FLIGHT BOOKING SYSTEM

(TRAVELO)

REPORT OF PROJECT SUBMITTED FOR PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF

BACHELOR OF TECHNOLOGY

In

INFORMATION TECHNOLOGY

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

By

Kunal Thakur

REGISTRATION NO – 161170110135 UNIVERSITY ROLL NO – 11700216059

Prakash Kumar Singh

REGISTRATION NO – 161170110143 UNIVERSITY ROLL NO – 11700216051

Parthajit Mukherjee

REGISTRATION NO – 161170110141 UNIVERSITY ROLL NO – 11700216053

Kumar Anubhav

REGISTRATION NO – 161170110133 UNIVERSITY ROLL NO – 11700216061

Sudhanshu Kumar

REGISTRATION NO – 161170110176 UNIVERSITY ROLL NO – 11700216018

Kumari Riya

REGISTRATION NO – 161170110134 UNIVERSITY ROLL NO –11700216060

UNDER THE SUPERVISION OF

Mrs. Shashwati Roy

[Assistant Professor, RCCIIT]

&

Dr. Shyantani Maiti

[Assistant Professor, RCCIIT]

AT

RCC INSTITUTE OF INFORMATION TECHNOLOGY

[Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal]

CANAL SOUTH ROAD, BELIAGHATA, KOLKATA – 700 015

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RCC INSTITUTE OF INFORMATION TECHNOLOGY

KOLKATA – 700015, INDIA

CERTIFICATE

The report of the Project titled **FLIGHT BOOKING SYSTEM**submitted by **Kunal Thakur(Roll No.: 11700216059 of B.Tech (IT) 8th Semester of 2020),Prakash Kumar Singh(Roll No.: 11700216051 of B.Tech (IT) 8th Semester of 2020),Parthajit Mukherjee(Roll No.: 11700216053 of B.Tech (IT) 8th Semester of 2020),Kumar Anubhav(Roll No.: 11700216061 of B.Tech (IT) 8th Semester of 2020),Sudhanshu Kumar(Roll No.: 11700216018 of B.Tech (IT) 8th Semester of 2020),Kumari Riya(Roll No.: 11700216060 of B.Tech (IT) 8th Semester of 2020)** has been prepared under our supervision for the partial fulfillment of the requirements for B Tech (IT) degree in West Bengal. University of Technology The report is hereby forwarded.

_____

Mrs. Shashwati Roy

Dept. of IT

RCCIIT, Kolkata

(Internal Supervisor)

Countersigned by

…….

Name of Head

Department IT

RCC Institute of Information Technology, Kolkata – 700 015, India

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We perceive as this opportunity as a big milestone in our career development. We will strive to use gained skills and knowledge in the best possible way, and we will continue to work on their improvement, in order to attain desired career objectives. Hope to continue cooperation with all of you in the future.

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INTRODUCTION

1.1 Project Overview

Travelo is a computerized **Airline Reservation System (ARS)**, convenient for the customers to book the flights online by enhancing the relationship between customers and airline agencies. The **ARS**contains the details about flight schedules and its fare tariffs, passenger reservations and ticket records .It is basically a different form of execution of online transactions in which the customer can reserve for tickets and can pay online for their ticket conformation. Allow the customers to access database and allow new customers to sign up for online access. If customer needed to cancel his/her reservation due to any reason, he/she may easily cancel out reservation with charges applied.

This project has been developed in aim to aid and computerize a flight booking. While keeping in mind the user will find an easyandfriendlier user interface to perform his task. The software has been made so user friendly that any person can use it easily without having any computer experience.

1.2 Project Description

TRAVELO Airline Reservation Systemwill hold flight schedules and its fare tariffs, passenger reservations and ticket records. It saves time as it allows online procedure as users no longer to wait in a queue to book the flights. It is automatically generated by the server. Admin is the main authority who can do addition, deletion, and modification of flights if required.

The project has been planned to be having the view of distributed architecture, with centralized storage of the database. The application for the storage of the data has been planned. Using the constructs of Database MYSQL and all the user interfaces has been designed using the Adobe Dreamweaver technologies.

The database connectivity is planned usingthe “SQL Connection” methodology. The standards of security and data protective mechanism have been given a big choice for proper usage. The application takes care of different modules and their associated reports, which are produced as per the applicable strategies and standards that are put forwarded by the administrative staff.

The entire project has been developed keeping in view of the distributed client server computing technology, in mind. The specification has been normalized up to 2NF to eliminate all the anomalies that may arise due to the database transaction that are executed by the general users and the organizational administration. The user interfaces are browser specific to give distributed accessibility for the overall system. The internal database has been selected as Database MYSQL.

The Airline Reservation System project is an implementation of a general AirlineTicketing 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.

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.

1.3 Definitions, Acronyms, and Abbreviations

Personal Details: Details of passengers such as user id, phone number, address, e-mail address etc.

Contact Details: Details of contact associated with the passenger.

SRS: System Requirement Specification

WWW: World Wide Web

MYSQL: is a RDBMS based on SQL which is used for adding, removing, and modifying information in the database.

