1. Introduction

Airline reservation systems were first introduced in the last 1950s as relatively simple standalone systems to control flight inventory, maintain flight schedules, seat assignments and aircraft loading. The modern airline reservation system is comprehensive suite of products to provide a system that assists with a variety of airline management tasks and service customer needs from time of initial reservation through completion of the flight.

One of the most common modes of travel is travelling by air. Customers who wish to travel by air nowadays have a wide variety of airlines and a range of timings to choose from. Nowadays competition is so fierce between airlines that there are lot of discounts and a lot of luxuries given to customer that will give an edge to that particular airline. The World Wide Web has become tremendously popular over the last four years, and currently most of the airlines have made provision for online reservation of their flights. The Internet has become a major resource for people looking for making reservations online without the hassle of meeting travel agents. My project intends to serve these purposes. It intends to check all the available airline databases and return a string of results, which can help them in their travel plans.

The objective of this project is to create an airline reservation system where a traveler can request all flight information as per their journey dates. They can get information regarding time, cost and other all at the same time and place. When the customer calls the Counter Assistant for his/her travel needs, the counter assistant will enter the customer's details (flight requirements) in the system. The system displays all the available airlines, schedules and prices. This system displays all the available airlines, schedules and prices. This system would help the airline to better serve its customers by catering to their needs. The site would use a Database to hold this information as well as the latest pricing and availability information for the airlines.

2. System Analysis

2.1 Literature survey

The effectiveness of the system depends on the way in which the data is organized. In the existing system, much of the data is entered manually it can be very time consuming. When records are accessed frequently, managing such records becomes difficult. Therefore organizing data becomes difficult. The major limitations are:

- Modifications are complicated.
- Much time consuming.
- Error prone.
- Unauthorized access of data.

The primary purpose of the new system is to speed up the transactions. User friendliness is another peculiarity of the proposed system. Messages are displayed in message boxes to make the system user friendly. The advantage of this system is the reduction in labor as it will be possible so search the details of various places. Every record is checked for completeness and accuracy and then it is entered into the database. The comments and valid messages are provided to get away redundant data.

2.2 Proposed System

2.2.1 Scope of the project

Airline Reservation System is one the modification that were carried out in the broadened.

This is basically an interface of global distribution system to carry out reservations on the desired airline from any place. Airline reservation system make the life of passengers very as they don't need to stand in queues for getting their seats reserved and they can easily make reservations on any airline just from a single system. On the other hand, it also removed an extra burden from the Airline Department as most of the passengers and travel agencies use this service instead of making reservations from the counters.

2.2.2 Aim of the project

This database is to create an airline reservation system where a traveler can request all flight information as per their journey dates. They can get information regarding time, cost and other all at the same time and place. The objective of this project is to implement the airline reservation system to the best satisfaction of the customer. The normal process which was followed until recently was too manually fill the data and process the data which used to cause a lot of inconvenience to both the administrator and the customer as well.

Now, we would like to use databases to facilitate this process of smooth reservation of airline tickets with minimal work on the part of both the customer and administrators involved.

3. Requirement Specification

Requirement specification plays an important role to create quality software solution; requirements are refined and analyzed to assess the clarity.

Requirements are represented in manner that ultimately leads to successful software implementation. Each requirement must be consistent with overall objective.

3.1 System Requirements:

These are the necessary specifications of computer must have in order to use the software or hardware. Here we would be explaining hardware and software requirements.

3.1.1. Hardware Configuration:

RAM : 1 GB and above

Hard Disk: 60 GB and above

3.1.2. Software Configuration:

Operating System: Windows

Front end : PHP

Back end : My SQL

Server : XAMPP/WAMP

Editor : Notepad, Notepad++

3.2 DEVELOPMENT ENVIRONMENT

Design Features

Open Source: PHP is freely available for use. The community of open source PHP developers provides technical support and is constantly improving updating the core PHP functionalities. PHP is available at free of cost under PHP General Public License and most of its associative required software's like MySQL, Text Editors and Apache Server are also freely available, so it proves very cost effective for the developers.

Cross-Platform:

PHP provides high compatibility with leading operating systems and web servers such as thereby enabling it to be easily deployed across several different platforms .PHP scripts can run across operating systems such as Linux, Windows, Solaris, OpenBSD, Mac OSX etc and also provide support for all major web servers such as Apache, IIS, iPlanet etc.

Power:

Several web tasks can now be easily perform using PHP. For example now we can develop from small websites to giant business and organizational websites, informative forums, chatting platforms, CRM solutions, e-commerce shopping carts, community websites, e-business, shopping carts and gigantic database driven sites.

User Friendly:

Designed in a user friendly manner, PHP gives more flexibility than C, C++ and ASP and overall helps in increasing traffic to the site.

Quick:

PHP is designed to work well with the web, and so things like accessing the GET and POST and working with HTML and URLs are built-ins in the PHP language. This makes it really concise and straightforward to make a website.

Extensions:

Being an open source language, a large number of libraries and extensions, to extend its core functionalities, are available for download. The source code of PHP can be modified to include custom created extensions and components thereby increasing its extensibility.

Easy Deployment:

There are many hosting companies that will, for a few dollars a month, give you a server running PHP so you can make a website really easily.

Automatically Refreshes:

Nowadays developing dynamic websites are in the huge demand due to its specific characteristics like it automatically refreshes and does not need to mak much changes manually.

Community Support:

A huge advantage that PHP offers is its community. If you are looking for a particular script, chances are another user has already created something similar. Check within the PHP community for availability. Likewise, if you have created a function that others might enjoy, be sure to post the code for others.

Other Tools:

If you need to access other web based tools like Google maps (which is always advisable for a business website), or any other, PHP makes it easy to access.

Talent Availability:

You can hire PHP programmers more easily than any other language programmers since so many people know the language.

INTRODUCTION TO MYSQL

Mysql is a powerful database. It's very good and free of change. Many developers in the world selected Mysql and php for developing their website.

The Mysql database has become the world's most popular open source database because of its consistent fast performance, high reliability and ease of use. It's used in more than 6 million installations ranging from large corporations to specialized embedded applications on every continent in the world.

Not only is Mysql the world's most popular open source database, it's also become the database of choice for a new generation of applications built on the LAMP stack(Linux, Apache, Mysql, php / Perl / python.) Mysql runs on more than 20 platforms including Linux, Window, OS/X, HP-UX, AIX, Netware, giving you the kind of flexibility that puts you in control.

Whether you're new to database technology or an experienced developer or DBA, Mysql offers a comprehensive range of certified software, support, training and consulting to make you successful .MYSQL is a free, widely used SQL engine. It can be used as a fast database as well as a rock-solid DBMS using modular engine architecture.

MYSQL Language

DDL (Data Definition Language) refers to the CREATE, ALTER and DROP statements.

DDL allows adding / modifying / deleting the logical structures which contain the data or which allow users to access / maintains the data (databases, tables, keys, views...). DDL is about "metadata".

DCL is used to grant / revoke permissions on databases and their contents. DCL is simple, but MYSQL's permissions are rather complex. DCL is about security.

Mysql Homepage

1. Scalability and Flexibility

The Mysql database server provides the ultimate in scalability, sporting the capacity to handle deeply embedded applications with a footprint of only 1MB to running massive data warehouses holding terabytes of information.

