VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM- 590014

A DBMS Mini-Project Report

On

"AIRLINE TICKET MANAGEMENT SYSTEM"

A Mini-project report submitted in partial fulfillment of the requirements for the award of the degree of ***Bachelor of Engineering in Computer Science and Engineering*** *of Visvesvaraya Technological University, Belgaum.*

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DAYANANDA SAGAR ACADEMY OF TECHNOLOGY & MANAGEMENT

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Udayapura, Kanakpura Road, Bangalore-560082

2021-22

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Mini-Project on Database Management System (DBMS) entitled **"*AIRLINE TICKET MANAGEMENT SYSTEM*"** has been successfully carried out by **ABHISHEK BARNWAL (1DT19CS004) and ABHISHEK MISHRA (1DT19CS005)** a bonafide students of **Dayananda Sagar Academy of Technology and Management** in partial fulfillment of the requirements for the award of degree in **Bachelor of Engineering in Computer Science and Engineering** of **Visvesvaraya Technological University, Belgaum** during academic year 2021-22. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of project work for the said degree.

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Prof. Keerthana Shankar	Dr. Prashanth CM	Dr. Nandini C
(Asst. Prof., Dept of CSE)	(Prof., Dept of CSE)	(Vice Principal & HOD, Dept. of CSE)

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ABSTRACT

Airline reservation System is a computerized system used to store and retrieve information and conduct transactions related to air travel. The project is aimed at exposing the relevance and importance of Airline Reservation Systems. It is projected towards enhancing the relationship between customers and airline agencies through the use of ARSs, and thereby making it convenient for the customers to book the flights as when they require such that they can utilize this software to make reservations.

This software has two parts. First is user part and the administrator part. User part is used as a front end and administrator is the back end. Administrator is used by airline authority. It will allow the customers to access database and allow new customers to sign up for online access. The system allows the airline passenger to search for flights that are available between the two travel cities, namely the "Departure city" and "Arrival city" for a particular departure and arrival dates. The system displays all the flight's details such as flight no, name, price and duration of journey etc. After search the system display list of available flights and allows customer to choose a particular flight. Then the system checks for the availability of seats on the flight. If the seats are available then the system allows the passenger to book a seat. Otherwise, it asks the user to choose another flight. To book a flight the system asks the customer to enter his details such as name, address, city, state, and credit card number and contact number. Then it checks the validity of card and book the flight and update the airline database and user database.

The system also allows the customer to cancel his/her reservation, if any problem occurs. The main purpose of this software is to reduce the manual errors involved in the airline reservation process and make it convenient for the customers to book the flights as when they require such that they can utilize this software to make reservations, modify reservations or cancel a particular reservation.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The Airline Reservations System (ARS) was one of the earliest changes to improve efficiency. ARS eventually evolved into the Computer Reservations System (CRS), and then into Global Distribution System (GDS). The airline industry created the first GDS in the 1960s as a way to keep track of flight schedules, availability, and prices. Although accused of being "dinosaurs" due to their use of legacy system technology, GDSs were actually among the first e-commerce companies in the world facilitating B-2-B electronic commerce as early as the mid-1970s, when SABRE (owned by American Airline) and Apollo (United) began installing their propriety internal reservations systems in travel agencies. Prior to this, travel agents spent an inordinate amount of time manually entering reservations. The airlines realized that by automating the reservation process for travel agents, they could make the travel agents more productive and essentially turn into an extension of the airline's sales force. It is these original, legacy GDSs that today provide the backbone to the Internet travel distribution system.
There are currently four major GDS systems:

1. Amadeus
2. Sabre
3. Galileo
4. Worldspan

1.2 PROBLEM DEFINITION

In 21st century the world has become a global village where everything is available in a single click of mouse button. Aviation sector is one of fastest mode of travel available with us, both at domestic and international level. To maintain such a large system is a hectic job. The present system is very time consuming and inefficient. The definition of our problem lies in manual system and a fully automated system.

1.3 MOTIVATION

Manual system: The system is more prone to errors and sometimes it encounters various problems which are unstructured.

Technical system: With the advent of latest technology if we do not update our system then our business will suffer massive losses financially. The technical system (we have proposed) contains the tools of latest trend i.e., computers printers, fax etc. The systems with this technology are very fast, accurate, user-friendly and reliable.

Need of Airlines system

A few factors that direct us to develop a new system are given below -:

1) Faster System

2) Accuracy

3) Reliability

4) Informative

5) Reservations.

1.4 OBJECTIVES

- To develop a system to management of airlines, this will perform all the functions with a click of mouse button's
- To develop a system that has good management of data along with integrity and minimizing redundancy
- To develop a system that will be user friendly in all possible ways
- To provide better customer support for passengers

CHAPTER 2

REQUIREMENTS

We have a wide range of options of languages. From these options we can choose appropriate platform/ tools and languages for development of the project. Some of these are as follows: -

Programming Languages: - In programming language we have C, C++, C#, Microsoft Access, Microsoft Visual Basic, and Oracle PL/SQL etc.

Relational Database: - Oracle, IBM DB2, SQL Server, MS Access and FoxPro etc.

2.1 SOFTWARE REQUIREMENTS:

Operating system	:	Windows 2000 or later
Front End	:	Visual Basic
Back End	:	SQL Server 2000

2.2 HARDWARE SPECIFICATIONS

Processor	:	Intel Pentium or more
Ram	:	128 MB or more
Cache	:	512 KB
Hard disk	:	16 GB hard disk recommended

