  `passenger_id` int(10) NOT NULL,
  `pnr` varchar(15) NOT NULL,
  `name` varchar(20) DEFAULT NULL,
  `age` int(3) DEFAULT NULL,
  `gender` varchar(8) DEFAULT NULL,
  `meal_choice` varchar(5) DEFAULT NULL,
  `frequent_flier_no` varchar(20) DEFAULT NULL
)";
$result7 = mysqli_query($conn,$tablepassengers);
if(!$result7){
  echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
}
```

Payment Table

```
//---------------------------------------------  payment details CREATION  ------------------------------

$payment_detailsTable = "CREATE TABLE IF NOT EXISTS `payment_details` (
  `payment_id` varchar(20) NOT NULL,
  `pnr` varchar(15) DEFAULT NULL,
  `payment_date` date DEFAULT NULL,
  `payment_amount` int(6) DEFAULT NULL,
  `payment_mode` varchar(15) DEFAULT NULL
)";
$result9 = mysqli_query($conn,$payment_detailsTable);
if(!$result9){
  echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
}

```

Ticket Details Table

```
//---------------------------------------------  ticket details CREATION  ------------------------------

$ticketDet =" CREATE TABLE IF NOT EXISTS `ticket_details` (
  `pnr` varchar(15) NOT NULL,
  `date_of_reservation` date DEFAULT NULL,
  `flight_no` varchar(10) DEFAULT NULL,
  `journey_date` date DEFAULT NULL,
  `class` varchar(10) DEFAULT NULL,
  `booking_status` varchar(20) DEFAULT NULL,
  `no_of_passengers` int(5) DEFAULT NULL,
  `payment_id` varchar(20) DEFAULT NULL,
  `customer_id` varchar(20) DEFAULT NULL
)";

$result5 = mysqli_query($conn,$ticketDet);
if(!$result5){
  echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
}

$var1 ='yes';
$var2 = 'no';
$addtickets = "INSERT INTO `ticket_details` (`pnr`, `date_of_reservation`, `flight_no`, `journey_date`, `class`, `booking_status`, `no_of_passe
SELECT * FROM (SELECT '1669050', '2021-11-25', 'AA104', '2021-12-04', 'business', 'CONFIRMED', 3,'620041544', 'harryroshan') AS tmp
WHERE NOT EXISTS(
  SELECT `pnr` FROM `ticket_details` WHERE pnr = '1669050'
)LIMIT 1";
$ticketsresult = mysqli_query($conn,$addtickets);
if(!$ticketsresult){
  echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
}

```

Customer Table

```
50
51  //---------------------------------------------  customerlogins CREATION  ------------------------------
52
53  $y1 = "CREATE TABLE IF NOT EXISTS `customer` (
54    `customer_id` varchar(20) NOT NULL,
55    `pwd` varchar(20) DEFAULT NULL,
56    `name` varchar(20) DEFAULT NULL,
57    `email` varchar(35) DEFAULT NULL,
58    `phone_no` varchar(15) DEFAULT NULL,
59    `address` varchar(35) DEFAULT NULL,
60    `passport` varchar(35) DEFAULT NULL
61  )";
62
63  $result2 = mysqli_query($conn,$y1);
64
```

Admin Details Table

```
17
18  //---------------------------------------------  adminlogins CREATION  ------------------------------
19
20
21  $y="CREATE TABLE IF NOT EXISTS `admin` (
22    `admin_id` varchar(20) NOT NULL,
23    `pwd` varchar(30) DEFAULT NULL,
24    `staff_id` varchar(20) DEFAULT NULL,
25    `name` varchar(20) DEFAULT NULL,
26    `email` varchar(35) DEFAULT NULL
27  )";
28
29  $result = mysqli_query($conn,$y);
30  if(!$result){
31    echo "The authors table was not created successfully because of this error ---> ". mysqli_error($conn);
32  }
33
34   $addtoAdmin = "INSERT INTO  `admin` (`admin_id`, `pwd`, `staff_id`, `name`, `email`)
35   SELECT * FROM(SELECT 'admin', 'Admin#123', 'adminID', 'AdminName', 'admin1234@gmail.com' ) As tmp
36  WHERE NOT EXISTS(
37    SELECT `pwd` FROM `admin` WHERE pwd = 'Admin#123'
38  ) LIMIT 1";
39
40  $result1 = mysqli_query($conn,$addtoAdmin);
41
42  $addFliDet = "INSERT INTO `Flight_details` (`flight_no`, `from_city`, `to_city`, `departure_date`, `arrival_date`, `d
43  SELECT * FROM (SELECT 'AA101', 'bangalore', 'mumbai', '2021-11-01', '2021-12-02', '21:00:00', '01:00:00', '195', '96'
44  WHERE NOT EXISTS(
45    SELECT `flight_no` FROM `Flight_details` WHERE flight_no ='AA101'
46  )LIMIT 1";
47  $result4 = mysqli_query($conn,$addFliDet);
48
```

Languages and Technologies used

- **Frontend -** HTML, CSS, JavaScript
- **Backend -** PHP
- **Database -** MySql
- **Query Language -** SQL

Interface Designs

The UI was designed using HTML, JS, and CSS, and the numerous screenshots that are provided later in the report depict the end product.
The Screenshot of the CSS design's source code is as follows:

```
29
30  /*-------------------------------------------------------------- skeleton ----------------------------------------------------------------
31
32  * {
33      box-sizing: border-box !important;
34  }
35
36  html {
37      scroll-behavior: smooth;
38  }
39
40  body {
41      color: #666666;
42      font-size: 14px;
43      font-family: 'Raleway', sans-serif;
44      line-height: 1.80857;
45      font-weight: normal;
46  }
47
48  a {
49      color: #1f1f1f;
50      text-decoration: none !important;
51      outline: none !important;
52      -webkit-transition: all .3s ease-in-out;
53      -moz-transition: all .3s ease-in-out;
54      -ms-transition: all .3s ease-in-out;
55      -o-transition: all .3s ease-in-out;
56      transition: all .3s ease-in-out;
57  }
```

```
140     outline: none !important;
141 }
142
143 a,
144 .btn {
145     text-decoration: none !important;
146     outline: none !important;
147     -webkit-transition: all .3s ease-in-out;
148     -moz-transition: all .3s ease-in-out;
149     -ms-transition: all .3s ease-in-out;
150     -o-transition: all .3s ease-in-out;
151     transition: all .3s ease-in-out;
152 }
153
154 img {
155     max-width: 100%;
156     height: auto;
157 }
158
159 :focus {
160     outline: 0;
161 }
162
163 .btn-custom {
164     margin-top: 20px;
165     background-color: transparent !important;
166     border: 2px solid #ddd;
167     padding: 12px 40px;
168     font-size: 16px;
169 }
170
```

```css
.lead {
    font-size: 18px;
    line-height: 30px;
    color: #767676;
    margin: 0;
    padding: 0;
}

.form-control:focus {
    border-color: #ffffff !important;
    box-shadow: 0 0 0 .2rem rgba(255, 255, 255, .25);
}

