VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI, KARNATAKA

A Mini Project Report

(Fifth Semester)

on

"AIRLINE MANAGEMENT SYSTEM"

Submitted in the partial fulfillment for the requirements for the conferment of

degree of

BACHELOR OF ENGINEERING

in

INFORMATION SCIENCE AND ENGINEERING

By

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ISE Dept.

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ACKNOWLEDGEMENT

We are happy to present this Mini Project after completing it successfully. This Mini project would not have been possible without the guidance, assistance and suggestions of many individuals. We would like to express our deep sense of gratitude and indebtedness to each and everyone who has helped us make this Mini Project a success.

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By,

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Atulya Jaiswal

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YELAHANKA, BANGALORE-64

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Declaration

We, hereby declare that the Mini Project titled "Airline Management System" is a record of original Mini Project work undertaken for the award of the degree Bachelor of Engineering in Information Science and Engineering of the Visvesvaraya Technological University, Belagavi during the year 2020-21. We have completed this Mini Project work under the guidance of Associate professor, **Dr. Sheela Kathavate,** Dept. of ISE. I also declare that this Mini Project report has not been submitted for the award of any degree, diploma, associate ship, fellowship or other title anywhere else.

Student Photo

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Signature

ABSTRACT

The objective of the project is to design an Airline Reservation Management System application which enables the customers to create the account, search and book flights. The user can also book flights in two modes that is the one way trip and the round trip. The project has been designed in PHP technology and consists of MySQL which acts as the database for the project. Our motivation for the project came from my enthusiasm and strong urge to learn PHP and SQL that are the most effective tools for hosting a website involving a database management.

The Airline Reservation Management System named “SKY AIR” aims at providing the passenger an easy yet an apt interface for a quick booking of tickets along with several other services. All the data needed for the application is stored in the form of tables in the MySQL database.

The report contains the details of all the tasks carried out during the entire software development life cycle of the Airline Reservation Management Project. This document depicts all the details of the project starting from the project design to testing.

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CHAPTER 1

INTRODUCTION

1.1 Outline

Database is an organized collection of data. The data is typically organized to model aspects of reality in a way that supports processes requiring information. A DBMS makes it possible for end users to create, read, update and delete data in a database. The DBMS essentially serves as an interface between the database and end users or application programs, ensuring that data is consistently organized and remains easily accessible. The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified and the database schema, which defines the database's logical structure. These three foundational elements help provide concurrency, security, data integrity and uniform administration procedures. The DBMS can offer both logical and physical data independence. That means it can protect users and applications from needing to know where data is stored or having to be concerned about changes to the physical structure of data.

The main purpose of maintaining database for Airline Reservation Management System is to reduce the manual errors involved in the booking and canceling of tickets and make it convenient for the customers and providers to maintain the data about their customers and also about the seats available to them. Due to automation many loopholes that exist in the manual maintenance of the records can be removed. The speed of obtaining and processing the data will be fast. For future expansion the proposed system can be web enabled so that clients can make various inquiries about boats between different destinations. Due to this, sometimes a lot of problems occur and they are facing many disputes with customers. To solve the above problem, we design a data base which includes customer details, availability of seats in flight, number of flights and their details.

1.2 Motivation and Scope

In the arena of global competition, organizations in all over the world are competing through the use of the most comprehensive and advanced technological feature. The most common example of innovation is in the area of information technology and communication. Various industries are using the technologies and the advancements of software and Internet to maintain and monitor their business transactions. In the application of the informative systems, the airline industry is the most common users of the system. The purpose of the application of system is to easily manage and organize all the reservations and bookings of the clients and gain the competitive advantage.

1.3 Problem Statement

Design and develop User Interface for Airline Reservation Management System where people can create an account, book the seats and select the flights on the basis of one way trip and round trip. Admin can add the details, update the details and delete the flight details.

1.4 Limitations

- It requires the XAMPP local host server to be installed without which it will not be able to function.
- The project currently runs on a locally hosted server, hence it cannot reflect the changes.
- It cannot dynamically update the registrations and needs to be done by the Database
- administrator.

CHAPTER 2

REQUIREMENT SPECIFICATION

2.1 Functional Requirements

Request for Login

The system shall require a user to register, in order to carry out any operations with it. It will ask the user for the following information at the least–a user name, a password, if correct the system allows the user to carry out the operations.

Entering details for the individual reservation

Having taken the input of source and destination, the user is now required to select the favourable flight. The user adds up details which includes the source, destination, class and date.

Retrieving details of the passenger

The system allows the user to check the booking history of any passenger by the "Show History" option.

The system accesses the DB-reservation immediately, retrieves the data from the database and displays the required information to the user.

View reservation Status

The system shall allow a passenger to view all information about departure & arrival time and price. It accesses DB and retrieves the details of the requested information and presents them to the passenger in a convenient format.

Admin login

Admin can edit the details. Can add new flight, update previously existing flight and also delete the existing flight information.

Query reservation Details

The system shall allow any user to access the details or status about the Airline reservation by requesting the user to login. The system accesses DB- schedule and presents the record of that reservations.

