INTRODUCTION

This software project is developed to automate the functionalities of a Airline ticket booking. The purpose of the software project is to develop the Management Information System (MIS) to automate the record of the different routes, different flights, different customers, billing, graphical analysis with a view to enhance the decision making of the functionaries. A MIS mainly consists of a computerized database, a collection of interrelated tables for a particular subject or purpose, capable to produce different reports relevant to the user. An application program is tied with the database for easy access and interface to the database. Using Application program or front-end, we can store, retrieve and manage all information in proper way.

This software, being simple in design and working, does not require much of training to users, and can be used as a powerful tool for automating a busy ticket booking. During coding and design of the software Project, Python Spyder IDE, a powerful front-end tool is used for getting integrated platform and coding simplicity. As a back-end a powerful, open source RDBMS. MySQL is used as per requirement of the CBSE curriculum of Informatics Practices Course(New).

FUTURE SCOPES

The objective of the software project is to develop a computerized MIS to automate the functions of a Airline ticket booking and to save our time .This software project is also aimed to enhance the current record keeping system, which will help managers to retrieve the up-to-date information at right time in right shape.

The proposed software system is expected to do the following functionality-

✓ To provide a user friendly integrated and centralized environment for MIS activities.

✓ The proposed system should maintain all the records and transactions, and should generate the required reports and information when required.

✓ To provide user-friendly interface to interact with a centralized database based on client-server architecture.

✓ To identify the critical operation procedure and possibilities of simplification using modern IT tools and practices.

In its current scope, the software enables user to retrieve and update the information from centralized database designed with MySQL. This software does not require much training time of the users due to limited functionality and simplicity.

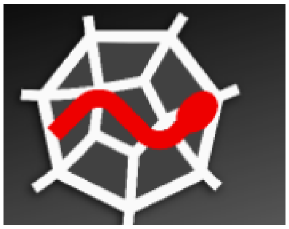
Introduction and Concepts:

A database is a collection of information related to a particular subject or purpose, such as tracking customer orders or maintaining a music collection. Using any RDBMS application software like MS SQL Server, MySQL, Oracle, Sybase etc., you can manage all your information from a single database file. Within the file, divide your data into separate storage containers called tables. You may and retrieve the data using queries. A table is a collection of data about a specific topic, such as products or suppliers. Using a separate table for each topic means you can store that data only once, which makes your database more efficient and reduces data-entry errors. Table organizes data into columns (called fields) and rows (called records).

A Primary key is one or more fields whose value or values uniquely identify each record in a table. In a relationship, a primary key is used to refer to specific record in one table from another table. A primary key is called foreign key when it is referred to from another table.

To find and retrieve just the data that meets conditions you specify, including data from multiple tables, create a query. A query can also update or delete multiple records at the same time, and perform built-in or custom calculations on your data.

Introduction to Python spyder ide



Spyder is a powerful scientific environment written in Python, for Python, and designed by and for scientists, engineers and data analysts. It offers a unique combination of the advanced editing, analysis, debugging, and profiling functionality of a comprehensive development tool with the data exploration, interactive execution, deep inspection, and beautiful visualization capabilities of a scientific package. Beyond its many built-in features, its abilities can be extended even further via its plugin system and API. Furthermore, Spyder can also be used as a PyQt5 extension library, allowing you to build upon its functionality and embed its components, such as the interactive console, in your own software.

Core components

- **Editor**
  Work efficiently in a multi-language editor with a function/class browser, real-time code analysis tools (pyflakes, pylint, and pycodestyle), automatic code completion (jedi and rope), horizontal/vertical splitting, and go-to-definition.
- **Interactive console**
  Harness the power of as many IPython consoles as you like with full workspace and debugging support, all within the flexibility of a full GUI interface. Instantly run your code by line, cell, or file, and render plots right inline with the output or in interactive windows.
- **Documentation viewer**
  Render documentation in real-time with Sphinx for any class or function, whether external or user-created, from either the Editor or a Console.
- **Variable explorer**
  Inspect any variables, functions or objects created during your session. Editing and interaction is supported with many common types, including numeric/strings/bools, Python lists/tuples/dictionaries, dates/timedeltas, Numpy arrays, Pandas index/series/dataframes, PIL/Pillow images, and more.
- **Development tools**
  Examine your code with the static analyzer, trace its execution with the interactive debugger, and unleash its performance with the profiler. Keep things organized with project support and a builtin file explorer, and use find in files to search across entire projects with full regex support

Introduction to MYSQL

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL,Perl/PHP/Python." Free-software-open source projects that require a fullfeatured database management system often use MySQL.