.navbar-form input {
    border: none !important;
}

.badge {
    font-weight: 500;
}

blockquote {
    margin: 20px 0 20px;
    padding: 30px;
}
```

```css
.full {
    float: left;
    width: 100%;
}

.layout_padding {
    padding-top: 90px;
    padding-bottom: 90px;
}

.layout_padding_2 {
    padding-top: 75px;
    padding-bottom: 75px;
}

.light_silver {
    background: #f9f9f9;
}

.theme_bg {
    background: #38c8a8;
}

.margin_top_30 {
    margin-top: 30px !important;
}

.full {
    width: 100%;
    float: left;
    margin: 0;
    padding: 0;
}
```

```
.loader_bg {
    position: fixed;
    z-index: 9999999;
    background: #fff;
    width: 100%;
    height: 100%;
}

.loader {
    height: 100%;
    width: 100%;
    position: absolute;
    left: 0;
    top: 0;
    display: flex;
    justify-content: center;
    align-items: center;
}

.loader img {
    width: 280px;
}


/*-- navigation--*/

.navigation.navbar {
    float: right;
    padding: 0px;
}

```

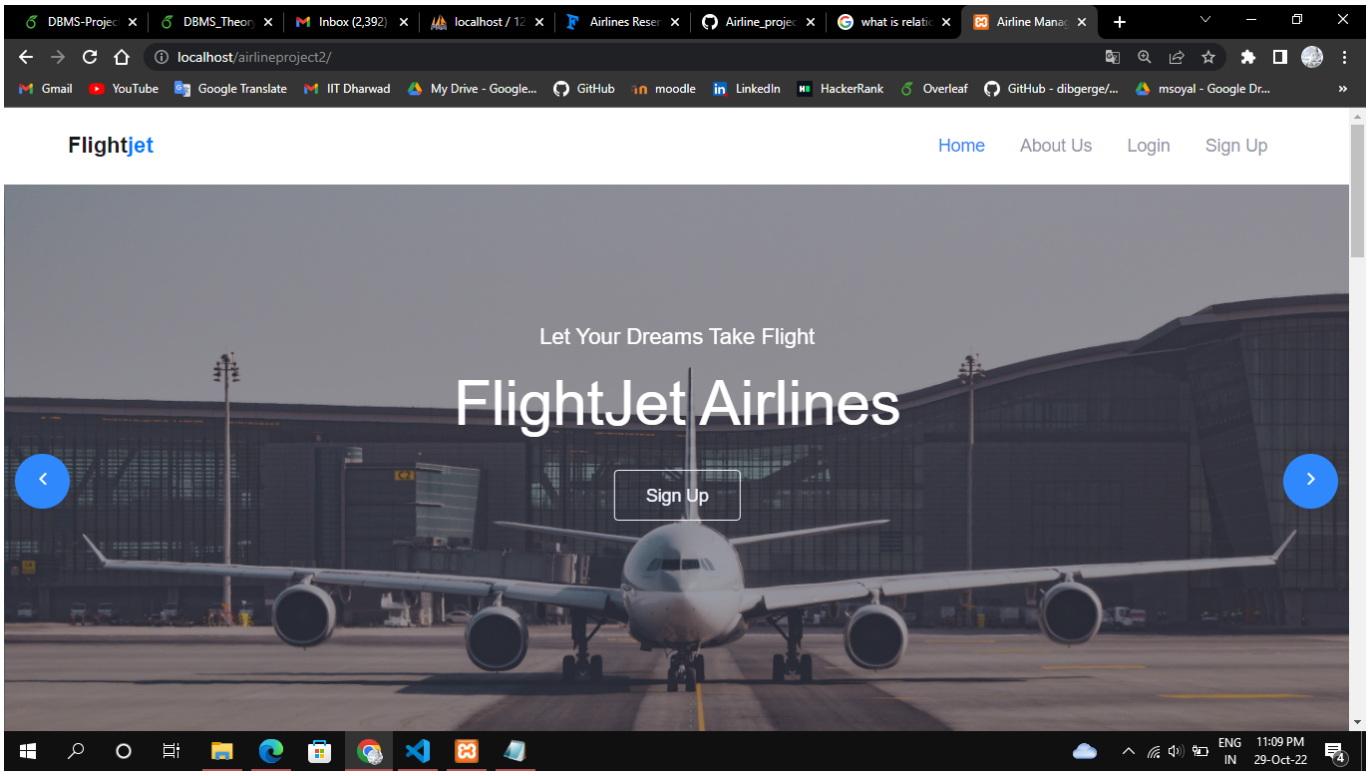