Web Browser

A Web Browser is a software application for accessing information on the world wide web. Each individual web page, image, and video is identified by the distinct URL, enabling browsers to retrieve and display them on the user's device. Note that the web browsers is not the same thing as a search engine, through the two are often confused.

XAMPP

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution.

2.2 Non-Functional Requirements

Performance

Response time of the System should be less than 3 second most of the time. Response time refers to the waiting time while the system accesses, queries and retrieves the information from the databases (DB-user, DB-schedule etc) (A local copy of student database is maintained to reduce this access time). It shall show no visible deterioration in response time as the number of reservations increases.

Reliability

- It shall be available 24 hours a day, 7 days a week
- It shall always provide accurate information about Airlines and Reservations.
- This software shall be robust enough to have a high degree of fault tolerance.
- For example, if the user enters a wrong password, the system should not crash and shall identify the invalid input and produce a suitable error message.
- The application shall be able to recover from power failures and other natural catastrophes and rollback the databases to their most recent valid state.

Usability

It shall provide a easy-to-use graphical interface similar to other existing registration system so that the users do not have to learn a new style of interaction.
Any notification or error messages generated by the website shall be clear, succinct and polite.

Integrity

Only system administer has the right to change system parameters, such as flight details etc.

The system should be secure and must use encryption to protect the databases.

Users need to be authenticated before having access to any data.

2.3 Domain Constraints

- **Regulatory policies:** It is a mandatory that no text box must be left empty or contains Insufficient data.
- **Hardware limitations:** There must be a 64 MB on board memory
- **Control functions:** The software must be very user-friendly and display appropriate error messages.
- **Interfaces to other applications:** Not applicable.
- **Parallel operations:** It must support many users simultaneously.
- **Safety/security considerations:** The application must be exited always normally.
- **Software Requirement:** Operating System- Windows/Mac/Ubuntu
  - Browser- Chrome/Mozilla Firefox/Internet Explorer
- **Hardware Requirement:** Processor- 32 or 64bit
  - Memory- 2GB RAM
  - Hard Disk- 100M

