Tribhuvan University Faculty of Humanities and Social Science

Flight Ticket Reservation System

A PROJECT REPORT

Submitted to
Department of Computer Application
Birendra Multiple Campus

In partial fulfilment of the requirements for the Bachelors in Computer Application

Submitted by
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Birendra Multiple Campus

Supervisor's Recommendation

I hereby recommend that this project prepared under my supervision by SANTOSH RIMAL entitled **"FLIGHT TICKET RESERVATION"** in partial fulfilment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

SIGNATURE

Hari Prasad Sapkota

SUPERVISOR

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LETTER OF APPROVAL

This is to certify that this project prepared by Santosh RIMAL entitled **"FLIGHT TICKET RESERVATION"** in partial fulfilment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

…… Hari Prasad Sapkota Lecturer Supervisor Department of computer Application Birendra Multiple Campus Bharatpur-10,Chitwan	…….. Mr. Soba Raj Poudel Program Co-Ordinator Department of computer Application Birendra Multiple Campus Bharatpur-10,Chitwan
Govinda Saran Gupta **Internal Examiner**	**External Examiner**

Abstract

The project's goal is to allow people to Reserve Flight tickets online. The Ticket Reservation System is an Internet based application that can be accessed throughout the Net and can be accessed by anyone who has a net connection. This application will reserve the tickets. This online ticket reservation system provides a website for a Flight where any user of internet can access it. User is required to login to the system to booking the tickets. Tickets can be collected at the counter and Travel with family and friends in Flight and enjoy. But all this excitement vanishes after standing in hours in long queues to get tickets booked. The website provides complete information about flight, airlines, airports, price available seats etc. Our online tickets reservation system is one of the best opportunities for those who cannot afford enough time to get their tickets reserved standing in long queues. People can book tickets online at any time of day or night.

Acknowledgment

First, I would like to express my special thanks to Birendra Multiple campus and gratitude to our teacher supervisor Mr. Hari Prasad Sapkota who gave me the great opportunity to do this wonderful project on the topic of Flight Ticket Reservation System. Which also helped me in doing a lot of research for completing my Project. I came to know about so many new things I am really thankful to them. Secondly, I would also like thank my parents and friends who helped me a lot in finishing this project within the limited time frame. this project help to increase my Knowledge and Skills.

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List of Abbriviations

- HTML : Hypertext markup language
- CSS : Cascading Style Sheet
- PHP : Hypertext Preprocessor
- DFD : Data Flow Diagram
- ER : Entity Relationship

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Chapter 1 Introduction

1.1 Introduction

The web based “Flight Reservation System” project is an attempt to stimulate the basic concepts of flight reservation system. The system enables the customer to do the things such as search for airline flights to travel cities on a specified date, choose a flight based on the details, reservation of flight and cancellation of reservation [1]. 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 and price 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. To book a flight the system asks the customer to enter his details such as name, address and contact number.

1.2 Problem Statement

Every Airline company and travel agencies are charged with the responsibility of ensuring to give safe and comfortable service to their customers. To ensure this quality of service, the companies which works on this business should reach to their customers and give a quality service to compute in the market. And this includes easy ticket reservation system. Very often, they cannot put up the reservation list on time. Owing to the inefficiencies in the manual system, when passengers cancel tickets, the reservation list is not updated in time. They maintain a waiting list, which is used to update the reservation list when passengers cancel tickets. Currently, the manual system handles all requests for changes in reservation. Reservation opens few days before the scheduled departure date. In the context of Nepal we can face following obstacles while implementing the system.

- Internet connectivity - is still a huge problem in rural and remote areas.
- Basics Computer knowledge – is also a problem for many people.

1.3 Objectives

The main purpose of this study is to automate the manual procedures of reserving ticket for any journey made through flight. Specifically, objectives of this project will consist of:

i) Providing a web-based flight ticket reservation function where a customer can buy plane ticket through online system.

ii) Enabling customers to check the availability of flight online.

1.4 Scope and Limitation

Every website has its own unique features and its limitations. The ticket reserving software offers following scope and lacks following things:

1.4.1 Scope

i. Helps to book ticket online

ii. Fast and secure booking.

iii. Every information will be secure.

1.4.2 Limitation

i. Payment method is not included.

ii. One should have basic knowledge of computer to operate.

1.5 Report Organization

The main report is organized in a chapter-wise manner. The report consists of five different chapters.

• I briefly introduce our project, its existing problems, our solution to that problem and its scope and limitations.

• This includes project related theories, general concepts and study of preexisting similar projects.

• All the documentation of actual project development activities like requirement gathering, feasibility study modelling and designing are included in this chapter.

• I define the tools used to implement our project like CASE tools and testing is performed for each function of the product.

• This includes conclusion and recommendations of the project.