Workflow and Pages

The opening of the site occurs from a home page containing login and sign up options. We provided sign up and login option for admin and customer where the facilities and works are follow-

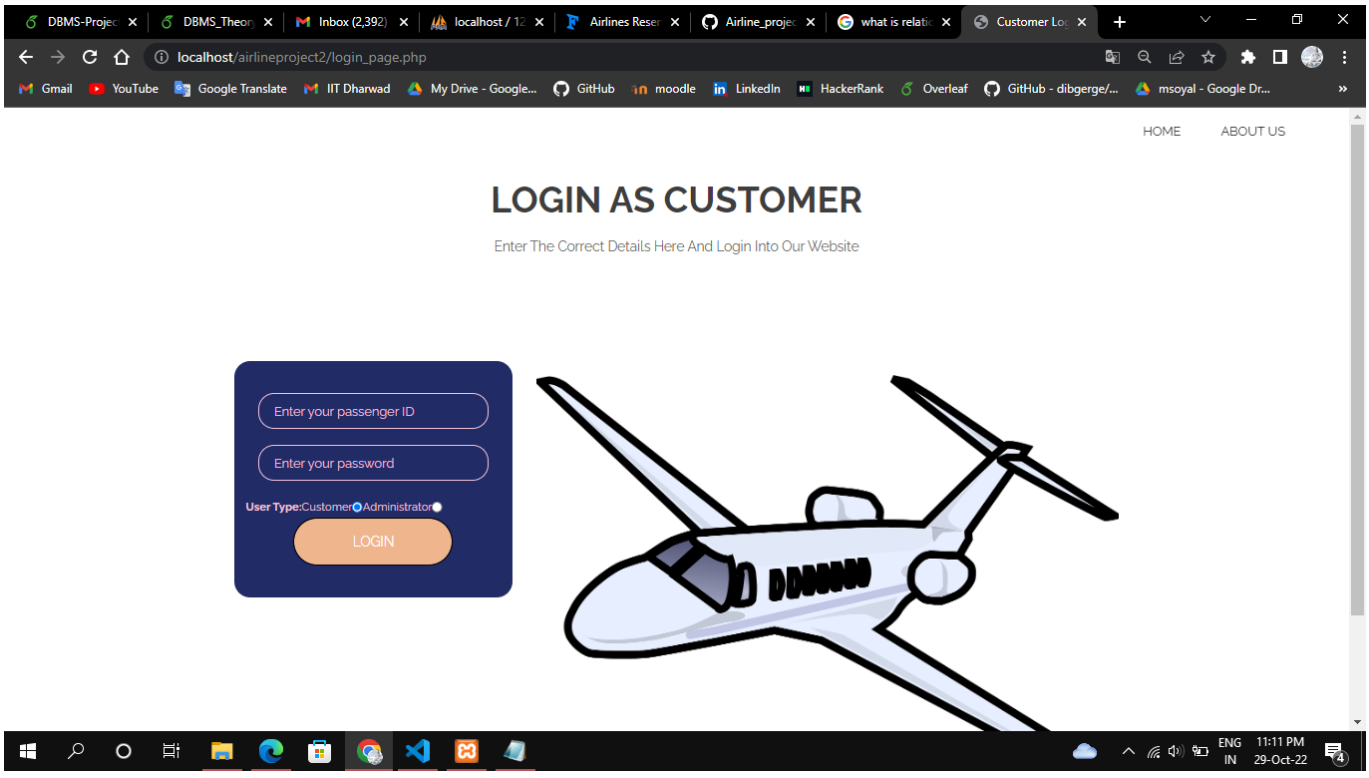
- Administrator
  - Login
  - Manage the passenger's booking status
  - Add a new flight
  - Delete the existing flight
  - Logout
- Passenger
  - Login
  - Edit Profile
  - Request to view the available flights as per requirement
