PM SHRI KENDRIYA VIDYALAYA HEBBAL

COMPUTER SCIENCE INVESTIGATORY PROJECT

TOPIC: HOTEL MANAGEMENT SYSTEM

NAME :

CLASS : 12 'C'

ROLL NO :

CONTENTS

CERTIFICATE

This is to certify (Name of the student), student of class 12th 'C' has successfully completed the project in COMPUTER SCIENCE on the topic HOTEL MANAGEMENT SYSTEM under the guidance of Mr. RAMESHA KS during the year 2024 – 25. The references taken in making this project have been declared at the end of this project.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

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PRINCIPAL

ACKNOWLEDGEMENT

It is with pleasure that I acknowledge my sincere gratitude to our teacher, Mr. Ramesha KS who taught and undertook the responsibility of teaching the subject computer science. I have been greatly benefited from his classes.

Our sincere thanks go to our principal Mr. Anand Prakash Semwal who has always been a source of support and without whose inspiration, this project would not have been successful.

I would like to thank all those who had helped directly or indirectly towards the completion of this project.

INTRODUCTION

The **Hotel Management System** is a Python-based project that simplifies and streamlines the process of managing hotel operations. The system leverages a MySQL database to store and manage information about rooms, bookings, and customers. This project is designed to assist hotel administrators with various tasks such as managing room details, tracking room availability, booking rooms for customers, and handling checkouts efficiently.

By integrating a user-friendly menu-driven interface, the system ensures ease of operation and provides a robust solution for hotel management. The project is an excellent example of how programming and database systems can work together to automate routine administrative tasks, reduce manual errors, and improve overall efficiency in hospitality management.

OBJECTIVE

The objective of this project is to let the students apply the programming knowledge into a real-world situation/problem and also, to understand the students how programming skills help in developing a good software.

By this project, students will be able to :

- ✔ **Write programs utilizing modern software tools.**
- ✔ **Apply object-oriented programming principles effectively when developing small to medium sized objects.**
- ✔ **Write effective procedural code to solve small to medium sized problems.**
- ✔ **Demonstrate a breadth of knowledge in computer science, as exemplified in the areas of systems, theory and software development.**

```
import mysql.connector as mycon

# Establish the connection
con = mycon.connect(host="localhost", user="root", password="root", database="hotel")

# Function to create tables if they do not exist
def create_table():
    if con.is_connected():
        cursor = con.cursor()

        # Create rooms table first (no references yet)
        cursor.execute("""
        CREATE TABLE IF NOT EXISTS rooms (
            room_no VARCHAR(20) PRIMARY KEY,
            room_type VARCHAR(20),
            price VARCHAR(20),
            status VARCHAR(20) DEFAULT 'Vacant'
        );
        """)

        # Now create booking table, which references the rooms table
        cursor.execute("""
        CREATE TABLE IF NOT EXISTS booking (
            room_no VARCHAR(20),
            cname VARCHAR(50),
            idno VARCHAR(25),
            idtype VARCHAR(25),
            address VARCHAR(100),
            phone VARCHAR(15),
            dateofcheckin DATE,
            PRIMARY KEY (room_no),
            FOREIGN KEY (room_no) REFERENCES rooms(room_no)
        );
        """)

        con.commit()
```