Chapter 2 Background Study and Literature Review

2.1 Background Study

Many people are travelling with airplanes, either as means of daily transportation to and from work, when going on vacation, to mention a few. To make reservations for such travels, airline companies websites hold the functionality for the user to book a travel himself. A functionality which these websites lack is the option for the user to set up specific requirements for a travel, such as; travel time or date. (Jarvenpaa L. S, 1996). The purpose of this project is to develop an easy-to-use airline reservation system, which accommodates these functionalities. In addition, the system should also be of use for travel agencies. These should have the same functionalities in the system as the private users, thus enabling them a greater understanding of the fight network. Involving from manual records and logs in the early 1930s, Airlines Reservations System (Arsanjani) is the improved, computerized feature of airline reservations (Winston, 1995). Flight ticket reservation system helps in systematic and effective organization of bookings, schedules and customer data. Airline reservations system has today evolved into Computer Reservations System. When integrated with Global Distribution System, can be used by multiple distribution channels such as travel agencies, which can then use it for flight booking. Flight ticket reservation system consists of several areas such as the inventory management, availability display and reservation and fare quotes and tickets. American Airlines introduced the first automated Ticket reservation system called the Electromechanical Reservisor in 1946. It was followed by a new machine called Magnetronic Reservisor. In 1959, to improve the existing Reservisor, an improved automated booking system called SABRE was introduced (Winston,1995).. [2].

2.2 Literature review

David J. Wardel, said in his published journal titled Airline Reservation System A report and Overview: that Airline computerized reservation systems are in the primary form of travel computerizations in the world. These systems manage the millions of business transactions Also David J. Wardel wrote The Computer Reservation System function as extremely powerful and valuable distribution and marketing tools for their airline owners. [3].

Chapter 3 System Analysis and Design

3.1 System Analysis

Flight ticket reservation system is considered as one of the effective ways of booking flight ticket. This system is considered of having different requirement for its use. Under this system, functional and nonfunctional requirements should be analyzed. Some models of software use and requirement are as followed.

Waterfall model is used for this project. This project has fixed specification, sample time, enough resources and well understood technology. So, I used waterfall methodology to build this system.

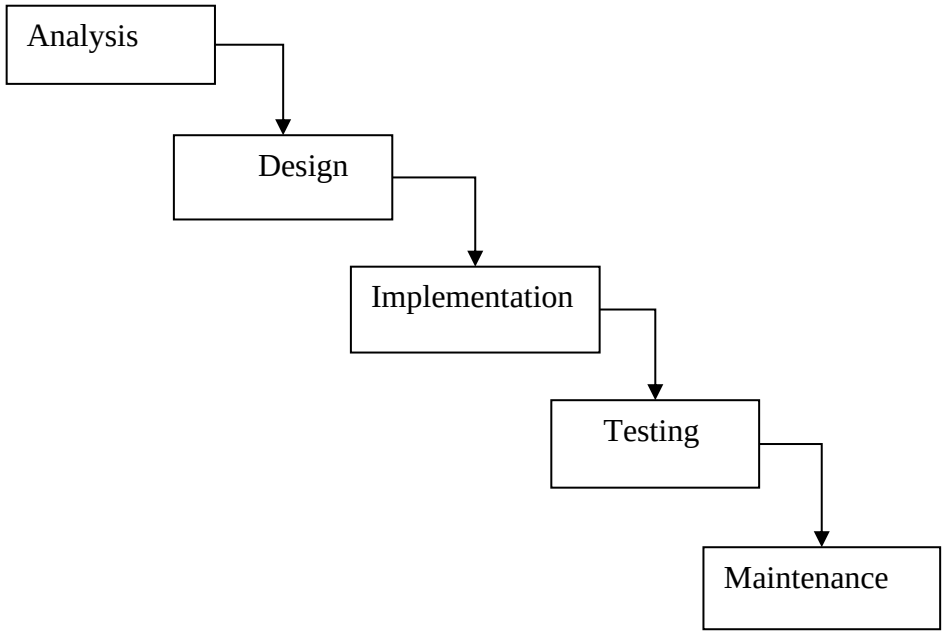

Figure 3-1 Waterfall Model

3.1.1 Requirement Analysis

Requirement analysis is done while developing a system and before implementing. It is categories into following two parts.

i. Functional Requirements

a) **Registration:** If the customers want to check flight details, then they must be registered first.

b) **Login:** After register Customer can login to the system by entering a valid email and password and admin can also login to the system by entering a valid email and password.

c) Admin will able to control whole system.

d) User will able to fill their information

e) User will able to book flight and cancel.

ii. Non-Functional Requirements

a) Availability- It will be available whenever the system is needed

b) Security- It will be secure.

c) Performance- It will be fast with good response

d) Reliability- It will be reliable.

e) Maintainability-It will be maintained time to time.

3.1.2 Feasibility Analysis

A feasibility study is an analysis that takes all of a project's relevant factors into account including economic, technical, legal, and scheduling considerations to ascertain the likelihood of completing the project successfully. Feasibility studies also can provide a company's management with crucial information that could prevent the company from entering carelessly into risky businesses.

i. Technical

This system work with the existing hardware, software and the technical expertise. In short, it does not require any additional Hardware and Software.

ii. Operational

Most of the user are familiar with the technologies and so they don't need any special training and also our system is very user friendly and easy to use.

- **Front end:**
  - -Html
  - -CSS
  - -JavaScript
- **Backend**:
  - -PHP
  - Server: -My Sql

iii. Economic

The software and hardware resources required to run the project is already available with us. No new system should be deployed thus, it is highly economic

iv. Schedule

If a project has a high probability to be completed on-time, then its schedule feasibility is appraised as high.