2. High Performance

A unique storage-engine architecture allows database professional to configure the Mysql database server specifically for particular applications, with the end result being amazing performance results.

3. High Availability

Rock-solid reliability and constant availability are hallmarks of Mysql, with customers relying on Mysql to guarantee around-the-clock uptime.

4. Robust Transactional Support

Mysql offers one of the most powerful transactional database engines on the market. Features include complete ACID (atomic, consistent, isolated, durable) transaction support, unlimited row-level locking, distributed transaction capability, and multi-version transaction support where readers never block writers and vice-versa.

5. Web and Data Warehouse Strengths

Mysql is the de-facto standard for high-traffic website because of its high-performance query engine, tremendously fast data inserts capability, and strong support for specialized web functions like fast full text searches.

6. Strong Data Protection

Because guarding the data assets of corporations is the number one job of database professionals, Mysql offers exceptional security features that ensure absolute data protection.

7. Comprehensive Application Development

One of the reasons Mysql is the world's most popular open source database is that it provides comprehensive support for every application development need.

8. Management Ease

This rule holds true whether the platform is Microsoft Windows, Linux, or UNIX. Once installed, Self-management features like automatic space expansion, auto-restart, and dynamic configuration changes take much of the burden off already overworked database administrators.

XAMPP

XAMPP is free open source software that provides an easy way for web designers and developers to install the necessary components to run PHP based software like WordPress, Drupal, Joomla, and others on Windows, Mac OS X, and Linux.

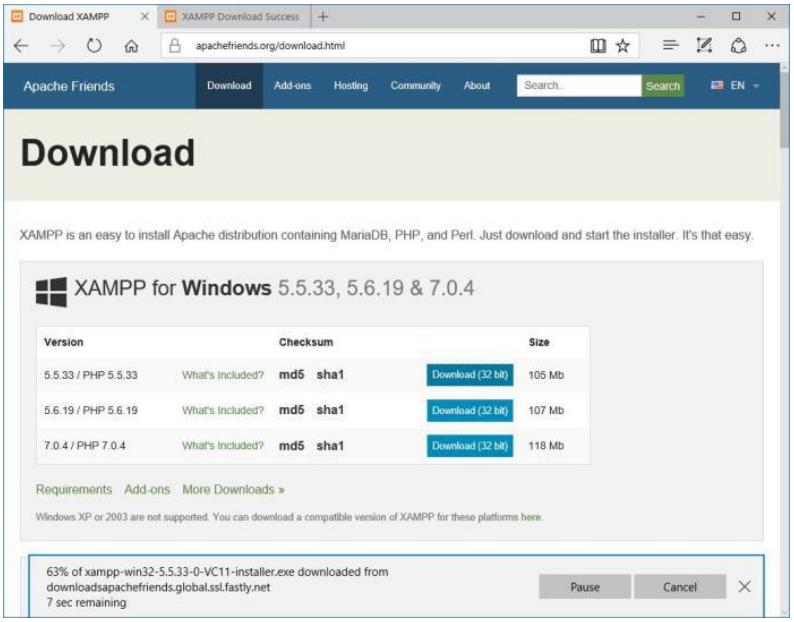
If you're a web developer, designer, or a person trying to get into blogging, XAMPP will save you time and frustration having to manually install and configure Apache, MySQL, PHP, and Perl on your computer to create a test environment.

How to install XAMPP on Windows

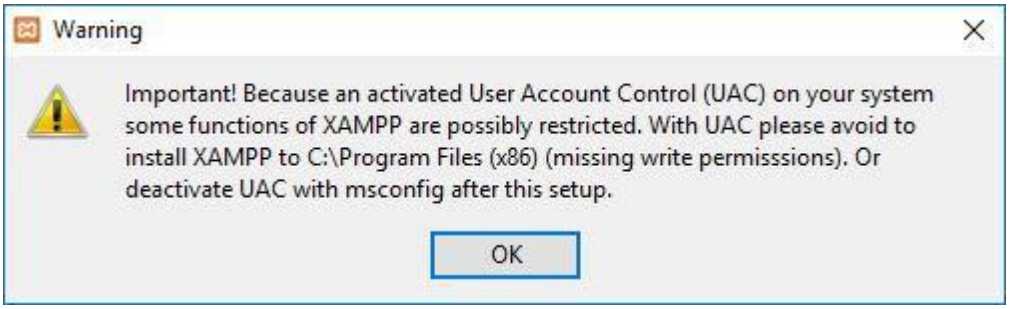
1. Download XAMPP from Apache Friends.

If you have special version requirements for PHP, then download the version you're required to install. If you don't have a version requirement, then download the oldest version, as it may help you to avoid issues trying to install a PHP based software.

1. Double-click the file to run the installer.

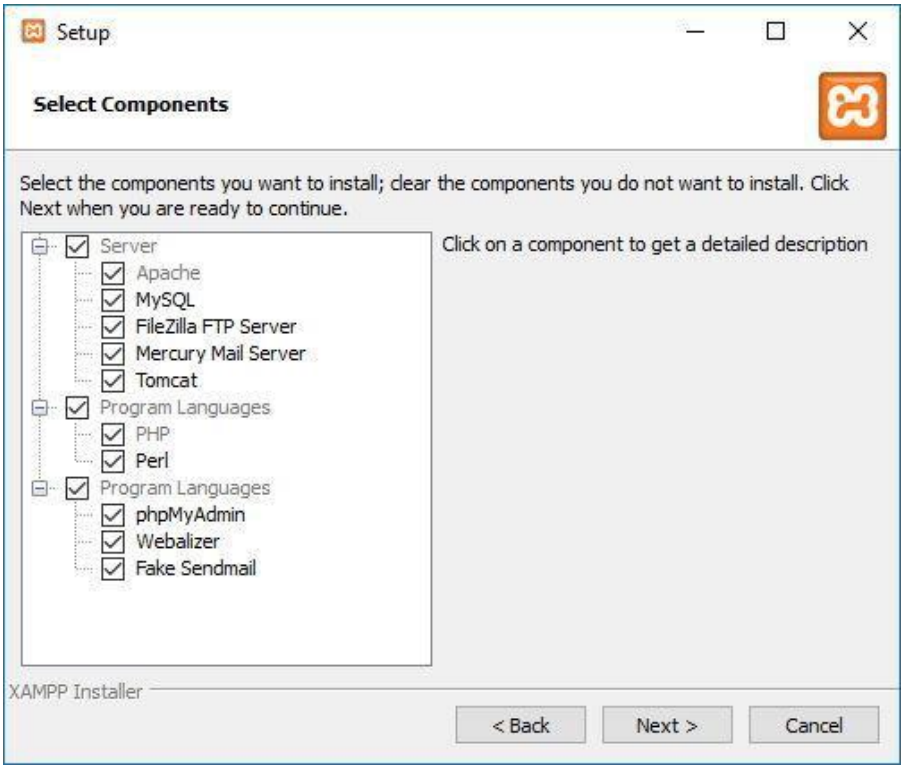


2. Click **OK** on the warning to continue.



2. Click **Next**.

3. XAMPP offers a variety of components that you can install, such as MySQL, phpMyAdmin, PHP, Apache, and more. For the most part, you will be using most of these components, as such it's recommended to leave the default options and click **Next**.