CHAPTER 3

DATABASE DESIGNS

3.1 DFD for Airline Reservation System

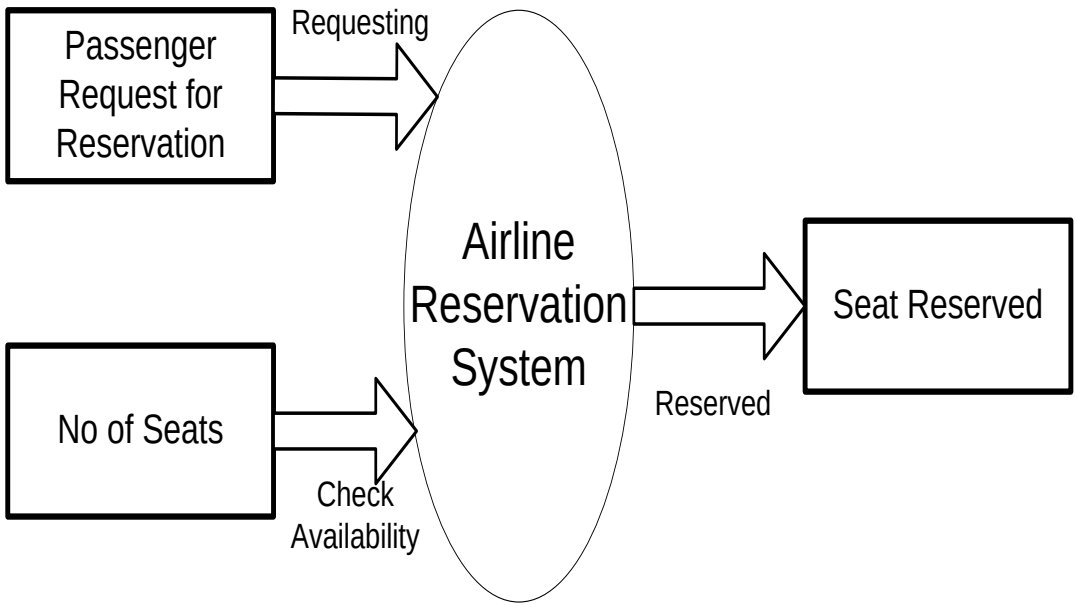


Fig. 3.1 Data Flow Diagram for Airline reservation System

3.1.1 First Level of Data Flow Diagram for System Login

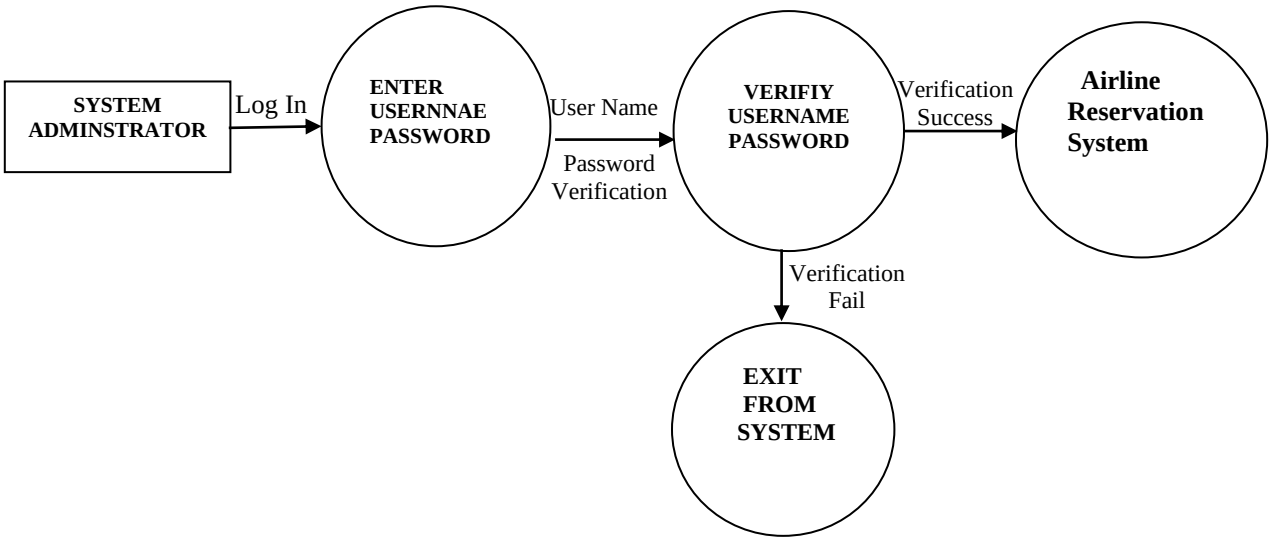


Fig. 3.1.1 First level Data Flow Diagram

3.1.2 Second Level of Data Flow Diagram for General Inquiry System

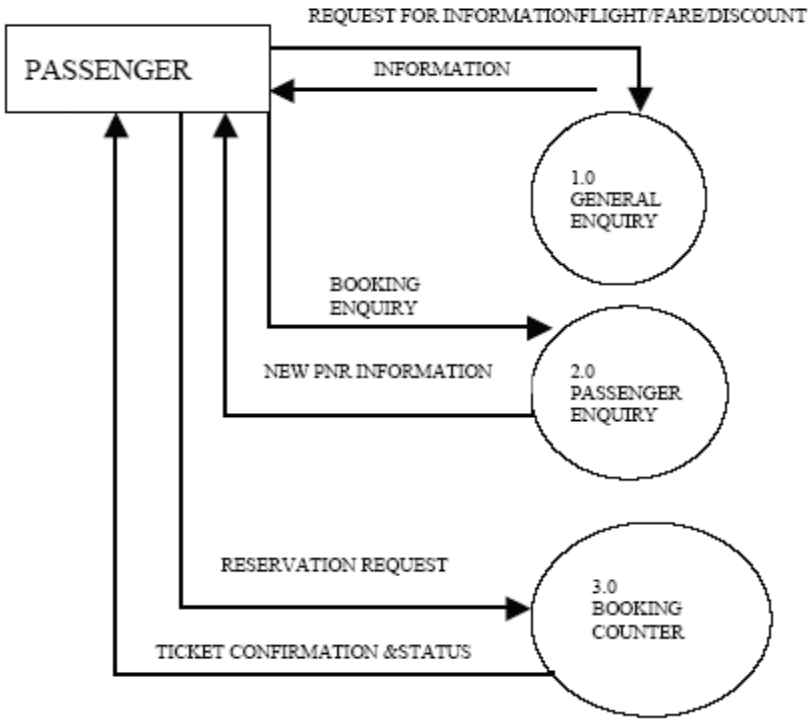


Fig. 3.1.2 Second Level Data Flow Diagram

3.1.3 Third Level Data Flow Diagram for Booking Section

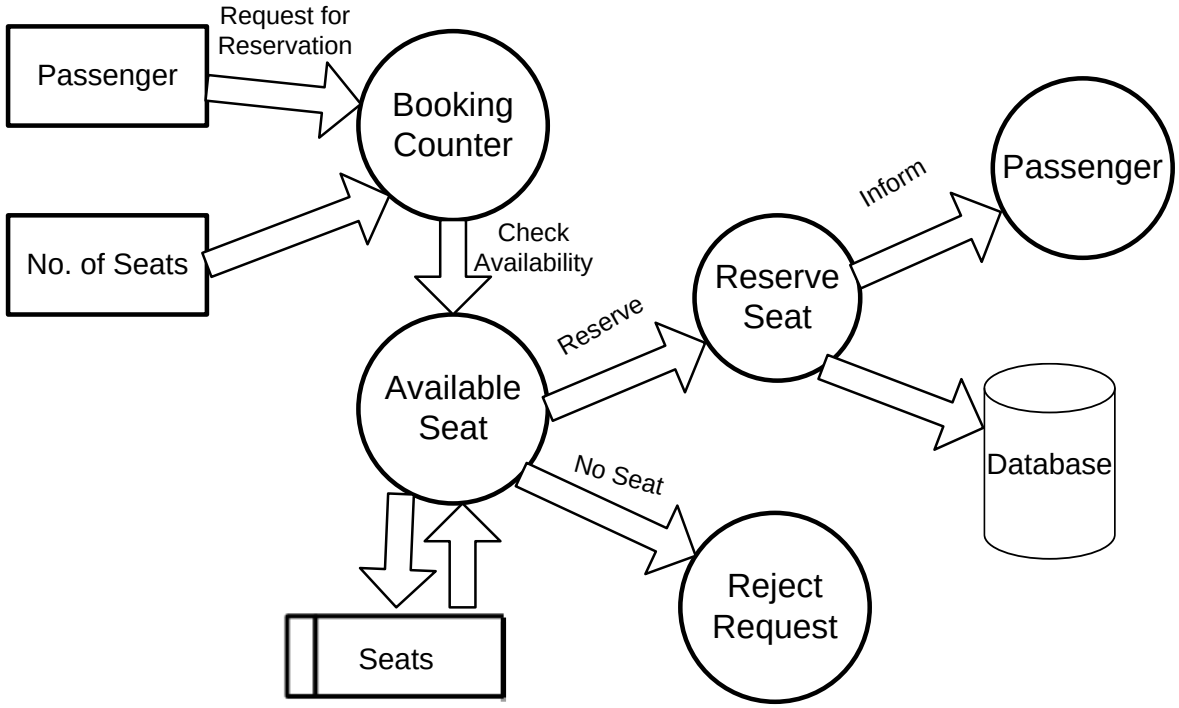


Fig. 3.1.3 Third Level Data Flow Diagram

3.2 E-R Diagram

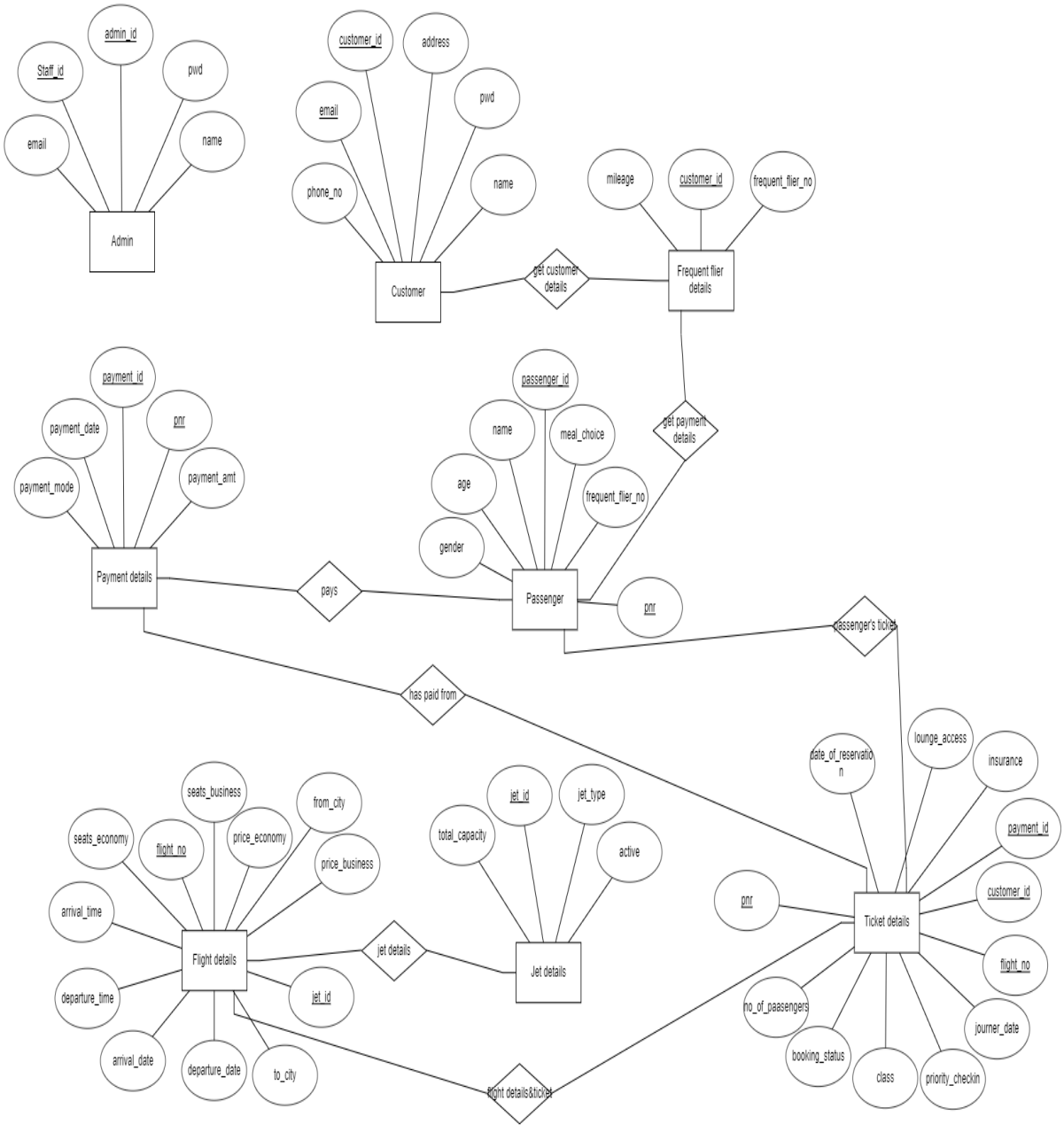


Fig. 3.2 E-R Diagram for Airline Reservation System

3.2.1 RELATIONAL SCHEMA

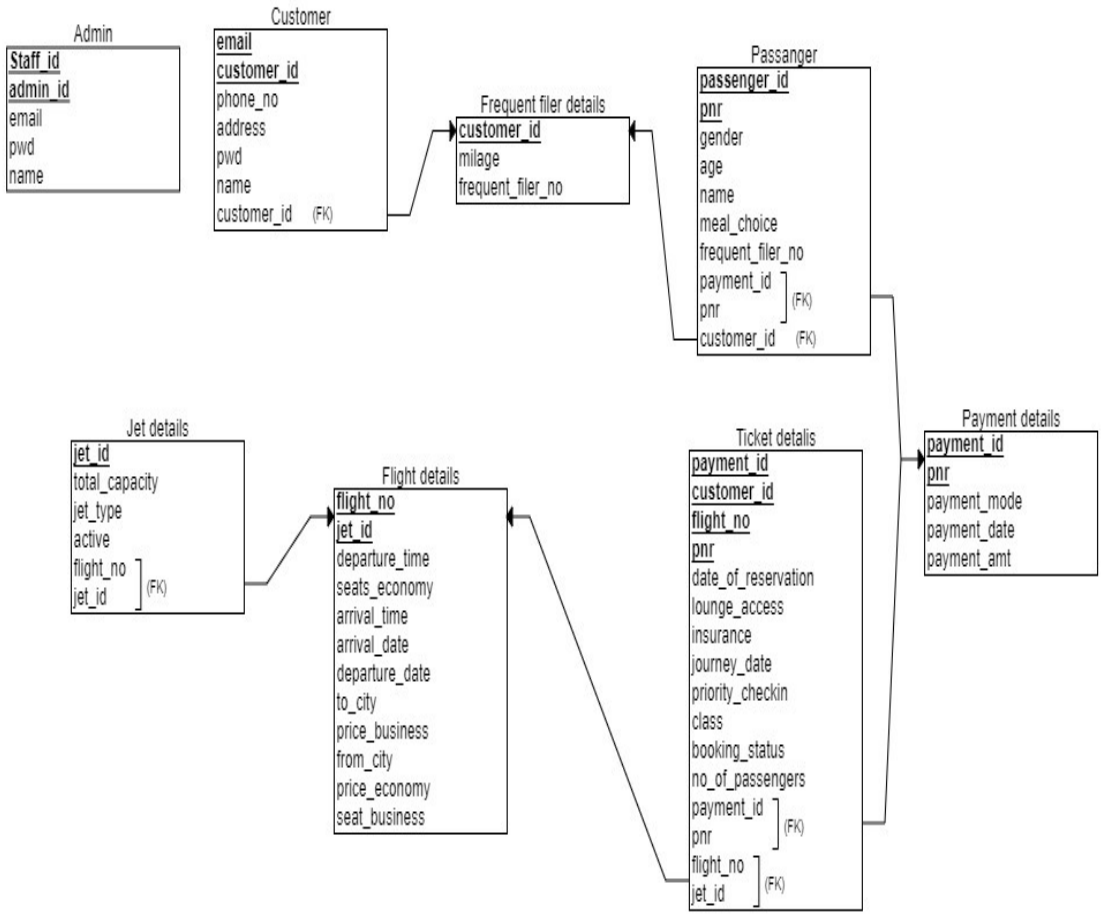


Fig. 3.2.1 Schema Diagram for Airline Reservation System

3.3 DATABASE SCHEMA

3.3.1 Database:

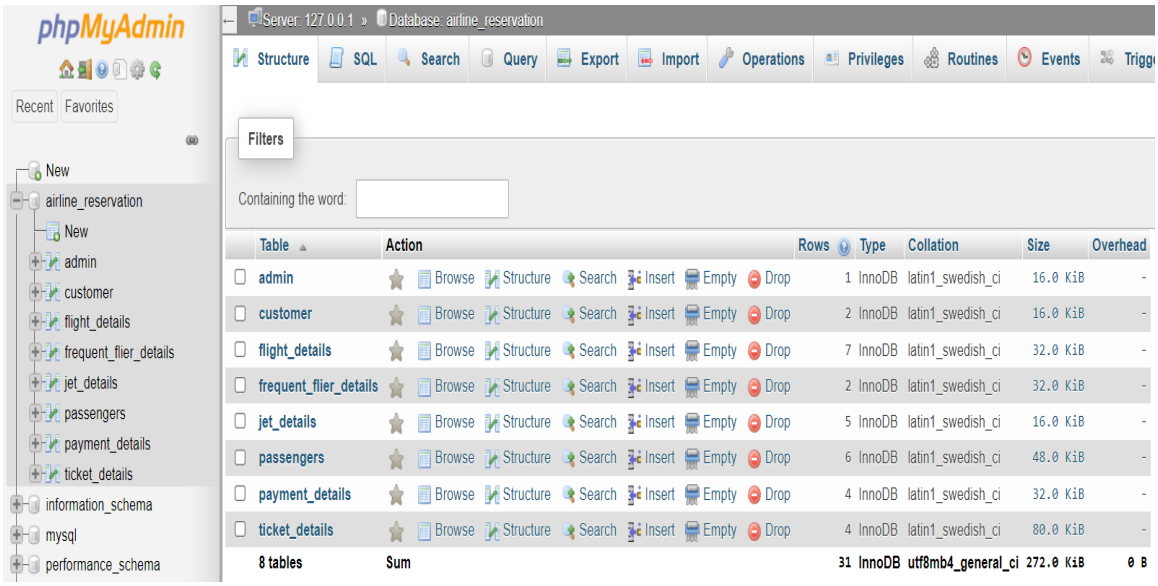


Fig 3.3.1 Database Schema for Airline Reservation System

3.3.2 Table admin:

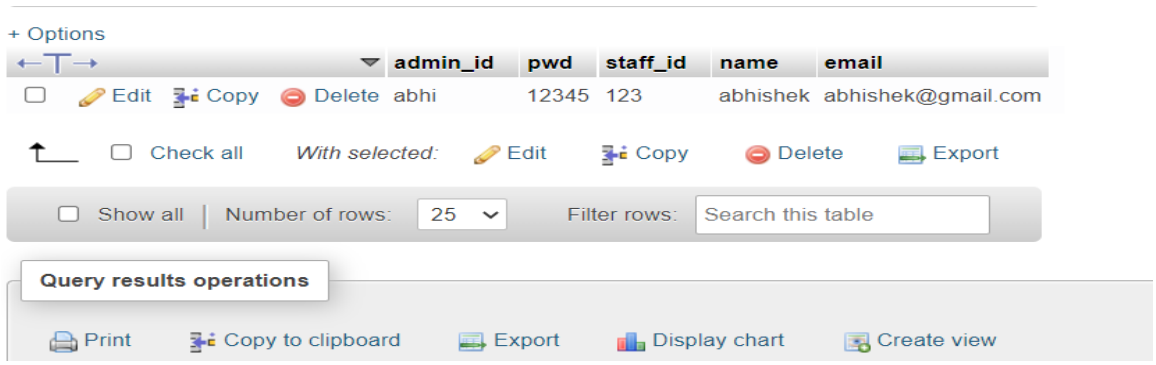


Fig 3.3.1 Admin Table for Airline Reservation System

3.3.3 Table customer:

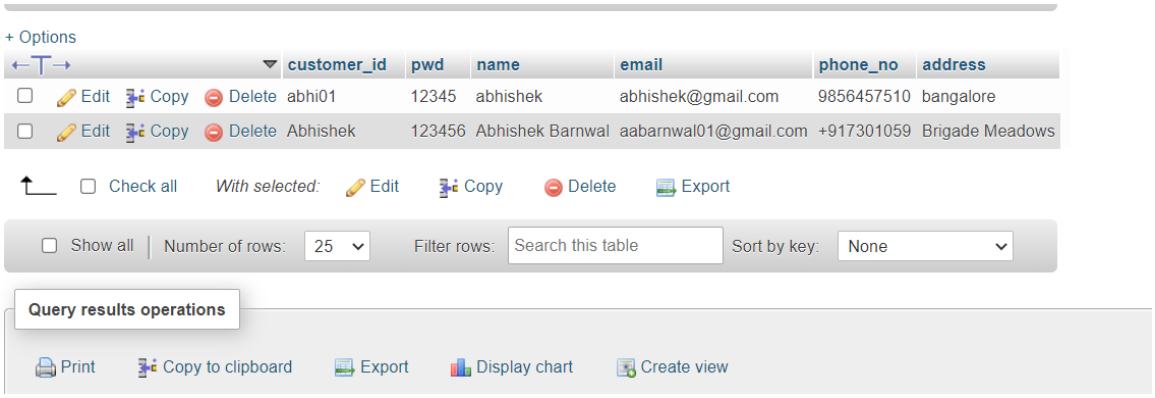


Fig 3.3.3 Customer Table for Airline Reservation System

3.3.4 Table flight details:

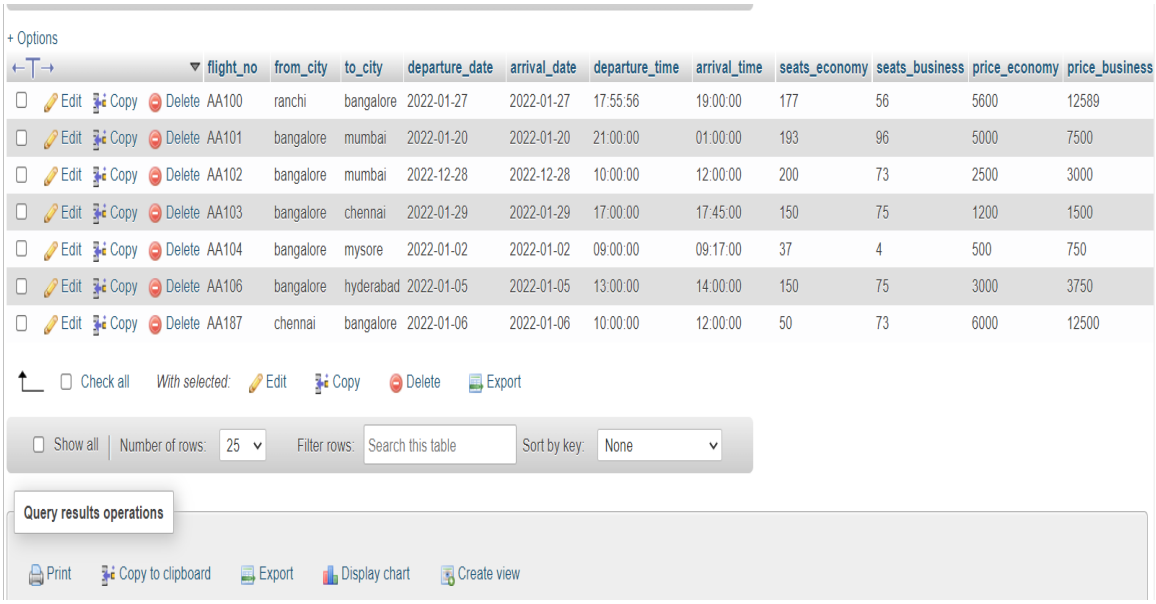


Fig 3.3.4 Flight Table for Airline Reservation System

3.3.5 Table frequent flier details:

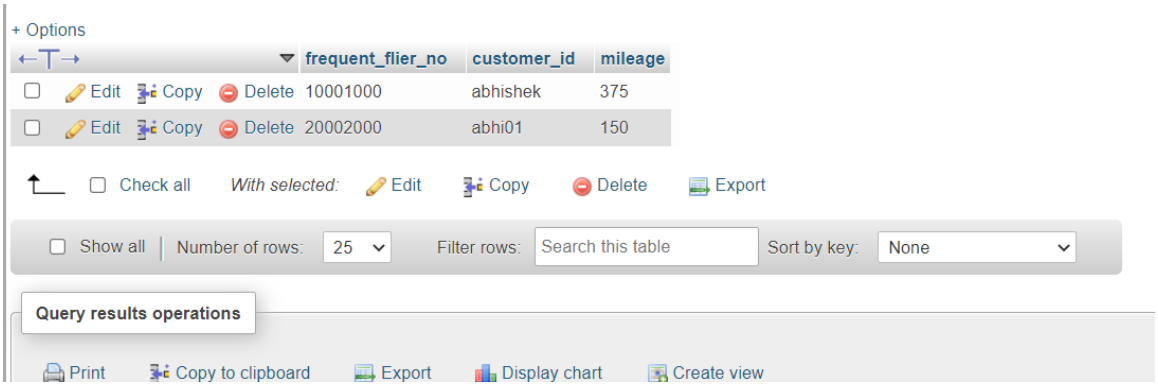


Fig 3.3.5 frequent Flier Table for Airline Reservation System

3.3.6 Table jet_details:

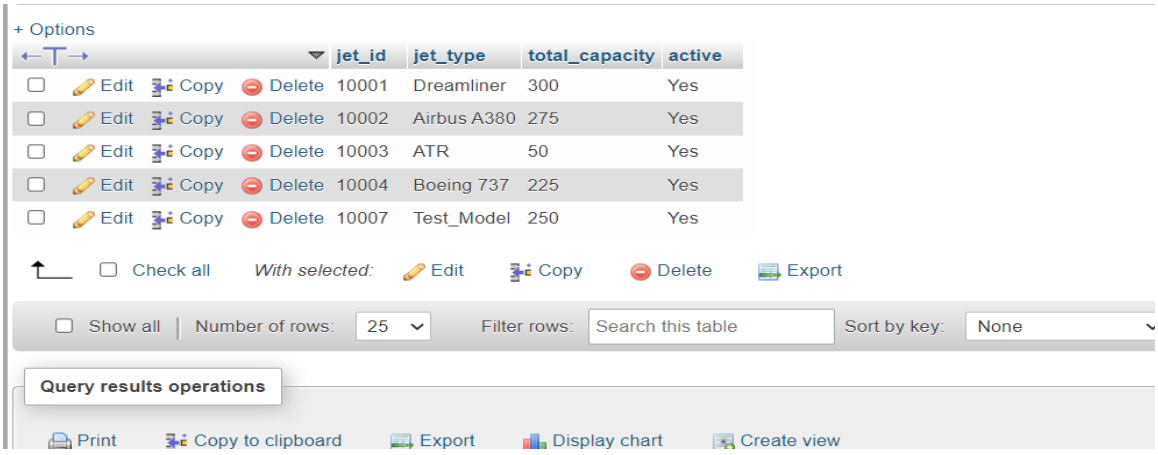


Fig 3.3.6 Jet Details Table for Airline Reservation System

3.3.7 Table passengers:

+ Options

	passenger_id	pnr	name	age	gender	meal_choice	frequent_flier_no
Edit Copy Delete	1	1669050	Harry Roshan	20	male	yes	20002000
Edit Copy Delete	1	4590577	Abhishek Mishra	21	male	yes	15006300
Edit Copy Delete	1	6214875	Nadeem	21	male	yes	*NULL*
Edit Copy Delete	1	8503285	Subham	10	male	yes	40001000
Edit Copy Delete	2	4590577	Abhishek baranwal	21	male	yes	*NULL*