For commercial use, several paid editions are available, and offer additional functionality. Applications which use MySQL databases include: TYPO3, MODx, Joomla, WordPress,phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large-scale websites, including Wikipedia, Google (though not for searches),Facebook, Twitter, Flickr, and YouTube.

MySQL works on many system platforms, including AIX, BSDi, FreeBSD, HPUX, eComStation, i5/OS, IRIX, Linux, OS X, Microsoft Windows, NetBSD, Novell NetWare, OpenBSD, OpenSolaris, OS/2 Warp, QNX, Solaris, Symbian, SunOS, SCO OpenServer, SCOUnixWare, Sanos and Tru64. A port of MySQL to OpenVMS also exists.

MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a homebrewed lexical analyzer. [35] Many programming languages with languagespecific APIs include libraries for accessing MySQL databases. These include MySQL Connector/Net for integration with Microsoft's Visual Studio (languages such as C# and VB are most commonly used) and the JDBC driver for Java. In addition, an ODBC interface called MyODBC allows additional programming languages that support the ODBC interface to communicate with a MySQL database, such as ASP or ColdFusion

Problem Definition & Analysis

The hardest part of building a software system is deciding precisely what to build. No other part of the conceptual work is so difficult as establishing the detailed technical requirement. Defining and applying good, complete requirements are hard to work, and success in this endeavor has eluded many of us. Yet, we continue to make progress. Problem definition describes the What of a system, not How. The quality of a software product is only as good as the process that creates it. Problem definition is one of the most crucial steps in this creation process. Without defining a problem, developers do not know what to build, customers do not know what to expect, and there is no way to validate that the built system satisfies the requirement.

Problem definition and Analysis is the activity that encompasses learning about the problem to be solved, understanding the needs of customer and users, trying to find out who the user really is, and understanding all the constraints on the solution. It includes all activities related to the following:

- Identification and documentation of customer's or user's needs.
- Creation of a document that describes the external behavior and the association constraints that will satisfies those needs.
- Analysis and validation of the requirements documents to ensure consistency, completeness, and feasibility
- Evolution of needs

After the analysis of the functioning of a online flight booking, the proposed System is expected to do the following: -

- To provide a user friendly based integrated and centralized environment for computerized Online flight booking
- The proposed system should maintain the fluency in online ticket booking and satisfaction, and should generate the required reports and information when required.
- To provide efficient and secured Information, flow and retrieval system, ensuring the integrity and validity of information.
- To provide user-friendly interface to interact with a centralized database based on client-server architecture.
- To identify the critical operation procedure and possibilities of simplification using modern IT tools and practices

HARDWARE AND SOFTWARE

While developing the system, the used hardware are:
intel(R) Core(TM) i5 - 6200U @ 2.30 Ghz
8 GB installed RAM

Software used
PYTHON
MySQL
Word for documentation

System Design & Development

An important aspect of system design is the design of compact imformation. To begin with a logical model of data structure is developed first. A database is a container object which contains tables, queries, reports and data validation policies enforcement rules or constraints etc. A logical data often represented as a records are kept in different tables after reducing anomalies and redundancies. The goodness of data base design lies in the table structure and its relationship.