CHAPTER 3

SYSTEM/ REQUIREMENT ANALYSIS

3.1 Overall System Description

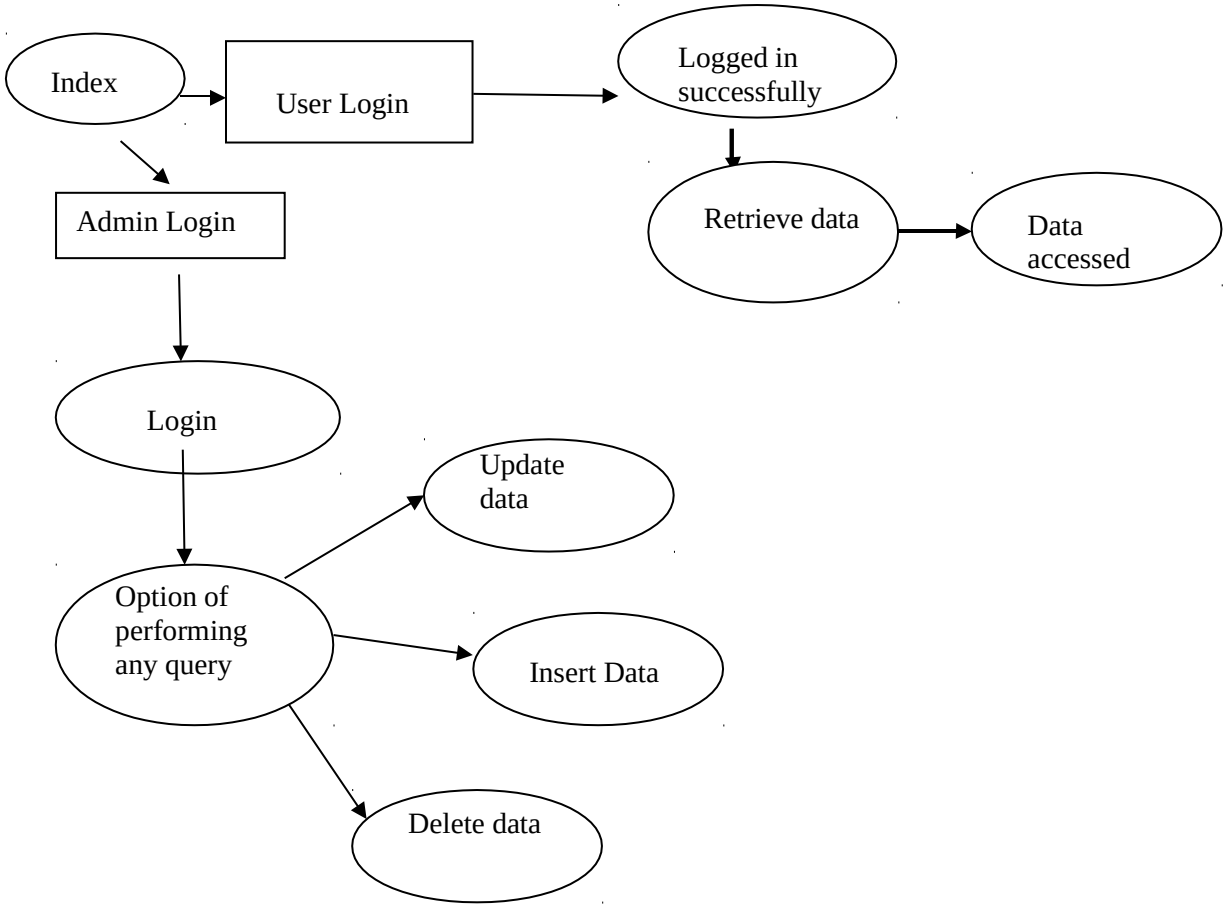

Fig. 3.1: Overall System Design

The overall description of the system is as follows:

This project is about creating the database about Airline Reservation Management System.

The airline reservation system facilitates the passengers to inquire about the flights available on the basis of source and destination, booking of tickets, inquire about the status of the booked ticket, etc. The aim of case study is to design and develop a database maintaining the records of different flights, flight status, and passengers. The record of flight includes its name, source, destination, and days on which it is available, whereas record of flight status includes dates for which tickets can be booked, and number of seats already booked.

The user is first presented with a login screen where he asked to enter his Username and Password. If the correct input is received from the user, he is taken to the Main Interface where he will be presented with an array of choices. Inputting a wrong Username and Password displays a message to the user to check the details he has entered and to correct it or to register his details first. Only the Database Administrator has the authority to remove user accounts. It also allows the user to view the details of the added information and search.

3.2 Updating Module

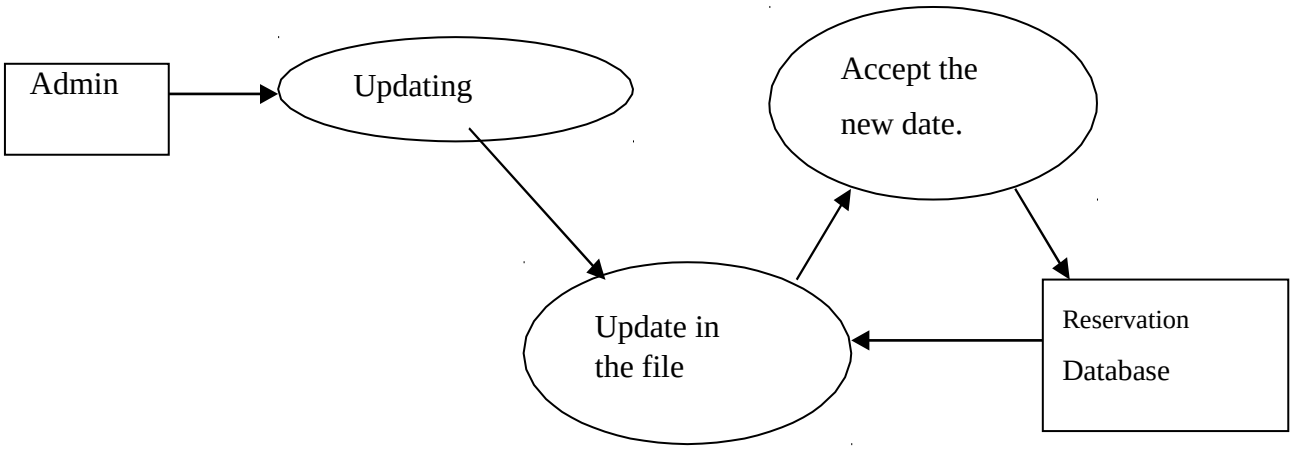

Fig. 3.2: Updating Module

There are situations where the details of reservations, user or flight are mistyped and are stored in the database. To update them we need to use this mode. This can be done only by the admin. After updating the database is again committed with new details.