Edit Copy Delete	3	3773951	aadith	11	male	yes	10001000

Check all *With selected:* Edit Copy Delete Export

Fig 3.3.7 Customer Table for Airline Reservation System

3.3.8 Table payment_details:

+ Options

	payment_id	pnr	payment_date	payment_amount	payment_mode
Edit Copy Delete	167177221	6214875	2022-01-05	4600	credit card
Edit Copy Delete	356366049	5702608	2022-01-25	11700	credit card
Edit Copy Delete	507078933	8732270	2022-01-27	6450	credit card
Edit Copy Delete	507086978	9332472	2022-01-31	9470	debit card

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Fig 3.3.8 Payment Details Table for Airline Reservation System

3.3.9 Table ticket_details:

[Edit] [Explain SQL] [Create PHP code] [Refresh]

umber of rows: 25 Filter rows: Search this table Sort by key: None

	pnr	date_of_reservation	flight_no	journey_date	class	booking_status	no_of_passengers	lounge_access	priority_checkin	insurance	payment_id	customer_id
Delete	4590577	2022-01-24	AA10	2022-01-20	economy	CONFIRMED	2	yes	yes	yes	178524043	admin
Delete	5702608	2022-01-25	AA101	2022-01-26	economy	CANCELLED	2	yes	yes	yes	356366049	admin
Delete	6214875	2022-01-05	AA106	2022-01-05	business	CANCELED	1	yes	yes	yes	167177221	Abhishek
Delete	8732270	2022-01-30	AA10	2022-01-22	business	CONFIRMED	1	yes	yes	yes	507078933	admin

With selected: Edit Copy Delete Export

umber of rows: 25 Filter rows: Search this table Sort by key: None

ations

opy to clipboard Export Display chart Create view

Fig 3.3.9 Ticket Details Table for Airline Reservation System

CHAPTER 4

IMPLEMENTATION

4.1 Modules & Description

4.1.1 User Registration Module:

User Registration Process-
It takes the User details such as User Name, Name, Email ID, Password, Mobile No. The output is a status message which shows the user is successfully registered or if any error is detected while filling the sign-up fields. Error condition in the above process arises if the '@' is missing in the Email field, if the Email is already registered, if the Mobile No contains any characters and/or any of the required fields are left blank.