ARS: Airline Reservation System

RDBMS: Relational Database Management System

HTML: Hypertext Markup Language

PHP: Hypertext Preprocessor

CSS: Cascading Style Sheet

HTTP: Hypertext Transfer Protocol

PROBLEM DEFINITION

2.1 Existing System

Using conventional (offline) method if a person wants to book a flight ticket, he/she usually followsone of these methods:

Disadvantages:

- Manually goes to the Airport and book his/her ticket.
- Downloading the ticket form as paper document, filling itmanually and submitting it at Airport.
- Fill the Ticket form on system and get the print out as paper documents tosubmit it at Airport.
- Booking the Ticket at some particular registered ticket counters in online.
- Even above approaches make a ticket booking online, it was not completely done on online. Passenger may not have much freedom over this approach.
- Hence the Passenger may or may not be satisfied with this approach as it includes manual intervention like travelling to Airport for booking his ticket.
- Cannot Upload and Download the latest updates.
- No use of Web Services and Remote Services.
- Risk of mismanagement and of data when the project is under development.
- Less Security.
- No proper coordination between different Applications and Users.
- Fewer Users – Friendly

2.2. Proposed System:

The Proposed system ensures the complete freedom for users, where user at his own system can logon to this website and can book his ticket. Our proposed system allows only registered users to book the tickets, view timings and cancel their tickets.

In this Proposal the entire work is done on online and ticket with id is also provided for passengers as a print document. Here passengers can send their queries and suggestions through a feedback form.

To debug the existing system, remove procedures those cause data redundancy, make navigational sequence proper to build strong password mechanism.

Advantages:

- User friendliness provided in the application with various controls.
- The system makes the overall project management much easier and flexible.
- It provides high level of security with different level of authentication.

2.3. Product Functions

The websitewill allow accessonly toauthorized users with specific roles like (Administrator-maintains the website, Company-Register the passengers, Passenger- Fills the details).

Following are the System Functions:

Passenger role:

On the register form, passenger should enter all their detail such as their name, email-id, password and contact number.

Administrator role:

The system administrator must be able to add, update and modify flights and view theregistered customer details.

2.4. User Characteristics

End Users

All specific knowledge or skills are required from the feeder.

- **Educational level:** Users should be comfortable with the English language.
- **Experience:** Users should have prior information regarding the online booking.
- **Skills:** Users should have basic knowledge and should be comfortable

Administrator

Administrator must be capable to manage user rights.

This system will not take care of any virus problem, which might occur either on the Client or the server system. Avoiding the use of pirated software and ensuring that floppies and other removable media are scanned for viruses before use could minimize the possibility of viral infection.

2.5. Constraints

The Information of all users, subjects and allocations must be stored in a database that is accessible by every connected system. MYSQL is used for database.

- Users may access from any system connected to the online database.
- Users must have their correct usernames and passwords toenter into their accounts.

2.6. System Study

System Study is a detailed study of the various operations performed by a system and their relationships within and outside of the system. Here the key question is- what all problems exist in the present system? What must be done to solve the problem? Analysis begins when a user or manager begins a study of the program using existing system.

System study can be categorized into two parts:

- System planning and initial investigation
- Proposed System with objectives

2.7. Assumptions and Dependencies

The Software needs the following third party products-

- Eclipse IDE with J2EE for the development of project.
- MYSQL Workbench for database connectivity.
- PopSQL for writing the SQL queries, sharing their results, and visualizing the data.

Although basic password authenticationand role based security mechanisms will be used to protect the database from unauthorized access. Redundant Database is setup as the role of backup Database Server when primary database is failure.

FEASIBILITY STUDY

Preliminary investigation examines project feasibility. The likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. All system is feasible if there are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary
investigation:

- Technical Feasibility
- Operation Feasibility
- Economic Feasibility

3.1. Technical Feasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:
 Does the necessary technology exist to do what is suggested?
 Does the proposed equipment have the technical capacity to hold the data required to use the new system?
 Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
 Can the system be upgraded if developed?
 Are there technical guarantees of accuracy, reliability, ease of access and data security?
Earlier no system existed to cater to the needs of 'Secure Infrastructure Implementation System'. The current system developed is technically feasible. It is aweb based user interface for audit workflow at NIC-CSD. Thus, it provides an easyaccess to the users.The database's purpose is to create, establish and maintain a workflow among various entities to facilitate all concerned users in their various capacities or roles.Permission to the users would be granted based on the roles specified. Therefore, it provides the technical guarantee of accuracy, reliability and security.

The software and hardware requirements for the development of this project are not many and are already available in-house at NIC (National Information Centre) or are available as free as open source.
The work for the project is done with the current equipment and existing software technology. Necessary bandwidth exists for providing a fast feedback to the users irrespective of the number of users using the

3.2. Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspectsof the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following:

 Is there sufficient support for the management from the users?

 Will the system be used and work properly if it is being developed andImplemented?