Following Gantt Chart Shows the schedule for our project: -

Table 3-1 Gantt Chart

week Phases	1	2	3	4	5	6	7	8	9	10	11	12
Study and Analysis	■	■										
Design			■									
coding			■	■	■	■						
implementation					■	■	■	■				
Testing				■	■	■	■	■	■	■		
Documentation	■	■	■	■	■	■	■	■	■	■	■	■
Review											■	■

3.1.3 Data Modelling (ER-Diagram)

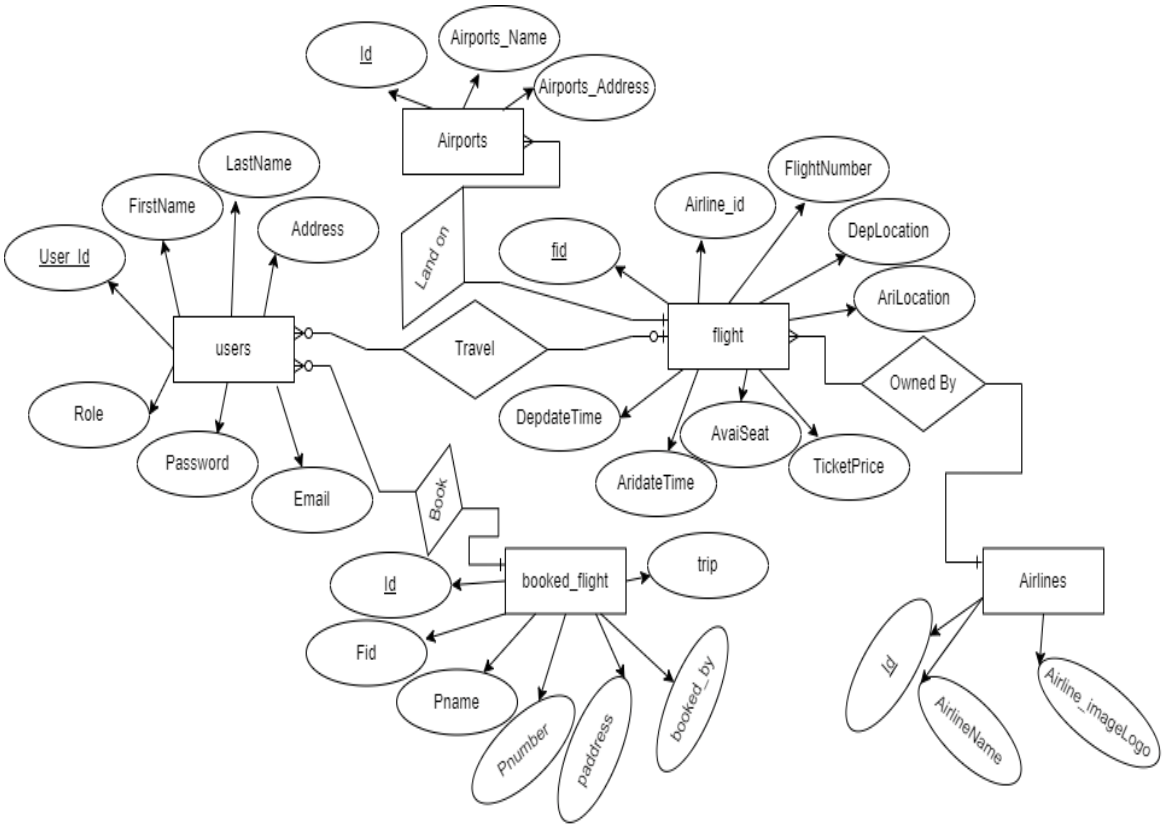

Figure 3-2 ER diagram of Flight Ticket Reservation System

3.1.4 Process Modelling (DFD)

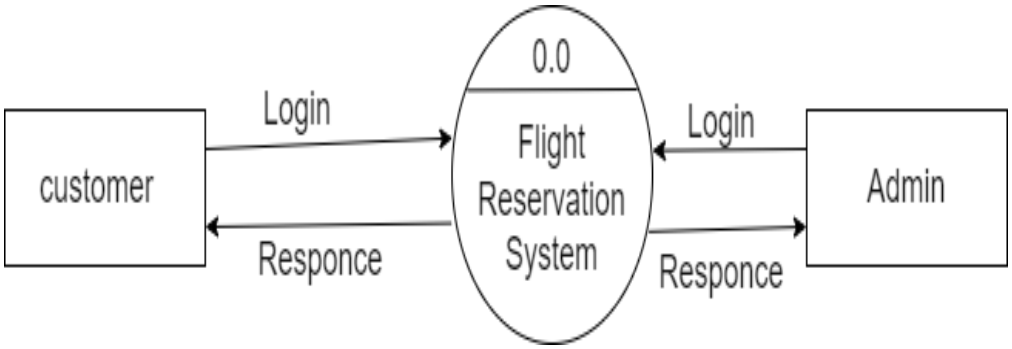

Figure 3-3 0 Level DFD

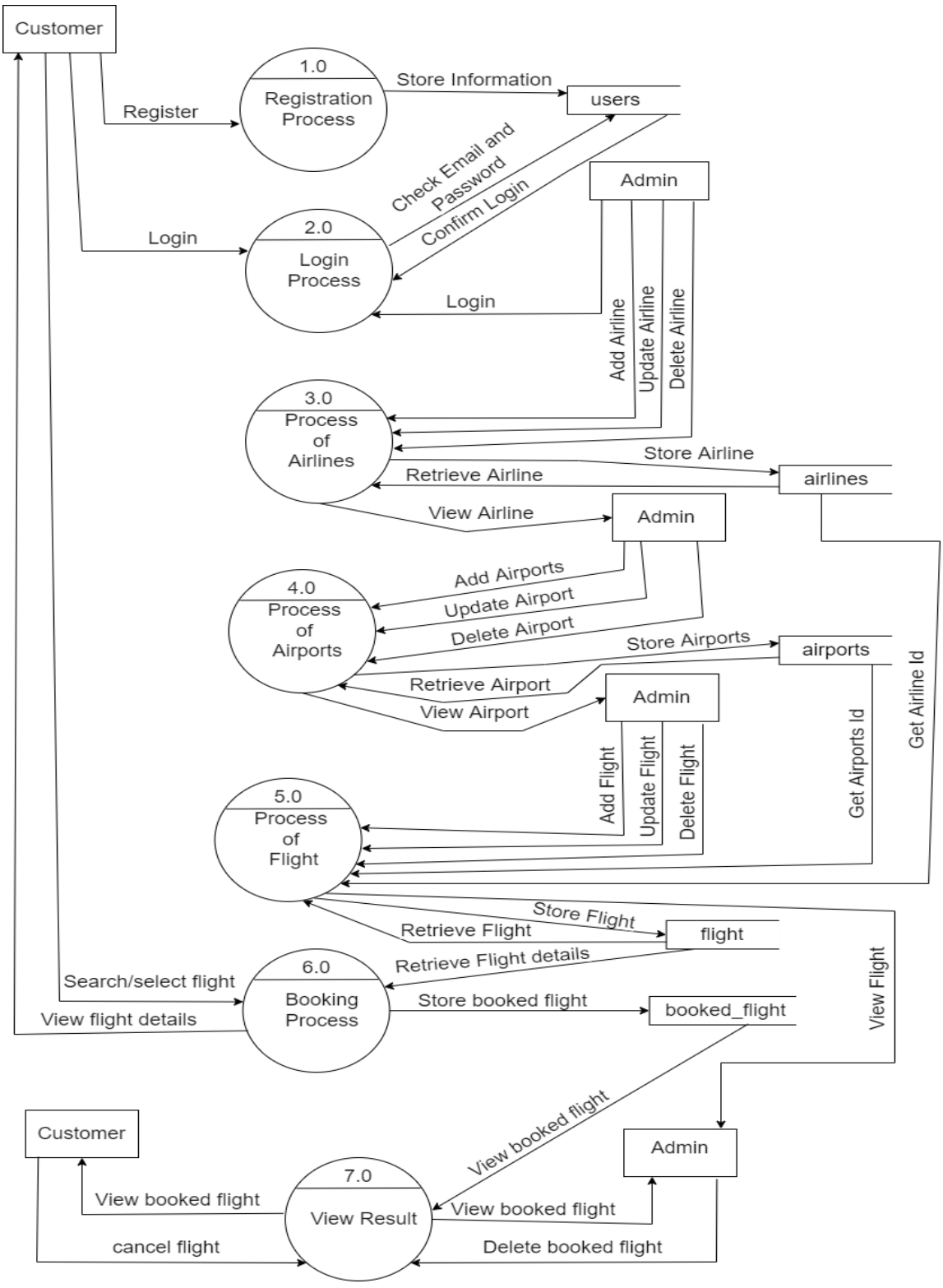

Figure 3-4 1 level DFD

3.2 System Design

Systems design is the process of defining the architecture, product design, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development.

User Module:

• Only signup user can login into the application.

• Those users who aren't sign-up must sign-up first by filling the necessary attributes such as email, password.

• Only sign-up user will be provided with the email and password.

• User can view the art-work, artist name, and the description of the picture.

Admin Module:

• Admin can add, edit and update entire system.