User Login Process-
It takes the registered user name and password for the login process of the user. An unsuccessful status message is displayed if an invalid user name or password is detected or if required fields are left blank by the user.

4.1.2 Admin Registration Module:

Admin Login Process-
It takes the Username and Password of the user for admin privileges. Unsuccessful login attempts could be because the user might insert the invalid Username or Password or if any required fields are left blank by the user.

4.1.3 Admin Operations Module

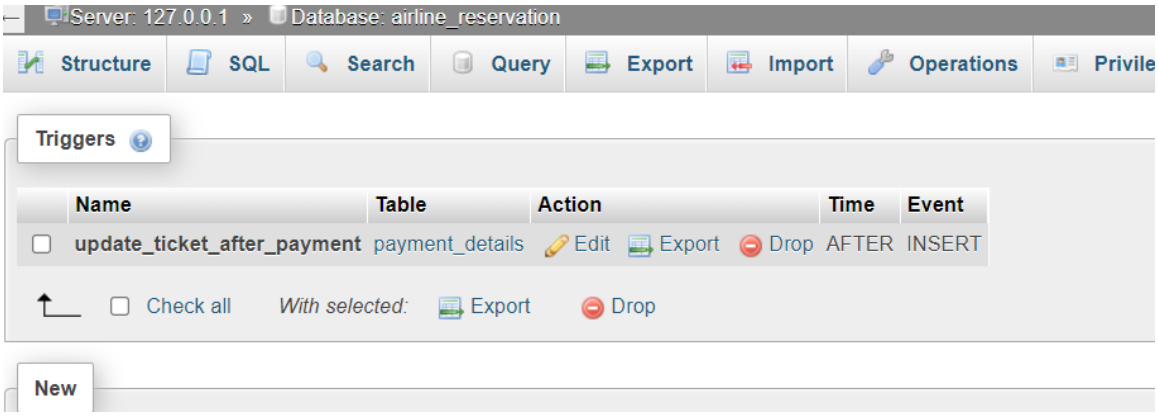
View Booked Flight Details-
It gives admin the privilege to view the user details. The admin cannot modify any user details, it opens in a read-only mode.
No condition of error could arise.

Add Fight Details-
It is used when the admin wishes to add any new scheduled flight. The
admin can do this via a button click. A status message is displayed prompting the addition as successful. An error could occur if the database is not updated successfully.

4.2 Trigger

The trigger is implemented for:

- The trigger is used to update ticket details after payment and update booking status as Confirmed.



The above is the screenshot of Trigger used.

4.3 Source Code

4.3.1 Sample Code to establish connection with the Database:

```
<?php
DEFINE('DB_USER','root');
DEFINE('DB_PASSWORD','');
DEFINE('DB_HOST','localhost');
DEFINE('DB_NAME','airline_reservation');

$dbc=mysqli_connect(DB_HOST,DB_USER,DB_PASSWORD,DB_NAME)
OR dies('Could not connect to MySQL:' .
        mysqli_connect_error());
?>
```

4.3.2 Backend Source Code

```
<?php
    session_start();
?>
<html>
<head>
```

```
<title>WELCOME TO AIRLINE TICKET RESERVATION
</title>
<link rel="stylesheet" type="text/css" href="css/style.css"/>
<link rel="stylesheet" href="font-awesome-4.7.0\css\font-awesome.min.css">
<link rel="preconnect" href="https://fonts.gstatic.com">
<link
href="https://fonts.googleapis.com/css2?family=Roboto+Mono:ital@1&display=swap"
rel="stylesheet">
<link rel="icon" href="images/download.png">
</head>
<body>
<img class="logo" src="images/download.png" width="80px" height="80px">
<h1 id="title">
        AIRLINE TICKET
RESERVATION
</h1>
<div>
<ul>
<li><a href="home_page.php"><i class="fa fa-home" aria-hidden="true"></i> Home
</a></li>
<li>
<?php
if(isset($_SESSION['login_user'])&&$_SESSION['user_type']=='Customer')
{
echo "<a href=\"book_tickets.php\"><i class=\"fa fa-ticket\" aria-hidden=\"true\"></i>
Book Tickets</a>";
}
else if(isset($_SESSION['login_user'])&&$_SESSION['user_type']=='Administrator')
{
echo "<a href=\"admin_ticket_message.php\"><i class=\"fa fa-ticket\" aria-
hidden=\"true\"></i> Book Tickets</a>";
}
else
{
echo "<a href=\"login_page.php\">
<i class=\"fa fa-ticket\" aria-hidden=\"true\">
</i> Book Tickets</a>";
}
?>
</li>
<li><a href="about_us.html"><i class="fa fa-plane" aria-hidden="true"></i> About
Us</a></li>
<li><a href="contact_us.html"><i class="fa fa-phone" aria-hidden="true"></i> Contact
Us</a></li>
<li>
<?php
```

```
if(isset($_SESSION['login_user'])&&$_SESSION['user_type']=='Customer')
{
echo "<a href=\"customer_homepage.php\"><i class=\"fa fa-sign-in\" aria-
hidden=\"true\"></i> Login</a>";
}
else if(isset($_SESSION['login_user'])&&$_SESSION['user_type']=='Administrator')
{
echo "<a href=\"admin_homepage.php\"><i class=\"fa fa-sign-in\" aria-
hidden=\"true\"></i> Login</a>";
}
else
{
echo "<a href=\"login_page.php\"><i class=\"fa fa-sign-in\" aria-hidden=\"true\"></i>
Login</a>";
}
?>
</li>
</ul>
</div>
<div class="container">
<div class="welcome_text" style="text-align:
center;">           
   <u>WELCOME TO AIRLINE TICKET
RESERVATION!</u></span> </div>
<img src="images/shutterstock_390581569.jpg" width=100% >
</div>
</body>
</html>
```