Table Design:

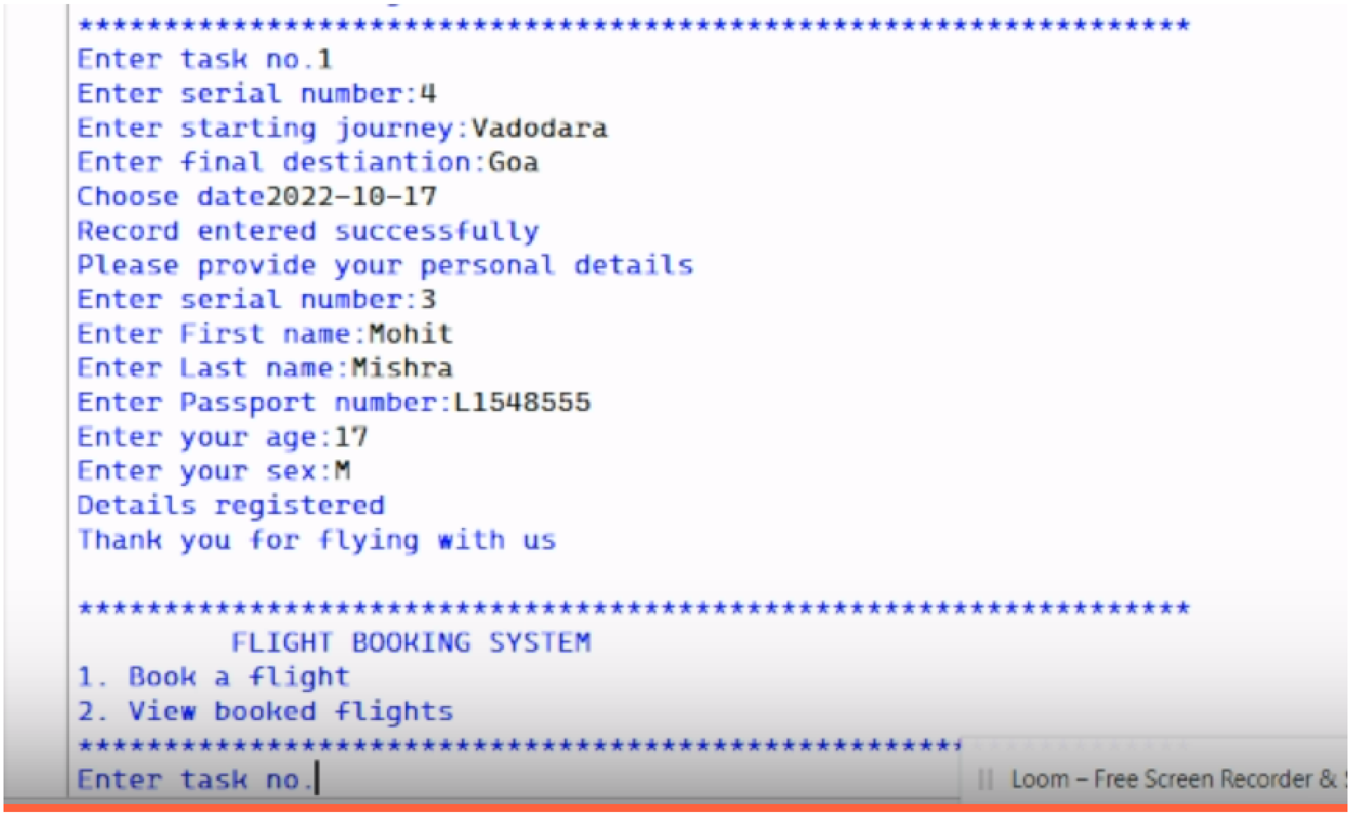
The tables are normalized to minimize the redundancies of data and enforcing the validation rules of the organization. Most of the tables are designed to store master records. The tables and their structure are given below.

