VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI

DBMS MINI PROJECT REPORT ON

ONLINE BUS RESERVATION MANAGEMENT SYSTEM

Submitted in partial fulfilment for the requirements for the fifth semester

BACHELOR OF ENGINEERING IN INFORMATION SCIENCE AND ENGINEERING

For the Academic Year 2022-2023

Submitted by:

1MV20IS059 SUPRITHA S

1MV20IS055 SHREYA M

Under the guidance of

Mr. Vijaya Kumara Y M

Assistant Professor, Department of ISE, Sir MVIT

Department Of Information Science And Engineering

Sir M Visvesvaraya Institute Of Technology , Bengaluru

SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY

Krishnadevaraya Nagar, International Airport Road, Hunasmaranahalli, Bengaluru – 562157

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

It is certified that the DBMS Mini Project work entitled “ONLINE BUS TICKETING SYSTEM" is carried out by SUPRITHA S (1MV20IS059), SHREYA M (1MV20IS055) bonafide students of Sir M Visvesvaraya Institute of Technology in partial fulfilment for the 5th semester for the award of the Degree of Bachelor of Engineering in INFORMATION SCIENCE AND ENGINEERING of the Visvesvaraya Technological University, Belagavi during the academic year 2022-2023. It is certified that all corrections and suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the course of Bachelor of Engineering.

Name & Signature of Guide :

_____

Dr Vijaykumar Y N,

Asst Prof, Dept of ISE, Sir MVIT.

External Examination:

Name of the Examiner: Signature with Date :

DECLARATION

We hereby declare that the entire project work embodied in this dissertation has been carried out by us and no part has been submitted for any degree or diploma of any institution previously.

Place: Bengaluru

Date:

Signature of Students:

Name1: Name2:

_____ _____

SUPRITHA S **SHREYA M**

(1MV20IS059) **(1MV20IS055)**

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompanies the successful completion of any task would be incomplete without mentioning the people who made it possible. With deep gratitude, I acknowledge all those guidance and encouragement, which served as bacon of light and crowned our efforts with success. I thank each one of them for their valuable support. I would also like to express thanks to Project guide Mr. Vijaykumar Asst .Prof, Dept of ISE, for guiding me to complete mini project work successfully.

1MV20IS059 Supritha S

1MV20IS055 Shreya M

ABSTRACT

Online Bus Reservation Management System (OBRMS) is designed to manage the booking and maintenance of growing bus transportation. Presently bus passengers frequently need to know about their ticket reservation status, ticket visibility status on particular bus for particular destination, bus arrival and departure timing, halts and route of bus etc.

Customer information centers at the bus stations are unable to serve such quires at peak periods. Also, as for now there are no customer call centers facilities are available.

Ticket booking in rural areas is much more difficult as people living there have to come all the way to the city where mostly Reservation Office and Bookings as well as Payments are done. Although there is computerized system, however does not have that great productivity and usefulness.

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INTRODUCTION

India is 7th largest country in terms of geographic size. Also having 382 people per.sq.km of density. This means there is need for efficient means of long-distance transportation. Therefore, it will make way too easy for running and managing bus transportation. Manually it is near to impossible to keep paper work and manage it using manpower for country with such a great population. Hence this system will help in smooth management of transportation It will specially help the start-up business in bus transportation as less manpower needed and collectively operating all the aspects of business, such as billing, booking, bus arability, record keeping, payment etc.

Existing System :

Online Bus Reservation Management System (OBRMS) is designed to manage the booking and maintenance of growing bus transportation. Presently bus passengers frequently need to know about their ticket reservation status, ticket visibility status on particular bus for particular destination, bus arrival and departure timing, halts and route of bus etc. Customer information centers at the bus stations are unable to serve such quires at peak periods. Also, as for now there are no customer call centers facilities are available. Ticket booking in rural areas is much more difficult as people living there have to come all the way to the city where mostly Reservation Office and Bookings as

well as Payments are done. Although there is computerized system, however does not have that great productivity and usefulness.

Proposed System:

There are number of advantages of Bus Transport Management System. This is comparatively to the present system faster and optimum requires less time for updating and fetching data. It working on it easier and the friendly user interface is cherry on the cake for the users. Implementation of AJAX Technology makes it much faster. As required, we can update and change the database if in future any new route or bus is implemented by the transportation management. Most importantly it saves time. It also costs less for maintaining as new technologies are used.

SYSTEM OVERVIEW

Online Bus Transport Management System makes transport maintenance easy and requires less man power and less time as well as cost for maintaining it. Various new concepts are implemented in this proposed system. HTML, XML, CSS for designing and front-end development of the system. Most popular technology nowadays in the fields of web development i.e. AJAX, JavaScript, PHP is also implemented having the major role in validation and for whole processing. With the help of documentation, it's very much easy for the any third party to understand the system. As everything is automated now in new system now user need less Clerical work involvement to manage transport work.

There are # main modules in the system

1. Admin Module
2. User Module
3. Transaction Module

Objective Of The Project:

Online Bus Reservation Management System (OBRMS) is designed to manage the booking and maintenance of growing bus transportation.

ANALYSIS

Project management

Project management skills are put to good use for this project. Having gone through project management modules in Time Series Analysis, Optimization and with two interns Project Management for Business and IT respectively, they enhanced my knowledge on managing a project. Project management focuses on achieving the objectives by applying five processes

1.Initiating

2.Planning

3.Executing

4.Closing

5.Monitoring

Online Bus Reservation System

There are many software developments companies that offer Bus Reservation System. There are records on the past years projects on Online Bus Reservation System is done by students. Through the researches, it is observed that there are features where this project can adopt and implement. With this feature, it helps administrator to save time as well as increase their efficiency.

REQUIREMENTS

Software requirements:

Tools used : XAMPP

Programming languages :PHP

Front end design :HTML, CSS, JavaScript

Database : MYSQL

Hardware Requirements:

Processor : Intel dual Core, i5

Ram : 4 GB

Hard disk : 500 GB

SCRIPTING LANGUAGE SELECTION

There are many scripting languages available in the market. VBScript, Perl, JSP (Java Server Pages), ASP (Active Server Pages) and PHP (Hypertext Pre-processor) are some of those commonly used. Yet for this project, PHP is the language that is utilized for the coding piece because it is a server-side, embeddable HTML language.

Being a widely-used open-source scripting language, it is free for everyone to use and is especially suited for web development. On top of that, the existing system is already using PHP. There are many advantages for using PHP thus no need for the switch to another scripting language. Other than being a freeware, there are many free upgrade packages easily available. The other benefit of choosing PHP is the ease in installation. It can run as a plug in on quite a number of web servers such as the Apache. On the other hand, JSP requires J2EE server to run and because it is a Java coded language, it is therefore more complex to understand and to do coding Further exploring on the processing speed against ASP, PHP is interpreted at run-time and not compiled into memory whereas ASP is more memory intensive with each ASP language compiler running in its own processes.

This results in slower processing speed for ASP. In addition, ASP runs more reliably only on Microsoft Windows-based web servers than other web servers. In conclusion, PHP is the preferred selection due to the ease of usage and it can be uploaded and run on another platform with minimal change required to be done to the script. Beyond and above, the compiling time and speed for PHP is faster and more efficient.

DATABASE SELECTION

There are a variety of databases that we can select from the market. The widely used databases are Microsoft Access, Microsoft SQL, Oracle and MySQL. Looking at Microsoft Access, it does not encourage concurrent usage and it may be inefficient, as the database needs to be saved into one file. It is also unable to process high speed and large size database as compared to MySQL. In terms of costs, Oracle database requires a licensing fee but MySQL database is a freeware. In addition, MySQL database is easy to install, user friendly, reliable and is able to run on different platforms. Moreover, PHP can access MySQL database directly without the need to go through ODBC (Open Database Connectivity). To conclude, PHP script is able to run faster with MySQL database and the processing time will definitely be shorter. The pre-school does not require complex and costly software for its database management system hence MySQL is the ideal database for this project.

Web server selection

After deciding on the scripting language and database, next is to select the web server that can support them. Web server is necessary for the delivery of web content to the web browser. As such, Apache HTTP server which has performance similar with other 'high-performance' server is considered Thereafter, research and actual testing have been performed to see the outcome of the various servers listed in the Figure below. These servers include PHP and MySQL in their installation packages thus allowing smoother and simpler download process. However, based on the performance and interface, Wamp or Camp server is the preferred choice.

FRONT END USING HTML,CSS

The front-end used in this project is html along with the css language.

html is the standard markup language for creating web pages

- html stands for hyper text markup language.
- html describes the structure of web pages using markup.
- html elements are the building blocks of html pages.
- html elements are represented by tags.
- html tags label pieces of content such as "heading", "paragraph", "table", and so on browsers do not display the html tags, but use them to render the content of the page.