  - Ticket Booking
  - View Booked Flight Tickets
  - Ticket cancellation
  - Print the ticket
  - Logout
- Dashboard
  - Home
  - About Us
  - Login
  - SignUp

ScreenShots

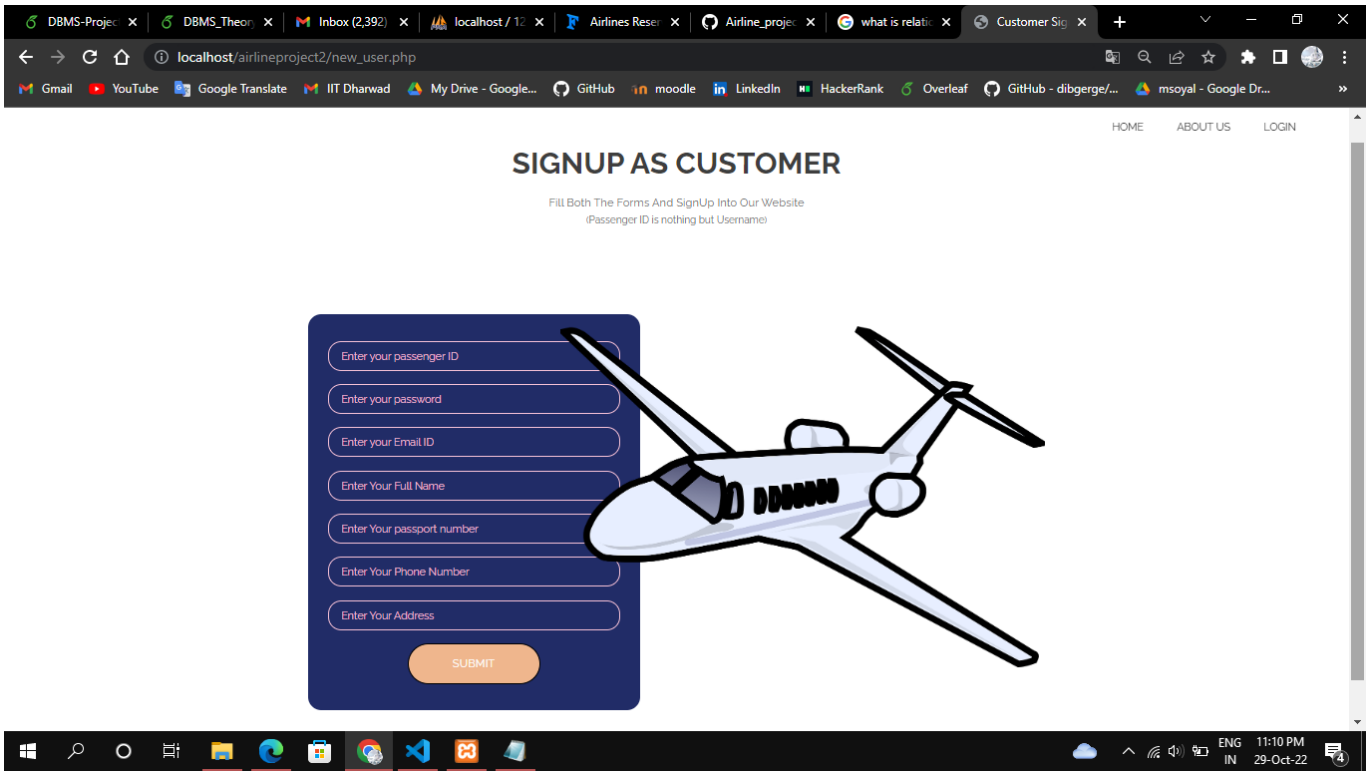
1. Home Page



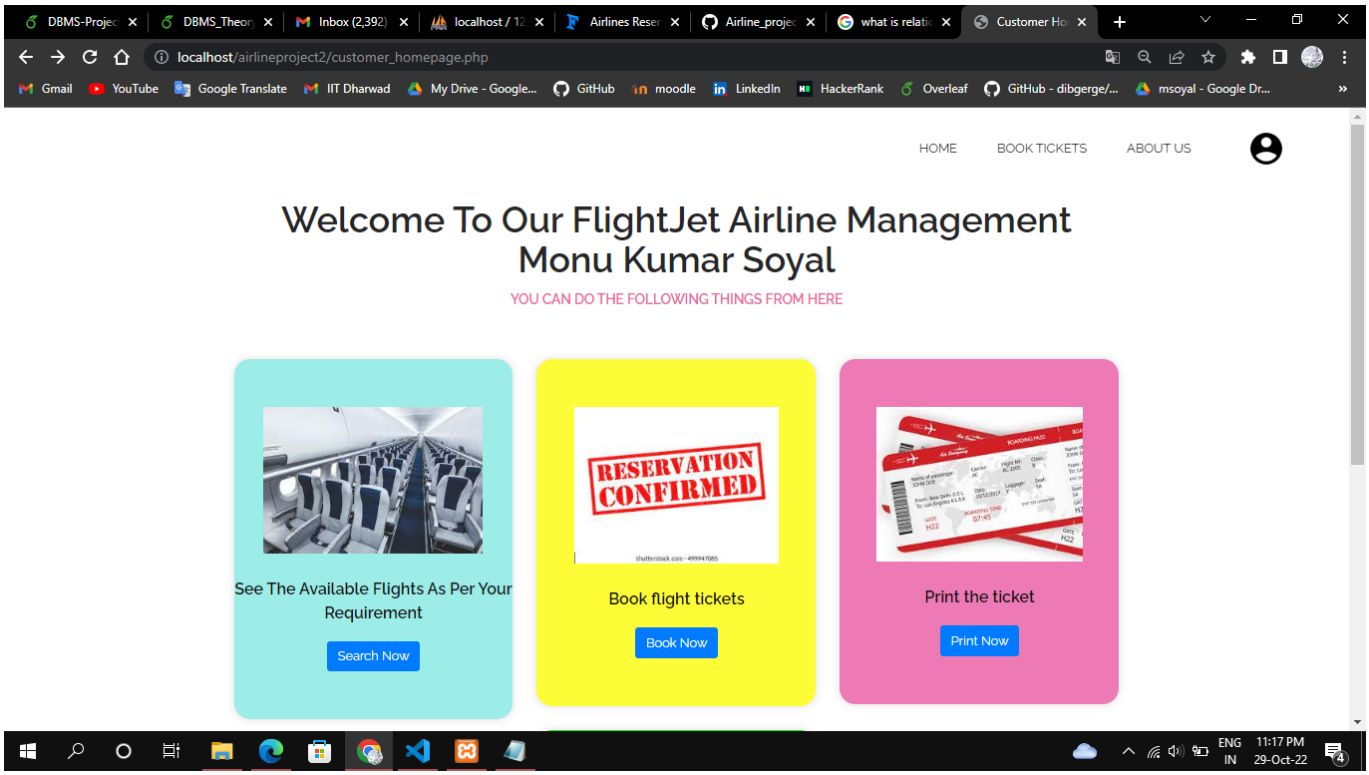
2. Customer Login

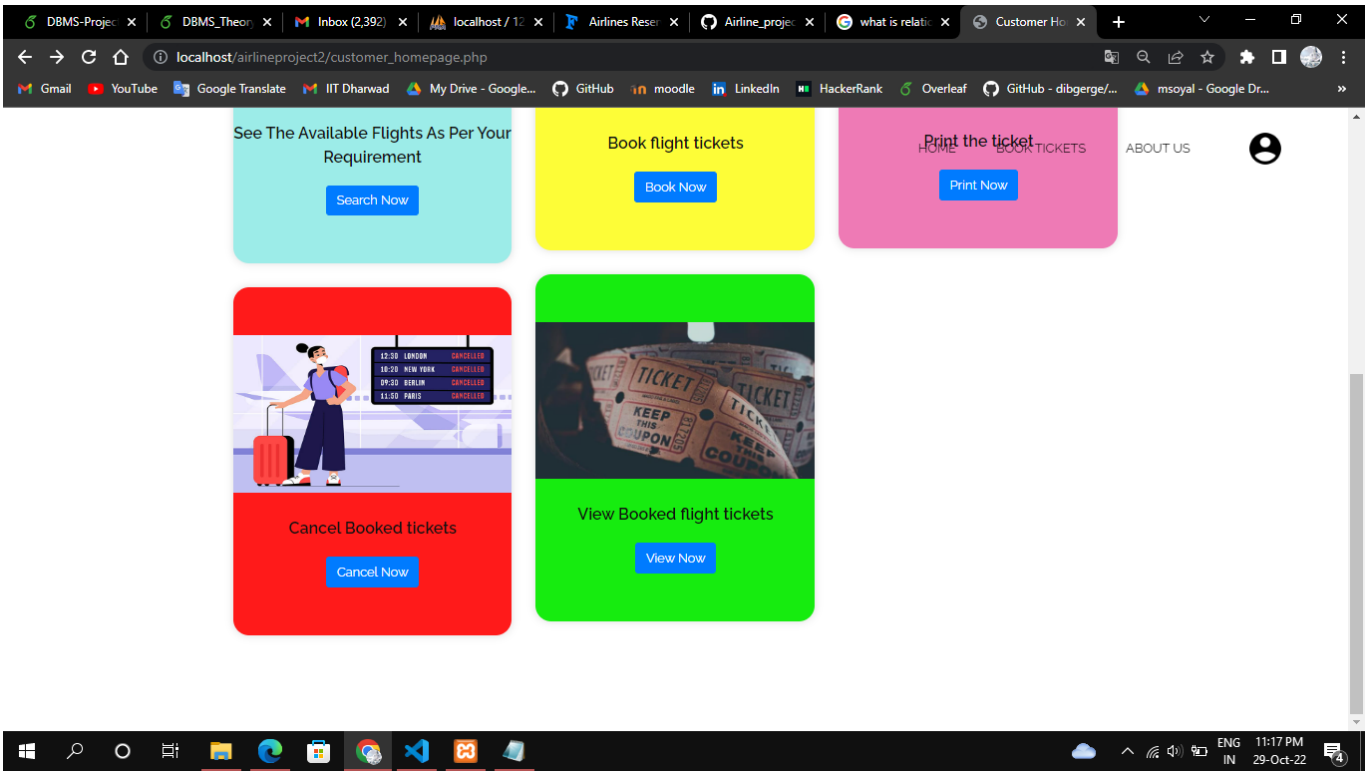


3. Customer Signup

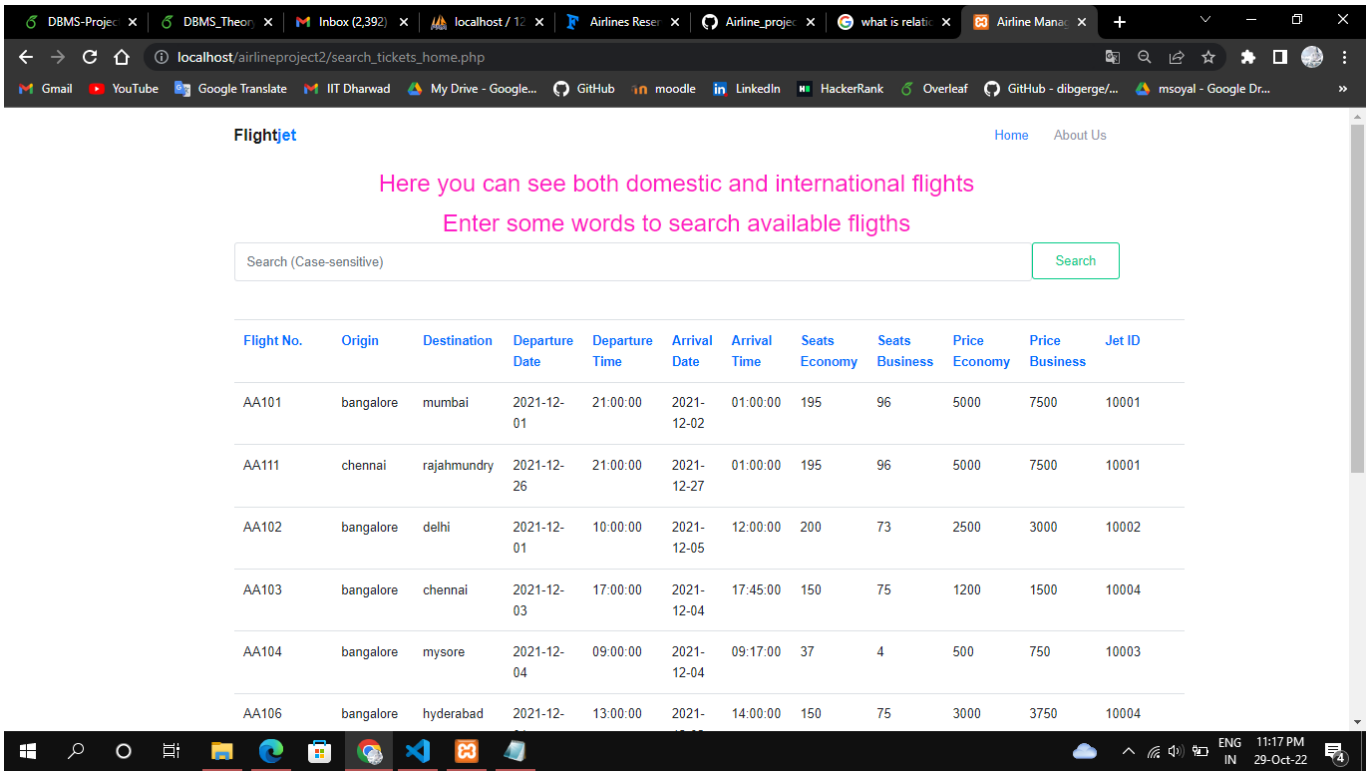


4. Customer Home Page



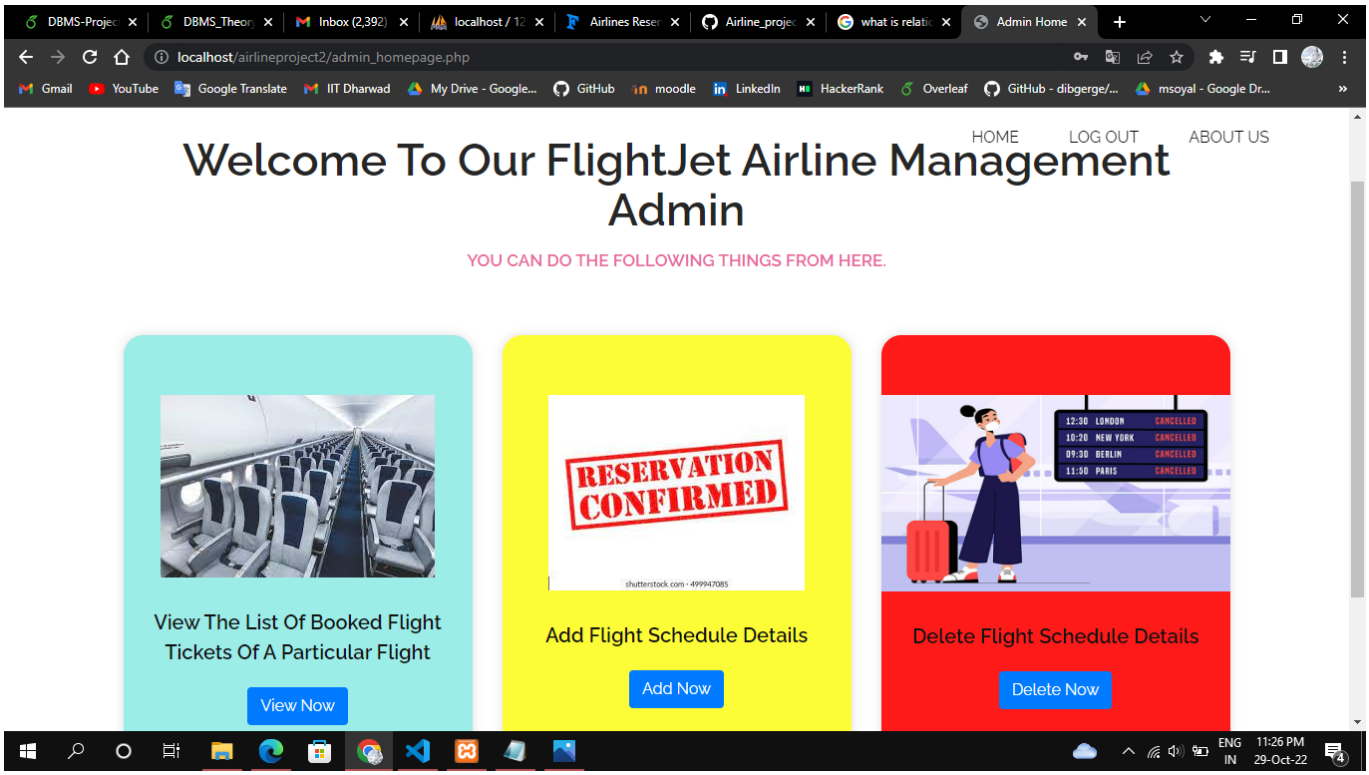


5. Flight Details

