

Computer Science Project Synopsis

Name: John Abraham  
Class: XII  
Section: J  
Academic Year: 2021-22  
Roll No.: 27600709

Project Synopsis Grading

1. **Comments**
2. The subject has been well researched.
3. The technical writing is well structured
4. The project plan ideas are clear, and the writing is concise
5. The logical flow of the subject matter has been maintained throughout the entire report
6. All requirements required for the grading of this report have been complied with.
7. **Marks** – 5/5



Teacher’s Signature

Certificate

This is to certify that John Abraham of class XII-J has successfully completed the Computer Science project on the topic Airline Reservation Systemunder the guidance of our Computer Science teacher Mrs. Smitha John during the academic year 2021-22.



Teacher’s Signature

25 Nov 2021

Date

Acknowledgement

I would like to express my gratitude to my teacher Mrs. Smitha John who gave me a golden opportunity to do this project of Computer Science. It helped me to do things individually and taught me a lot about teamwork, MySQL, and python. Thank you for all the help, guidance, and support without which it would have been impossible to complete this project.

Index

|  |  |  |
| --- | --- | --- |
| Sr.no. | Particulars | Page |
| 1. | Title of the project | 5 |
| 2. | Background of the Project | 6-7 |
| 3. | Functions and Modules | 8-10 |
| 4. | Flow of the Project | 11-13 |
| 5. | Use of Technology | 14-19 |

Title of the Project:



Airline reservation System

Team members:

1. John Abraham
2. Hariprasad Sivakumar
3. Sri Raghav Vishwa Sreedhar

Background of the Project

Airline reservation systems (ARS) are systems that allow an airline to sell their inventory (seats). It contains information on schedules and fares and contains a database of reservations (or passenger name records) and of tickets issued (if applicable). ARSs are part of [passenger service systems](https://en.wikipedia.org/wiki/Passenger_service_system) (PSS), which are applications supporting the direct contact with the passenger.

ARS eventually evolved into the [computer reservations system](https://en.wikipedia.org/wiki/Computer_reservations_system) (CRS). A computer reservation system is used for the reservations of a particular airline and interfaces with a [global distribution system](https://en.wikipedia.org/wiki/Global_distribution_system) (GDS) which supports travel agencies and other distribution channels in making reservations for most major airlines in a single system.

Modules

**import mysql.connecter**:

By importing this package, we are able to establish the connection between SQL and Python.

**import datetime:**

This package provides basic functions for display date related values in the program.

**import random**:

This package has functionality to generate random numbers and select numbers within a range.

**import csv**:

This is used to import the complete csv module.

Functions

**connect()**:

This function establishes connection between

Python and MySQL.

**is\_connected():**  
this function checks whether the connection is established or not:

**cursor()**:

It is a special control structure that facilitates the row-by-row processing of records in the result set.

The syntax is:

<cursor object>=<connection object>.cursor()

**execute()**:

This function is use to execute the sql query and retrieve records using python.

The syntax is:

<cursor object>.execute(<sql query string>)   
  
**fetchall()**:

This function will return all the rows from the result set in the form of a tuple containing the records.

**commit()**:

This function provides changes in the database physically.

**open():**It creates a file object for file operations.

**write():**  
it writes the contents to the file in the form of string.

**read():**it reads the entire file and returns its contents in the form of a single string.

Flow of the Project

Our project is based on Airline Reservation System. The project consists of 3 primary modules:

1. Customer:
2. Account
3. Book\_Flight
4. Manage\_Booking
5. Airline\_Employee:
6. Exit
7. **Customer**
8. In the **Account**function, you have 2 options, i.e.,

* Sign Up:

The user can create a new account to access the airline reservation system by providing details of name, date of birth, email id, password for the account, and phone number.

* Log In:

The user can log into his/her existing account by providing the email id and password of the existing account.

1. In the **Book\_Flight**function,the user inputs the details such as departure airport, arrival airport, departure date, return date(if returning), no. of passengers and ticket class.  
   The system in return displays the available airlines and prices of tickets.

The user then selects the desired ticket(s) and moves on to pay for the tickets. Once the credentials are matched and the payment is received by the airlines successfully, the user receives a print of the receipt.