Advantages of html:

1. The first advantage it is widely used.
2. Every browser supports html language.
3. Easy to learn and use.
4. It is by default in every window so you don't need to purchase extra software.
5. You can integrate html with css, javascript, php etc.

THE BACK-END DATABASE USED IN THIS PROJECT IS MYSQL:

It is a language used to interrogate and process data in a relational database. Originally developed by IBM for its mainframes, SQL commands can be used to interactively work with a database or can be embedded within a script or programming language as an interface to a database. Programming extensions to SQL have turned it into a full-blown database programming language, and all major database management systems (DBMSs) support it. ANSI standardized SQ. But most DBMSs have some proprietary enhancement, which if used, makes SQL non- standard. Moving an application from one SQL database to another sometimes requires tweaking, the age-old problem in this business!

Advantages of MySQL:

- SQL Queries can be used to retrieve large amounts of records from a database quickly.
- SQL is used to view the data without storing the data into the object.
- SQL joins two or more tables and show it as one object to user.
- SQL databases use long-established standard, which is being adopted by ANSI & ISO. Non-SQL databases do not adhere to any clear standard.

DATA FLOW DIAGRAM

A data flow is a graphical technique that describes information flow and transforms that are applied as data move from input to output. The DFD is also known as dataflow graphs or bubble chart. The DFD is used to represent increasing information flow details. Also, DFD can be stated as the starting point of the design phase that functionality decomposes

COMPONENTS OF DATA FLOW DIAGRAM

There are four symbols that are used in the drawing of Data Flow Diagrams:

1.**Entities :** 

External entities represent the sources of data that enter the system or the recipients of data that leave the system.

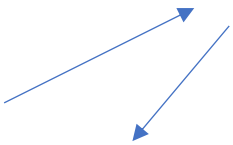
2. **Process :** 

Processes represent data in which data is manipulated by being stored or retrieve or transformed in some way. A circle represents it. The process will show the data information or charge.

3. **Database:** 

Database represents storage of data within the system.

4. Data Flow:



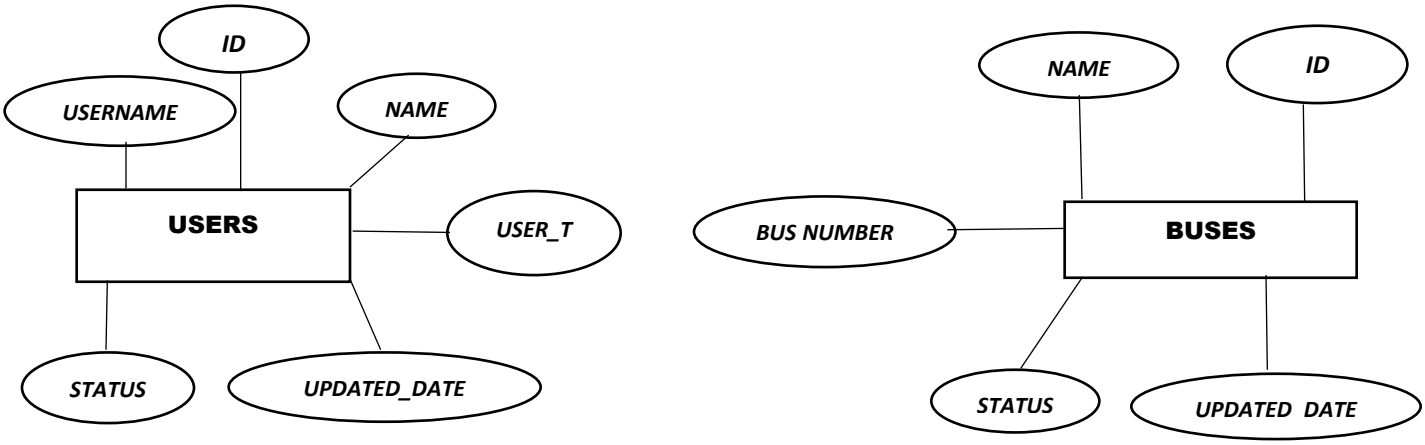
ER-DIAGRAM

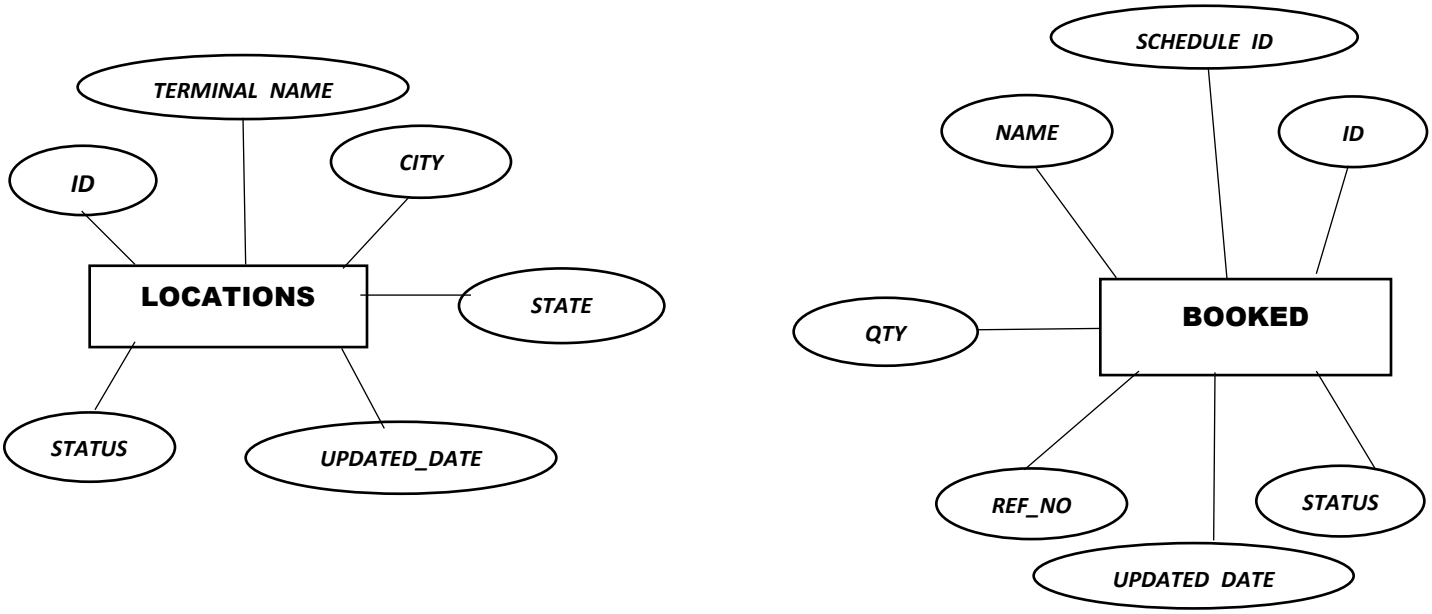
An Entity–relationship model (ER model) describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database. The main components of E-R model are: entity set and relationship set. What is an Entity Relationship Diagram (ER Diagram)? An ER diagram shows the relationship among entity sets. An entity set is a group ofsimilar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database. The geometric shapes and their meaning in an E-R Diagram. We will discuss these terms in detail in the next section (Components of a ER Diagram) of this guide so don't worry too much about these terms now, just go through them once.

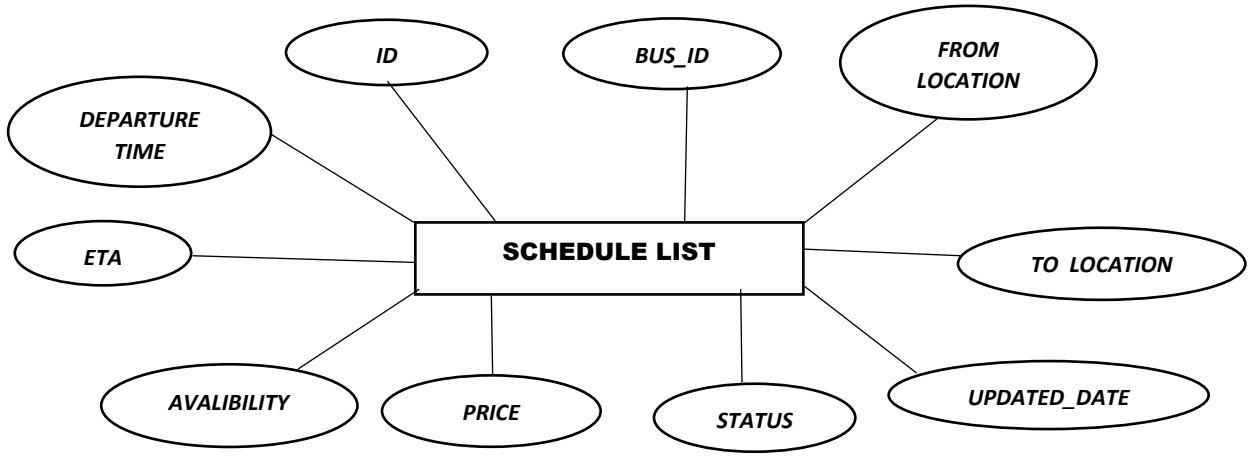
- Rectangle: Represents Entity sets.
- Ellipses: Attributes
- Diamonds: Relationship
- Set Lines: They link attributes to Entity Sets and Entity sets to Relationship Set
- Double Ellipses: Multivalued Attributes
- Dashed Ellipses: Derived Attributes
- Double Rectangles: Weak Entity Sets
- Double Lines: Total participation of an entity in a relationship

ER modelling helps you to analyse data requirements systematically to produce a well-designed database. So, it is considered a best practice to complete ER modelling before implementing your database.