 Will there be any resistance from the user that will undermine the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So, there is no question of resistance from the users that can undermine the possible application benefits.

3.3. Economic Feasibility

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economic feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

3.4. Interfaces

In computing, an interface is a shared boundary across which three separate components
of computer system exchange information.

User interfaces

The application will have a user friendly and menu based interface.

3.5. Hardware Requirements:

Intel I3 2.8 GHz Processor and Above
RAM 1 GB and Above
HDD 20 GB Hard Disk Space and Above

3.6. Software Requirements:

- WINDOWS OS (Windows 7, 8, 10) Or Linux
- Eclipse IDE
- Database Mysql for Backend.

Server side

An Apache Web server will accept all requests from the client. A development database will be hosted locally (using MySQL); the production database is hosted centrally.

MY-SQL (BACKEND)

MySQL in July 2013, it was the world's second most widely used RDBMS, and the most widely used open-source client server model RDBMS. It is named after cofounder Michael Widenius's. The SQL abbreviation stands 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.

Apache

The Apache HTTP Server is web server software notable for playing a key role in the initial growth of the World Wide Web. In 2009 it became the first web server software to surpass the 100 million web site milestone. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. Since April 1996 Apache has been the most popular HTTP server software in use.

MySQL Workbench

MySQL Workbench is a visual database design tool that integrates SQLdevelopment, administration, database design, creation and maintenance into a single integrated development environment for the MySQL database system. It is the successor to DBDesigner 4 from fabFORCE.net, and replaces the previous package of software.

SYSTEM ANALYSIS

System Analysis is a detailed study of the various operations performed by a system and their relationships within and outside of the system. Here the key question is- what all problems exist in the present system? What must be done to solve the problem? Analysis begins when a user or manager begins a study of the program using existing system.

4.1. Software Requirement Specification (SRS)

The software, Site Explorer is designed for management of web sites from a remote location. This section provides software requirements to a level of detail sufficient to enable designers to design the system an testers to test the system.

This section contains all of the functional and quality requirements of the system. It gives a detailed description of the system and all its features.

Introduction

Purpose: The main purpose for preparing this document is to give a general insight into the analysis and requirements of the existing system or situation and for determining the operating characteristics of the system.

Scope: This Document plays a vital role in the development life cycle (SDLC) and it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

Developer's responsibilities overview

The developer is responsible for

1. Developing the system which meets the SRS and solving all the requirements of the system.

2. Demonstrating the system and installing the system at client's location after the acceptance testing is successful.

3. Submitting the required user manual describing the system interfaces to work on it and also the documents of the system.

4. Conducting any user training that might be needed for using the system.

5. Maintaining the system for a period of one year after installation.

4.2. Communication Interfaces

The HTTP protocol will be used to facilitate communications between the client and server. The system supports Google Chrome and Mozilla Firefox web browsers.

4.3. Operations

The normal and special operations required by the user such as:

1. The various modes of operations in the user organization

2. Periods of interactive operations and periods of unattended operations

3. Data processing support functions

4. Backup and recovery operations

4.4. Performance Requirements

This subsection specifies numerical requirements placed on the software or on the human interaction with the software, as a whole..Numerical requirements will include:

1. 300 terminals will be supported at a time

2. Only text information will be supported (HTTP)

Although basic password authentication and role based security mechanisms will be used to protect OPMS from unauthorized access; functionality such as email notifications are assumed to be sufficiently protected under the existing security policies applied by the University network team. Redundant Database is setup as the role of backup Database Server when primary database is failure.

SYSTEM DESIGN

5.1. Module description

The list of modules incorporated with "AIRLINE RESERVATION SYSTEM(Travelo)"is as follows:

RESERVATION MODULE:-

After registering with us the passenger can logon to his/her own account and can view all flight details such as Timings, Prices, Availability of seats and can book the ticket with unique ticket id and gives its personal details.

The major operations included in this module were:-

¬ View all airline schedules, timings, fare details and seats availability.

¬Book the tickets.

¬ View the ticket.

Administrative module:-

Administrative module is provided for the sake of administrators to manage the site and update the content at regular intervals, the major operations included in this module are:

¬ Create and maintain airline schedule, fare and timings of the Flight.

¬ View the passenger list.

¬ View the available seats in the flights.

¬Updating the flight schedule, timings and fare.

5.2. Software System Attributes

There are a number of attributes of software that can serve as requirements. It is important that required attributes by specified so that their achievement can be objectively verified. The following items provide a partial list of examples. These are also known as non-functional requirements or quality attributes. These are characteristics the system must possess, but that pervade (or cross-

cut) the design. These requirements have to be testable just like the functional requirements.

5.2.1. Reliability

It means the extent to which program performs with required precision. The website developed should be extremely reliable and secure so that information about any questions etc. is not leaked. The system shall not be down more than 2 times in a year.

5.2.2. Availability

Checking that the system always has something to function and always pop up error messages in case of component failure. In that case the error messages appear when something goes wrong so to prevail availability problems.