1. In **Manage\_Booking**function, there are 2 options:
2. Online Check-In:  
   Here, the user will be able to check-in 24hrs before the date of departure by entering the ticket number provided in the receipt.
3. Change Booking:

With this option, the user will be able to change the date of travel according to their need.

1. **Airline\_Employee**

This module enables the airline employee to cross check the information of a particular customer who has booked a ticket on a particular date by providing the date of travel as reference.

1. **Exit**

When the user has completed using the system, the user can exit the program through this module.

Use of Technology

Graphical user interface

Description automatically generated

* Python is an open-source, object-oriented, high-level programming language with dynamic semantics.
* It is one of the most popular languages at present mainly due to its beginner friendliness and it being a general-purpose language, meaning it can easily be learned by anyone and can be used to solve any type of problem.
* Despite its easy accessibility python can be used to solve complex problems and programs
* It is used for data analysis, web development, machine learning. This is just a slither of what python is capable of.
* Debugging in python is easy as well, a bug/bad input will never cause a segmentation error, it raises an exception.   
  A source-level debugger allows inspection of local and arbitrary expressions setting breakpoints, stepping through the code a line at a time.The debugger written in python itself testifies to python’s introspective power.

**HARDWARE AND SOFTWARE REQUIREMENT**

**MINIMAL SYSTEM REQUIREMENTS:**

* CPU: Intel Core i3 or similar
* RAM: 2GB
* Graphics card: Any graphics card with video memory capacity not less than 500MB.
* E.G.: GeForce 7300 GT, or Intel HD Graphics 620

**RECOMMENDED SYSTEM REQUIREMENTS**:

* CPU: Dual core Intel Core i5 or similar
* RAM: 4GB
* Graphics card: Any graphics card with video memory capacity not less than 1GB.
* E.G.: Intel HD Graphics 610, NVIDIA GeForce 930MX

Background pattern

Description automatically generated with low confidence

**About MySQL:**

**MYSQL** is an open-source relational database management system (RDBMS) that uses Structured Query Language (SQL).A [relational database](https://en.wikipedia.org/wiki/Relational_database) organizes data into one or more data tables in which data types may be related to each other; these relations help structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an [operating system](https://en.wikipedia.org/wiki/Operating_system) to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups.

**SQL** provides SQL provides many different types of commands used for different purposes such as:

* Data Definition Language (DDL): It is a set of SQL commands used to create, modify, and delete database structures but not data.
* Data Manipulation Language (DML): It deals with the manipulation of data present in the database
* Transaction Control Language (TCL): It helps the user to manage the transactions that takes place in a database
* Session Control Commands
* System Control Commands

MySQL is a freely available open-source RDBMS that uses Structured Query Language (SQL). It is downloadable from site www.mysql.orgMySQLis fast, reliable, scalable alternative to many of the commercial RDBMs available today. MySQL provides you with a rich set of features that support a secure environment for storing, maintaining, and accessing data. MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often, MySQL is used with other programs to implement applications that need relational database capability.

MySQL has received positive reviews, and reviewers noticed it "performs extremely well in the average case" and that the "developer interfaces are there, and the documentation (not to mention feedback in the real world via Web sites and the like) is very, very good".It has also been tested to be a "fast, stable and true multi-user, multi-threaded SQL database server".

**SYSTEM REQUIREMENTS FOR MYSQL**

**Operating system:**Oracle, Windows 10, Ubuntu 21.10, Mac OS 11 etc.

|  |  |  |
| --- | --- | --- |
| Minimum Hardware Requirements | | |
|  | minimum | recommended |
| **CPU** | 64-bit x86 CPU | Multi Core 64-bit x86 CPU, 8 GB RAM |
| **RAM** | 4GB | 8GB or higher |
| **Display** | 1024x768 | 19200x1200 or higher |

**DISPLAY DEVICE:**

Name: - Intel(R) HD Graphics

Manufacturer: -Gigabyte Technology Co., Ltd

Chip Type: -Intel(R) HD Graphics

Family DAC Type: - Internal

Total Memory: -775 MB

Current Display mode: -1336 X 768

(32 Bit) (60Hz)

Monitor: -Generic PnP Monitor

**DRIVER**:

Main Driver: -igdumdim 32.dll, igd loiumd32.dll, igd lo

Version: -10.18.10.3345

Date: -10/28/13

WHQL logo’s: -Yes

DDI Version: II

Driver Model: -WDDM 1.1