VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI-590014, KARNATAKA



A Mini Project Report

On

"Airline Reservation Management System"

Submitted in Partial Fulfillment of the Requirement for

"DBMS Laboratory with Mini Project -V Semester"

For the Award of Degree

BACHELOR OF ENGINNERING

IN

INFORMATION SCIENCE & ENGINEERING

Submitted By:

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Certificate

Certified that the Mini Project Work entitled "AIRLINE RESERVATION MANAGEMENT SYSTEM" carried out by SHIVAM KUMAR (1SG19IS095) & SRIHARSHA CP (1SG19IS104), bonafide students of Sapthagiri College of Engineering, in partial fulfillment for the award of Bachelor of Engineering degree in Information Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-22. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The mini-project report has been approved as it satisfies the academic requirements in respect of DBMS Laboratory with Mini Project (18CSL58) prescribed for the said Degree.

Signature of the Guide Prof. Ramya Assistant Professor Signature of the HOD Dr. H R Ranganatha Professor & Head

EXTERNAL EXAMINATION

Name of the Examiners	Signature with Date
1	
2	

ACKNOWLEDGEMENT

Any achievement does not depend solely on the individual efforts but on the guidance, encouragement and co-operation of intellectuals, elders and friends. A number of personalities, in their own capacities have helped us in carrying out this mini project work. We would like to take this opportunity to thank them all.

We would like to express my profound thanks to **Sri. G Dayanand**, Chairman, Sapthagiri College of Engineering Bangalore, for his continuous support in providing amenities to carry out this Mini Project.

Special Thanks to **Manoj G D**, Executive Director, Sapthagiri College of Engineering Bangalore, for his valuable suggestion.

Also, we would like to express our immense gratitude to **Dr. H Ramakrishna**, Principal, Sapthagiri College of Engineering, Bengaluru, for his help and inspiration during the tenure of the course.

We also extend our sincere thanks to **Dr. H R Ranganatha**, Professor and Head, Department of Information Science and Engineering, Sapthagiri College of Engineering, for his constant support.

We would like to express our heartful gratitude to **Prof. RAMYA**, Assistant professor, Department of Information Science and Engineering, Sapthagiri College of Engineering, for their timely advice on the mini project and regular assistance throughout the work.

We also extend our sincere thanks to all the **Faculty members** and **supporting staff** Department of Information Science and Engineering, Sapthagiri College of Engineering, for their constant support and encouragement.

Finally, we thank our parents and friends for their moral support.

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ABSTRACT

The objective of the project is to design an Airline Reservation Management System application which enables the customers to search and book flights, packages and hotels. The project has been designed in PHP, CSS and JS technology and consists of a SQL server which acts as the database for the project.

The Airline Reservation Management System project mainly consists of two types of users. The customers who access the information provided by the website and the administrator who modifies and updates the information available on the website. All the data needed for the application is stored in the form of tables in the SQL server.

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

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INTRODUCTION

1.1. Introduction to DBMS

Database is a collection of related data. DBMS came into existence in 1960 by Charles. Again in 1960 IBM brought IMS-Information management system. In 1970 Edgor Codd at IBM came with new database called RDBMS. In 1980 then came SQL Architecture- Structure Query Language. In 1980 to 1990 there were advances in DBMS e.g., DB2, ORACLE.

A database has the following implicit properties:

- ❖ A database represents some aspect of the real world, sometimes called the mini world or the Universe of Discourse (UoD). Changes to the mini world are reflected in the database.
- ❖ A database is a logically coherent collection of data with some inherent meaning.

 A random assortment of data cannot correctly be referred to as a database.
- ❖ A database is designed, built, and populated with data for a specific purpose. It has an intended group of users and some preconceived applications in which these users are interested.

In other words, a database has some source from which data is derived, some degree of interaction with events in the real world, and an audience that is actively interested in its contents.

Metadata (meta data, or sometimes meta information) is "data about data", of any sort in any media. An item of metadata may describe a collection of data including multiple content items and hierarchical levels, for example a database schema. In data processing, metadata is definitional data that provides information about or documentation of other data managed within an application or environment. The term should be used with caution as all data is about something and is therefore metadata.

A database management system (DBMS) is a collection of programs that enables users to create and maintain database. The DBMS is a general-purpose software system that facilitates the process of defining, constructing, manipulating and sharing databases among various users and applications.