3.3 Display Module

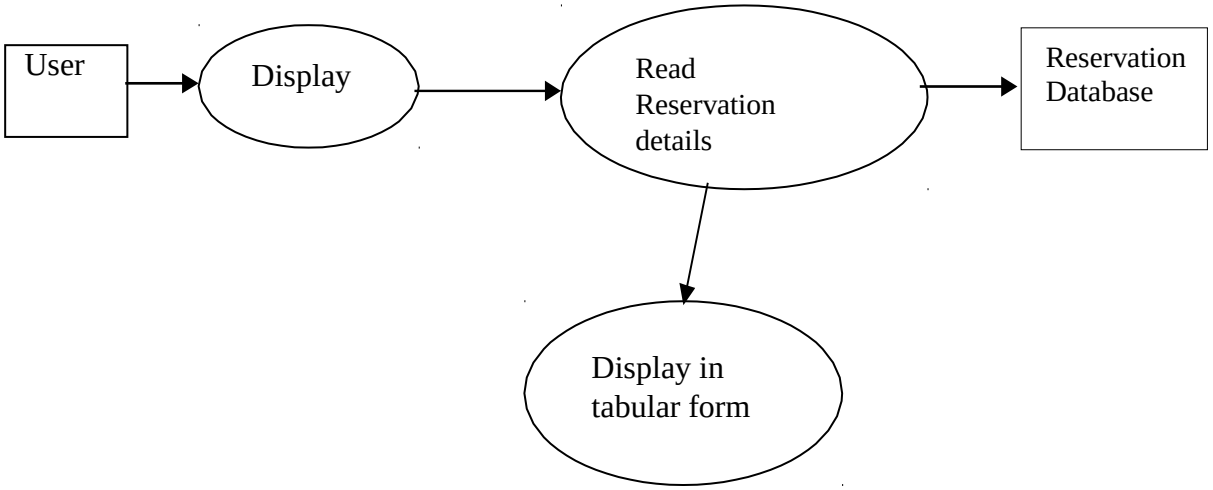

Fig. 3.3: Display Module

This mode is used to view the information about any reservations, user, or a flights. He can view details in the form of table also.

3.4 Deletion Module

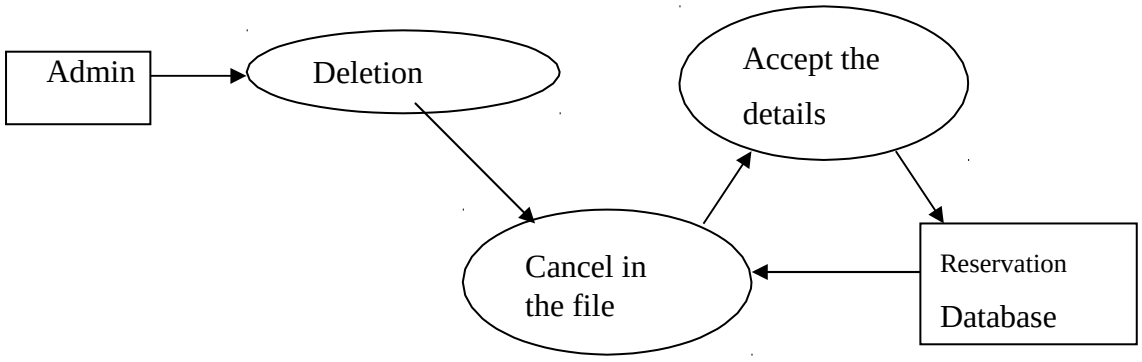

Fig. 3.4: Deletion Module

In Deletion mode the admin has the right to delete a detail or information of the flights. Admin has right to delete any information.