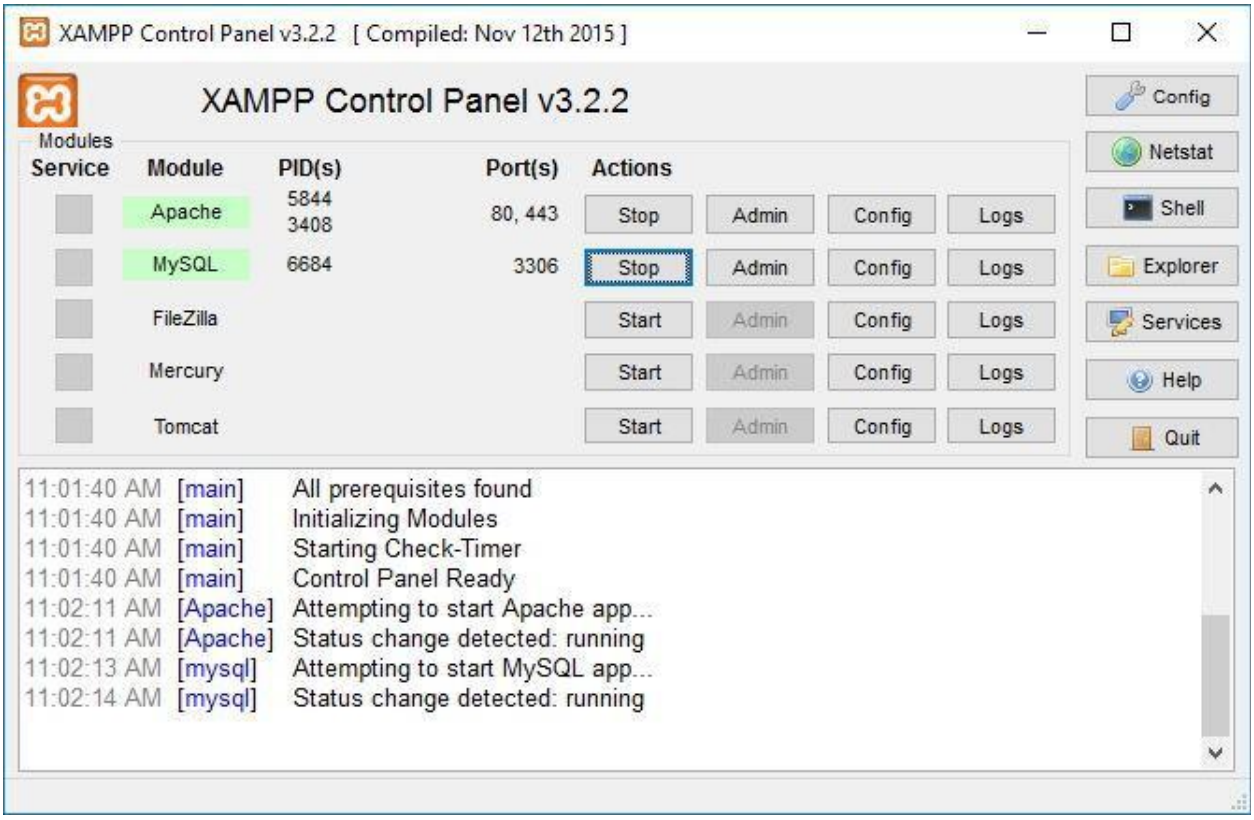
4. Uncheck the **Learn more about Bitnami for XAMPP** and click **Next**.

6. Leave the default install location settings or choose another folder to install the software, and click **Next** to begin the installation.

7. During the installation Windows will prompt you to allow certain services to communicate through the firewall. Click **Allow access** through the firewall for private.

8. Click **Finish** to complete the installation and to start using XAMPP Control Panel.

9. Choose your language (English or German), and click **Save** to complete and open XAMPP Control Panel.

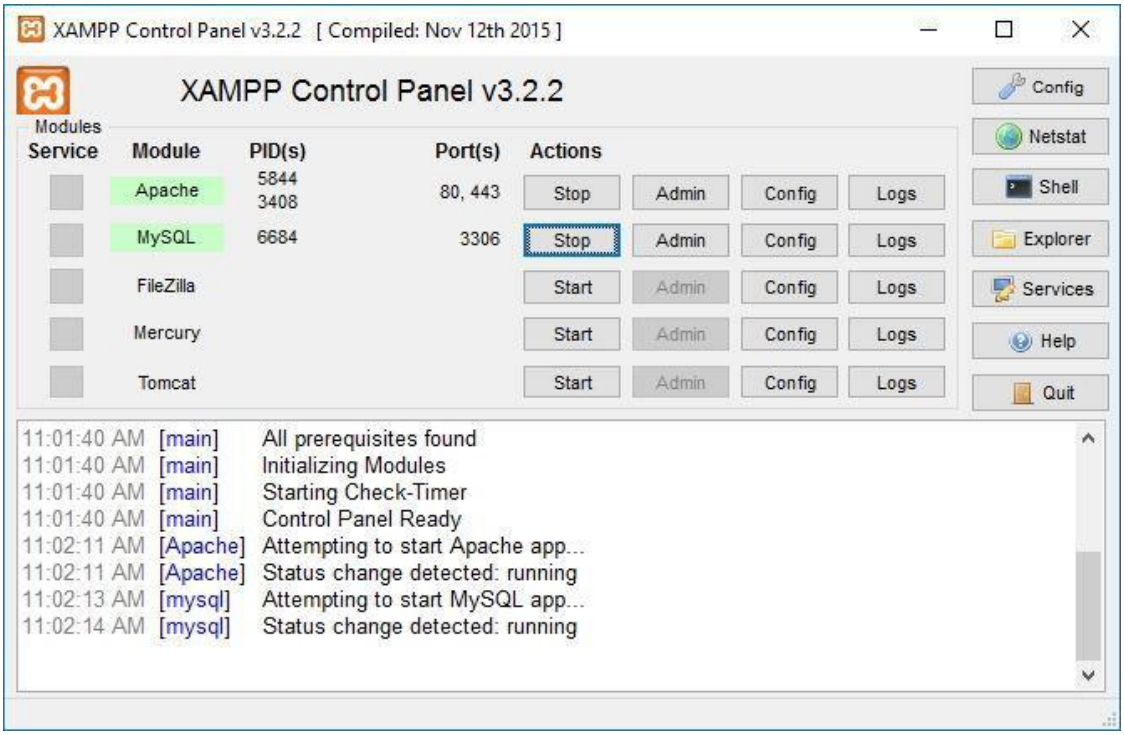


How to configure XAMPP on Windows 10

The XAMPP Control Panel includes three main sections. In **Modules**, you will find all the services available. You can run each service by clicking the Start button.