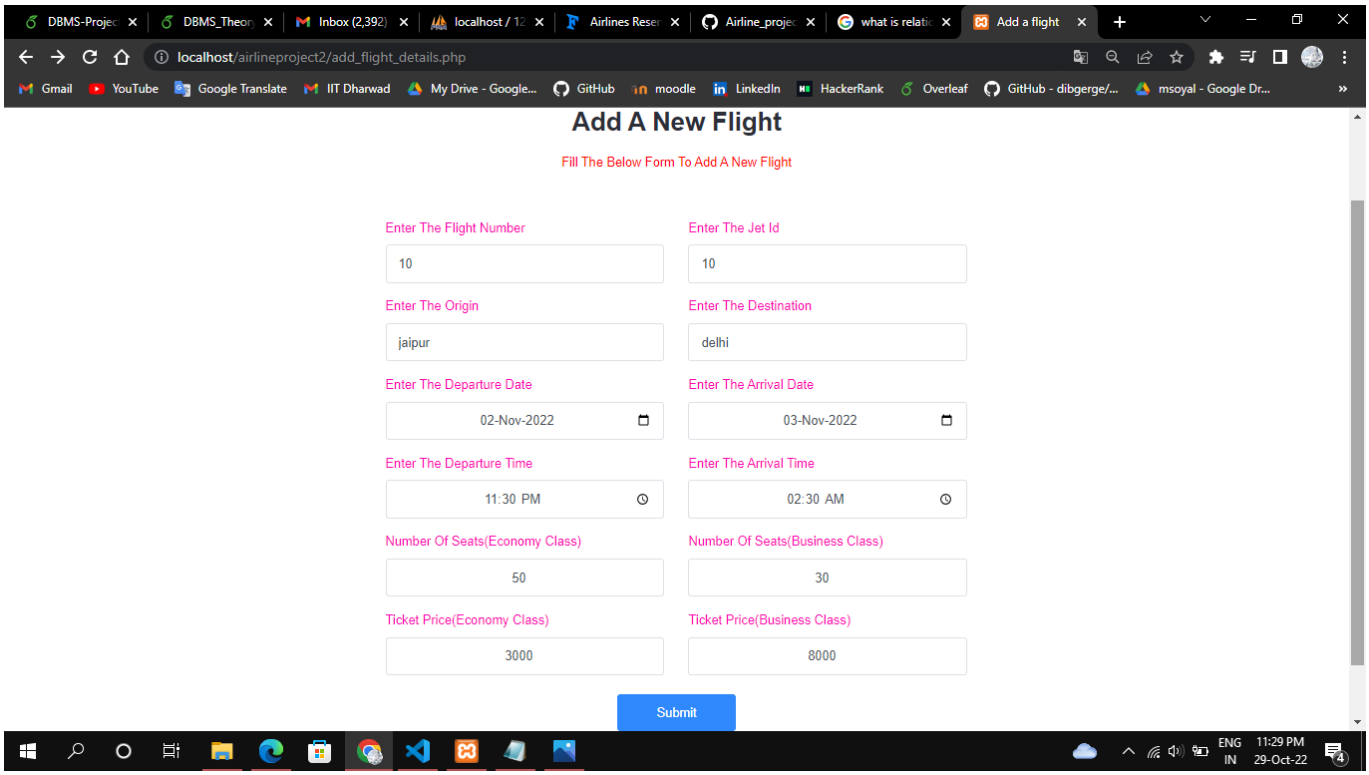


Flight No.	Origin	Destination	Departure Date	Departure Time	Arrival Date	Arrival Time	Seats Economy	Seats Business	Price Economy	Price Business	Jet ID
AA101	bangalore	mumbai	2021-12-01	21:00:00	2021-12-02	01:00:00	195	96	5000	7500	10001
AA111	chennai	rajahmundry	2021-12-26	21:00:00	2021-12-27	01:00:00	195	96	5000	7500	10001
AA102	bangalore	delhi	2021-12-01	10:00:00	2021-12-05	12:00:00	200	73	2500	3000	10002
AA103	bangalore	chennai	2021-12-03	17:00:00	2021-12-04	17:45:00	150	75	1200	1500	10004