3.2.1 Architectural Design

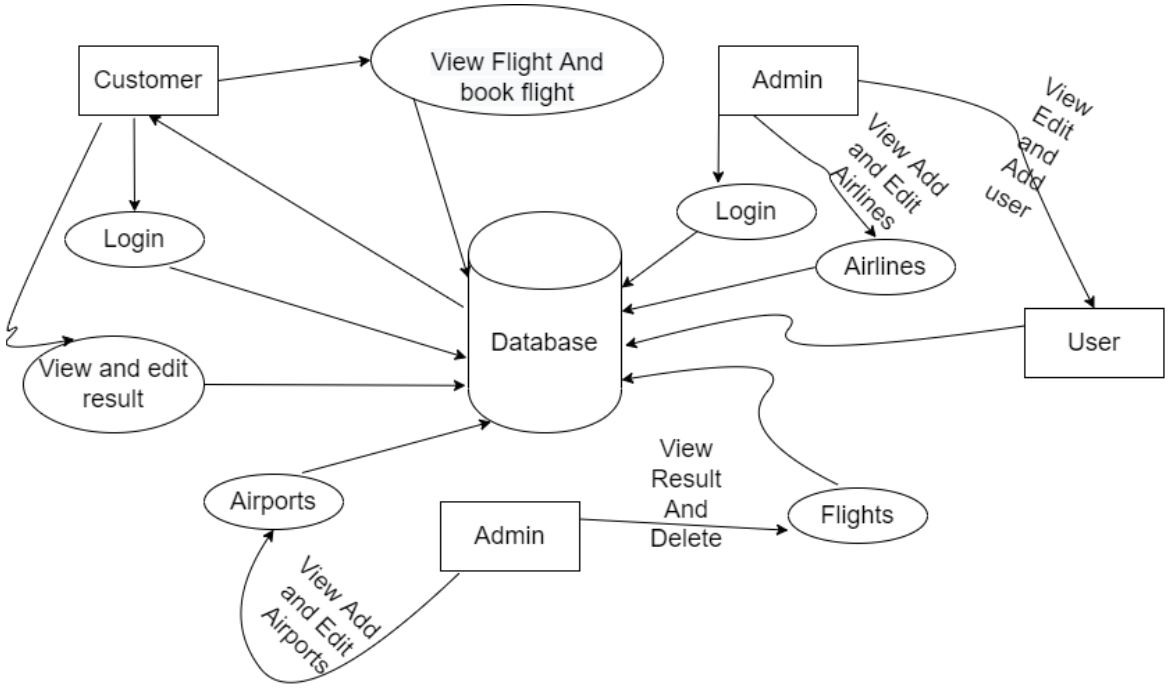

Figure 3-5 Architectural Design

3.2.2 Database Schema Design

Table 3-2 Database Schema Design

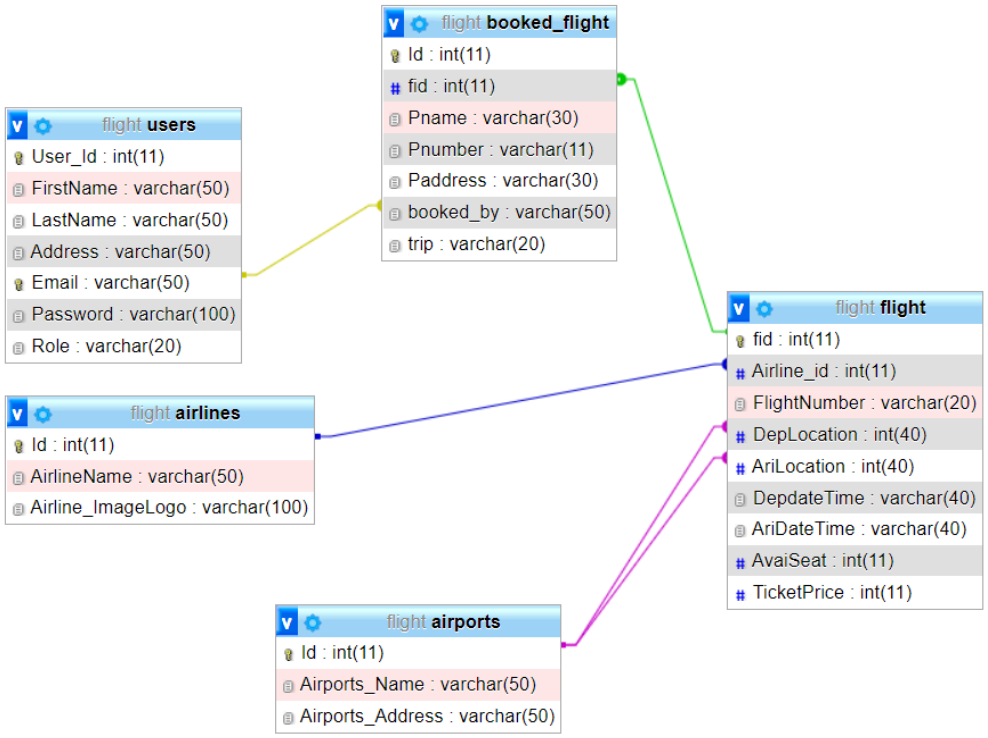

Table 3-3 User Table

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	User_Id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
☐	2	FirstName	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	3	LastName	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	4	Address	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	5	Email	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	6	Password	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	7	Role	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Table 3-4 Airlines Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Id	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	AirlineName	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
3	Airline_ImageLogo	varchar(100)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Table 3-5 Airports Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Id	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	Airports_Name	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
3	Airports_Address	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Table 3-6 Booked_flight Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	Id	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	Fid	int(11)			Yes	*NULL*			Change Drop More
3	Pname	varchar(30)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
4	Pnumber	varchar(11)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
5	Paddress	varchar(30)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
6	booked_by	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
7	trip	varchar(20)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