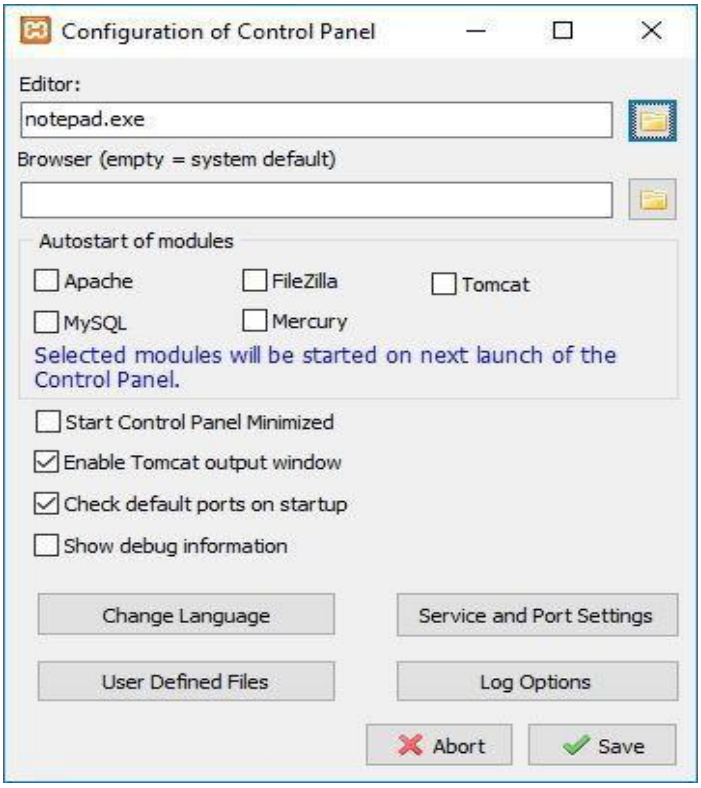
When you start some of the services, including Apache and MySQL, on the right side, you will also see the process ID number and TCP/IP port numbers each service is using. For example, by default **Apache uses TCP/IP port 80 and 443**, while **MySQL uses TCP/IP port 3306**.

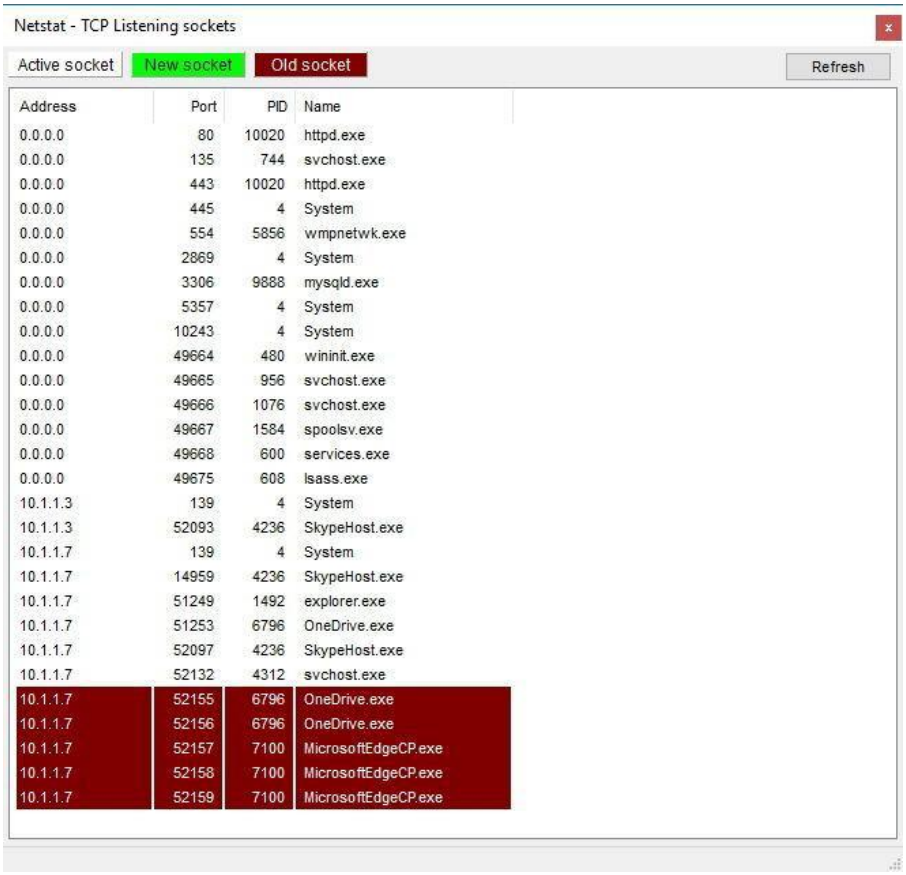
You can also click the **Admin** button to get access to the administration dashboard for each service and verify that everything is working correctly.



On the right side have a list of buttons to configure various aspects of the control panel, including **Config** to configure which modules will automatically want to start when you launch XAMPP. k

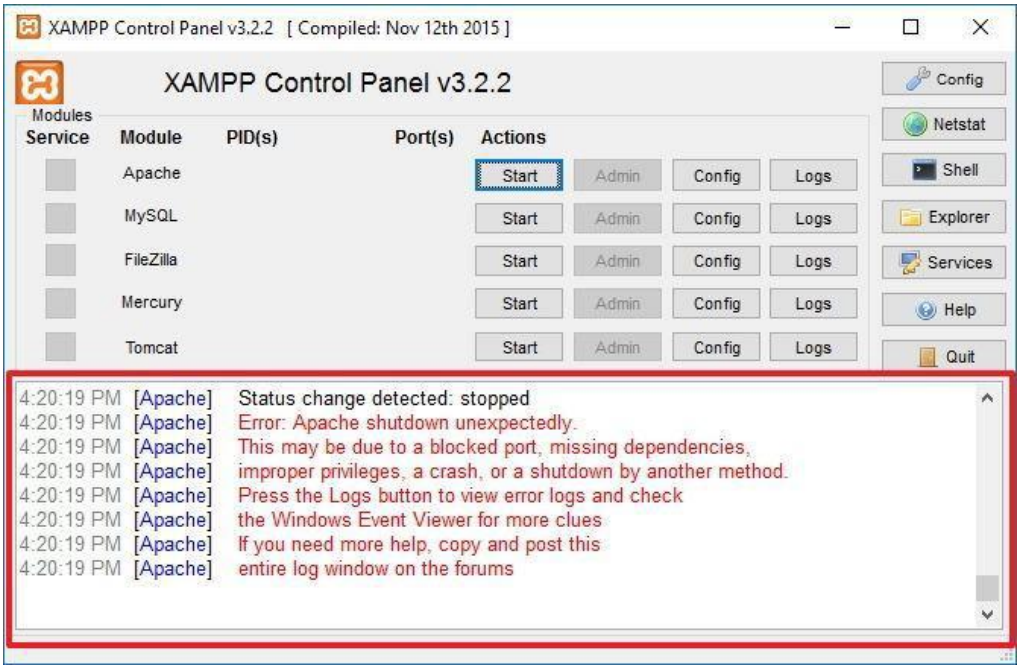
Netstart will give you a list of services currently accessing the network, process ID and TCP/IP port information.