The code used to design it :-

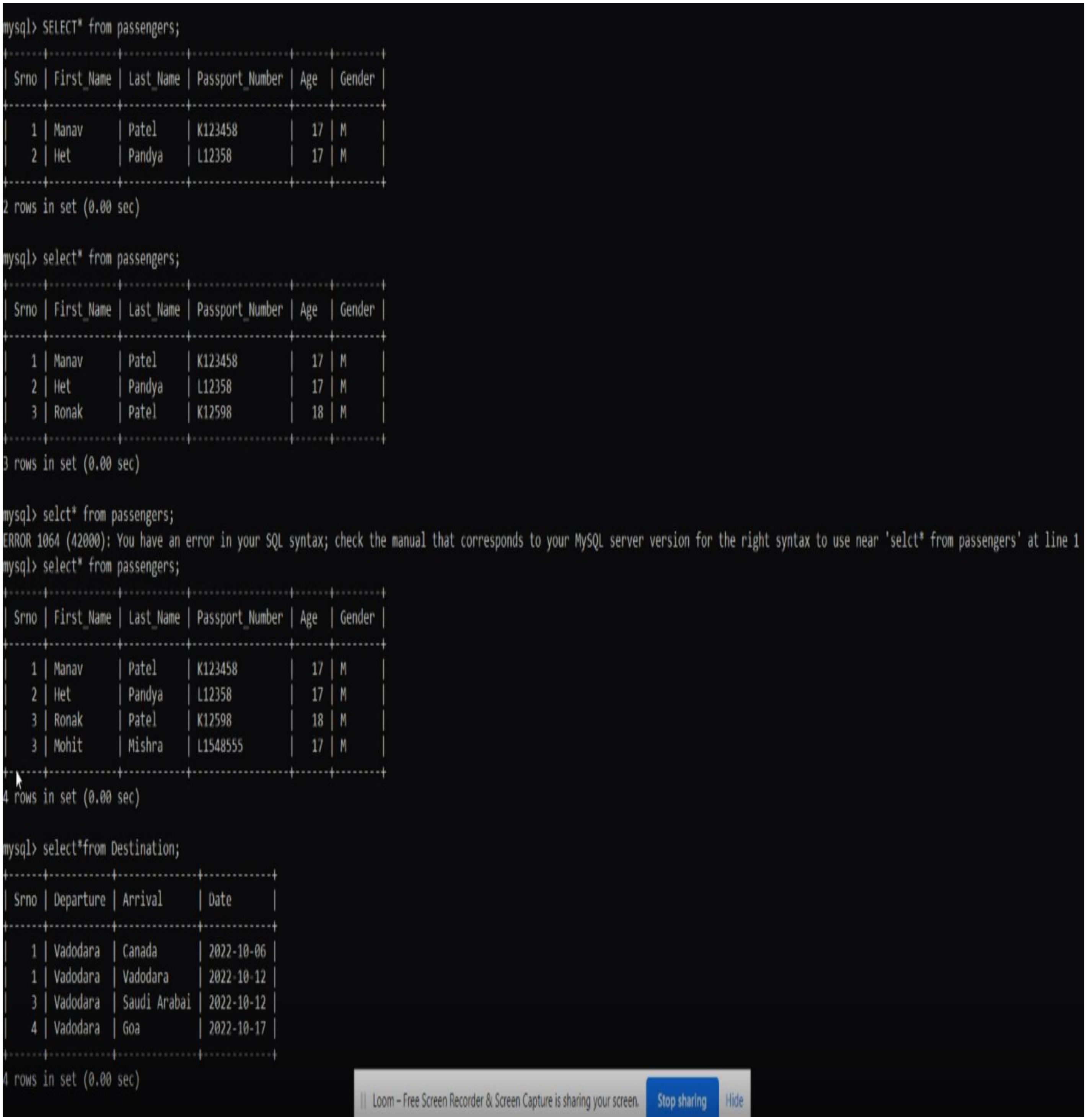
```
import pandas as pd
import pymysql

conn=pymysql.connect(host='localhost',user='root',passwd='12345678',
database='airlines')




def disp():
        c1=conn.cursor()
        sql1="select * from passengers;"
        sql2="select * from Destination;"
        c1.execute(sql1)
        c1.execute(sql2)
        conn.commit()
        print("Thank you for flying with us")
        menu()


def details():
        c1=conn.cursor()
        M=[]
        print("Please provide your personal details")
        Srno=input("Enter serial number:")
        M.append(Srno)
        First_Name=input("Enter First name:")
        M.append(First_Name)
        Last_Name=input("Enter Last name:")
        M.append(Last_Name)
        Passport_Number=input("Enter Passport number:")
        M.append(Passport_Number)
        Age=input("Enter your age:")
        M.append(Age)
        Gender=input("Enter your sex:")
        M.append(Gender)
        ct=(M)
        sql="insert into
passengers(Srno,First_Name,Last_Name,Passport_Number,Age,Gender)
values(%s,%s,%s,%s,%s,%s)"
        c1.execute(sql,ct)
        conn.commit()
        print('Details registered')
        disp()


def dest():
        c1=conn.cursor()
        L=[]
        srno=input("Enter serial number:")
        L.append(srno)
        Departure=input("Enter starting journey:")
        L.append(Departure)
        Arrival=input("Enter final destiantion:")
        L.append(Arrival)
        Date=input("Choose date")
        L.append(Date)
        pas=(L)
        sql="insert into
Destination(srno,Departure,Arrival,Date)values(%s,%s,%s,%s)"
```

```
    c1.execute(sql,pas)
    conn.commit()
    print('Record entered successfully')
    details()

def menu():
    print()
    print("***********************")
    print("                    FLIGHT BOOKING SYSTEM                              ")

    print("1. Book a flight")
    print("2. View booked flights")

    print("***********************")
    x=input("Enter task no.")
    if(x=='1'):
        dest()
    elif(x=='2'):
        disp()
    else:
        print("INVALID NUMBER..please try again")
        menu()

def pswd():
    ps=input("Enter Password:")
    if ps=="123":
        menu()
    else:
        print("wrong Password")
        pswd()
pswd()
```