CHAPTER 5

RESULT ANALYSIS & SCREENSHOTS

5.1 Home page:

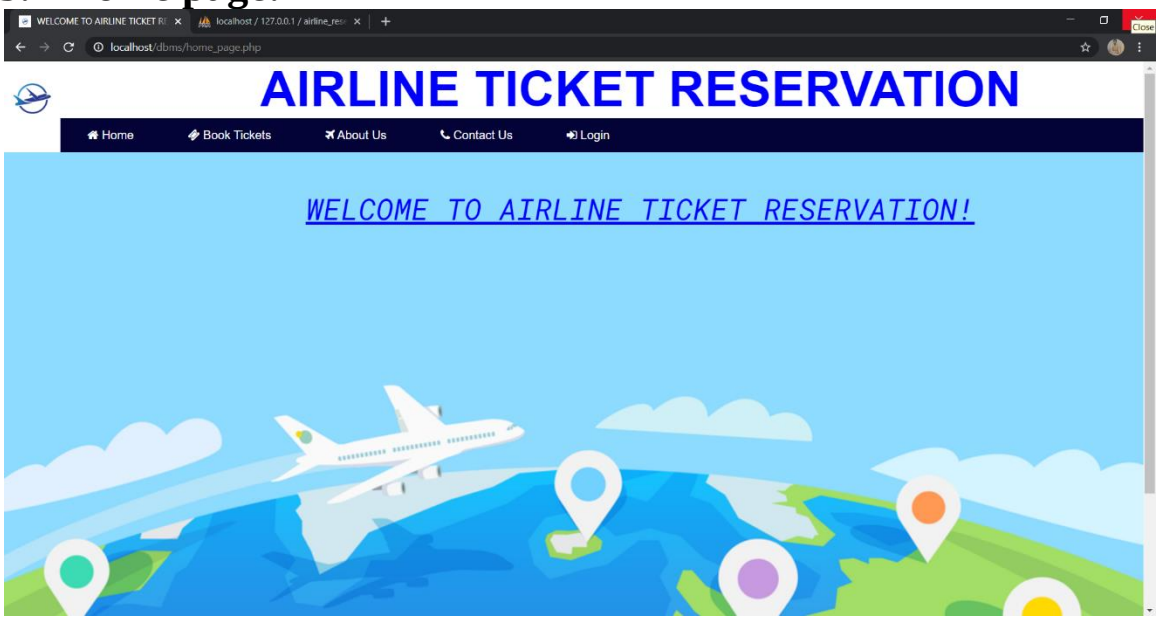


Fig. 5.1 Home Page of Airline Reservation System.

5.2 Login page:

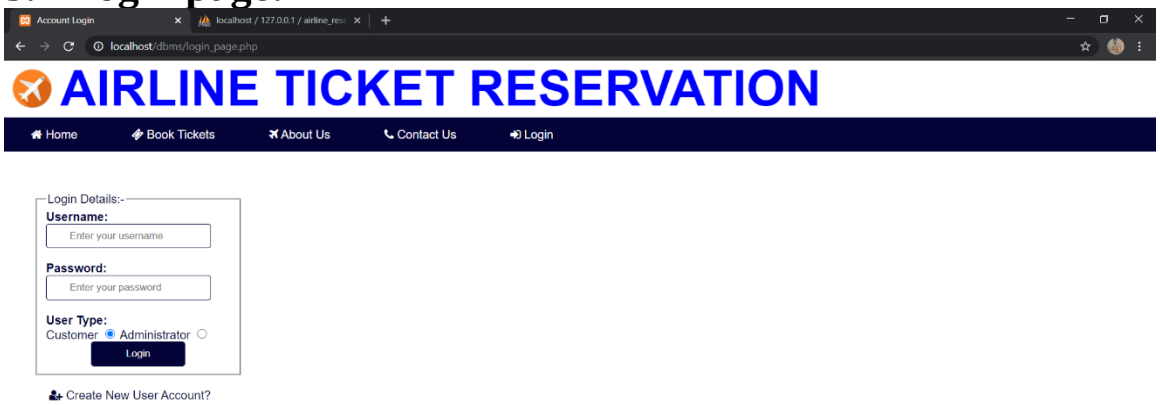


Fig.5.2 Login Page of Airline Reservation System.

5.3 Creating new user account page:

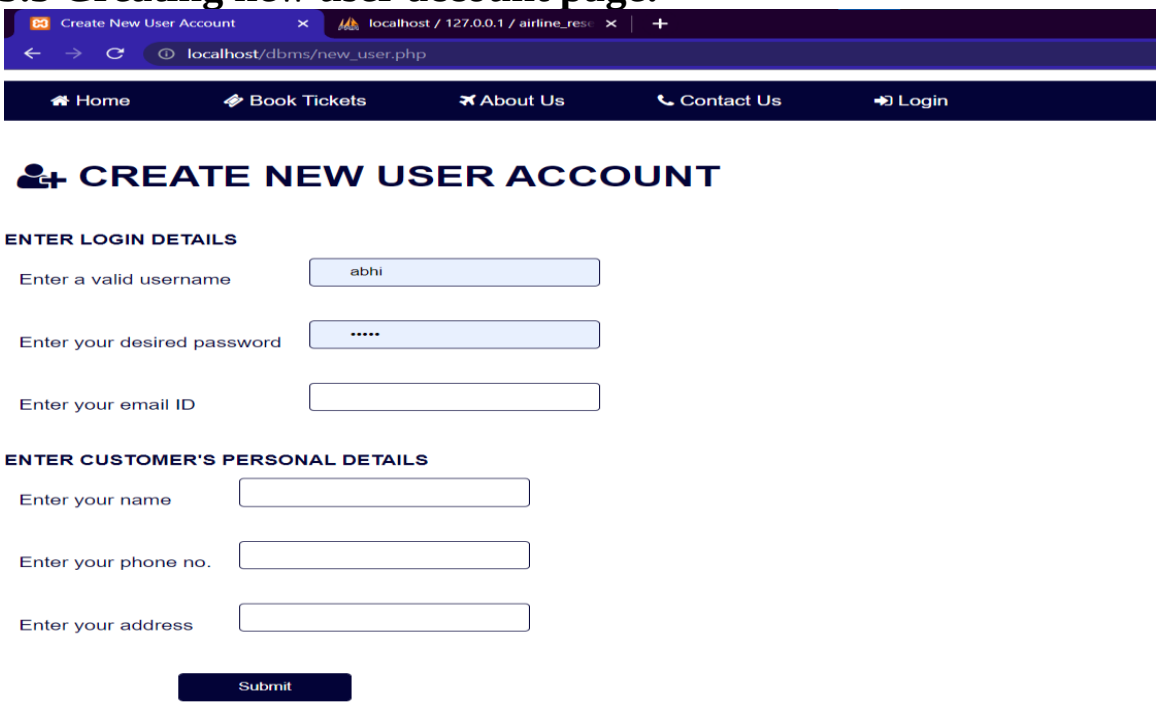


Fig. 5.3 Creating user account Page of Airline Reservation System.

5.4 Admin dashboard page:

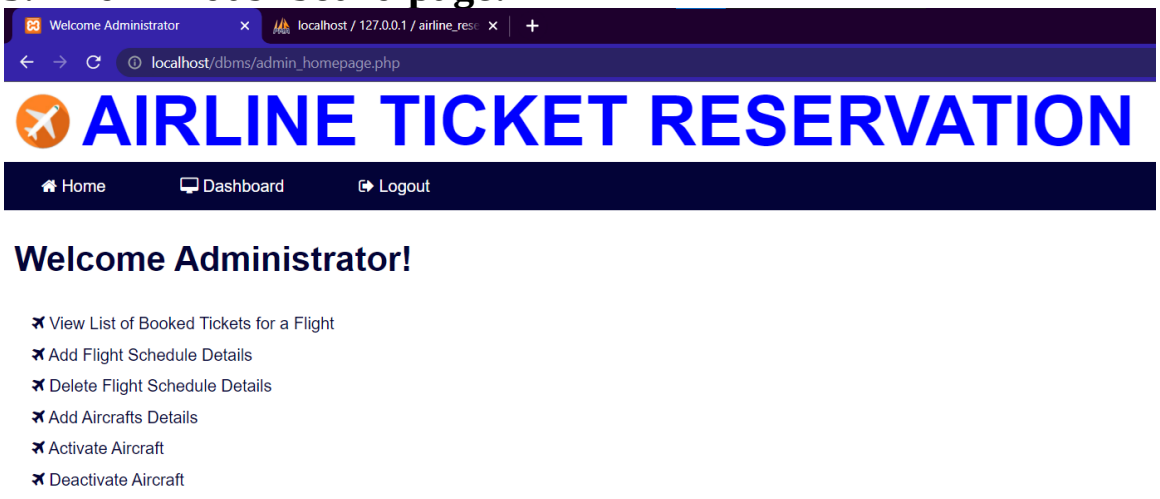


Fig. 5.4 Admin Dashboard Page of Airline Reservation System.