Configuration of Control Panel
Editor:
notepad.exe
Browser (empty = system default)
Autostart of modules
Apache
FileZilla
Tomcat
MySQL
Mercury
Selected modules will be started on next launch of the Control Panel.
Start Control Panel Minimized
Enable Tomcat output window
Check default ports on startup
Show debug information
Change Language
Service and Port Settings
User Defined Files
Log Options
Abort
Save


Netstat - TCP Listening sockets
Active socket
New socket
Old socket
Refresh
Address Port PID Name
0.0.0.0 80 10020 httpd.exe
0.0.0.0 135 744 svchost.exe
0.0.0.0 443 10020 httpd.exe
0.0.0.0 445 4 System
0.0.0.0 554 5856 wmpnetwk.exe
0.0.0.0 2869 4 System
0.0.0.0 3306 9888 mysqld.exe
0.0.0.0 5357 4 System
0.0.0.0 10243 4 System
0.0.0.0 49664 480 wininit.exe
0.0.0.0 49665 956 svchost.exe
0.0.0.0 49666 1076 svchost.exe
0.0.0.0 49667 1584 spoolsv.exe
0.0.0.0 49668 600 services.exe
0.0.0.0 49675 608 lsass.exe
10.1.1.3 139 4 System
10.1.1.3 52093 4236 SkypeHost.exe
10.1.1.7 139 4 System
10.1.1.7 14959 4236 SkypeHost.exe
10.1.1.7 51249 1492 explorer.exe
10.1.1.7 51253 6796 OneDrive.exe
10.1.1.7 52097 4236 SkypeHost.exe
10.1.1.7 52132 4312 svchost.exe
10.1.1.7 52155 6796 OneDrive.exe
10.1.1.7 52156 6796 OneDrive.exe
10.1.1.7 52157 7100 MicrosoftEdgeCP.exe
10.1.1.7 52158 7100 MicrosoftEdgeCP.exe
10.1.1.7 52159 7100 MicrosoftEdgeCP.exe

And there are also quick access buttons to open the shell command-line utility, XAMPP install folder, Services, and quick.

Lastly, you get the logs section, where you can get a glance of what happens every time you start a module or change a setting. This is also the first place to look at when something isn't working.

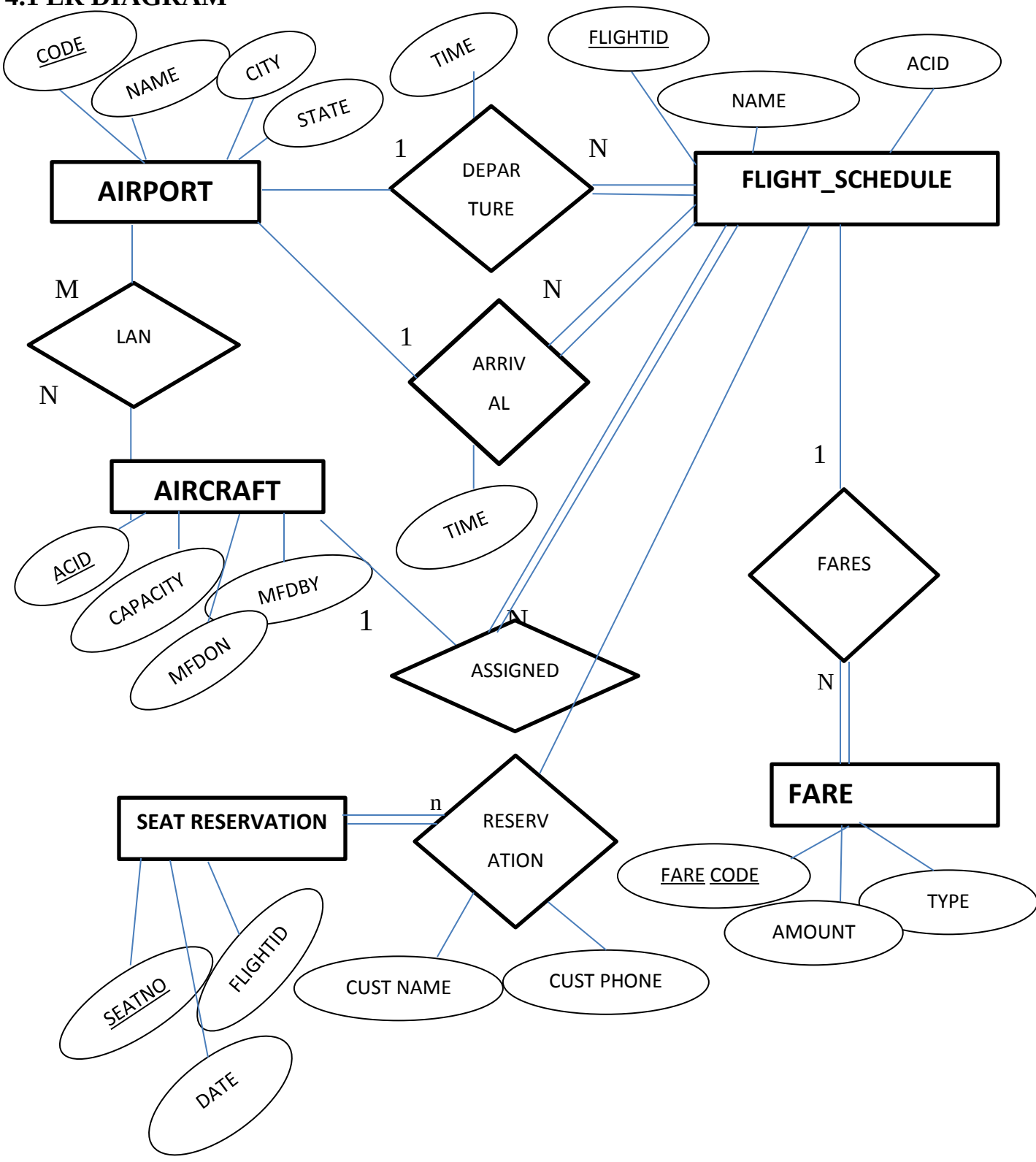


The default settings should work for most people using XAMPP to create a testing environment to run a website for personal use or a client. However, depending on your setup configuration, you may need to change the TCP/IP port number for the Apache server, the database upload size, or set the password for phpMyAdmin.

To change these settings, you'll need to use **Config** button for the corresponding service. For example, you'll need to open the **httpd.conf** file to change the settings on the Apache server, and the **my.ini** file to change the settings for MySQL.

4. System Design

4.1 ER DIAGRAM



4.2 Schema Diagram:

AIRCRAFT

Ac_id	Ac_number	Capacity	Mfd_by	Mfd_on

FLIGHT_SCHEDULE

Flight_id	Flight_name	Departure	Arrival	Flight_date	Ac_id

AIRPORT

Airport_code	Name	City	State	Flight_id

FARE

Fare_code	Amount	Type	Flight_id

SEAT_RESERVATION

Seat_no	Customer_name	Customer_phone	Flight_date	Flight_id

5. System implementation

5.1 Module Description

The following are the main modules in the Airline Reservation system.

Aircraft Module:

This module gives the aircraft information like id, aircraft number, capacity, manufactured by, manufactured on. The following table describes the aircraft module attributes and features of the attributes. Here we can see the details of the aircraft from which they have manufactured and and when they manufactured

Ac_id	Ac_number	Capacity	Mfd_by	Mfd_on

CREATE COMMAND:

```
SQL>create table aircraft(
                Ac_id varchar (4) constraint aa_id_pk Primary key,
                Ac_number varchar (10) aa_num_nn not null,
                Capacity int (11),
            .   Mfd_by varchar (15),
                Mfd_on date);
```

INSERT COMMAND:

```
SQL>insert into aircraft
        Values ('&ac_id','&ac_number','&capacity','&mfd_by','&mfd_on');
```

Flight_Schedule Module

This module gives the information about the flights like flight_id, flight_name, flight_date, depature, arrival. The following table describes the flight module attributes and

features of the attributes. In this module we can get the information about the flight date and when they arrival and departure.