ENTITY-RELATIONSHIP DIAGRAM:







SCHEMA DIAGRAM

A database schema is the skeleton structure that represents the logical view of the entire database. Itdefines how the data is organized and how the relations among them are associated. It formulates all the constraints that are to be applied on the data. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams. An Entity-Relationship Model (ERM) is an abstract and conceptual representation of data. Entity relationship modeling is a database modeling method, used to produce a type of conceptual schema or semantic data model of a system, often a relational database, and its requirements in a top-down fashion. In order to create an ER schema, you must know three main concepts: entity, attribute and relationship.

Entity Relationship model

An entity represents a description of the common features of set of objects of the real world. Examples of entities are Person, Car, Artist, and Album.

Attribute

An Attribute represents the properties of real-world objects that are relevant for the application purposes. Attributes are associated with the concept of Entity, with the meaning that all the instances of the entity are characterized by the same set of attributes. In other words, the entity is a descriptor of the common properties of a set of objects, and such properties are expressed as attributes.

Relationship

A Relationship represents semantic connections between entities, like the association between an artist and his/her album, or between an artist and his/her reviews.

The possible values are one and many. Based on their maximum cardinality constraints, relationships are called "one-to-one", if both relationships roles have maximum cardinality 1,"oneto-many", if one relationship role has maximum cardinality 1 and the other role has maximum cardinality N, "many-to-many", if both relationships roles have maximum cardinality N.

SCHEMA DIAGRAM

USERS:

ID	NAME	USER_TYPE	USERNAME	PASSWORD	STATUS[0=inactive||1=active]	UPDATED_DATE

BUSES:

ID	NAME	BUS NUMBER	STATUS[0=inactive||1=active]	UPDATED_DATE

LOCATIONS:

ID	TERMINAL_NAME	CITY	STATE	STATUS[0=inactive||1=active]	UPDATED_DATE

SCHEDULE LIST:

ID	BUS_ID	FROM LOCATION	TO LOCATION	DEPARTURE TIME	ETA	STATUS	AVALIBILITY	PRICE	UPDATED DATE

BOOKED:

ID	SCHEDULE_ID	REF_NO	NAME	QTY	STATUS [0=unpaid||1=paid]	UPDATEDDATE

FRONT-END DESIGN

Front-end web development details

● HTML provides the basic structure of sites, which is enhanced and modified by other technologies like CSS and JavaScript.

● CSS is used to control presentation, formatting, and layout.

● JavaScript is used to control the behaviour of different elements.
HTML.

• HTML is at the core of every web page, regardless the complexity of a site or number of technologies involved. It's an essential skill for any web professional. It's the starting point for anyone learning how to create content for the web. And, luckily for us, it's surprisingly easy to learn.

CSS

• CSS stands for Cascading Style Sheets. This programming language dictates how the HTML elements of a website should actually appear on the frontend of the page.

JavaScript

• JavaScript is a more complicated language than HTML or CSS, and it wasn't released in beta form until 1995. Nowadays, JavaScript is supported by all modern web browsers and is used on almost every site on the web for more powerful and complex functionality.

Connectivity (front end and Back end)

PHP is an amazing and popular language! It is powerful enough to be at the core of the biggest blogging system on the web (Word Press)! It is deep enough to run the largest social network (Facebook)! It is also easy enough to be a beginner's first server-side language!

- PHP is an acronym for "PHP: Hypertext Pre-processor".
- PHP is a widely-used, open-source scripting language.
- PHP scripts are executed on the server.
- PHP is free to download and use.
- PHP files can contain text, HTML, CSS, JavaScript, and PHP code.
- PHP code are executed on the server, and the result is returned to the browser as plain HTML.
- With PHP you are not limited to output HTML. You can output images, PDF files, and even Flash movies. You can also output any text, such as XHTML and XML.

TABLE CREATION

```
CREATE TABLE `users` (
  `id` int(30) NOT NULL,
  `name` varchar(150) NOT NULL,
  `user_type` tinyint(1) NOT NULL DEFAULT 1 COMMENT '1 = admin, 2= faculty , 3 =
student',
  `username` varchar(25) NOT NULL,
  `password` varchar(25) NOT NULL,
  `status` tinyint(1) NOT NULL DEFAULT 1 COMMENT ' 0 = incative , 1 = active',
  `date_updated` datetime NOT NULL DEFAULT current_timestamp() ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

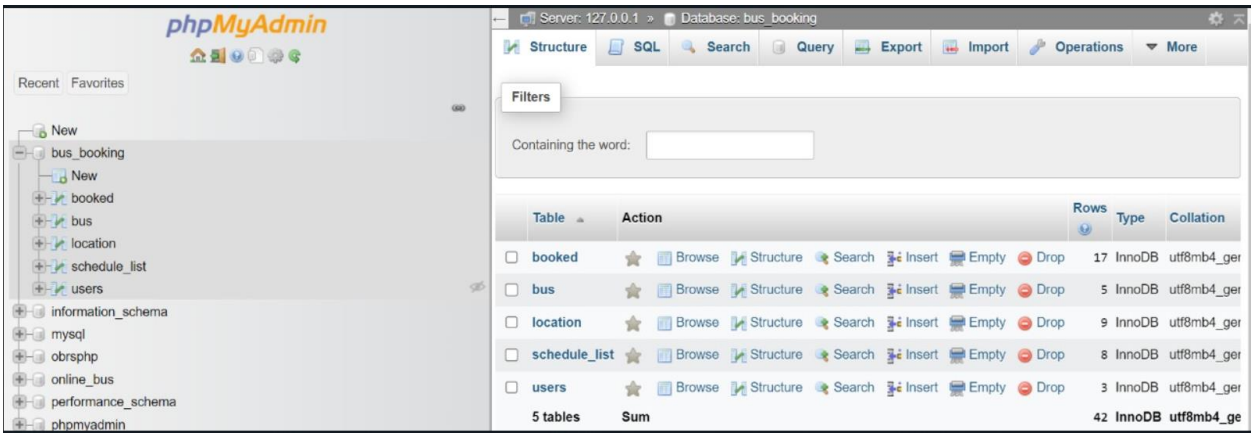
```
CREATE TABLE `bus` (
  `id` int(30) NOT NULL,
  `name` varchar(250) NOT NULL,
  `bus_number` varchar(50) NOT NULL,
  `status` tinyint(1) NOT NULL DEFAULT 1 COMMENT '0 = inactive, 1 = active',
  `date_updated` datetime NOT NULL DEFAULT current_timestamp() ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
CREATE TABLE `location` (
  `id` int(30) NOT NULL,
  `terminal_name` text NOT NULL,
  `city` varchar(250) NOT NULL,
  `state` varchar(250) NOT NULL,
  `status` tinyint(1) NOT NULL DEFAULT 1 COMMENT '0= inactive , 1= active',
  `date_updated` datetime NOT NULL DEFAULT current_timestamp() ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
CREATE TABLE `schedule_list` (
```

```
  `id` int(30) NOT NULL,
  `bus_id` int(30) NOT NULL,
  `from_location` int(30) NOT NULL,
  `to_location` int(30) NOT NULL,
  `departure_time` datetime NOT NULL,
  `eta` datetime NOT NULL,
  `status` tinyint(4) NOT NULL DEFAULT 1,
  `availability` int(11) NOT NULL,
  `price` text NOT NULL,
  `date_updated` timestamp NOT NULL DEFAULT current_timestamp() ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