Defining a database specifying the database involves specifying the data types, constraints and structures of the data to be stored in the database. The descriptive information is also stored in the database in the form database catalogue or dictionary; it is called meta-data. Manipulating the data includes the querying the database to retrieve the specific data. An application program accesses the database by sending the queries or requests for data to DBMS. The important function provided by the DBMS includes protecting the database and maintain the database.

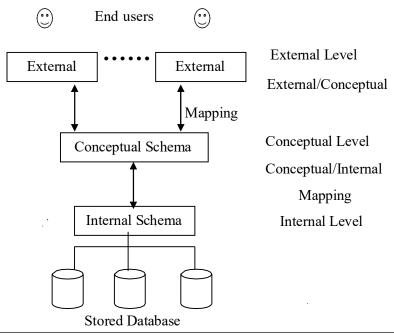


Figure 1.1: Three Schema Architecture

The figure 1.1 shows the Three schema architecture of Database Management System.

The Three schema architecture consists of three levels of the architecture:

• External Level:

The external level is the view that the individual user of the database has. This view is often a restricted view of the database and the same database may provide a number of different views for different classes of users. In general, the end users and even the application programmers are only interested in a subset of the database.

• Conceptual Level:

The conceptual view is the information model of the enterprise and contains the view of the whole enterprise without any concern for the physical implementation. The conceptual view is the overall community view of the database and it includes all the information that is going to be represented in the database.

• Internal Level:

The internal view is the view about the actual physical storage of data. It describes what data is stored in database and how.

The three-schema architecture is a convenient tool with which the user can visualize the schema levels in a database system. DBMS must transform a request specified on an external schema into a request against conceptual schema and then into a request on an internal schema for processing over a stored database and the reverse should be done for retrieving the data. The process of transforming requests and results between levels are called **mapping**.

1.2. Overview of the project

The project maintains two levels of users: -

- 1. Administrator Level
- 2. User Level

The Airline Reservation System project is an implementation of a general Airline Ticketing website like Orbitz, which helps the customers to search the availability and prices of various airline tickets, along with the different packages available with the reservations. The Front End is designed using PHP and JS. MySQL is used for Back End.

This project also covers various features like online registration of the users, modifying the details of the website by the management staff or administrator of the website, by adding, deleting or modifying the customer details, flights or packages information. In general, this website would be designed to perform like any other airline ticketing website available online.

1.2.1. Problem Statement:

To maintain and manipulate the data to be stored in the Airline Reservation Management Database System.

1.2.2. Objectives of the Project:

- The main objective behind this project is to promote paperless data storage and its maintenance and a move towards digital advancement of data.
- Less retrieval time of project details from vast data.
 More secure as data is stored in a database and can be accessed only by authorized person. User can view their details instantly.

SYSTEM DESIGN AND METHODOLOGY

2.1 System Architecture

The main programming language used are

- 1. PHP
- 2. CSS
- 3. JAVASCRIPT
- 4. MYSQL

2.1.1 PHP

- It is a server-side scripting language designed primarily for web development but also used as a general-purpose programming language.
- PHP was originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Development Team.
- PHP stands for the acronym: Hypertext Preprocessor.
- PHP code may be embedded into HTML or HTML5 markup, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server software combines the results of the interpreted and executed PHP code, which may be any type of data, including images,

with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical application

2.1.2 CASCADING STYLE SHEETS (CSS)

- It is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML, the language can be applied to any document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media.
- Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications.
- CSS is designed primarily to enable the separation of presentation and content, including aspects such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .CSS file, and reduce complexity and repetition in the structural content. Separation of formatting and content makes it possible to present the same markup page in different styles.

2.1.3 JAVASCRIPT

- It is often abbreviated as JS, is a high-level, dynamic, weakly typed, prototype-based, multiparadigm, and interpreted programming language.
- Alongside HTML and CSS, JavaScript is one of the three core technologies of World Wide Web content production. It is used

- to make webpages interactive and provide online programs, including video games.
- The majority of websites employ it, and all modern web browsers support it without the need for plug-ins by means of a built-in JavaScript engine. Each of the many JavaScript engines represent a different implementation of JavaScript, all based on the ECMAScript specification, with some engines not supporting the spec fully, and with many engines supporting additional features beyond ECMA.
- As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative programming styles. It has an API for working with text, arrays, dates, regular expressions, and basic manipulation of the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded. Initially only implemented client-side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non-web programs such as word processors and PDF software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets.

2.1.4 MYSQL

- It is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of cofounder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language.
- The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements.

- MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.
 For proprietary use, several paid editions are available, and offer additional functionality.
- The MySQL server package will install the MySQL database server which can interact with using a MySQL client. User can use the MySQL client to send commands to any MySQL server; on a remote computer The MySQL server is used to persist the data and provide a query interface for it (SQL). The MySQL client's purpose is to allow you to use that query interface. The client package also comes with utilities that allows you to easily backup/restore data and administer the server.
- MySQL is a central component of the LAMP open-source web application software stack (and other "AMP" stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl / PHP / Python ". Applications that use the MySQL database include: TYPO3, MODx, Joomla, WordPress, phub, Mob, and Drupal. MySQL is also used in many high-profile, large-scale websites, including Google (though not for searches), Facebook, Twitter, Flickr, and YouTube.

2.2 E-R Diagram

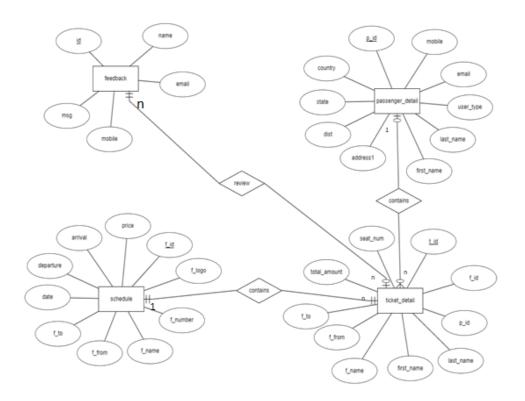


Figure 2.1: E-R Diagram

The **feedback** consists of the following attributes:

- <u>id</u>
- name
- email
- mobile
- msg

The passenger_detail consists of the following attributes:

- <u>p id</u>
- mobile
- email
- user_type
- last_name

- first_name
- address1
- dist
- state
- country

The **ticket_detail** consists of the following attributes:

- <u>t id</u>
- f_id
- p_id
- last_name
- first_name
- f_name
- f_from
- f_to
- total_amount
- seat_num

The **schedule** consists of the following attributes:

- <u>f_id</u>
- f_logo
- f_number
- f_name
- f_from
- f_to
- date
- departure
- arrival
- price

2.3 Schema Diagram

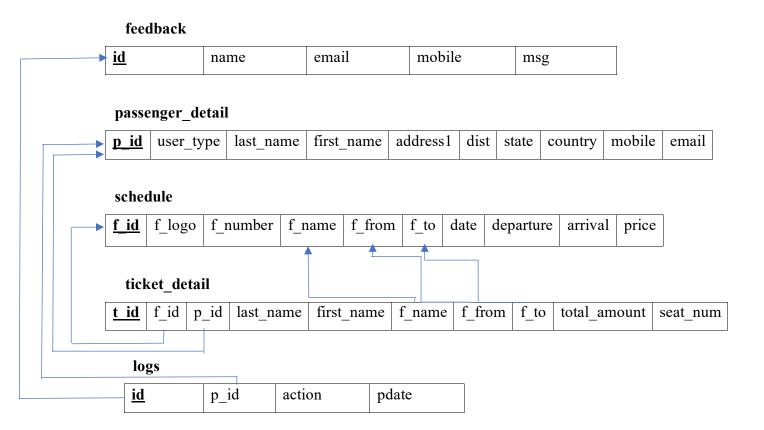


Figure 2.2: Schema Diagram

SYSTEM IMPLEMENTATION

3.1 Module Description

To implement this project, SQL is used for backend and PHP is used for frontend (GUI) creation.

Some of the features of PHP are:

> Simple

It is very simple and easy to use, compared to another scripting language it is very simple and easy, this is widely used all over the world.

> Interpreted

It is an interpreted language, i.e., there is no need for compilation.

> Faster

It is faster than other scripting languages e.g., asp and jsp.

> Open Source

Open source means you no need to pay for using PHP, you can free download and use.

> Platform Independent

PHP code will be run on every platform, Linux, Unix, Mac OS X, Windows.

> Case Sensitive

PHP is case sensitive scripting language at the time of variable declaration. In PHP, all keywords (e.g., if, else, while, echo, etc.), classes, functions, and user-defined functions are NOT case-sensitive.

> Speed Comparison of ASP, PHP, JSP

PHP is faster than other scripting languages e.g., asp and jsp.

3.2 Modules

The modules included in this project are:

Admin Login

Admin login is used for the admin authorization. Admin can manage all the entries made to the database. Admin is authorized to delete or view the registered details.