Flight_id	Flight_name	Flight_date	departure	arrival	Ac_id

CREATE COMMAND:

```
Create table flight_schedule (
        Flight_id varchar (10) constraint fs_id_pk Primary key,
        Flight_name varchar (15) constraint fs_name_nn not null,
        Flight_date date,
        Departure time,
        Arrival time,
       Ac_id varchar (4) constraint fs_id_fk foreign key);
```

INSERT COMMAND:

```
Insert into flight_schedule
    values (‘&flight_id’,’&flight_name’,’&flight_date’,’&departure’,’&arrival’,’&ac_id’);
```

Airport module:

This module gives the information about the airport like Airport_code,Airport_name, city, state .The following table describes the airport module attributes and features of the attributes .From this module we can get the information about airports and the flights that are available in that airport.

Airport_code	Name	City	state	Flight_id

CREATE COMMAND:

```
Create table airport (
        Airport_code varchar (10) constraint a_code_pk primary key,
        Name varchar (30),
        City varchar (15),
```

State varchar (15),

Flight_id varchar (10) constraint a_id_fk foreign key);

INSERT COMMAND:

Insert into airport values ('&airport_code','&name','&city''&state','&flight_id');

Fare Module:

This module gives the information about the fare like fare_code, amount, type. The following table describes the fare module attributes and features of the attributes. From this customer can get the information about the amount for the type of reservation and also for places where they need to travel.

Fare_code	Amount	type	Flight_id

CREATE COMMAND:

Create table fare (

Fare_code varchar (3) fare_code_pk Primary key,

Amount int (11),

Type varchar (15),

Flight_id varchar (10) constraint fare_id_fk foreign key);

INSERT COMMAND:

Insert into fare values ('&fare_code','&amount','&type','&flight_id');

Trigger:

Triggers are stored programs, which are automatically executed or fired when some event occurs. Triggers are written to be executed in response to any of the following events. A database manipulation (DML) statement (DELETE, INSERT, or UPDATE). A database definition (DDL) statement (CREATE, ALTER, or DROPS).

Here we have applied trigger for the fare module that will automatically give the

Discount for the amount that we have entered.

Here is the trigger code:

Trigger name: discount

Table: fare

Time: before

Event: insert

Definition: Set new. Discount= (new. amount*0.02);

Definer: root@localhost

Stored procedure:

A **stored procedure** is a set of Structured Query Language (**SQL**) statements with an assigned name, which are **stored** in a relational database management system as a group, so it can be reused and shared by multiple programs.

Here we have applied stored procedure for the fare table which calculates total amount.

Here the stored procedure code in sql database:

Routine name: total

Type: procedure

Parameters

Direction: out

Name: total

Definition: select sum (amount) into total from fare

Definer: root@localhost

Seat reservation:

This module gives the information about the seats like Seat_no, Customer_name Customer_phone, flight date, flight_id. The following table describes the seat attributes and function of the attributes .Here customer can get the information about the seat reservation on which flight and date of the flight. And this gives the information about the customers.

Seat_no	Customer_name	Customer_phone	Flight_date	Flight_id

CREATE COMMAND:

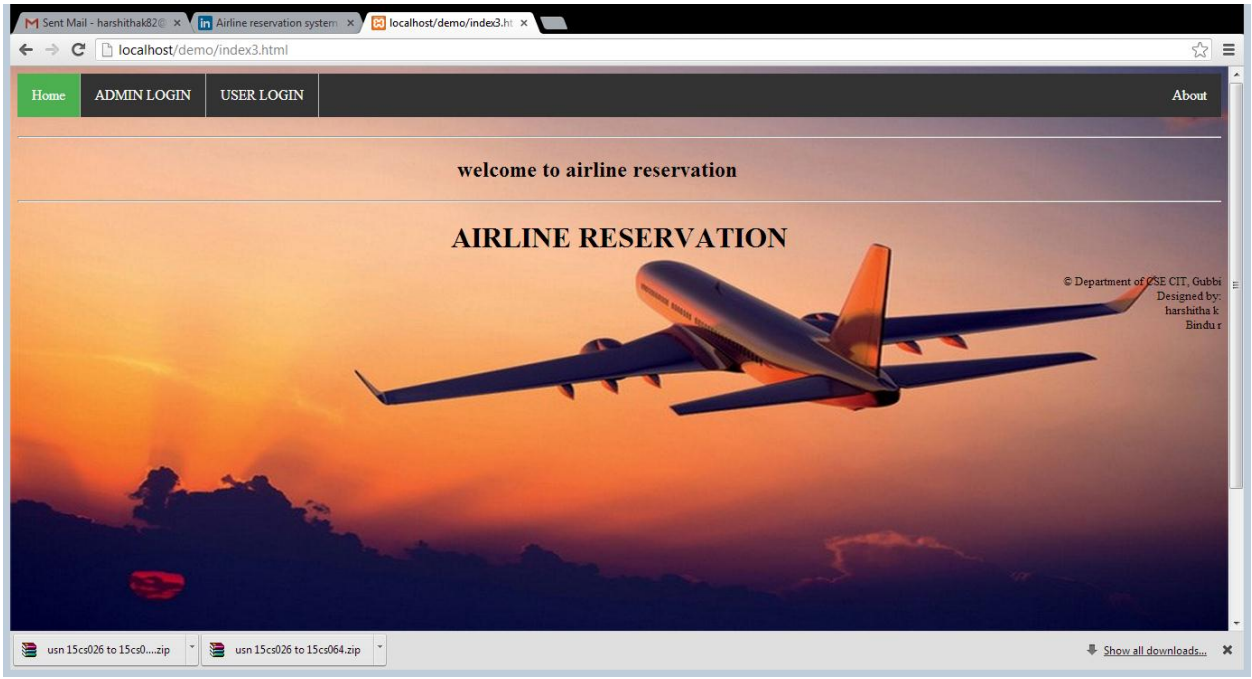
```
Create table seat reservation (
        Seat_no   int (11) constraint seat_no_pk primary key,
       Customer_name varchar (15),
       Customer_phone varchar (10),
       Flight_date date,
       Flight_id varchar 10) constraint seat_id_fk foreign key);
```

INSERT COMMAND:

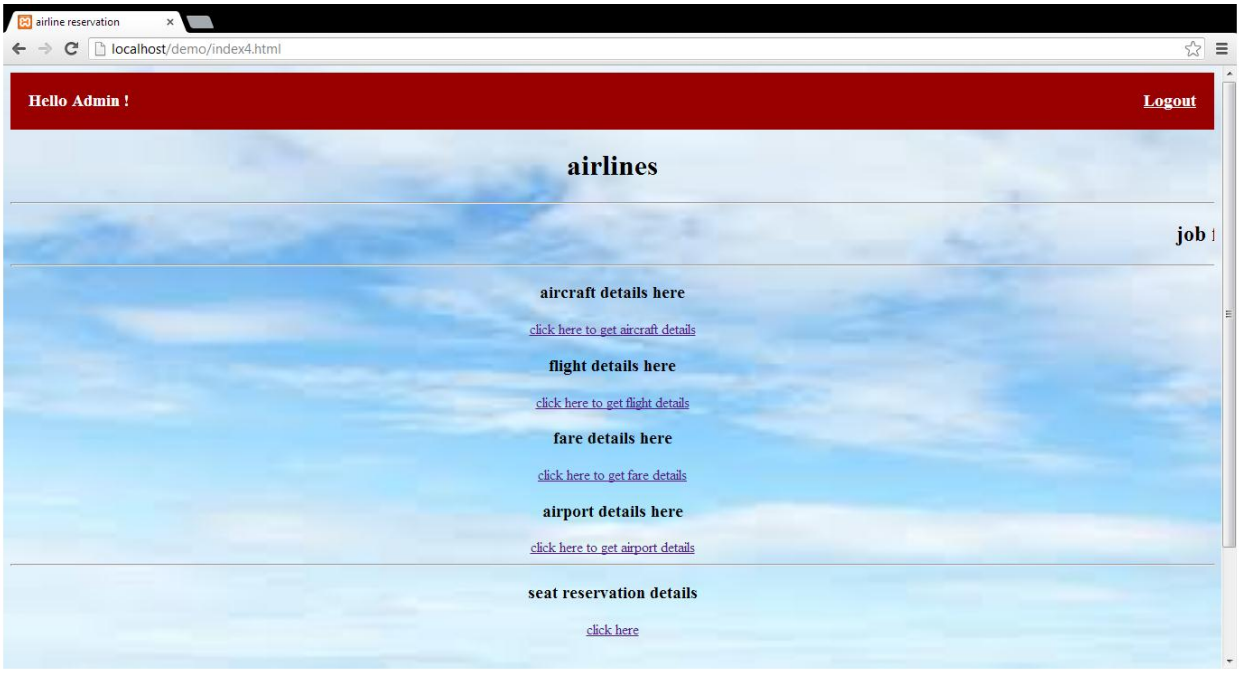
```
Insert into seat reservation
   Values (‘&seat_no’,’&customer_name’,’&customer_phone’,’&flight_date,’&flight_id’);
```