5.5 Customer dashboard page:

Fig. 5.5 Customer Dashboard Page of Airline Reservation System.

5.6 Booking flight ticket page:

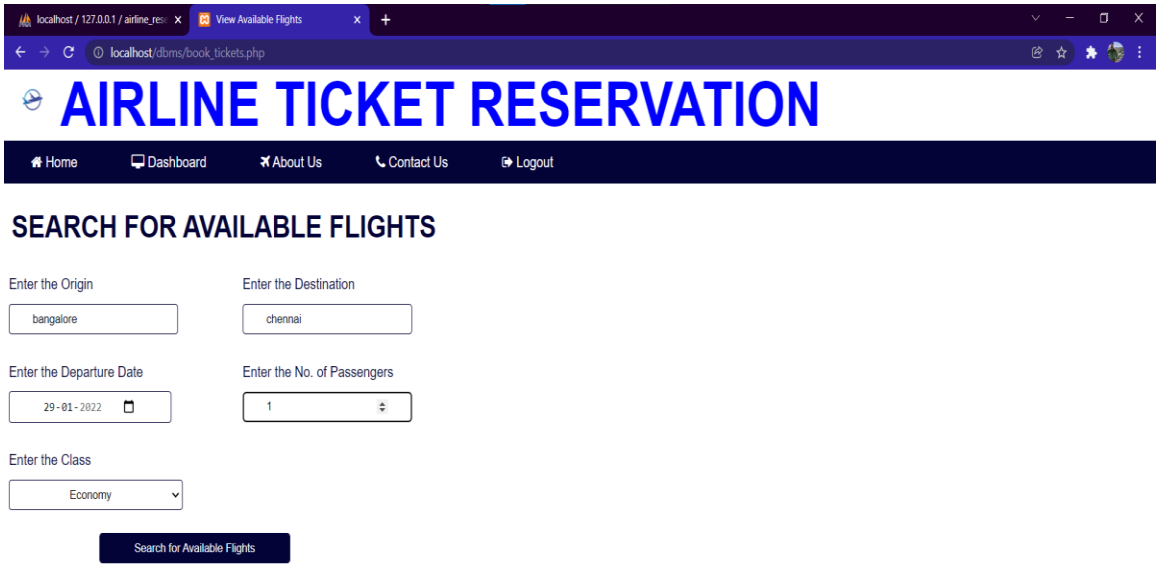


Fig.5.6 Booking Page of Airline Reservation System.

5.7 Booked flight details page:

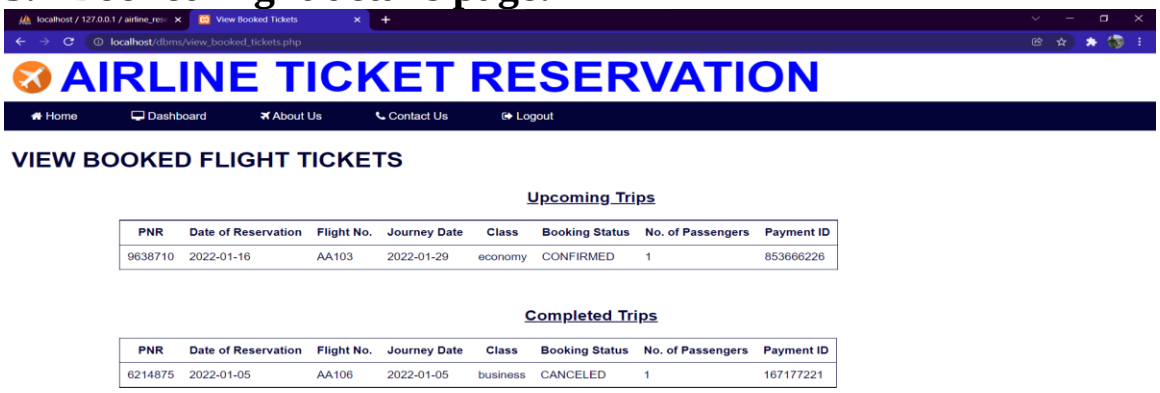


Fig. 5.7 Booked Flight Page of Airline Reservation System.

5.8 Cancel flight ticket page:

Fig. 5.8 Cancel Flight Ticket Page of Airline Reservation System.

Chapter 6

SYSTEM TESTING

After all phase have been perfectly done, the system will be implemented to the server and the system can be used.

6.1 System Testing

The goal of the system testing process was to determine all faults in our project. The program was subjected to a set of test inputs and many explanations were made and based on these explanations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing

1. Unit testing

2. Integration testing

6.1.1 Unit Testing

Unit testing is commenced when a unit has been created and effectively reviewed. In order to test a single module, we need to provide a complete environment i.e., besides the section we would require

1. The procedures belonging to other units that the unit under test calls
2. Non local data structures that module accesses
3. A procedure to call the functions of the unit under test with appropriate parameters

Test for the admin module

Testing admin login form-This form is used for log in of administrator of the system. In this form we enter the username and password if both are correct administration page will open otherwise if any of data is wrong it will get redirected back to the login page and again ask the details.

6.1.2 Integration Testing

In the Integration testing we test various combination of the project module by providing the input.

The primary objective is to test the module interfaces in order to confirm that no errors are occurring when one module invokes the other module.

CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 Conclusion

The Airline reservation system has been a way of minimizing the clerical work, which is almost a routine and consumes the most precious time. This AIRLINE RESERVATION SYSTEM has been an attempt to help the user to minimize his workload along with minimizing the paper works and saving of time. The system has been developed in a way to make it very user friendly. The Airline Reservation System is a great improvement over the manual hectic system which uses lots of work. The computerization of the system speeds up the process. This system was thoroughly checked and tested with dummy data and found to be very reliable.

7.2 Future Enhancement

Although, our system has been completed but it's not perfect. We had planned to make some enhancement in the future. We think that our system has potential to grow. Besides, we'll include more functions and introduce more widgets to the system. Like

- Mobile version
- Call Center Support
- Payment options and document checking such as ID proofs can be added

We also plan to enhance the interface so that it looks more attractive and interactive.

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- http://www.codeproject.com
- http://www.msdn.com.
- http://www.vb123.com
- http://www.vbcode.com
- http://www.sqltuner.com

Books

- Mastering Visual Basic 6 (Paperback)
- Visual Basic Black Book (Paperback)
- SQL Bible, 2nd Edition (Paperback)
- Database Development in Visual Basic
- PHP 6 and MySQL 5 - Larry Ullman

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