CHAPTER 4

SYSTEM DESIGN

4.1 Entity Relationship Diagram

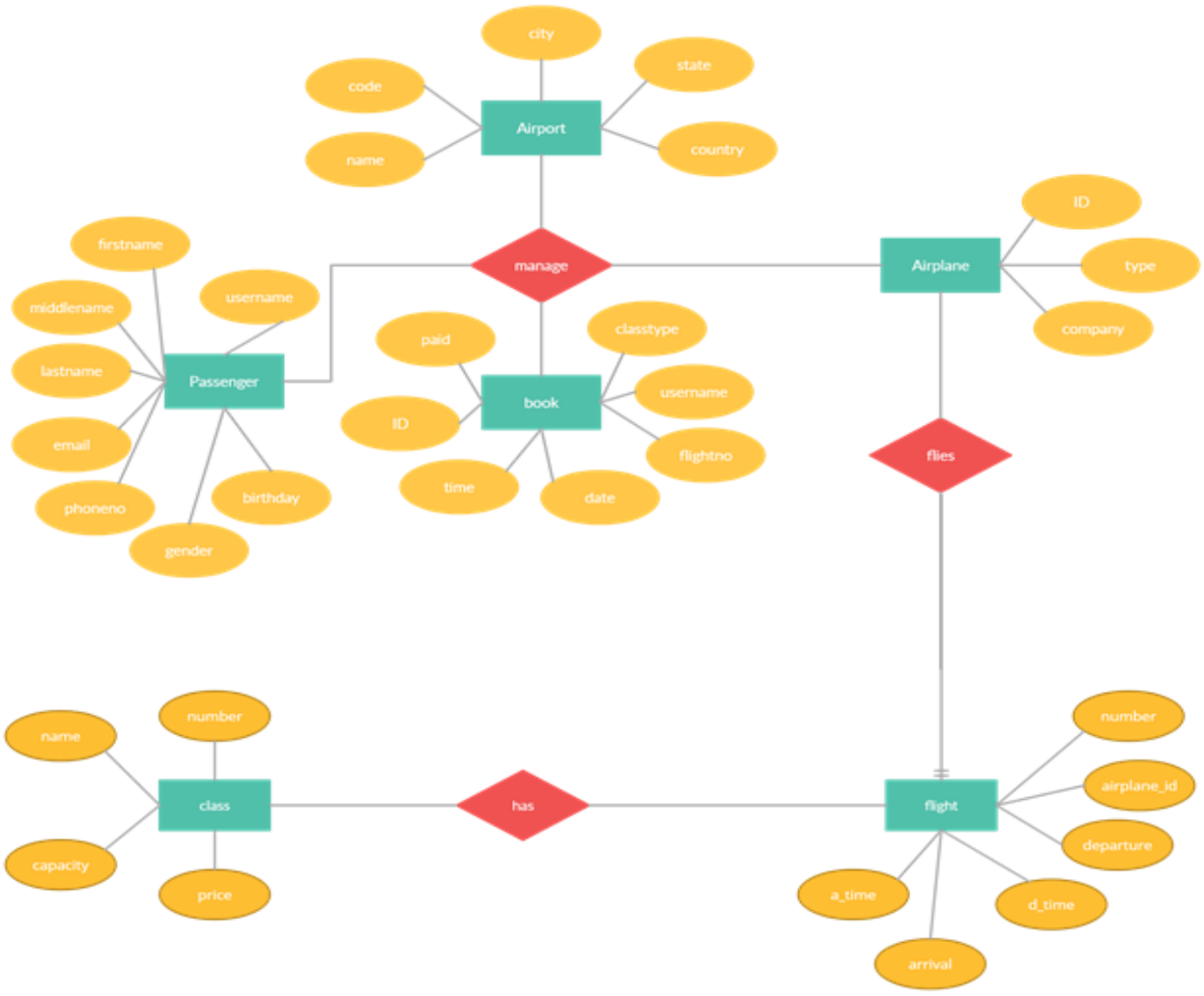

Fig. 4.1: ER Diagram

CHAPTER 5

IMPLEMENTATION

5.1 Description of Database Used

(Backend)

MariaDB is a community-developed fork of the MySQL relational database management system intended to remain free under the GNU GPL. Development is led by some of the original developers of MySQL, who forked it due to concerns over its acquisition by Oracle Corporation.

MariaDB intends to maintain high compatibility with MySQL, ensuring a drop-in replacement capability with library binary parity and exact matching with MySQL APIs and commands. It includes the XtraDB storage engine for replacing InnoDB, as well as a new storage engine, Aria, that intends to be both a transactional and non-transactional engine perhaps even included in future versions of MySQL.

5.2 Description implementation of the Front end:

PHP:

Hypertext Preprocessor is a server-side scripting language designed for Web development, and also used as a general-purpose programming language. It was originally created by Rasmus Lerdorf in 1994; the PHP reference implementation is now produced by The PHP Group. PHP is a server side scripting language, that is used to develop Static websites or Dynamic websites or Web applications. PHP stands for Hypertext Pre- processor, that earlier stood for Personal Home Pages. PHP scripts can only be interpreted on a server that has PHP installed.

WEB STACK:

1. **HTML5:** Hypertext Markup Language revision 5 (HTML5) is markup language for the structure and presentation of World Wide Web contents. HTML5 supports the traditional HTML and XHTML-style syntax and other new features in its markup, New APIs, XHTML and error handling.

2. **CSS3:** Cascading Style Sheets (CSS). As you probably know, CSS is a style language that describes how HTML markup is presented to the user. CSS3 is the latest version of the CSS specification.

CSS3 contains just about everything that's included in CSS2.1, the previous version of the spec. It also adds new features to help developers solve a number of presentation-related problems without resorting to scripting plugins or extra images.

3. **JAVASCRIPT:** JavaScript is a programming language that started off simply as a mechanism to add logic and interactivity to an otherwise static Netscape browser. In the system since its introduction, it has not only supplanted a variety of other competing languages and technologies to become the standard for browser-based programming, but it has also expanded beyond the client space to become a dominant language on the server side, as well.

CHAPTER 6

TESTING

6.1 Component Test

Login Module

Table 6.1: Login Module

TEST UNIT	TEST CASE	RESULT
Login Screen	An invalid username or password is entered by the user.	The system generates a message saying “invalid user id” or invalid password, whichever is the case.
Login Screen	An valid username or password is entered by the user.	The system grants access to the user and takes him to the Main Interface.

Displaying Reservation Details

Table 6.2: Displaying Details

TEST UNIT	TEST CASE	RESULT
Display	Enter History option.	History option shows the all previously booked flights.
Display	Enter Shopping Cart	If the details have been successfully reserved, it’ll display the list of the reservations.

6.2 System Testing

Table 6.3: System Testing

TEST UNIT	TEST CASE	RESULT
Airline Reservation	Click on Search Button.	Opens all the available flights.
Airline Reservation	Click on Home Button.	It directly goes to the Home window showing search flights option.
User Registration	Click on Sign Up Button.	Opens a Registration Window.
View reservation	Click on History Button.	Opens previous Bookings.
Deleting/Updating a flight info.	Click on update/delete Button.	Opens a window where it gives option to update, add and delete existing flights.