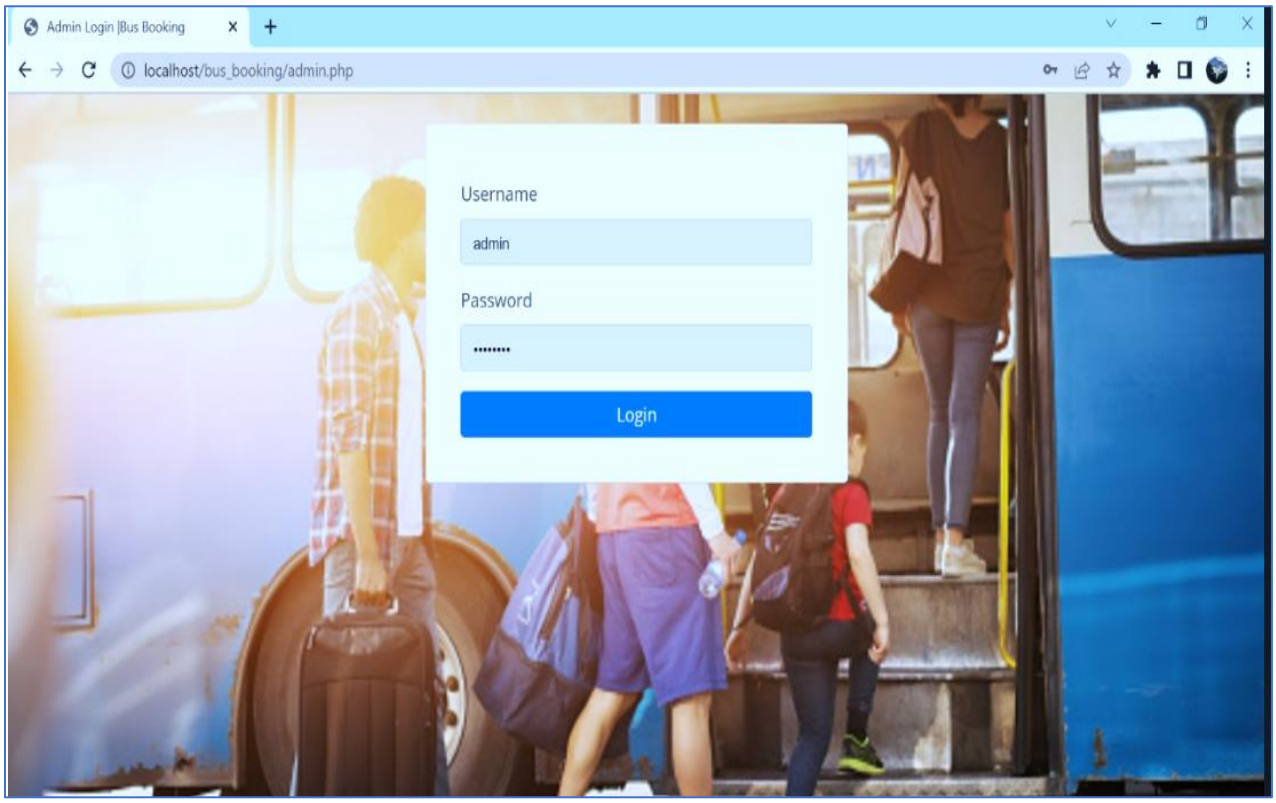
```
CREATE TABLE `booked` (
  `id` int(30) NOT NULL,
  `schedule_id` int(30) NOT NULL,
  `ref_no` text NOT NULL,
  `name` varchar(250) NOT NULL,
  `qty` int(11) NOT NULL,
  `status` tinyint(1) DEFAULT 0 COMMENT '1=Paid, 0- Unpaid',
  `date_updated` datetime NOT NULL DEFAULT current_timestamp() ON UPDATE
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

TABLE CREATED:

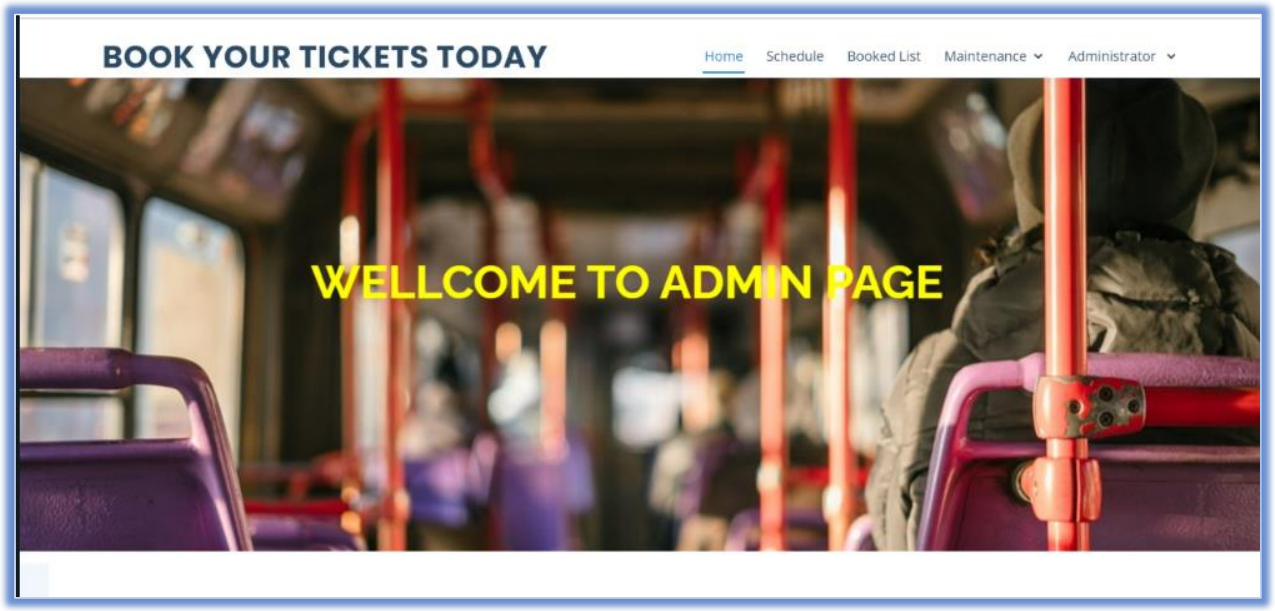


IMPLEMENTATION WITH SCREENSHOTS

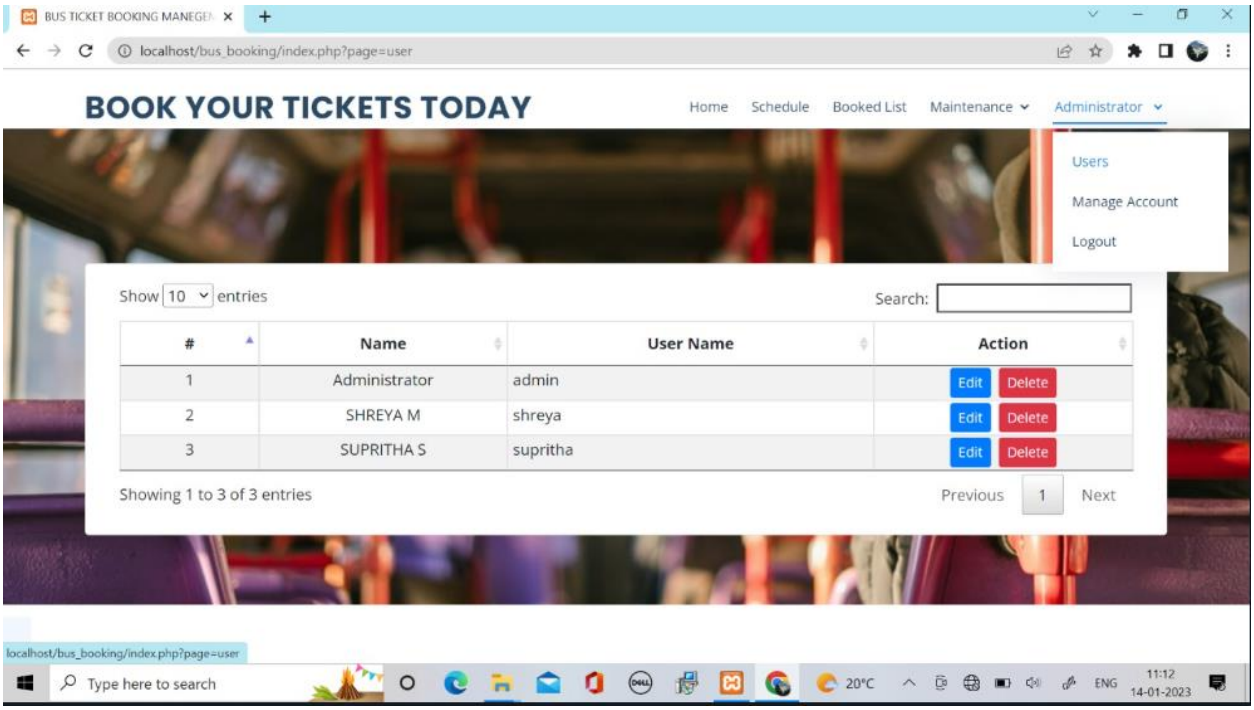
Admin page login:



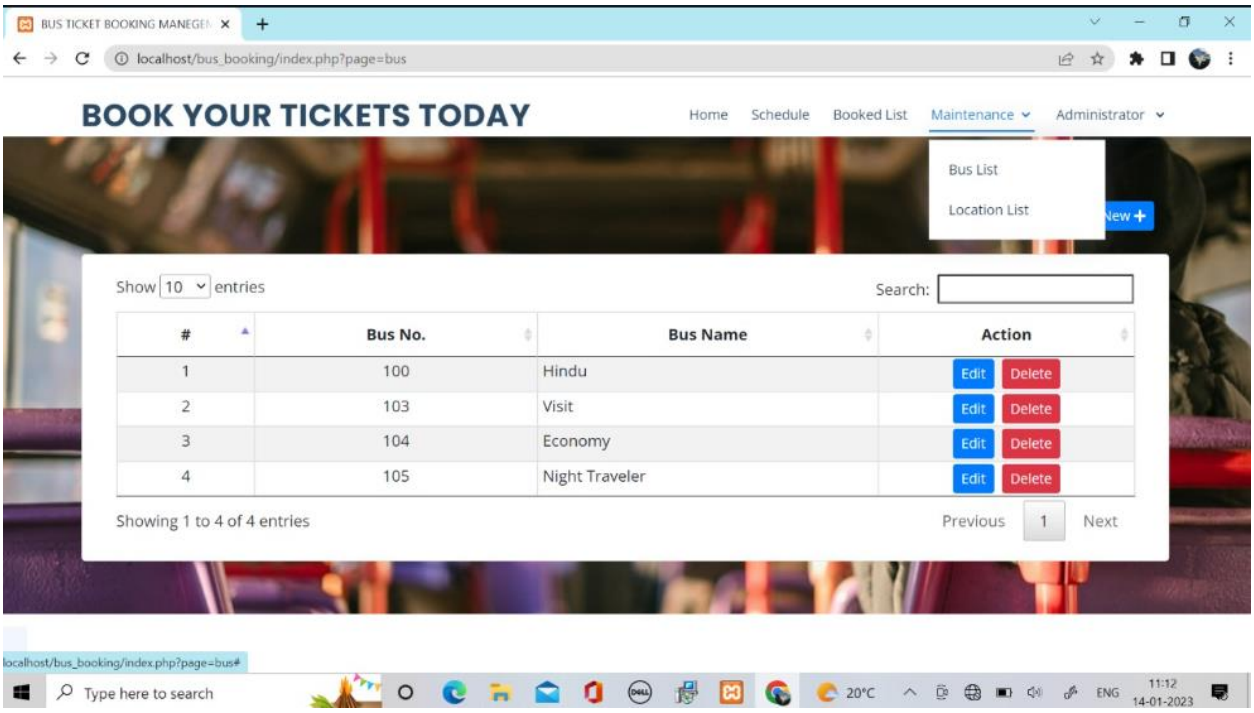
Home page:



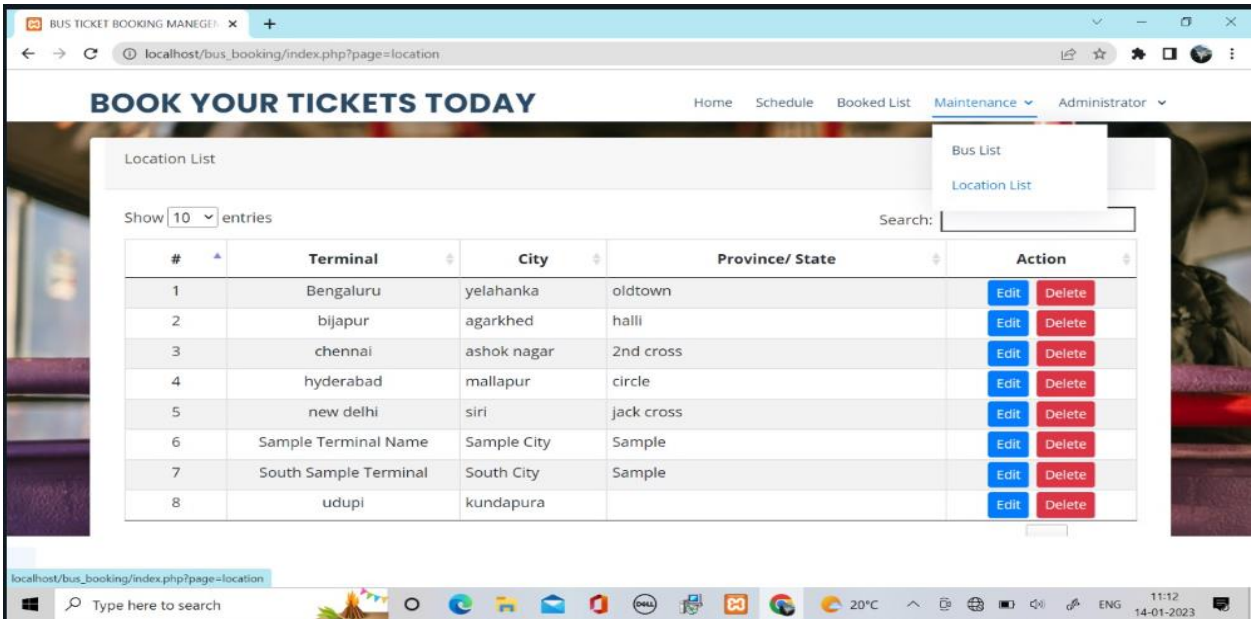
Administrator:



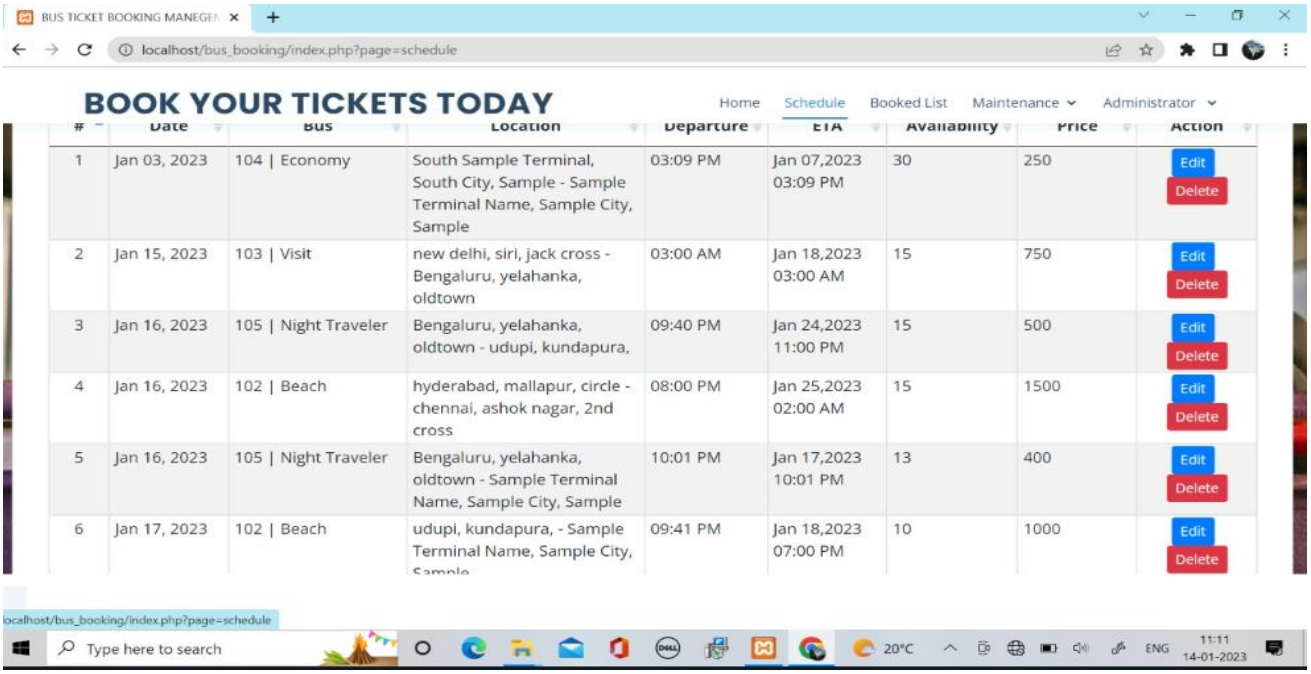
Bus list:



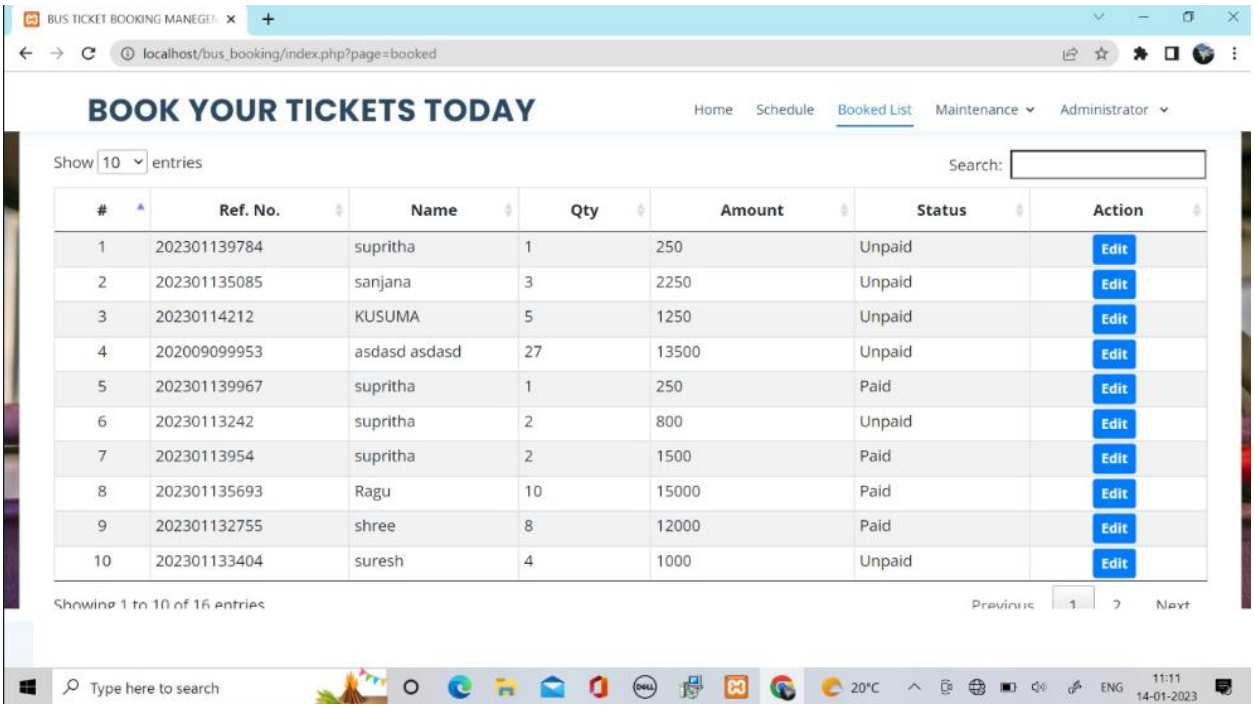
Location list:

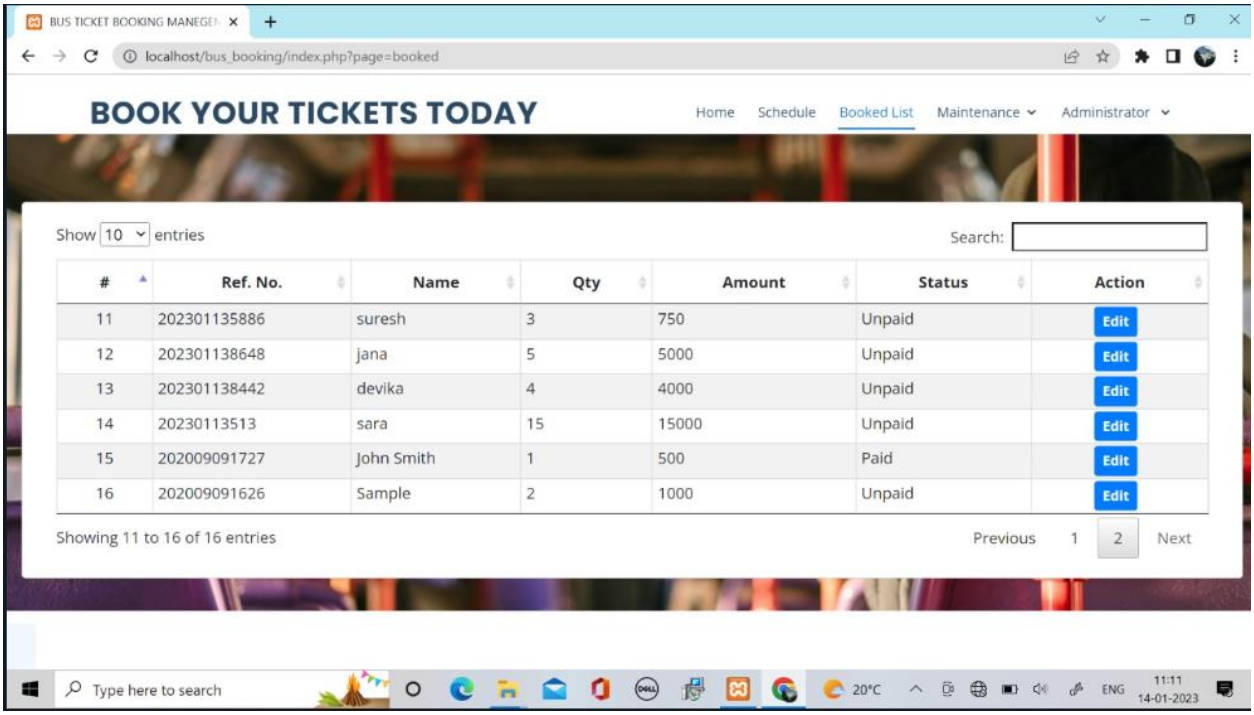


Schedule list:

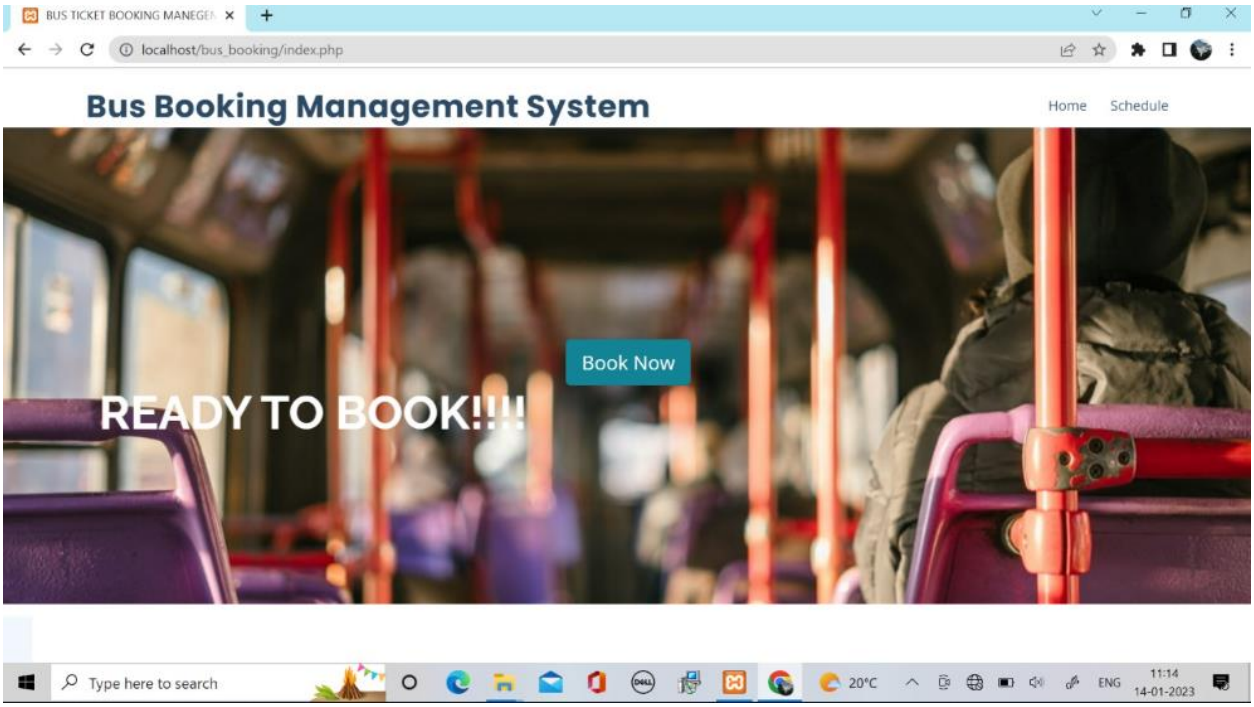


Booked seats:

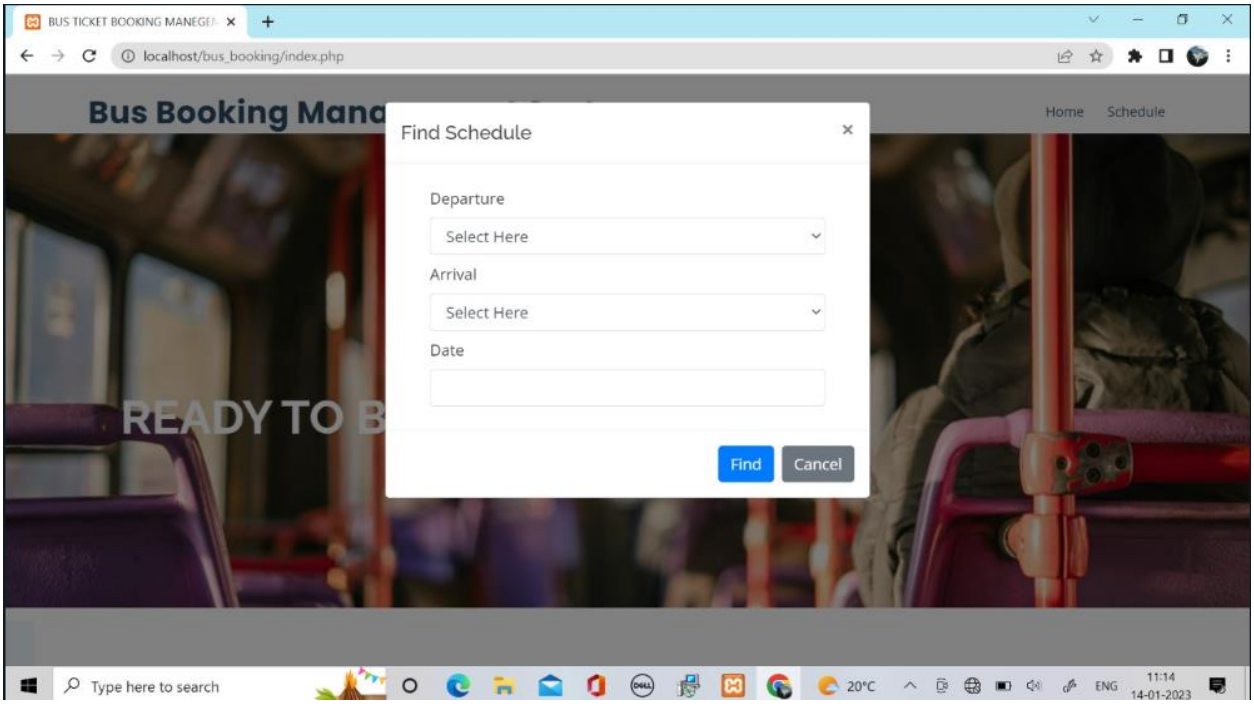




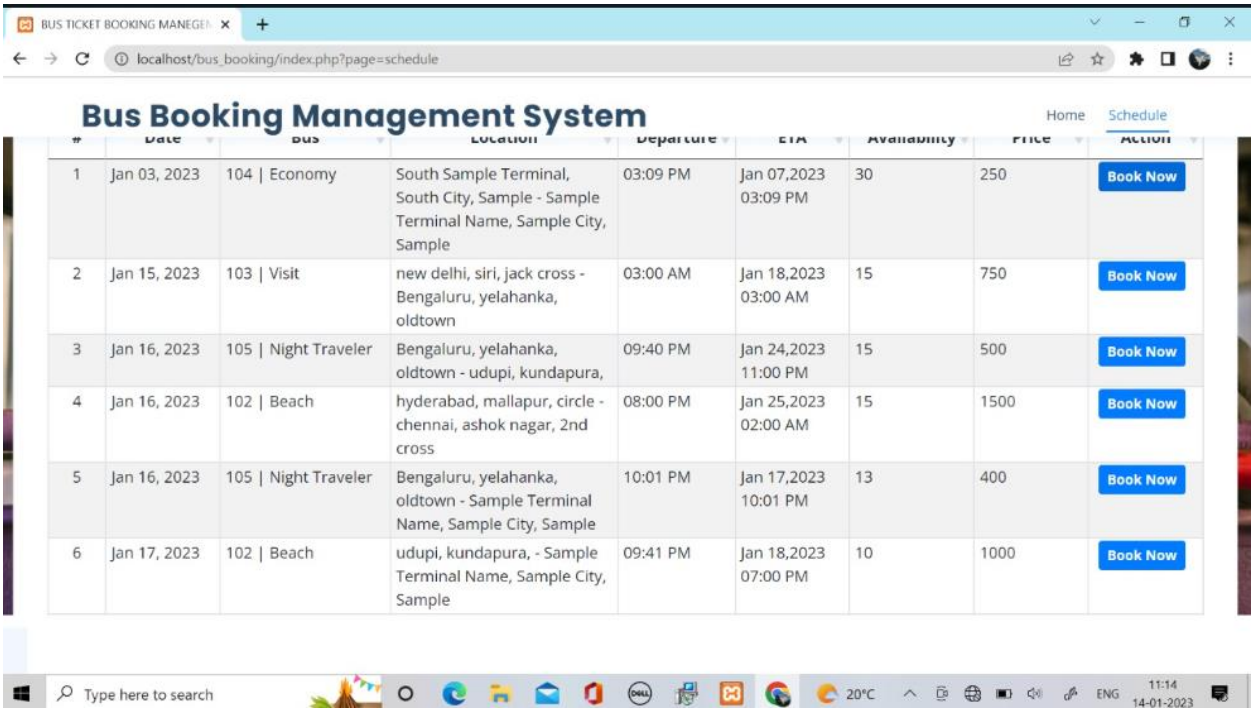
USERS HOME PAGE:



Booking:

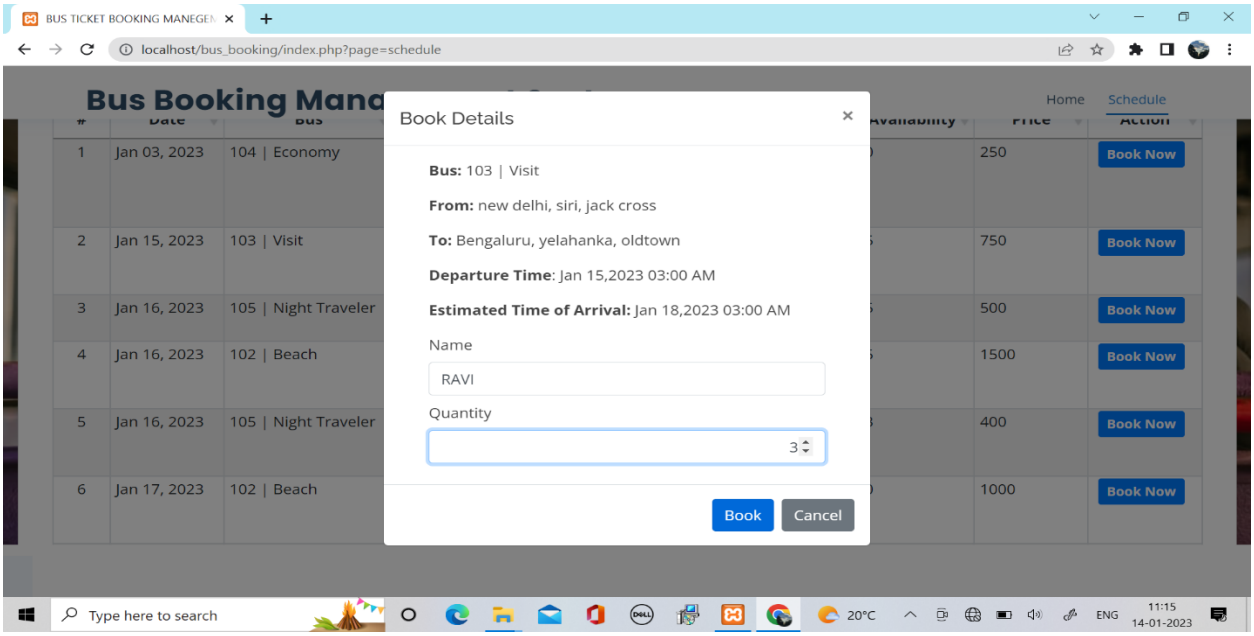


Schedule:

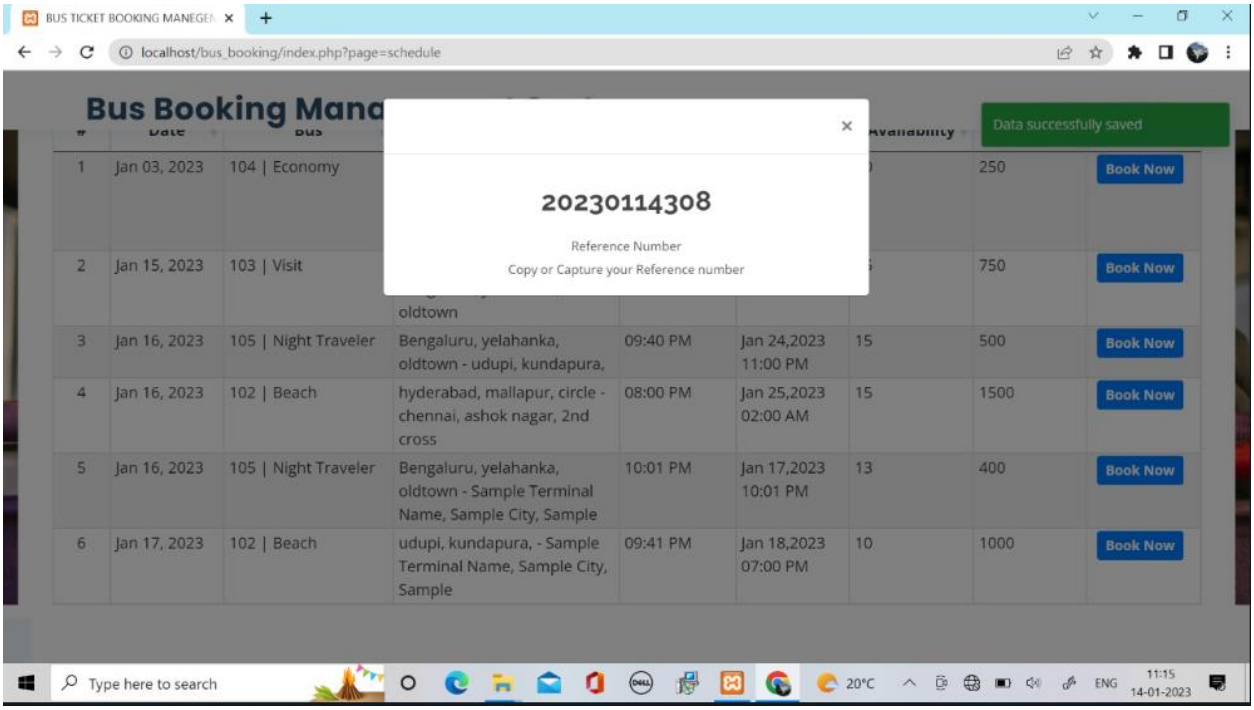


#	Date	Bus	Location	Departure	ETA	Availability	Price	Action
1	Jan 03, 2023	104 | Economy	South Sample Terminal, South City, Sample - Sample Terminal Name, Sample City, Sample	03:09 PM	Jan 07,2023 03:09 PM	30	250	Book Now
2	Jan 15, 2023	103 | Visit	new delhi, siri, jack cross - Bengaluru, yelahanka, oldtown	03:00 AM	Jan 18,2023 03:00 AM	15	750	Book Now
3	Jan 16, 2023	105 | Night Traveler	Bengaluru, yelahanka, oldtown - udupi, kundapura,	09:40 PM	Jan 24,2023 11:00 PM	15	500	Book Now
4	Jan 16, 2023	102 | Beach	hyderabad, mallapur, circle - chennai, ashok nagar, 2nd cross	08:00 PM	Jan 25,2023 02:00 AM	15	1500	Book Now
5	Jan 16, 2023	105 | Night Traveler	Bengaluru, yelahanka, oldtown - Sample Terminal Name, Sample City, Sample	10:01 PM	Jan 17,2023 10:01 PM	13	400	Book Now
6	Jan 17, 2023	102 | Beach	udupi, kundapura, - Sample Terminal Name, Sample City, Sample	09:41 PM	Jan 18,2023 07:00 PM	10	1000	Book Now