User Login

Login is generally used for the user authorization. Only the authorized users are allowed to manipulate the database.

User Registration

- **Description:** It describes the scenario where the user registers with the application by providing all the necessary details, in order to make reservations or booking for flights.
- **Actor:** User or the Customer
- **Input:** The user or the customer will have to provide all the necessary details present in the customer registration form of the application.
- **Output:** All the details entered in the customer registration page will be verified and accepted by the system into the database.

User Login

- **Description:** It describes the scenario where the user logs into the application, with the username and password he/she has provided while registering with the system.
- **Actor:** User or the Customer
- **Input:** The user or the customer creates a username and password at the time of registering with the system. He/she then uses them to log on to the system and make reservations or view any information.
- Output: The application then verifies the authenticity of the username and password that the customer has provided and allows the user to view the information available on the system if the username and password are valid.

Book Flights

- **Description:** It describes the scenario where the user books airline tickets.
- **Actor:** User or the Customer
- **Input:** After logging into the application, the customer looks up the information related to various airlines and checks the availability of seats on flights. If he/she finds that there are any available tickets, he/she then purchases them.
- **Output:** The application verifies the authenticity of the username and password and then displays information related to various flights to the customer.

Login/Logout

- **Description:** It describes the scenario where the administrator of the application, logs into the system and logs out after the work is done.
- Actor: Administrator
- **Input:** The administrator of the website logs into the application with the username and password provided to him.
- Output: The application verifies the authenticity and displays the home page of the administrator.

Add/Delete or Modify Customer Information

- **Description:** It describes the scenario where the administrator adds, deletes or modifies customer information in the system database.
- Actor: Administrator
- **Input:** The administrator of the applications logs onto the system with his username and password.
- Output: The application authenticates the administrator, and then displays the page where the administrator can add new customers to the database or delete existing customers or modify details of customers in the database.