CHAPTER 7

INTERPRETATION OF RESULT

Fig.7.1:Login Window

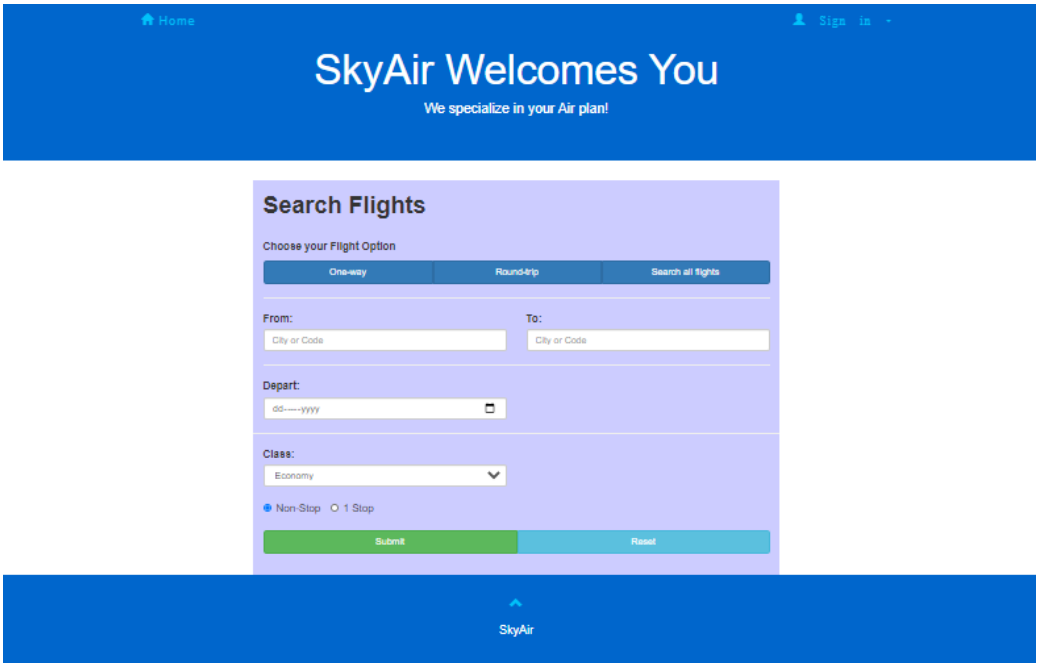

Fig. 7.2: Home Page

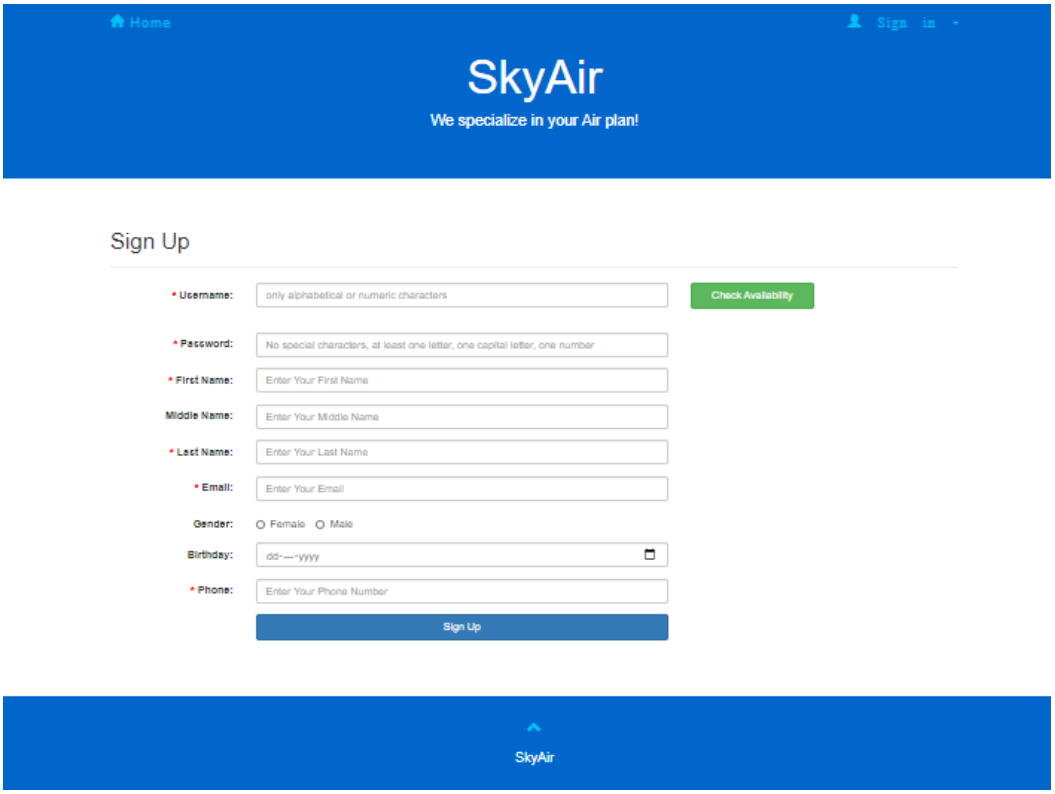

Fig. 7.3: Registration Window

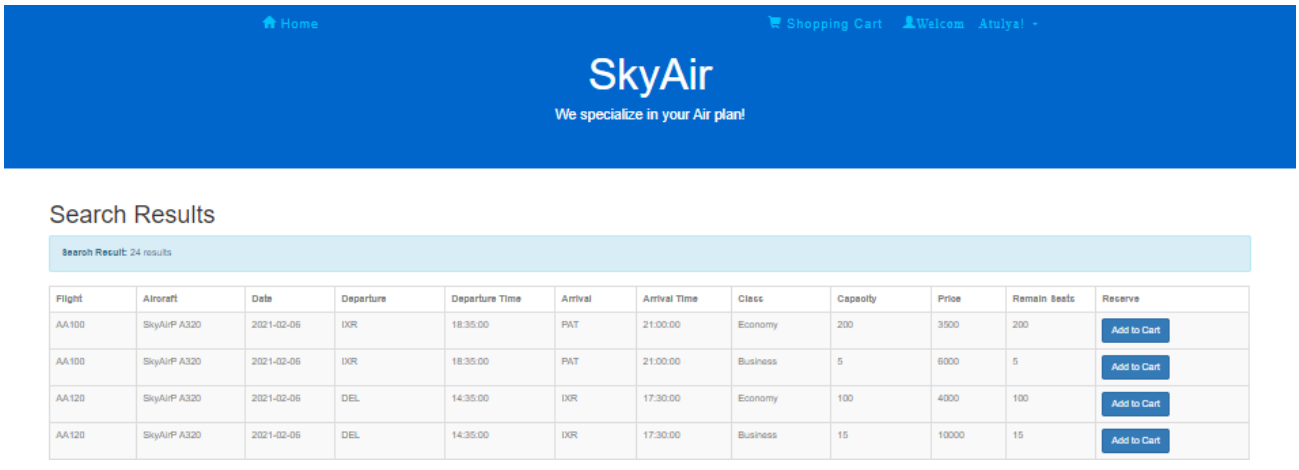

Fig. 7.4: Available Flights Window

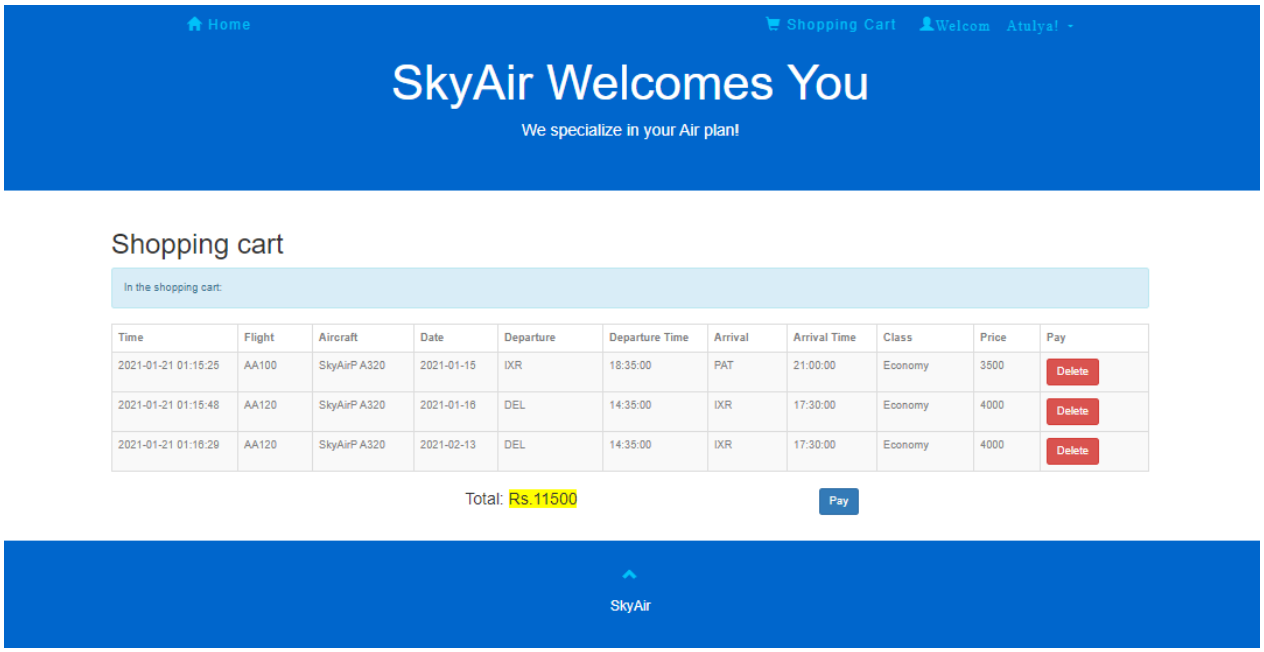

Fig. 7.5: Shopping Cart Window

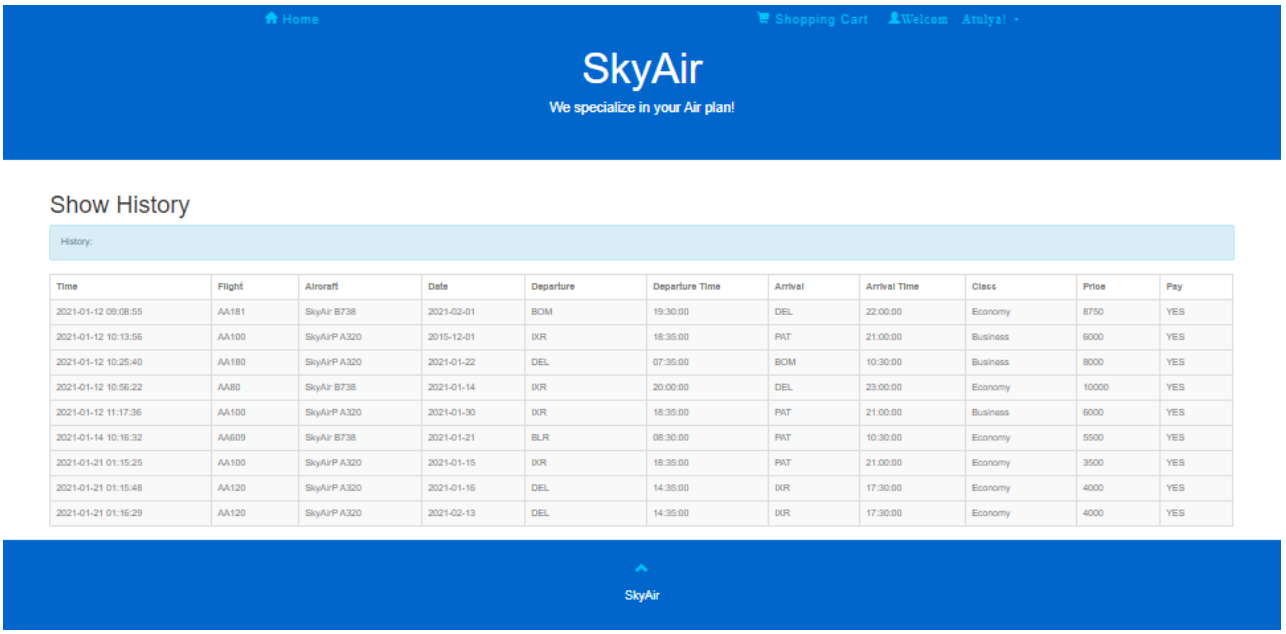

Fig. 7.6 Show History Window

Fig. 7.5: Admin Page

CONCLUSION

This project is about creating the database about Airline Management Reservation System. The Airline reservation system facilitates the passengers to inquire about the flights available on the basis of source and destination, booking of tickets, inquire about the history of the booked ticket, etc. The aim of case study is to design and develop a database maintaining the records of different flights, and passengers.

In our project Airline Reservation Management System we have stored all the information about the flight scheduled and the users can search and book the flights. This database is helpful for the applications which facilitate passengers to book the tickets and check the details of flights. We had considered the most important requirements only, many more features and details can be added to our project in order to obtain even more user friendly applications. These applications are already in progress and in future they can be upgraded.