5.2.3. Security

The security requirements deal with the primarily security. The software should be handled only by the administrator and authorized users. Only the administrator has right to assign permissions like creating new accounts and generating password. Specific requirements in this area could include the need to:

¬ Utilize certain cryptographic techniques

¬ Keep specific log or history data sets

¬ Restrict communications between some areas of the program

¬ Check data integrity for critical variable.

5.2.4. Maintainability

The application is to be designed so that it is easily maintained. Also it should allow incorporating new requirements in any module of system. Backups for database are available.

5.2.5. Portability

The software is a web based application and is built in PHP and My SQL. So it is platform independent and is independent of OS. The application will be easily portable on any window based system.

5.3. Organizing the specific Requirements

For anything but trivial systems the detailed requirements tend to be extensive. For this reason, it is recommended that careful consideration be given to organizing these in a manner optimal for understanding. There is no one optimal organization for all systems. Different classes of systems lend themselves to different organizations of requirements. Some of these organizations are described in the following subclasses.

5.3.1. System Mode: ~ Some systems behave quite differently depending on the mode of operation. When organizing by mode there are two possible outlines. The choice depends on whether interfaces and performance are dependent on mode.

5.3.4. Feature: ~ A feature is an externally desired service by the system that may require a sequence of inputs to affect the desired result. Each feature is generally described in as sequence of stimulus-response pairs.

5.3.5. Stimulus: ~ Some systems can be best organized by describing their functions in terms of stimuli.

5.3.6. Response: ~ Some systems can be best organized by describing their functions in support of the generation of a response.

5.3.7. Functional Hierarchy: ~ When none of the above organizational schemes prove helpful, the overall functionality can be organized into a hierarchy of functions organized by common inputs, common outputs, or common internal data access. Data flow diagrams and data dictionaries can be use to show the relationships between and among the functions and data.

DATABASE DESIGN

The general theme behind a database is to handle information as an integrated whole. A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general objective is to make information access easy, quick and flexible for users. In database design several objectives are considered.

Control Redundancy:

Redundant occupies space and therefore, is wasteful. If versions of the data are in different phases of updating the system often gives conflicting information. A unique aspect of database design is storing only once, which controls redundancy and improves system performance.

Table Structure:-

Registration Table

	Field	Type	Collation	Attributes	Null	Default	Extra
☐	reg_id	tinyint(11)			No	*None*	auto_increment
☐	u_name	varchar(20)	latin1_swedish_ci		No	*None*	
☐	pswd	varchar(20)	latin1_swedish_ci		No	*None*	
☐	f_name	varchar(20)	latin1_swedish_ci		No	*None*	
☐	l_name	varchar(20)	latin1_swedish_ci		No	*None*	
☐	email	varchar(20)	latin1_swedish_ci		No	*None*	

Check All / Uncheck All *With selected:*

Passenger Table

Field	Type	Collation	Attributes	Null	Default	Extra
reg_id	tinyint(11)			No	*None*	auto_increment
passport_no	varchar(10)	latin1_swedish_ci		No	*None*	
visa_no	varchar(10)	latin1_swedish_ci		No	*None*	
f_name	varchar(30)	latin1_swedish_ci		No	*None*	
l_name	varchar(30)	latin1_swedish_ci		No	*None*	
email	varchar(30)	latin1_swedish_ci		No	*None*	
address	varchar(30)	latin1_swedish_ci		No	*None*	
contact	varchar(10)	latin1_swedish_ci		No	*None*	
pin_no	varchar(10)	latin1_swedish_ci		No	*None*	

Source Table

	Field	Type	Collation	Attributes	Null
☐	source_id	int(11)			No
☐	source_name	varchar(30)	latin1_swedish_ci		No

Destination Table

	Field	Type	Collation	Attributes	Null	Default	Extra
☐	destination_id	tinyint(20)			No	*None*	auto_increment
☐	destination_name	varchar(20)	latin1_swedish_ci		No	*None*	

Flight Details

Field	Type	Collation	Attributes	Null	Default
flight_id	int(11)			No	*None*
flight_name	varchar(20)	utf8_general_ci		No	*None*
source_id	int(11)			No	*None*
destination_id	int(11)			No	*None*
arrival_time	int(11)			No	*None*