RESULTS AND SCREENSHOTS

4.1 XAMPP Server



Figure 4.1: XAMPP Server

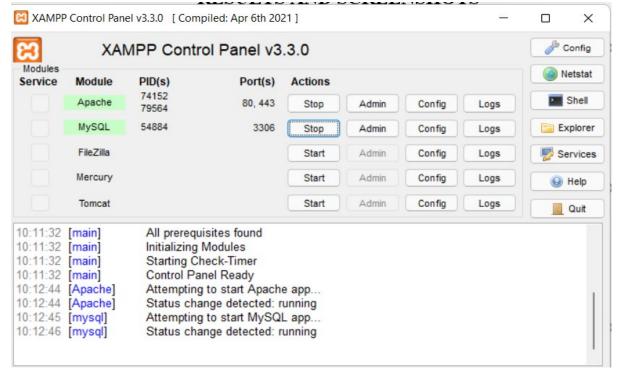


Figure 4.2: Apache and MySQL Started

4.2 Homepage

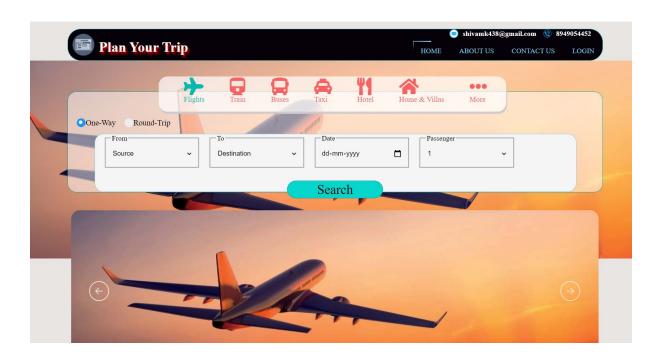


Figure 4.3: Homepage

4.3 Login Page for User and the Admin

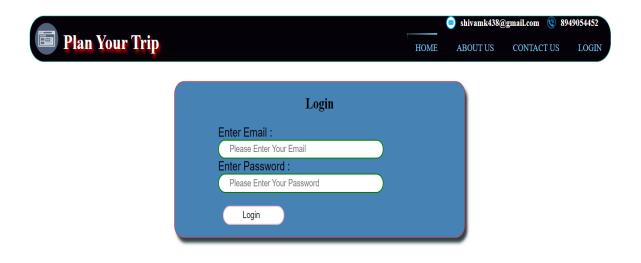


Figure 4.4: Login Page for User and the Admin

4.4 User Profile and its related Options

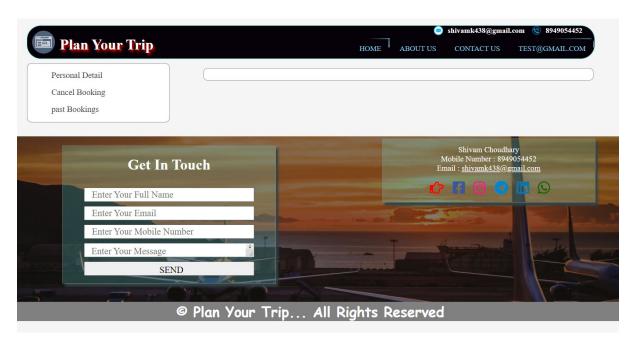


Figure 4.5: User Profile

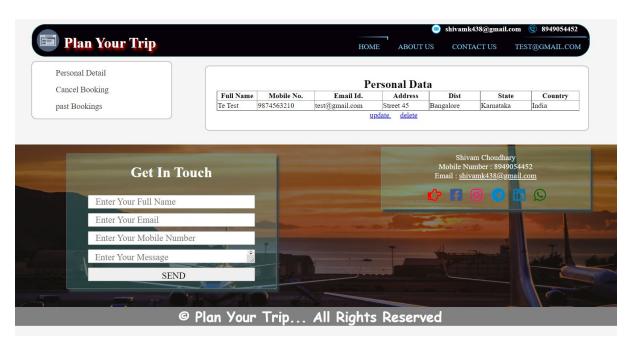


Figure 4.6: Personal Data

AIRLINE RESERVATION MANAGEMENT SYSTEM

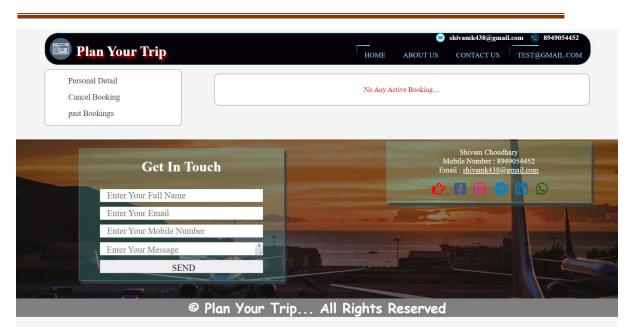


Figure 4.7: Cancel Booking

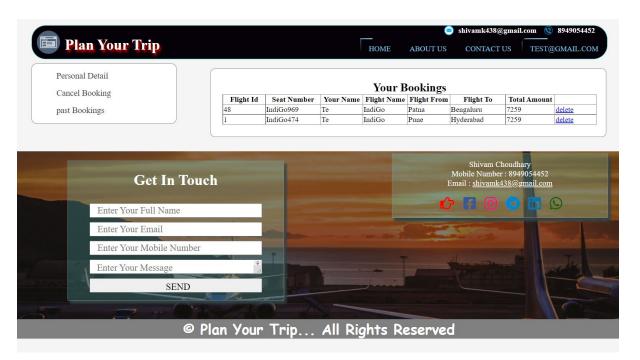


Figure 4.8: Past Bookings

4.5 Admin Profile and its related Options



Figure 4.9: Admin Profile

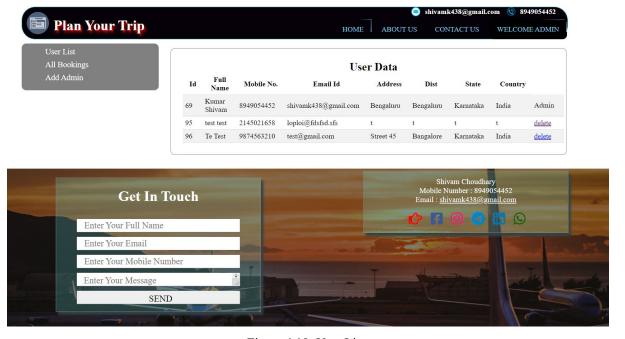


Figure 4.10: User List

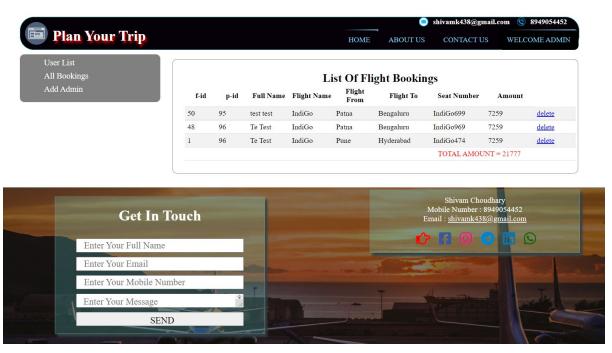


Figure 4.11: All Bookings

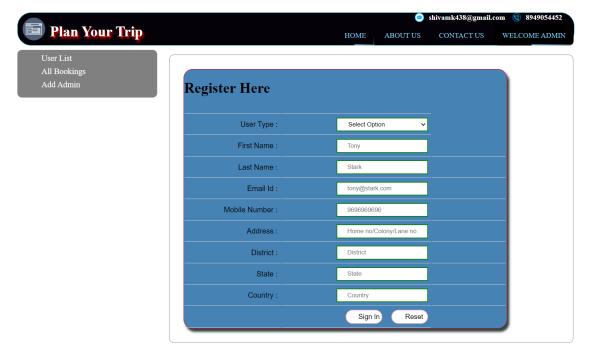


Figure 4.12: Add Admin

4.6 About Us



Figure 4.13: About Us

4.7 Ticket Booking

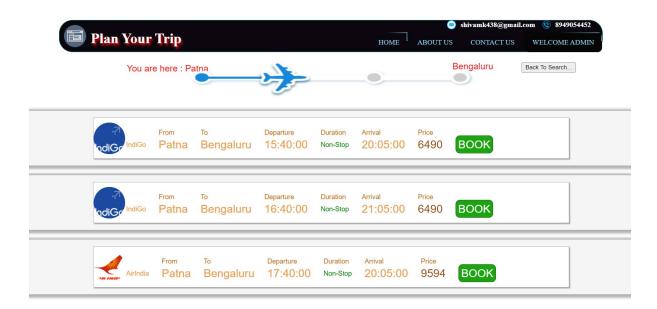


Figure 4.14: Ticket Booking

4.8 Pre-Booking Detail

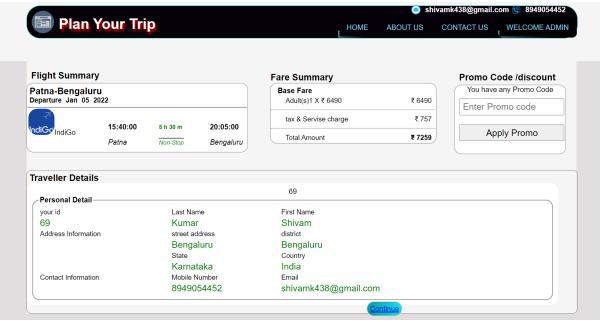


Figure 4.15: Pre-Booking Detail

4.9 Ticket

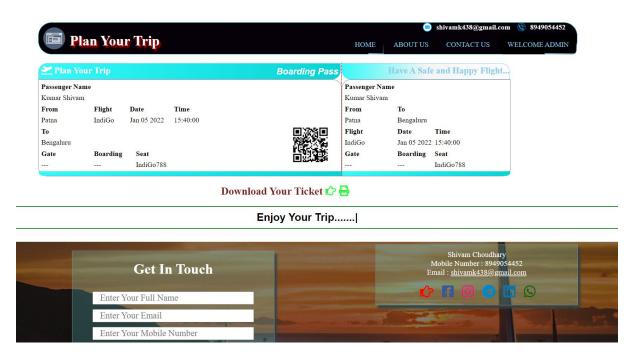


Figure 4.16: Ticket

CONCLUSION AND FUTURE WORKS

5.1 Conclusion

The "Airline Reservation Management System" was successfully designed and is tested for accuracy and quality. During this project we have accomplished all the objectives and this project meets the needs of the organization. The developed project will be used in searching, retrieving and generating information for the concerned requests. The advantages that are with this proposed system are reduced entry work, easy retrieval of information, reduced errors due to human intervention, user friendly screens to enter the data, portable and flexible for further enhancement, web enabled and fast finding of information requested.

It reduces the scope of manual error and conveniently maintains any modifications, cancellations in the reservations. It not only provides flight details but also creates a platform to book tickets, cancels or modifies ticket timings or dates and even informs about the number of people on board!

5.2 Future Works

- The project made here is just to ensure that this project could be valid in today real challenging world. Here all the facilities are made and tested.
- This project is valid for limited seat's availability and hence in the near future this will be seen in the upcoming projects.
- Also, some other advancement that can be done on the project will be done in the near future to make it more user friendly and easy handling for the customers.
- We would like to make this project more interactive in the future.

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