SOURCE CODE

```python
# Function to create a new room
def createRoom():
    print(" --- ENTER ROOM DETAILS  --- ")
    room_no = input("Enter Room No. : ")
    room_type = input("Enter Room Type (Simple/Delux/Super Delux): ")
    price = input("Enter Per Day Charges: ")
    status = "Vacant"

    query = "INSERT INTO rooms (room_no, room_type, price, status) VALUES (%s, %s, %s, %s)"
    data = (room_no, room_type, price, status)

    cursor = con.cursor()
    cursor.execute(query, data)
    con.commit()
    print("--- Room Created Successfully ---")

# Function to show all rooms
def showRooms():
    cursor = con.cursor()
    query = "SELECT * FROM rooms"
    cursor.execute(query)
    res = cursor.fetchall()
    for row in res:
        print(row)

# Function to show all vacant rooms
def showVacantRooms():
    cursor = con.cursor()
    query = "SELECT * FROM rooms WHERE status='Vacant'"
    cursor.execute(query)
    res = cursor.fetchall()
    for row in res:
        print(row)
```

```python
# Function to show all occupied rooms
def showOccupiedRooms():
    cursor = con.cursor()
    query = """
    SELECT rooms.room_no, booking.cname, booking.phone
    FROM rooms
    JOIN booking ON rooms.room_no = booking.room_no
    WHERE rooms.status = 'Occupied'
    """
    cursor.execute(query)
    res = cursor.fetchall()
    for row in res:
        print(row)

# Function to book a room
def bookRoom():
    print("-" * 40)
    print("       BOOKING A ROOM ")
    print("-" * 40)

    cname = input("Enter the Customer Name: ")
    idtype = input("Enter the ID submitted (PAN Card/License/Aadhar Card/Passport): ")
    idno = input("Enter the ID number: ")
    address = input("Enter Address: ")
    phone = input("Enter Phone number: ")
    dcheckin = input("Enter Date of Check-in (yyyy-mm-dd): ")
    room_no = input("Enter Room number: ")

    # Check if the room is available
    cursor = con.cursor()
    cursor.execute("SELECT status FROM rooms WHERE room_no = %s", (room_no,))
    room = cursor.fetchone()

    if room and room[0] == 'Vacant':
        query = "INSERT INTO booking (room_no, cname, idno, idtype, address, phone, dateofcheckin) VALUES (%s, %s, %s, %s, %s, %s, %s
        data = (room_no, cname, idno, idtype, address, phone, dcheckin)
        cursor.execute(query, data)
        con.commit()
```

```
        # Update the room status to Occupied
        cursor.execute("UPDATE rooms SET status='Occupied' WHERE room_no = %s", (room_no,))
        con.commit()
        print("-" * 50)
        print("       ROOM BOOKED")
        print("-" * 50)
    else:
        print("Room is already occupied or does not exist!")

# Function to check out a room
def checkout():
    room_no = input("Enter the Room Number: ")

    cursor = con.cursor()
    cursor.execute("SELECT rooms.room_no, booking.cname,booking.phone FROM rooms JOIN booking ON rooms.room_no = booking.room_no WHERE rooms.status = 'Occupied' AND rooms.room_no = %s", (room_no,))
    res = cursor.fetchall()

    if res:
        for row in res:
            print(row)

        chkoutdate = input("Enter the date of Checkout: ")

        # Update the room status to Vacant
        cursor.execute("UPDATE rooms SET status='Vacant' WHERE room_no = %s", (room_no,))
        con.commit()

        # Delete the booking record
        cursor.execute("DELETE FROM booking WHERE room_no = %s", (room_no,))
        con.commit()

        print("Checkout completed successfully.")
    else:
        print("No such occupied room found!")
```

```python
# Function to display menu
def showmenu():
    create_table()  # Ensure the tables are created when the program runs
    while True:
        print("@" * 30)
        print("----    HOTEL MANAGEMENT    ----")
        print("@" * 30)
        print("Press 1 - Create a New Room")
        print("Press 2 - Show All Rooms")
        print("Press 3 - Show All Vacant Rooms")
        print("Press 4 - Show All Occupied Rooms")
        print("Press 5 - Book a Room")
        print("Press 6 - Check Out")
        print("Press 7 - Exit")

        choice = int(input("Enter your choice : "))

        if choice == 1:
            createRoom()
        elif choice == 2:
            showRooms()
        elif choice == 3:
            showVacantRooms()
        elif choice == 4:
            showOccupiedRooms()
        elif choice == 5:
            bookRoom()
        elif choice == 6:
            checkout()
        elif choice == 7:
            break

# Run the menu
if con.is_connected():
    showmenu()
else:
    print("Unable to connect to the database.")
```

OUTPUT

FOR CREATING ROOMS:

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
----     HOTEL ELEMENTS MANAGEMENT SYSTEM     ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
Press 5 - Book a Room
Press 6 - Check Out
Press 7 - Exit
Enter your choice : 1
 --- ENTER ROOM DETAILS  ---
Enter Room No. : 1
Enter Room Type (Simple/Delux/Super Delux): simple
Enter Per Day Charges: 1000
--- Room Created Successfully ---
```

FOR SHOWING ROOMS:

```
----     HOTEL ELEMENTS MANAGEMENT SYSTEM     ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
Press 5 - Book a Room
Press 6 - Check Out
Press 7 - Exit
Enter your choice : 2
('1', 'simple', '1000', 'Vacant')
('10', 'simple', '1000', 'Vacant')
('11', 'delux', '2500', 'Vacant')
('12', 'super delux', '5000', 'Vacant')
('2', 'delux', '2500', 'Vacant')
('3', 'Super delux', '5000', 'Vacant')
('4', 'simple', '1000', 'Vacant')
('5', 'delux', '2500', 'Vacant')
('6', 'super delux', '5000', 'Vacant')
('7', 'simple', '1000', 'Vacant')
('8', 'delux', '2500', 'Vacant')
('9', 'super delux', '5000', 'Vacant')
```