3.2.3 Interface Design (UI Interface / Interface Structure Diagrams)

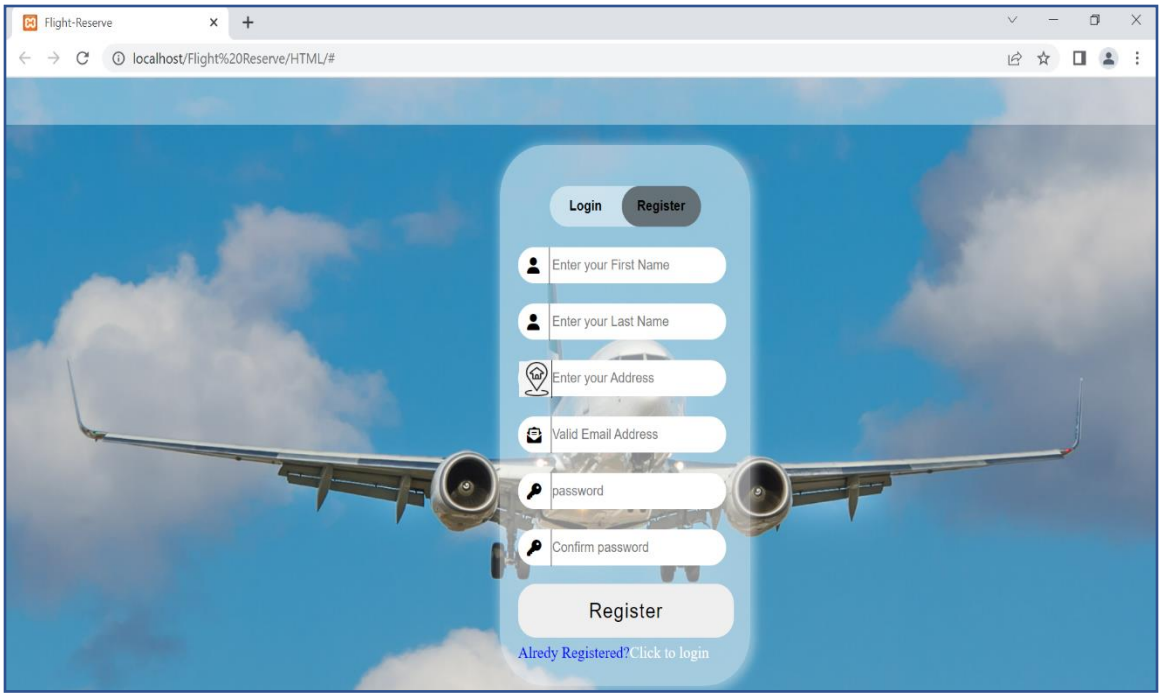

Figure 3-6 Register page

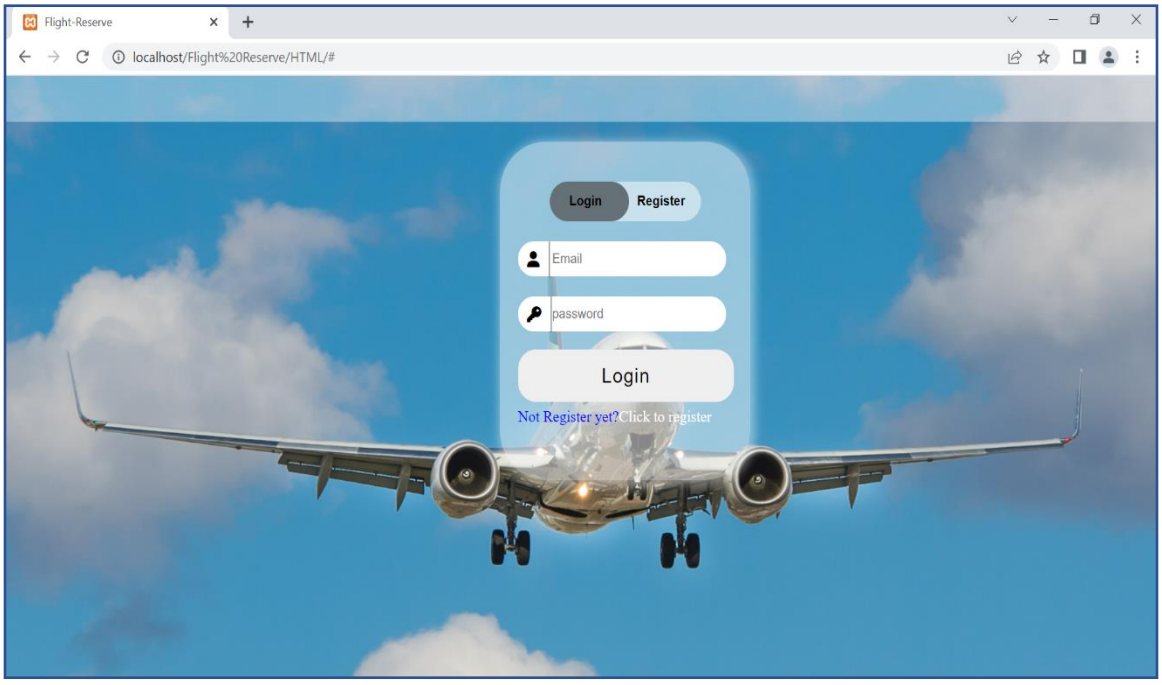

Figure 3-7 Login Page

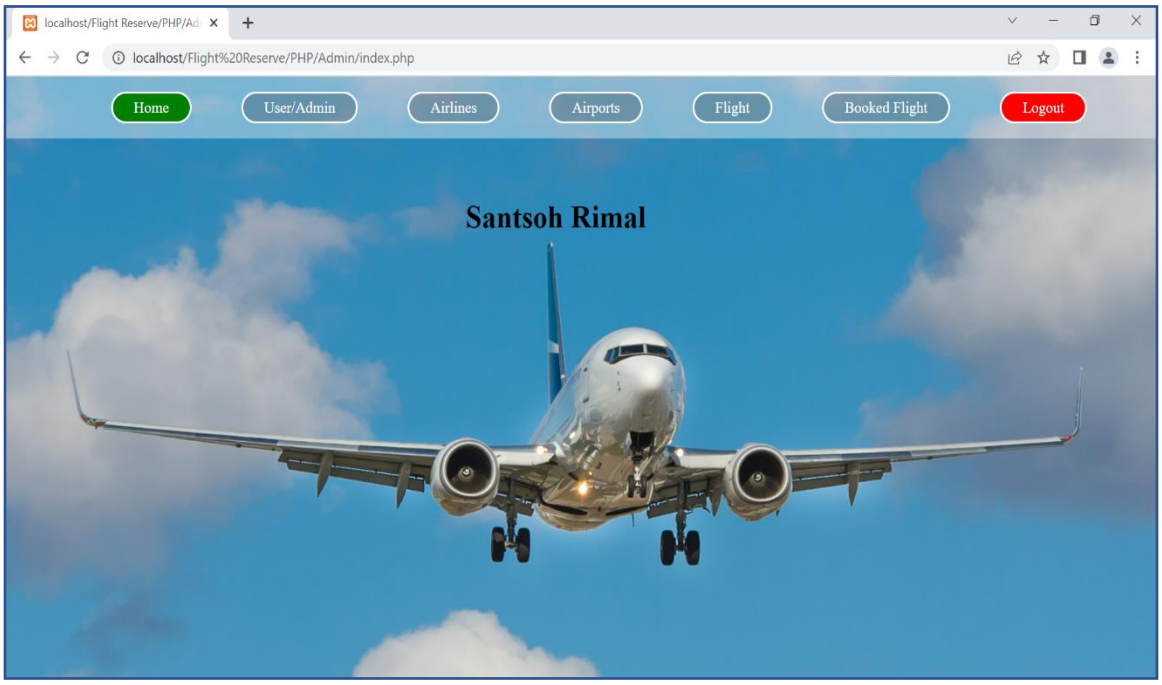

Figure 3-8 index page of admin

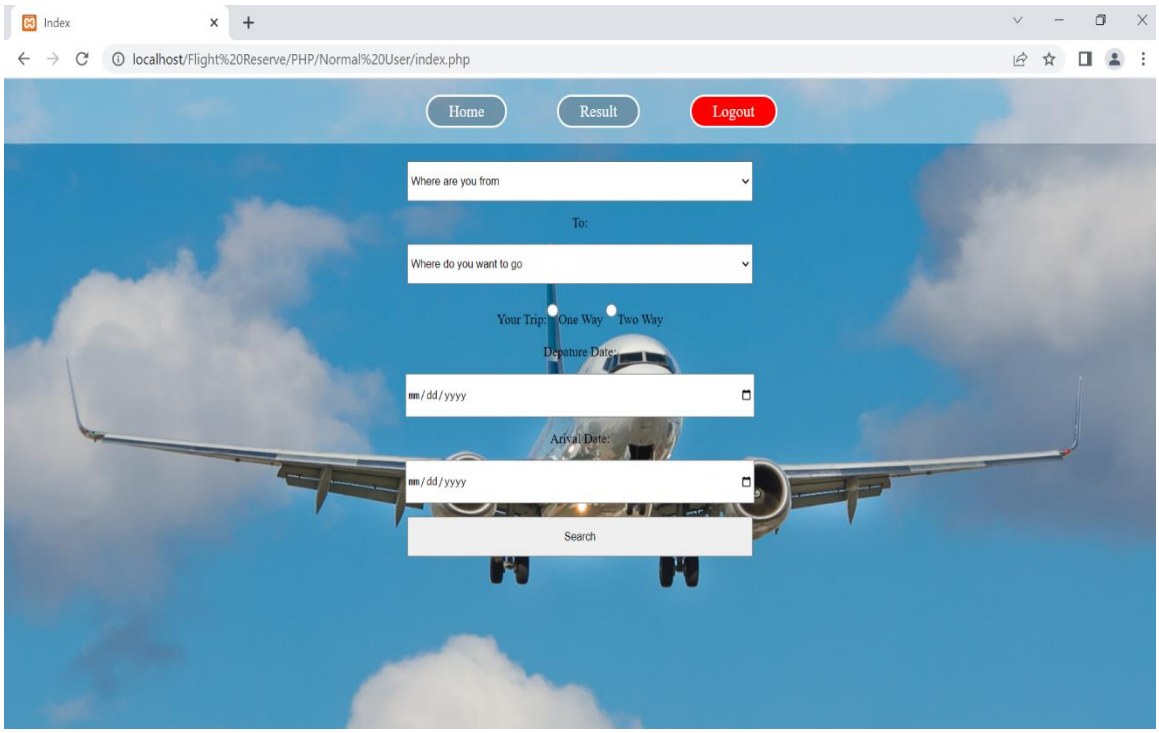

Figure 3-9 index page o User

3.2.4 Physical DFD

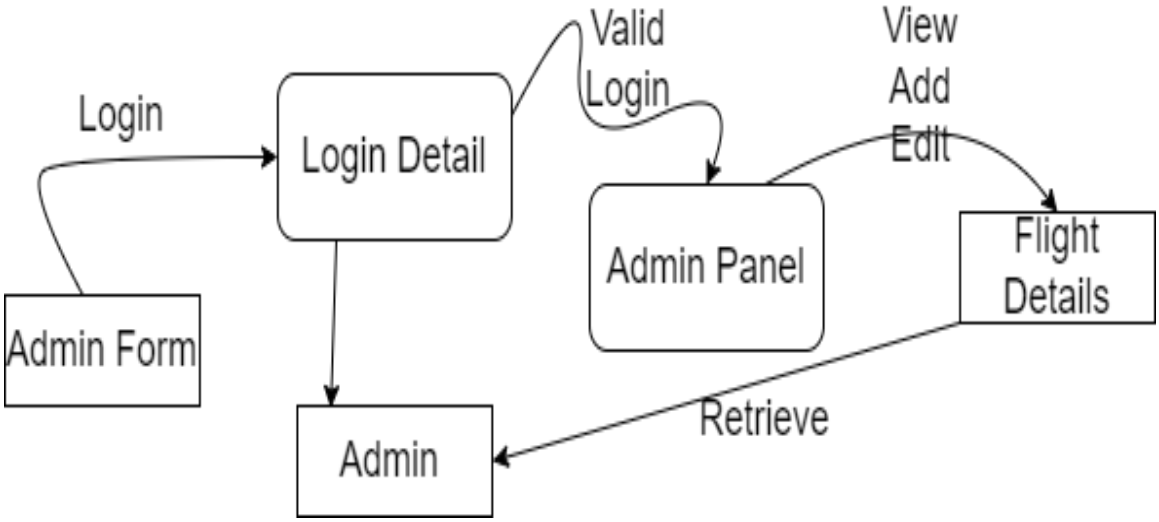

Figure 3-10 Physical DFD

Chapter 4 Implementation and Testing

4.1 Implementation

4.1.1 Tools Used (CASE tools, Programming languages, Database platforms)

▪ **Front end:**

- Html
- CSS
- JavaScript

▪ **Backend:**

- PHP
- Server: -XAMPP SERVER

4.1.2 Implementation Details of Modules (Description of procedures/functions)

The module used for the designed of the flight ticket booking system is given below

Login Module

The user and admin both will use the module. both will get asses to the system only after login but user have to register first.

4.2 Testing

Some of the types of testing that I did are described below:

a) Verify that all the specified fields are present on the registration page.
b) Verify that clicking submits button after entering all the required fields, submits the data to the server.

4.2.1 Test Cases for Unit Testing