Set Flight

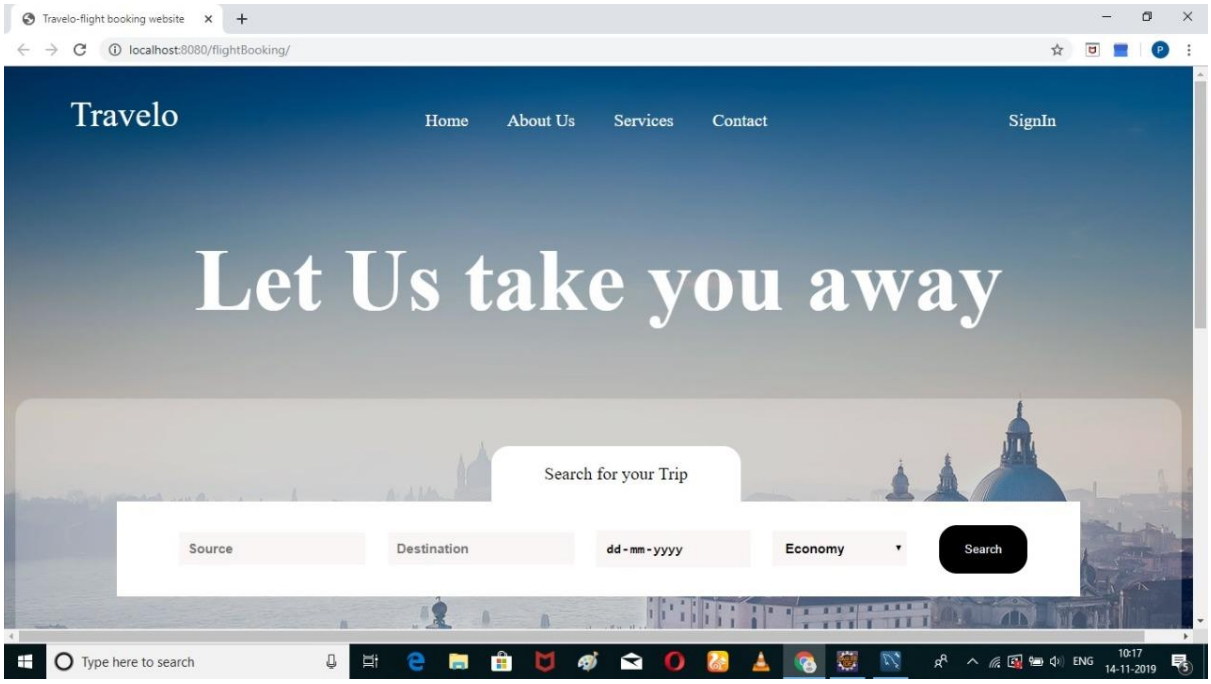
Field	Type	Collation	Attributes	Null	Default	Extra
set_flight_id	int(11)			No	*None*	
flight_id	int(11)			No	*None*	
source_id	int(11)			No	*None*	
destination_id	int(11)			No	*None*	
arrival_time	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP	on update CURRENT_TIMESTAM
departure_time	timestamp			No	0000-00-00 00:00:00	
fare	double			No	*None*	