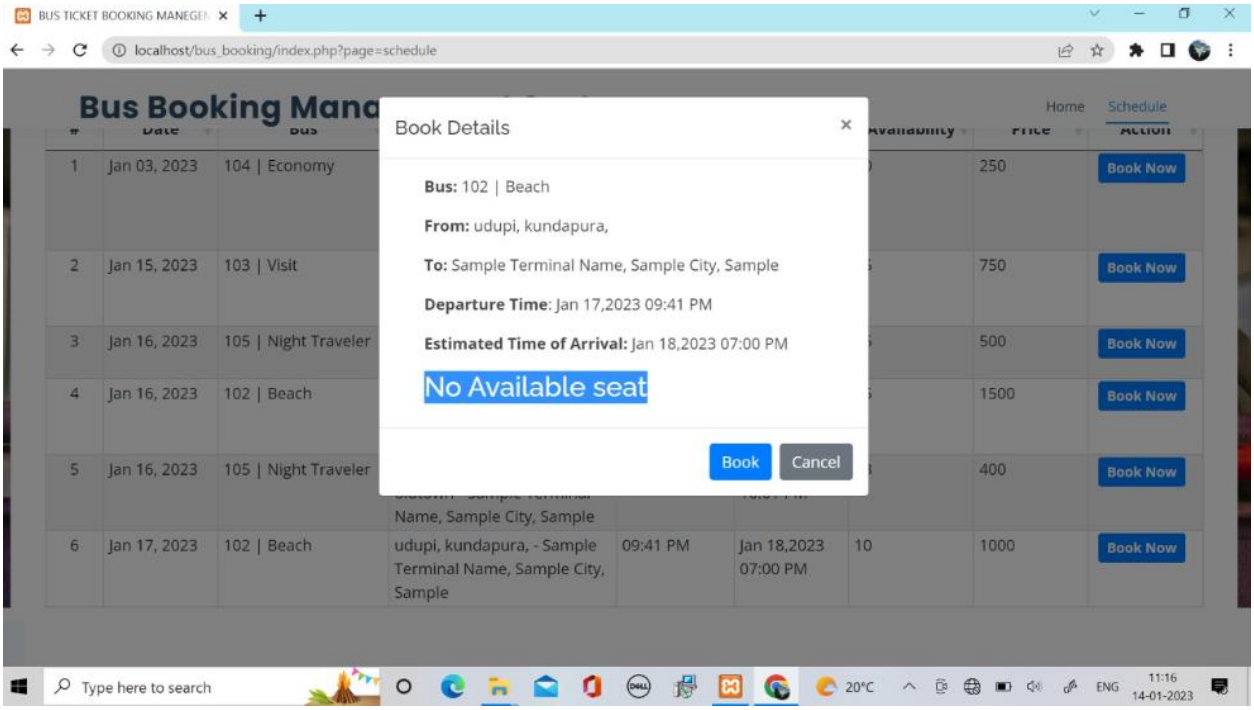
Booking details:



Booked:



If no seats:


BUS TICKET BOOKING MANEGEM
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Bus Booking Mana
Home
Schedule
Book Details
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From: udupi, kundapura,
To: Sample Terminal Name, Sample City, Sample
Departure Time: Jan 17,2023 09:41 PM
Estimated Time of Arrival: Jan 18,2023 07:00 PM
No Available seat
Book
Cancel
1 Jan 03, 2023 104 | Economy 250 Book Now
2 Jan 15, 2023 103 | Visit 750 Book Now
3 Jan 16, 2023 105 | Night Traveler 500 Book Now
4 Jan 16, 2023 102 | Beach 1500 Book Now
5 Jan 16, 2023 105 | Night Traveler Name, Sample City, Sample 400 Book Now
6 Jan 17, 2023 102 | Beach udupi, kundapura, - Sample Terminal Name, Sample City, Sample 09:41 PM Jan 18,2023 07:00 PM 10 1000 Book Now
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TESTING