AA104	bangalore	mysore	2021-12-04	09:00:00	2021-12-04	09:17:00	37	4	500	750	10003
AA106	bangalore	hyderabad	2021-12-	13:00:00	2021-	14:00:00	150	75	3000	3750	10004

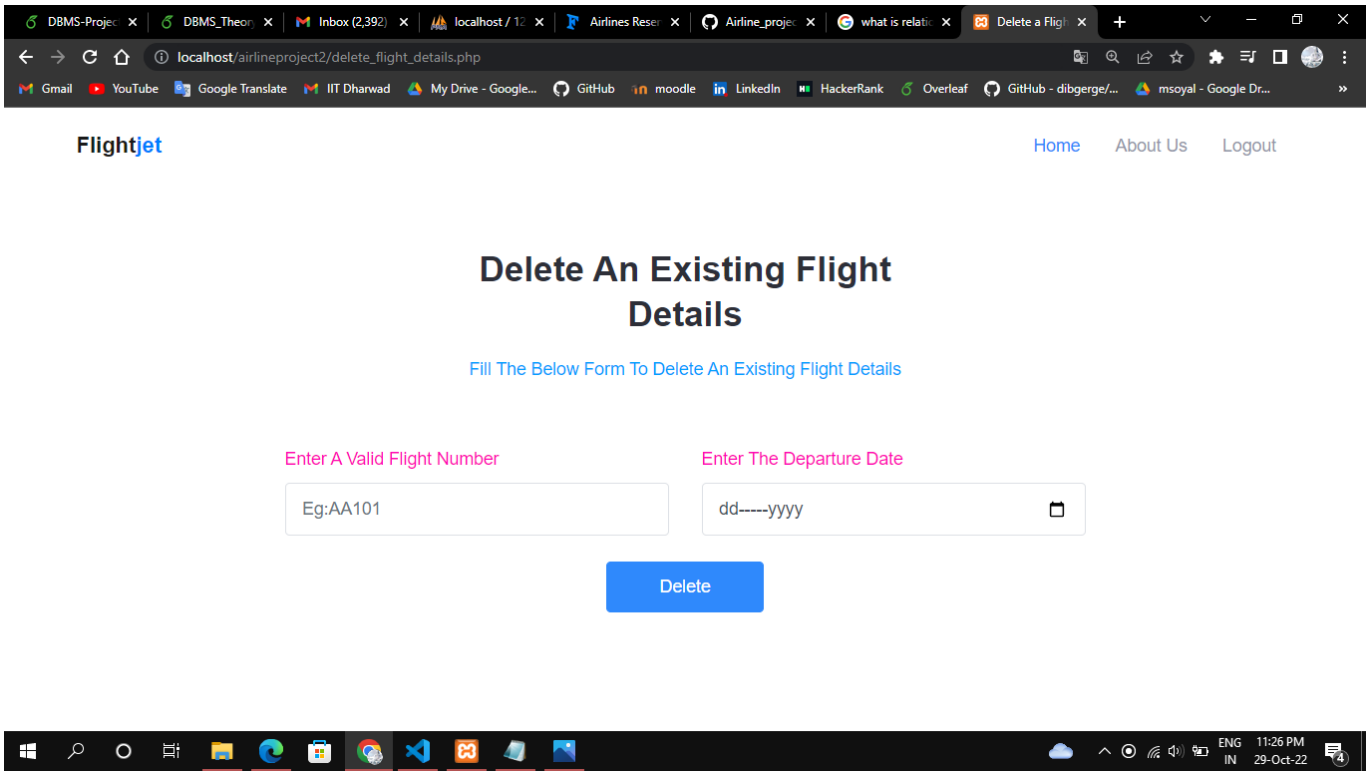
6. Admin Page



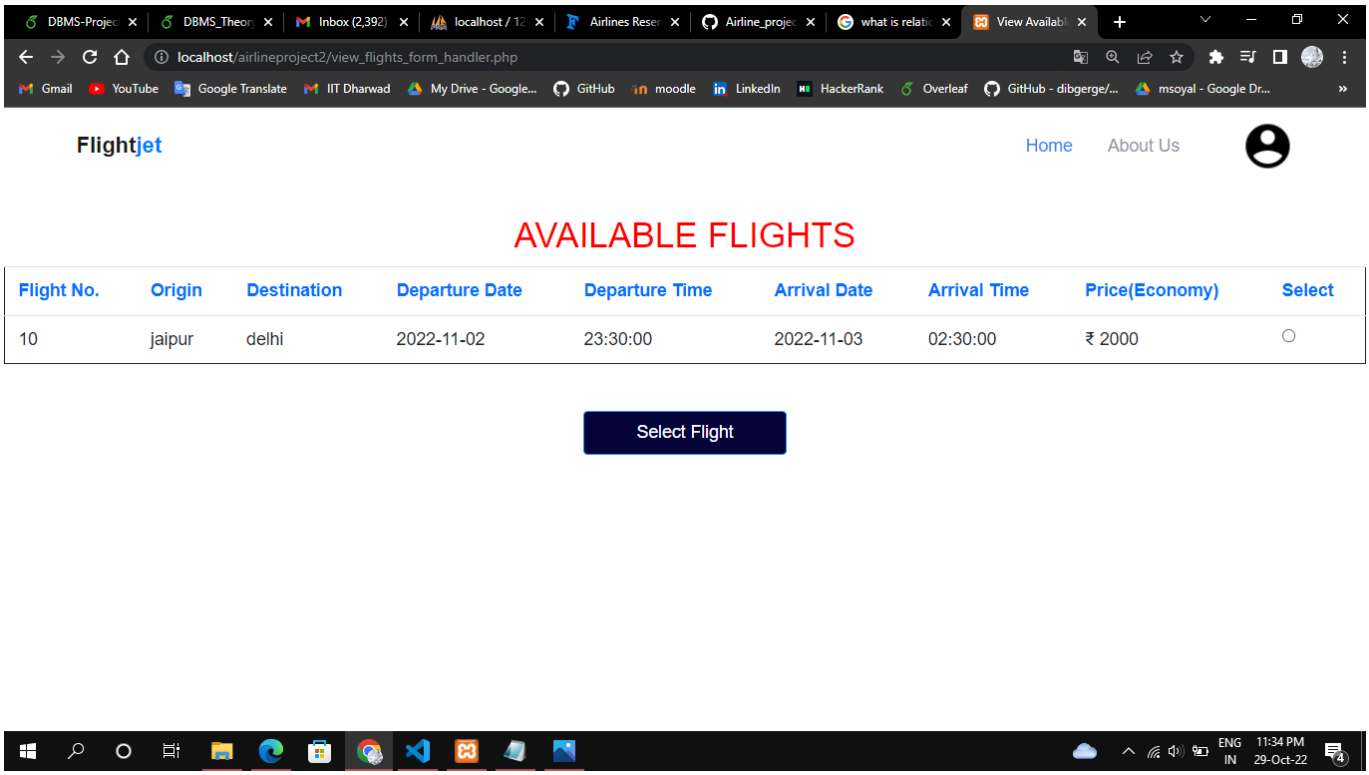
7. Add a Flight



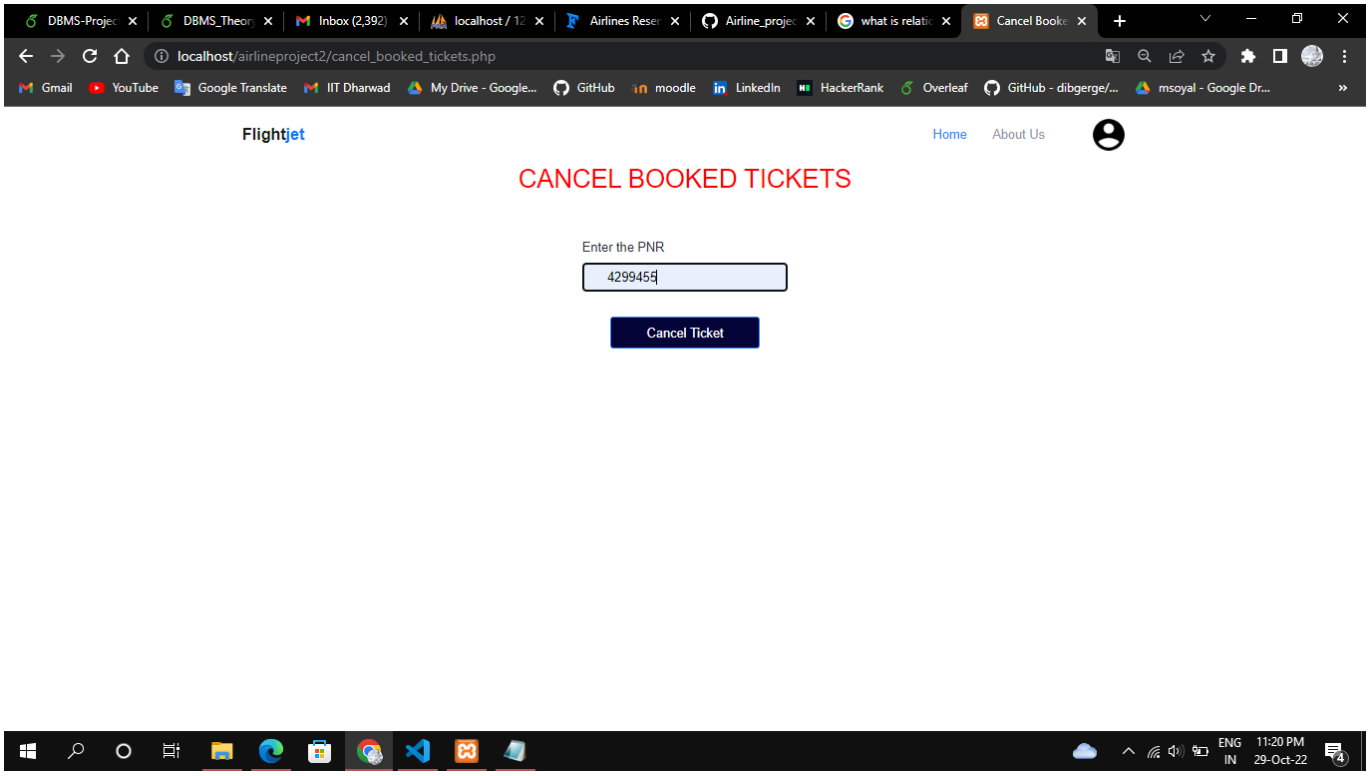
8. Delete Flight



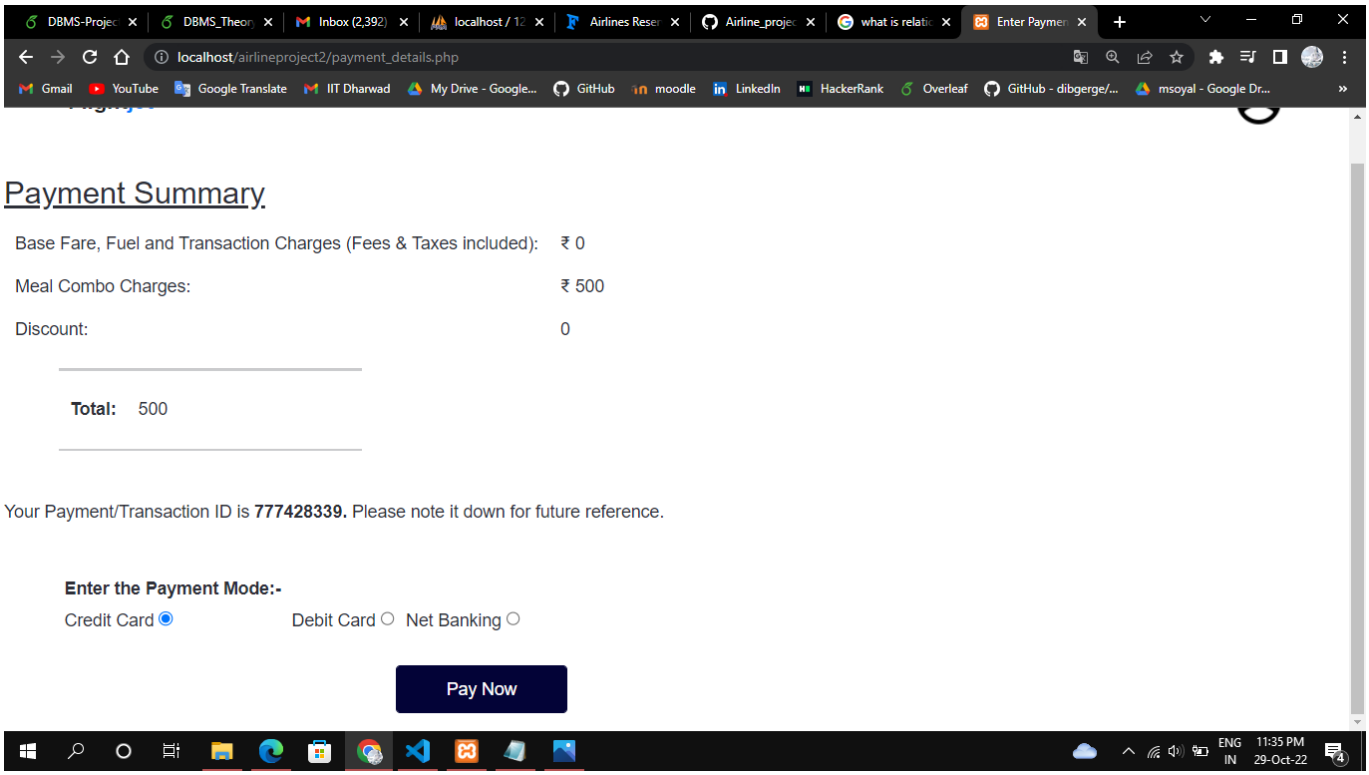
9. Available Flight



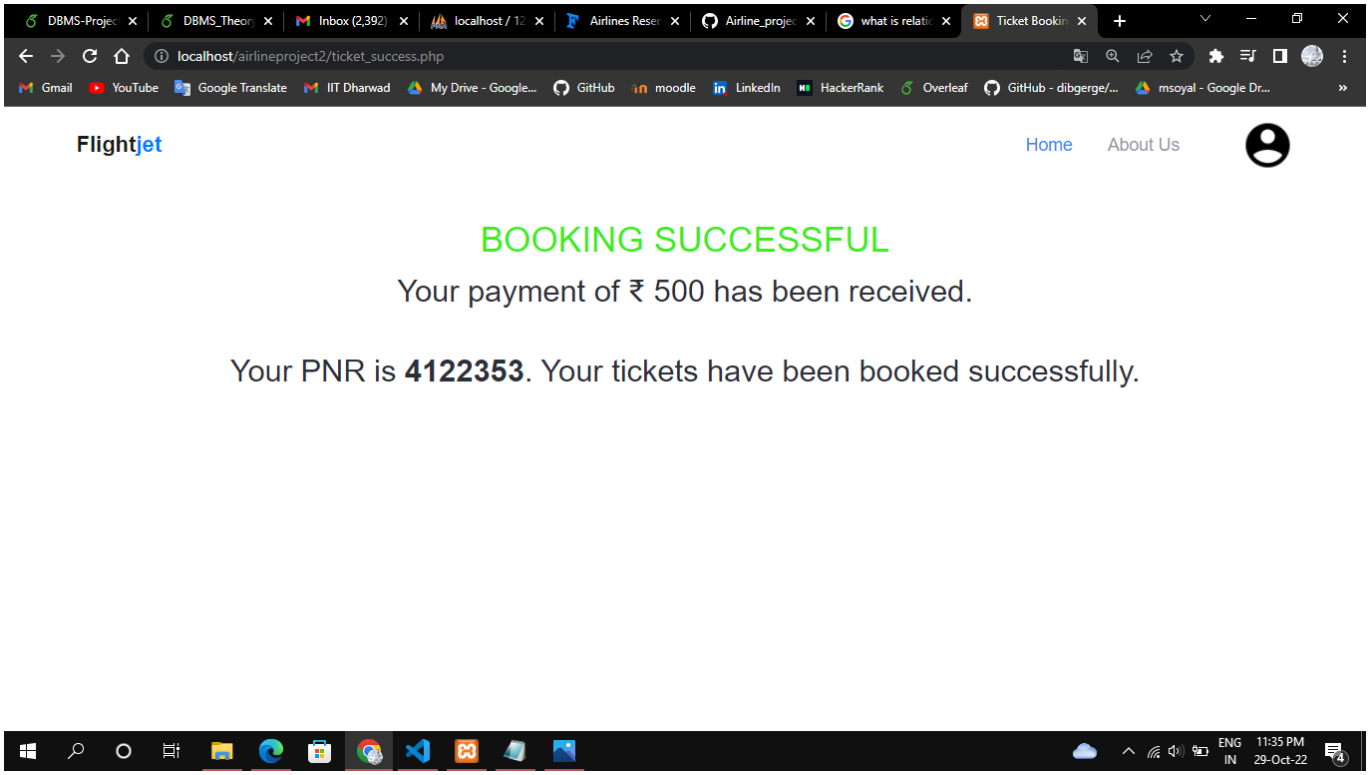
10. Cancel Booked Ticket