OUTPUT:



```
*****************************************************************
Enter task no.1
Enter serial number:4
Enter starting journey:Vadodara
Enter final destiantion:Goa
Choose date2022-10-17
Record entered successfully
Please provide your personal details
Enter serial number:3
Enter First name:Mohit
Enter Last name:Mishra
Enter Passport number:L1548555
Enter your age:17
Enter your sex:M
Details registered
Thank you for flying with us

*****************************************************************
         FLIGHT BOOKING SYSTEM
1. Book a flight
2. View booked flights
****************************************************
Enter task no.
```



```
mysql> SELECT* from passengers;
+------+------------+-----------+-----------------+------+--------+
| Srno | First_Name | Last_Name | Passport_Number | Age  | Gender |
+------+------------+-----------+-----------------+------+--------+
|    1 | Manav      | Patel     | K123458         |   17 | M      |
|    2 | Het        | Pandya    | L12358          |   17 | M      |
+------+------------+-----------+-----------------+------+--------+
2 rows in set (0.00 sec)

mysql> select* from passengers;
+------+------------+-----------+-----------------+------+--------+
| Srno | First_Name | Last_Name | Passport_Number | Age  | Gender |
+------+------------+-----------+-----------------+------+--------+
|    1 | Manav      | Patel     | K123458         |   17 | M      |
|    2 | Het        | Pandya    | L12358          |   17 | M      |
|    3 | Ronak      | Patel     | K12598          |   18 | M      |
+------+------------+-----------+-----------------+------+--------+
3 rows in set (0.00 sec)

mysql> selct* from passengers;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'selct* from passengers' at line 1
mysql> select* from passengers;
+------+------------+-----------+-----------------+------+--------+
| Srno | First_Name | Last_Name | Passport_Number | Age  | Gender |
+------+------------+-----------+-----------------+------+--------+
|    1 | Manav      | Patel     | K123458         |   17 | M      |
|    2 | Het        | Pandya    | L12358          |   17 | M      |
|    3 | Ronak      | Patel     | K12598          |   18 | M      |
|    3 | Mohit      | Mishra    | L1548555        |   17 | M      |
+------+------------+-----------+-----------------+------+--------+
4 rows in set (0.00 sec)

mysql> select*from Destination;
+------+-----------+--------------+------------+
| Srno | Departure | Arrival      | Date       |
+------+-----------+--------------+------------+
|    1 | Vadodara  | Canada       | 2022-10-06 |
|    1 | Vadodara  | Vadodara     | 2022-10-12 |
|    3 | Vadodara  | Saudi Arabai | 2022-10-12 |
|    4 | Vadodara  | Goa          | 2022-10-17 |
+------+-----------+--------------+------------+
4 rows in set (0.00 sec)
```

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