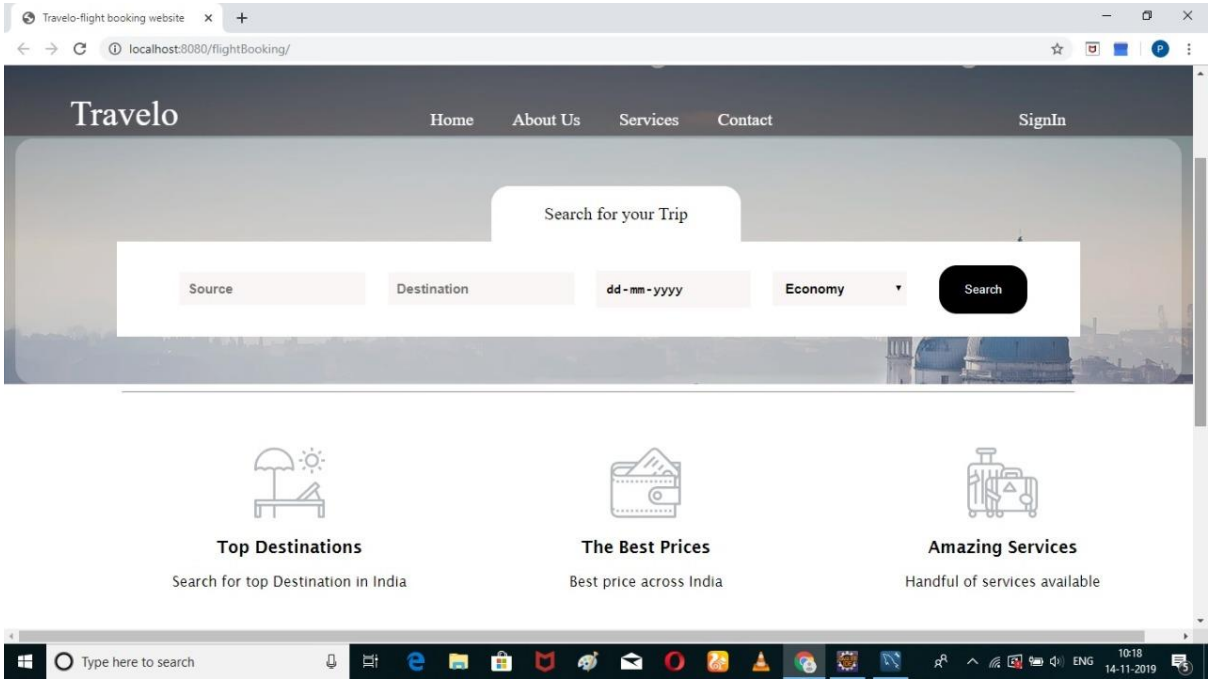
Ticket Table

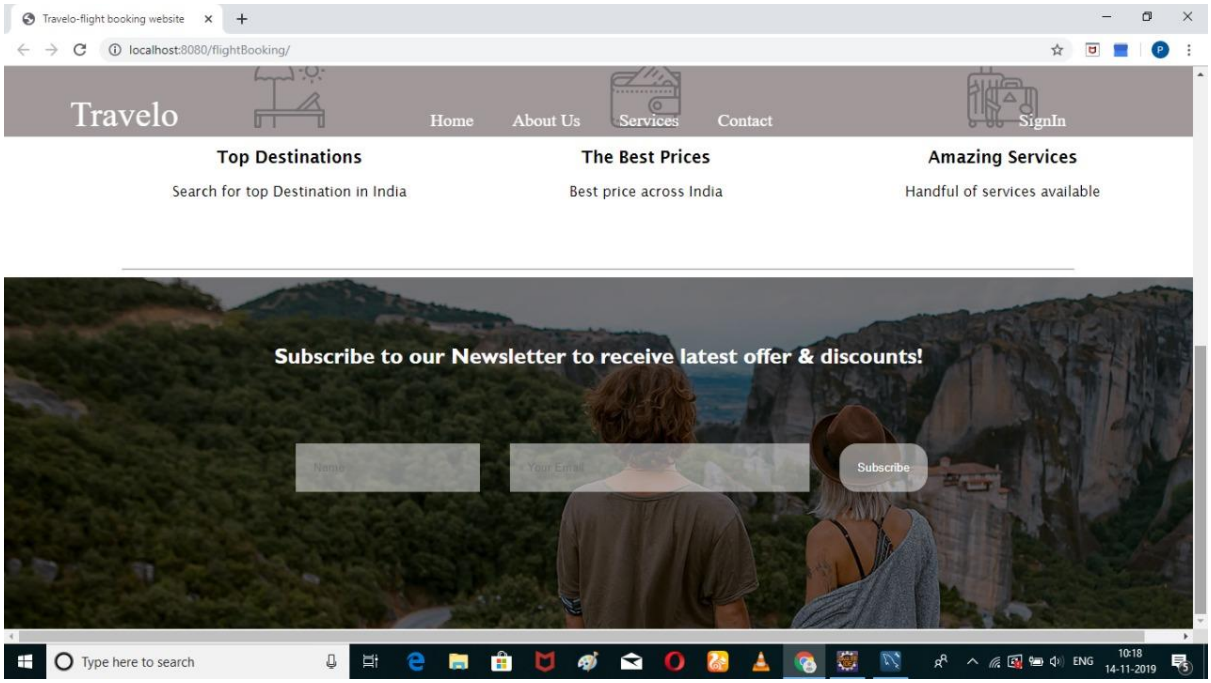
Field	Type	Collation	Attributes	Null	Default
ticket_id	int(11)			No	*None*
source_id	int(11)			No	*None*
destination_id	int(11)			No	*None*
depart_date	date			No	*None*
return_date	date			No	*None*
reg_id	tinyint(11)			No	*None*