6. Sample Output Screenshots

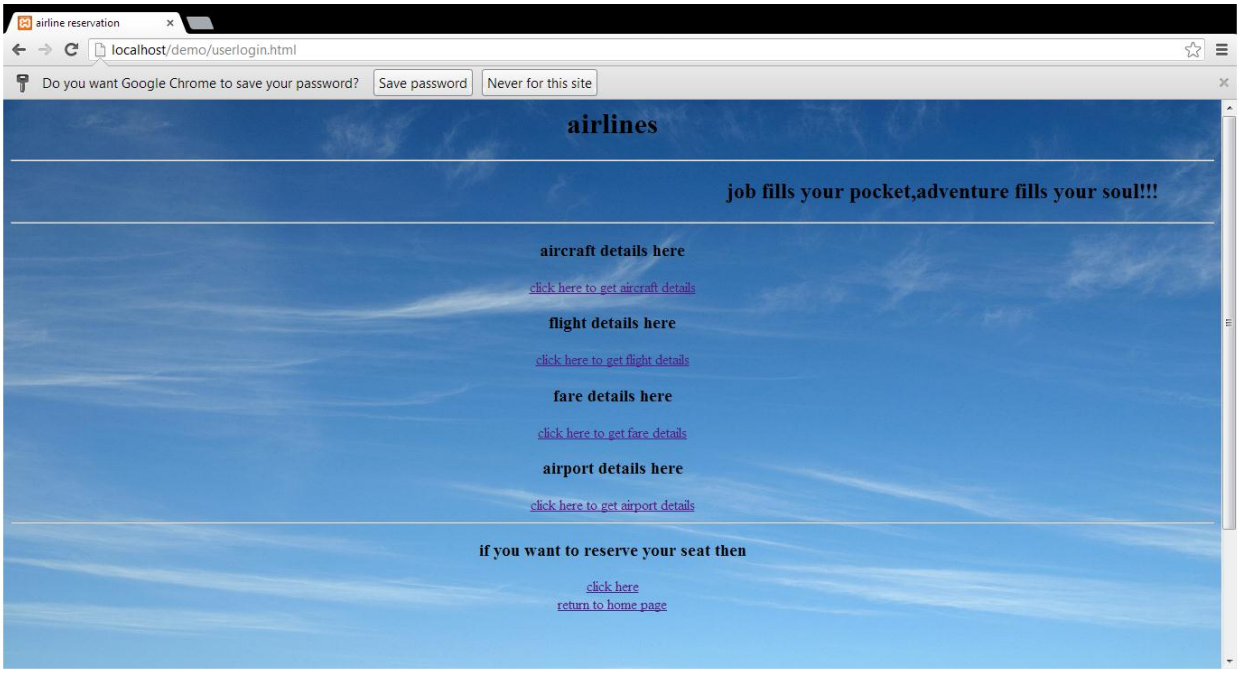
6.1 HOME PAGE



6.2 ADMIN AFTER LOGIN PAGE

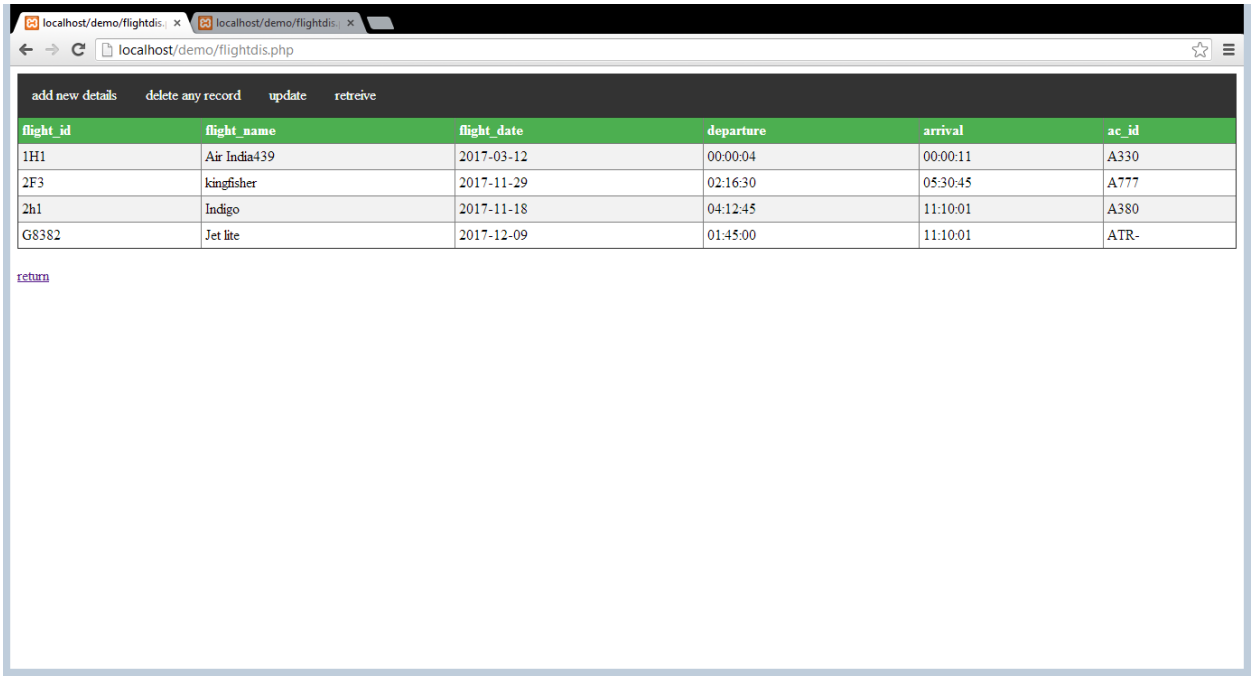


6.3 TO RESERVE SEAT PAGE

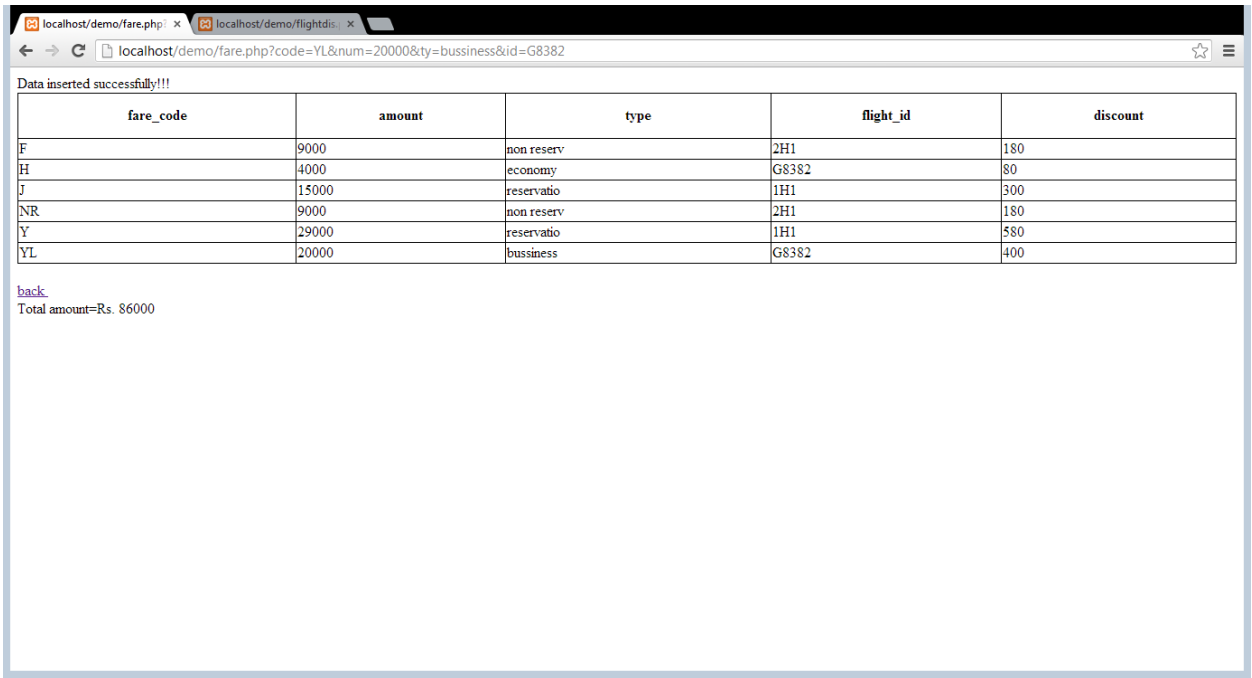


6.4 AIRCRAFT INSERT PAGE

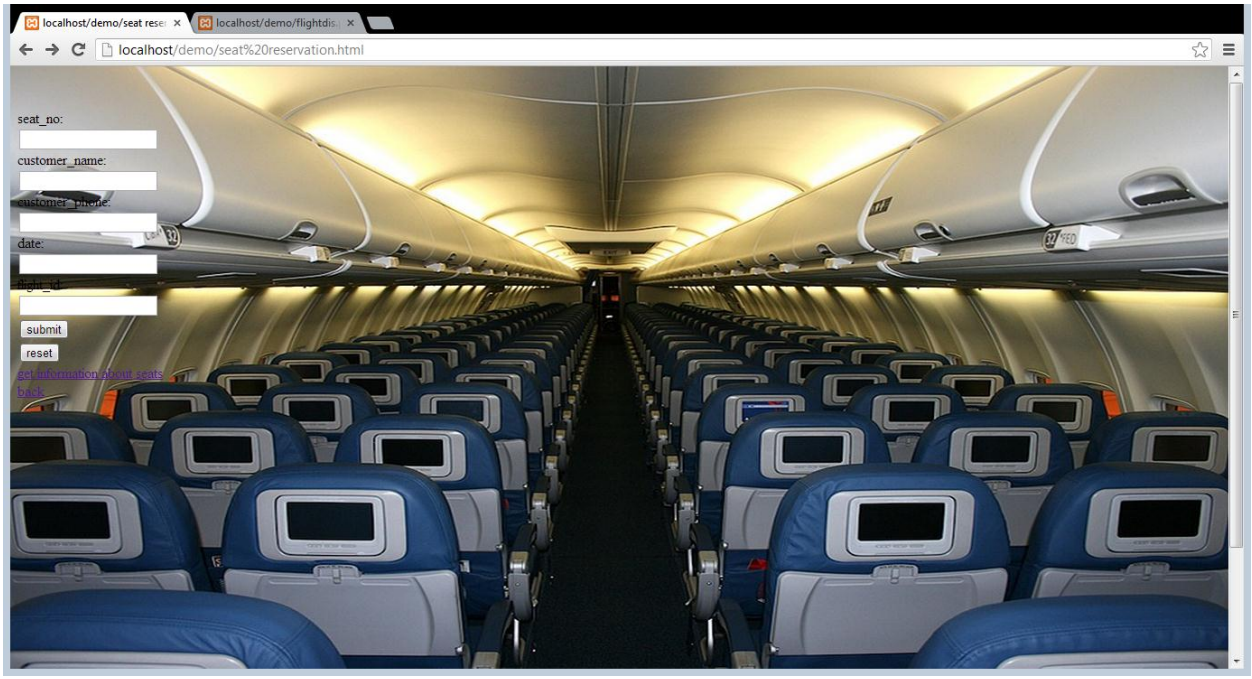
6.5 FLIGHT DETAILS PAGE



6.6 TRIGGER AND STORED PROCEDURE



6.7 SEAT RESERVATION PAGE



7. Conclusion

There was a lot of fun in making this project. This project was very useful to us as it provided us the inside view of the planning and implementation of the data base. In this project we had to think about the various options which we can provide to user. The implementation was not easy as we had to look into the minute details in order to achieve my goals. We have tried to make this project user friendly and also interactive by providing many features

We are satisfied by achieving the goals for which we had planned. A lot of experimental work can be done with this project. Looking forward for any advice which can help us to improve the project.

Airline reservation system is very helpful in collecting the record of an airlines efficiently and in less time. It requires less man power to keep the record and to update it time to time quickly. Less skilled labour is needed to maintain the database in comparison to the traditional office management.

8. Bibliography

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- ✓ www.google.com
- ✓ www.youtube.com
- ✓ www.csstutorials.net
- ✓ www.cssw3cschools.com