System testing is a series of different test whose primary purpose is to fully exercise computer based system. We can say that it will run according to its specifications and in the way users expect. Special test data are input for processing, and the results examined. A limited number of users may be allowed to use the system so that analyst can see whether they try to use it in unforeseen ways. It is desirable to discover any surprises before the organization implements the system and depends on it.

- We follow Black Box testing.
- Black box testing attempts to find errors in following
- Incorrect or missing function
- Interface errors
- Errors in data structure
- Initialization and termination errors

CONCLUSIONS

ONLINE BUS RESERVATION MANAGEMENT SYSTEM is a web-based application. Which has high integrity to change the current problems and system failure. It's going to be the need and optimum option for comfortable travel experience in future. Also, the same system with some basic and minute changes in programming and interface can be implemented for metros and railways also. From our project experience we have experienced that computerized system id more helpful rather than standing in queue for bookings. It helped us to get in depth knowledge about how system is planned, organized and managed. It's not everyone's cup of tea to manage such a huge transportation system so, by implementing ONLINE BUS RESERVATION MANAGEMENT SYSTEM things are going to get much better.

BIBLIOGRAPHY

- It has been a matter of immense pleasure, honor and challenge to have this opportunity to take up this project and complete it successfully. We have obtained information from various resources to design and implement our project. We have acquired most of the knowledge from the Internet.

REFERENCES

1. SQL Course On Solo Learn
2. Database System Models, Languages, Design And Application Programming, Ramazelemasri And Hamkant B. Navathe, 7th Edition,2017,Pearson.

The following are some of the resources:

- www.w3schools.com
- www.tutorialspoint.com