DESIGNING FORMS

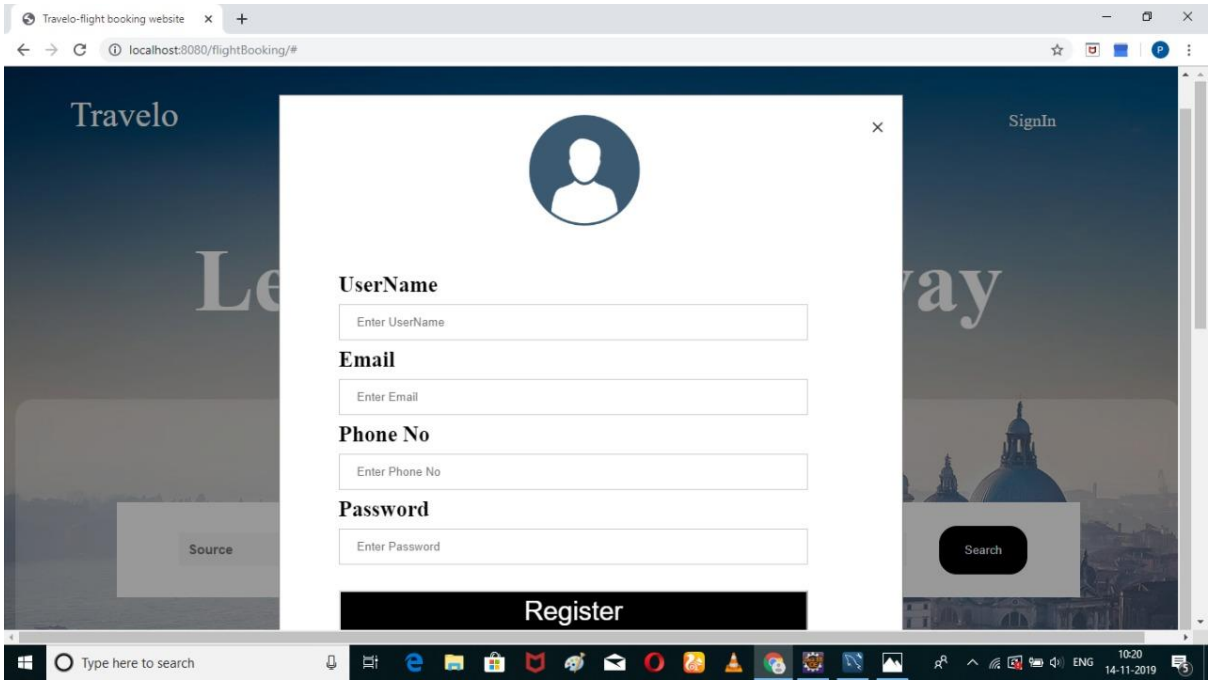
HOME PAGE



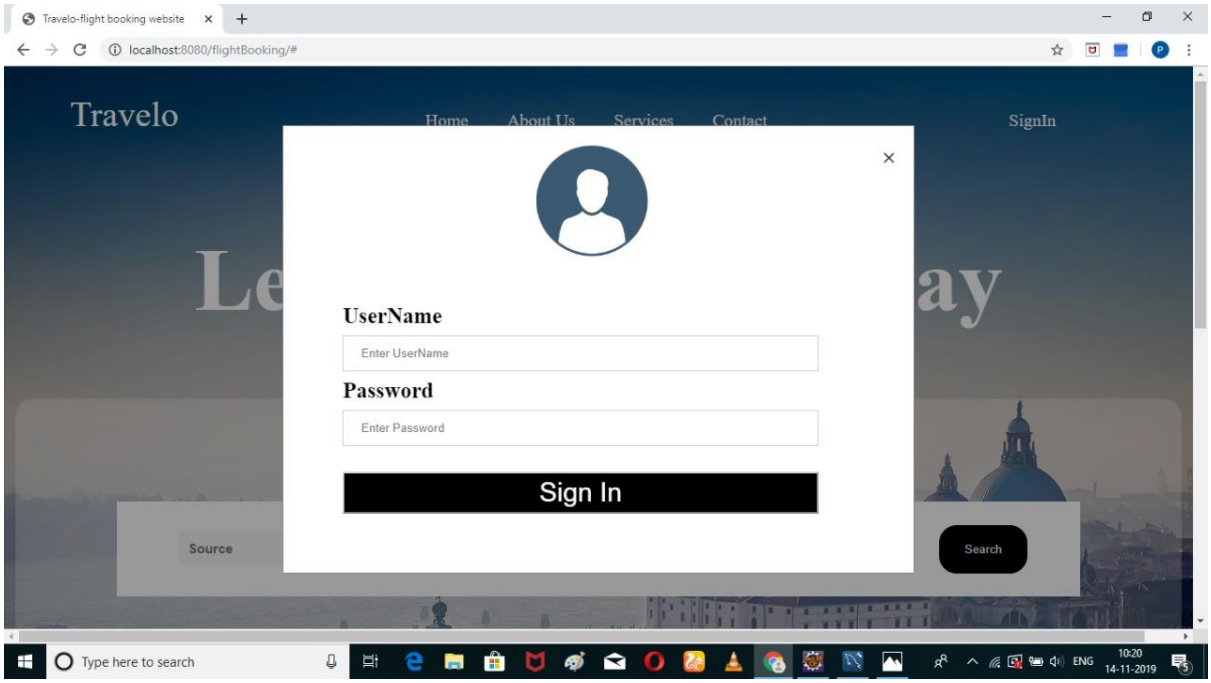




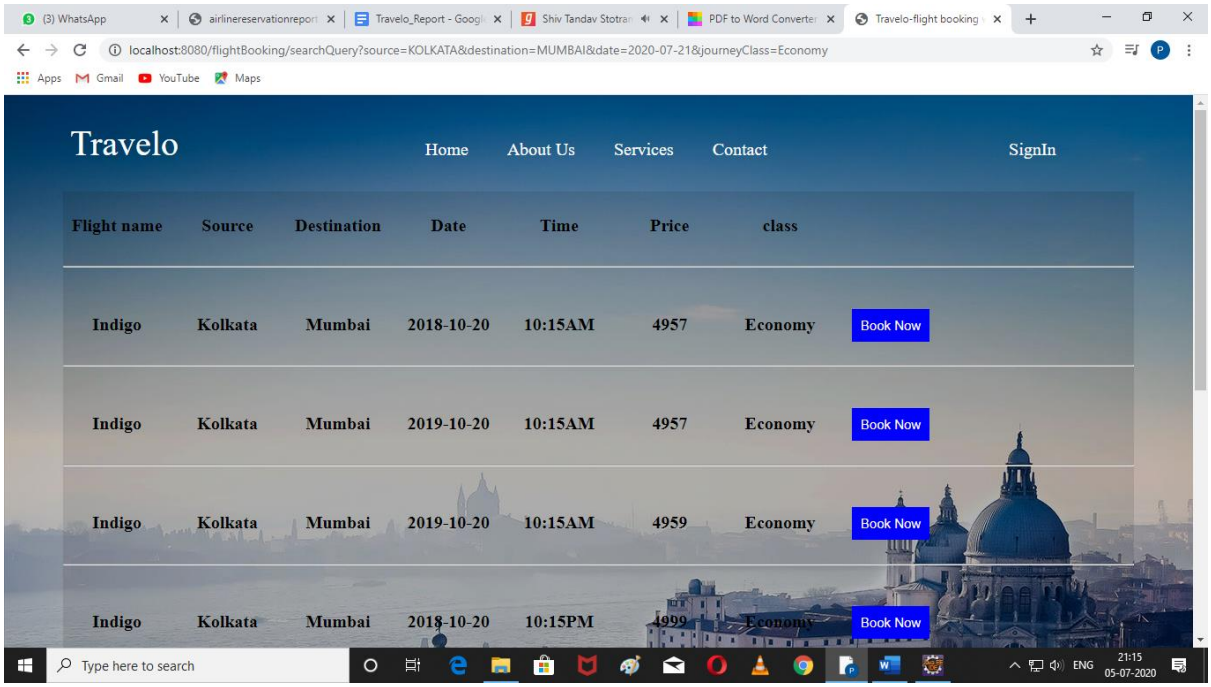
REGISTER FORM



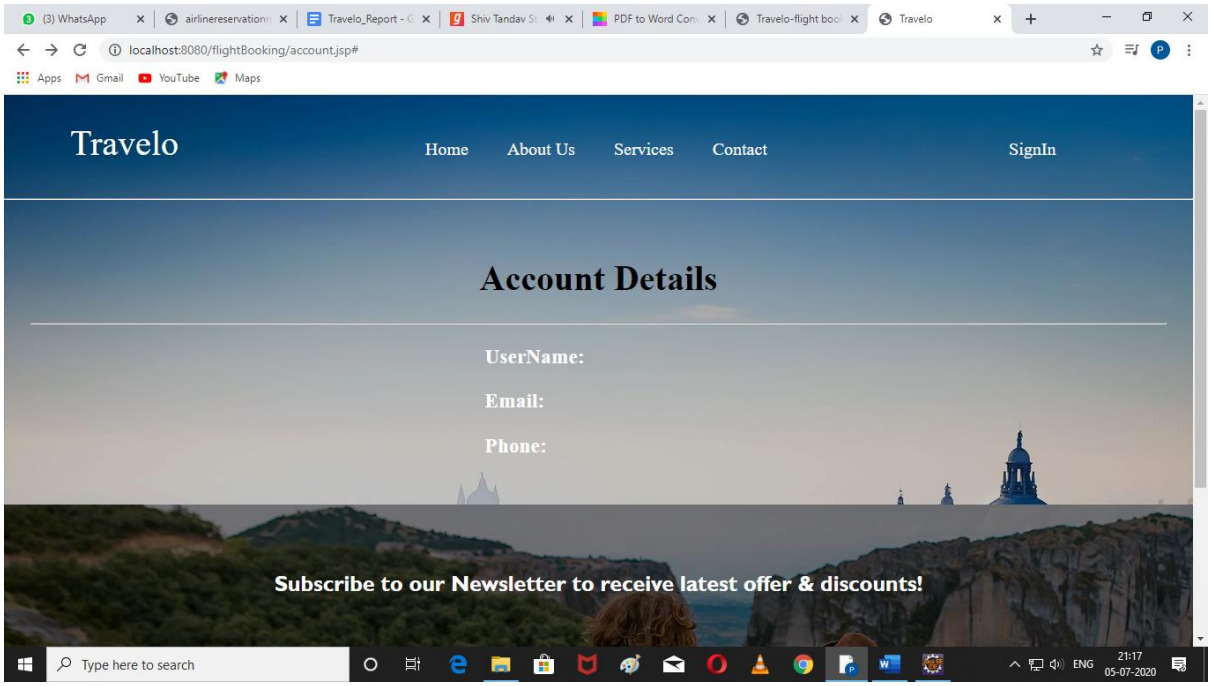
LOGIN FORM



FLIGHT SEARCH RESULT PAGE



ACCOUNT DETAILS



FUTURE SCOPE

- Add mobile verification two step verification process
- Introduce live chat between admin and user
- Automatically e-mail communication to passenger about flight scheduling and new schemes and discounting.
- Providing different types of tour packages in nominal cost.
- Sending messages on mobile of delaying or cancellation of flight

CONCLUSION

- “TRAVELO” is an online reservation system, which enable customers to check the availability of tickets & book their tickets.
- It provides an easy way to get tickets online rather than queue up to buy tickets.
- With these specific characteristics like faster system, accuracy, reliability, informative & many more, TRAVELO is such a preferable application that one should must try.

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