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- https://jsfiddle.net/

4.2 Schema Diagram

AIRPLANE

ID	TYPE	COMPANY

AIRPORT

CODE	NAME	CITY	STATE	COUNTRY

BOOK

ID	TIME	DATE	FLIGHTNO	USERNAME	CLASSTYPE	PAID

CLASS

NUMBER	NAME	CAPACITY	PRICE

FLIGHT

NUMBER	AIRPLANE_ID	DEPARTURE	D_TIME	ARRIVAL	A_TIME

PASSENGER

USERNAME	FIRSTNAME	MIDDLENAME	LASTNAME	EMAIL	PHONENO	GENDER	BIRTHDAY

Fig 4.2: Schema Diagram

Department Vision & Mission

Vision

Emerge as centre of learning in the field of information science & engineering with technical competency to serve the society.

Mission

To provide excellent learning environment through balanced curriculum, best teaching methods, innovation, mentoring and industry institute interaction.

Programme Educational Objectives

PEO-1: Successful professional career in Information Science & Technology.
PEO-2: Pursue higher studies & research for advancement of knowledge in IT industry.
PEO-3: Exhibit professionalism and team work with social concern.

Programme Specific Outcomes

1. Apply the knowledge of information technology to develop software solutions.
2. Design and Develop hardware systems, manage and monitor resources in the product life cycle.

Programme Outcomes

The graduates will have an ability to

PO1 **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2 **Problem analysis**: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6 **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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YELAHANKA, BANGALORE - 560064

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the Mini Project (Fifth Semester) entitled "**Airline Management System**" is a bonafide work carried out by **Mr. Aditya Yadav (1BY18IS008)** and **Mr. Atulya Jaiswal (1BY18IS032),** in partial fulfillment for the award of **Bachelor of Engineering Degree in Information Science and Engineering** of the Visvesvaraya Technological University, Belagavi during the year 2020-21. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report. The mini project report has been approved as it satisfies the academic requirements with respect to mini project work for the B.E Degree.

Signature of the Guide
Dr. Sheela Kathavate

Signature of the HOD
Dr. Pushpa S. K

EXTERNAL EXAMINERS

Name of the Examiner

Signature with Date