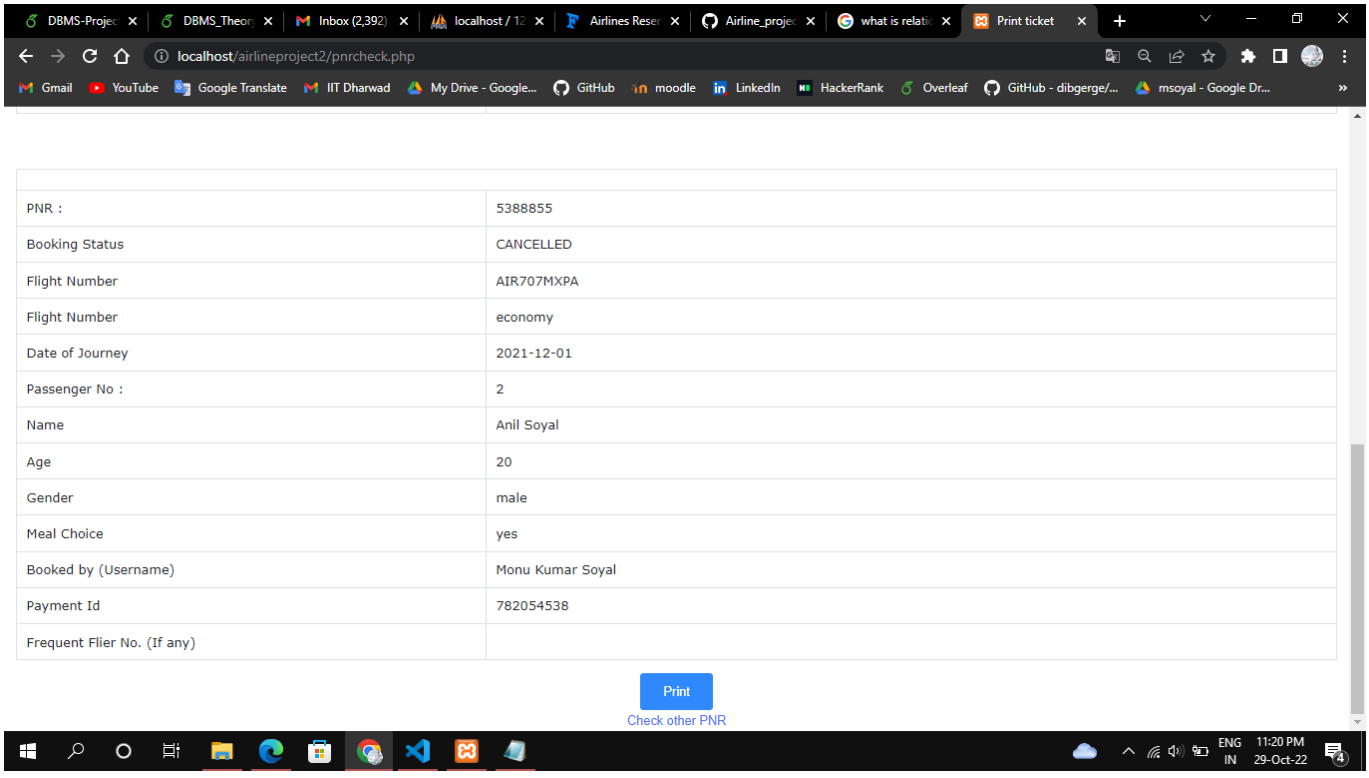
11. Payment



12. Payment Message



13. Print the Ticket



Conclusion

Using the fundamental ideas and tools covered in class and in the lab, an airline management system is created to make managing the many aspects of flight details and booking easier. While working on the project, we were able to obtain a thorough understanding of database management systems and familiarity with the numerous languages and technologies needed for the job.