```
----------------------------------------
       BOOKING A ROOM
----------------------------------------
Enter the Customer Name: Arjun Sharma
Enter the ID submitted (PAN Card/License/Aadhar Card/Passport
): License
Enter the ID number: 789654123
Enter Address: MG ROAD
Enter Phone number: 4569871230
Enter Date of Check-in (yyyy-mm-dd): 2024-12-19
Enter Room number: 1
--------------------------------------------------
      ROOM BOOKED
--------------------------------------------------
```

FOR BOOKING A ROOM:

FOR SHOWING ALL VACANT ROOMS:

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
----     HOTEL ELEMENTS MANAGEMENT SYSTEM     ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
Press 5 - Book a Room
Press 6 - Check Out
Press 7 - Exit
Enter your choice : 3
('10', 'simple', '1000', 'Vacant')
('11', 'delux', '2500', 'Vacant')
('12', 'super delux', '5000', 'Vacant')
('7', 'simple', '1000', 'Vacant')
('8', 'delux', '2500', 'Vacant')
('9', 'super delux', '5000', 'Vacant')
```

FOR

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
----     HOTEL ELEMENTS MANAGEMENT SYSTEM     ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
Press 5 - Book a Room
Press 6 - Check Out
Press 7 - Exit
Enter your choice : 4
('1', 'Arjun Sharma', '4569871230')
('2', 'Priya Nair', '5821558215')
('3', 'Vikram Rao', '3256132561')
('4', 'Aditi joshi', '5869158691')
('5', 'kavya menon', '3692583691')
('6', 'SURESH', '6958269582')
```

SHOWING ALL OCCUPIED ROOMS:

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
----    HOTEL ELEMENTS MANAGEMENT SYSTEM    ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
Press 5 - Book a Room
Press 6 - Check Out
Press 7 - Exit
Enter your choice : 6
Enter the Room Number: 4
('4', 'Aditi joshi', '5869158691')
Enter the date of Checkout: 2024-12-21
Checkout completed successfully.
```

FOR CHECKOUT:

EXIT:

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
----    HOTEL ELEMENTS MANAGEMENT SYSTEM    ----
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Press 1 - Create a New Room
Press 2 - Show All Rooms
Press 3 - Show All Vacant Rooms
Press 4 - Show All Occupied Rooms
```

DATABASE: hotel

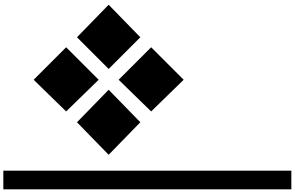
Mysql (BOOKING):

```
mysql> select*from booking;
+---------+-------------+-------------+------------+-------------+-----------+--------------+
| room_no | cname       | idno        | idtype     | address     | phone     | dateofcheckin |
+---------+-------------+-------------+------------+-------------+-----------+--------------+
| 1       | Arjun Sharma | 789654123   | License    | MG ROAD     | 4569871230 | 2024-12-19   |
| 2       | Priya Nair  | 325200009999 | Aadhar Card | Ganganagar  | 5821558215 | 2024-12-19   |
| 3       | Vikram Rao  | 325632563256 | Aadhar Card | Koramangala | 3256132561 | 2024-12-19   |
| 4       | Aditi joshi | 256985698   | License    | Whitefield  | 5869158691 | 2024-12-19   |
| 5       | kavya menon | 253625362536 | aadhar card | malleshwaram | 3692583691 | 2024-12-19   |
| 6       | SURESH      | Sbv5698     | Pan Card   | MYSORE      | 6958269582 | 2024-12-19   |
+---------+-------------+-------------+------------+-------------+-----------+--------------+
6 rows in set (0.00 sec)
```

Mysql (ROOMS):

```
mysql> select*from rooms;
+---------+-------------+-------+----------+
| room_no | room_type   | price | status   |
+---------+-------------+-------+----------+
| 1       | simple      | 1000  | Occupied |
| 10      | simple      | 1000  | Vacant   |
| 11      | delux       | 2500  | Vacant   |
| 12      | super delux | 5000  | Vacant   |
| 2       | delux       | 2500  | Occupied |
| 3       | Super delux | 5000  | Occupied |
| 4       | simple      | 1000  | Occupied |
| 5       | delux       | 2500  | Occupied |
| 6       | super delux | 5000  | Occupied |
| 7       | simple      | 1000  | Vacant   |
| 8       | delux       | 2500  | Vacant   |
| 9       | super delux | 5000  | Vacant   |
+---------+-------------+-------+----------+
12 rows in set (0.00 sec)
```

BIBLIOGRAPHY



YouTube.com

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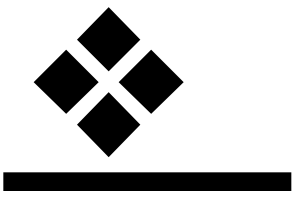

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GROUP MEMBERS:

LIKHITH S

HARSH VERMA

KSHITIJ TYAGI