Unit testing is a type of software testing where individual units or components of software are tested. The purpose is to validate that each unit of the software code performs as expected. Unit testing is done during the development (coding phase) of an application by the developers. Unit Tests isolate a section of code and verify its correctness.

Each and every component of this “FREADOM News” website have been tested individually by different components which has been shown in the table below. I have tested each component and manipulating each and every kind of input and checking the corresponding output until the components is working effectively and correctly.

4.2.2 Test Cases for System Testing

Table 4-1 Test cases for system Testing

Id	Test case	Test data	Result
1.	User	fullname, email,address, password should be filled and password should be match	Register
2.	Admin	username and password should be filled	Login
3.	User	username and password should be filled	Login

Chapter 5 Conclusion and Future Recommendations

5.1 Lesson Learnt / Outcome

When the project is completed, the user will be able to browse the system and start reserving ticket. They will be able to change their profile information, contact information if needed and cancel reservation of flight too.

5.2 Conclusion

The Flight ticket reservation system has been a way of minimizing the clerical work, which is almost a routine and consumes the most precious time. This FLIGHT TICKET 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. Any person having a little bit of window based can run this system without any pain. Almost all the difficulties of manual reservation have been removed by this system. Let me welcome all the suggestions and other improvements, which the system needs so that it covers all the needs if the user in the user way.

5.3 Future Recommendations

Software building is never ending process and continues the life of the software as per the changing needs of the user from time to time. There might be many reasons for updating software some of them are customer may face different problem in website like page refresh every time when they submit the form or try to change something and that may not satisfy the customer. Due to shortage of time, I cannot include many others things.

Following are some features which can be added in future on this system:

a) Payment Method.
b) Proper feedback system.
c) If the flight is cancel due to technical or some other problem Message will be send to customer through provided phone number or Email and also Notification will display.

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