SCHOOL OF ENGINEERING AND TECHNOLOGY

A Project Report
On

"HOTEL ROOM RESERVATION DATABASE MANAGEMENT SYSTEM"

Submitted in partial fulfillment of the requirements for the award of degree in

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE ENGINEERING

SUBMITTED BY-

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Internship carried at **IPEC_SOLUTIONS** -

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UNDER THE GUDIANCE OF AS PROJECT GUIDE
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2022-2023

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SCHOOL OF ENGINEERING AND TECHNOLOGY

Chagalahatti, Bengaluru, Karnataksa-562149

Department of Computer Science and Engineering

<u>CERTIFICATE</u>

This is to certify that the Project entitled "**HOTEL ROOM RESERVATION DATABASE MANAGEMENT SYSTEM**" has been successfully carried out by **E AJAY KUMAR (21BBTCS081)"** in partial fulfillment of the requirement for the award of the degree **Bachelor of Technology in Computer Science and Engineering at CMR University,** Bengaluru during the academic year **2022-2023.** The Mini Project report had been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Signature of HOD

_ _ _ _ _ _ _ _ _ _

Dr. Rubini P

HOD of Dept of CSE

SOET CMRU

Bagaluru-562149

<u>DECLARATION</u>

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I the undersigned solemnly declare that the report of the internship work entitled "**HOTEL ROOM RESERVATION DATABASE MANAGEMENT SYSTEM**" internship is based on my work carried out during the course study under the supervision of **Mrs. Fathima Afroz**, IPEC Solutions, Bangalore.

This internship work was done at IPEC Solutions located 1st floor, SK complex, Uttarahalli

main road, RR Nagar, Bengaluru, Karnataka-560098.

I assert that the statements made and conclusions drawn are an outcome of the internship work. I further declare that, to the best of my knowledge and belief, that this report does not contain any work which has been submitted for the award of the degree or any other degree in this university or any other university.

E AJAY KUMAR
(21BBTCS081)

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CHAPTER 1: INTRODUCTION

1.1   Introduction to Internship

An internship is a structured work experience related to a student's major and/or career goal. It is an experience that should enhance a student's academic, career, and personal development. It is an involvement, closely aligned with the student's major and arranged with an employer who believes it is desirable to aid in the training and education of the student. It is of a short duration, typically two to four months, through direct personal contact hours or through a training program, and to aid the intern in developing a summary report of his/her experience. This internship program is designed by IPEC Solutions for the partial fulfillment of the degree of Bachelor of Technology. The intern is honored by the internship program under this curriculum. This program has enhanced the skill and enthusiasm of the students as they get knowledge of the company environments and to learn different aspects of working mechanisms that prevail in the organizations.

1.2 Internship Program Objective

• To expose students to a particular job and a profession or industry.

• To provide students with opportunities to develop skills in the field of interest.

• To assist students in gaining vital work-related experience and building a strong resume
for bright career.

• To help students in developing business contacts i.e., creating network contacts.

• To help students potentially land permanent or contractual jobs from the host company.

1.3 About IPEC Solutions

IPEC Solutions Private Limited it is classified as Non-govt Company and is registered at Registrar of Companies, Bangalore. IPEC Solution is a research and development center and educational institute based in Bangalore. They are focused on providing quality education on the latest technologies and developing products which are of great need to society. They are also involved in distribution and sales of latest electronic innovation products developed all over the globe to their customers. They are continuously involved in research about futuristic technologies and finding ways to simplify them for their clients.

CHAPTER 2: LEARNING OUTCOMES

2.1 Python Introduction

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is **a dynamic, interpreted (bytecode-compiled) language**. There are no type declarations of variables, parameters, functions, or methods in source code. This makes the code short and flexible, and you lose the compile-time type checking of the source code.

Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

2.1.1 Conditional Statements

The if statement is a conditional statement in python, that is used to determine whether a block of code will be executed or not. Meaning if the program finds the condition defined in the if statement to be true, it will go ahead and execut the code block inside the if statement.

Syntax:

```python
if condition:

#execute code block
```

As discussed above, the *if statement* executes the code block when the condition is true. Similarly, the *else* statement works in conjunction with the *if statement* to execute a code block when the defined *if condition* is false.

Syntax:

```
if condition:
#execute code if condition is true
else:
#execute code if condition if False
```

The *elif* statement is used to check for multiple conditions and execute the code block within if any of the conditions evaluate to be true.

The *elif* statement is similar to the *else* statement in the context that it is optional but unlike the *else* statement, there can be multiple *elif* statements in a code block following an *if* statement.

```
if condition1:
# execute this statement
elif condition2:
# execute this statement
      . . . . . .
else:
# if none of the above conditions
# evaluate to True
# execute this statement
```

2.1.2 Looping Statements

Statements used to control loops and change the course of iteration are called control statements. All the objects produced within the local scope of the loop are deleted when execution is completed.

Python's for loop is designed to repeatedly execute a code block while iterating through a list, tuple, dictionary, or other iterable objects of Python. The process of traversing a sequence is known as iteration. In this case, the variable value is used to hold the value of every item present in the sequence before the iteration begins until this particular iteration is completed.

Syntax: for value in sequence:

   {code block}

While loops are used in Python to iterate until a specified condition is met. However, the statement in the program that follows the while loop is executed once the condition changes to false. All the coding statements that follow a structural command define a code block. These statements are intended with the same number of spaces. Python groups statements together with indentation.

Syntax: while <condition>:

   {code block}

2.1.3 Functions

Python Functions is a block of statements that return the specific task. The idea is to put some commonly or repeatedly done tasks together and make a function so that instead of writing the same code again and again for different inputs, we can do the function calls to reuse code contained in it over and over again.

Syntax: def function name(parameters):

   #statement

   return expression

CHAPTER 3: DATABASE MANAGEMENT SYSTEM

3.1 INTRODUCTION

A database management system (DBMS) refers to the technology for creating and managing databases. Basically DBMS is a software tool to organize (create ,retrieve ,update and manage) data in a database. The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient.

Normally people use software such as DBASE 4 or 5, Microsoft ACCESS or EXCEL to store data in the form of database in the form of database. Database systems are meant to handle large collection of information. Management of data involves both defining structures for storage of information and providing mechanisms that can do the manipulation of those stored information.

Moreover, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access. This project is aim to computerizing the manual process of **Hotel System.**

3.2: Introduction to Database Management System

DBMS can be break down into Database + Management system.
Database is collection of data and management system is a set of programs to store and retrieve those data. When dealing with huge amount of data, there are two things that optimization:
>storage of data
>retrieval of data
According to the principles of database systems, the data is stored in such a way that it acquires a lot less space as the redundant data has been removed before storage.

3.3: Applications of DBMS

The development of computer graphics has been driven both by the needs of the user community and by the advances in hardware and software. The applications of database are many and varied, it can be divided into four major areas:

1. Hierarchical and network system.
2. Flexibility with relational database.
3. Object oriented application,
4. Interchanging the data on the web for e-commerce.

3.4: Designing the database system

Professions such as engineering and architecture are concerned with design. Starting with a set of specification engineers and architects seek a cost effective and esthetic solutions that satisfies the specifications. Design is an iterative process rarely in the real world is a problem specified such that there is a unique optimal solution. Thus the designer works iteratively.

3.5: Data types and its explanation

The fields in the database table have a category of data, any of the forms of data used in the database table are explained below.

(a)   Integer:
One optional character(+or-) followed by at least one digit (0-9). leading and trailing blanks would be overlooked. There is no other character permitted.
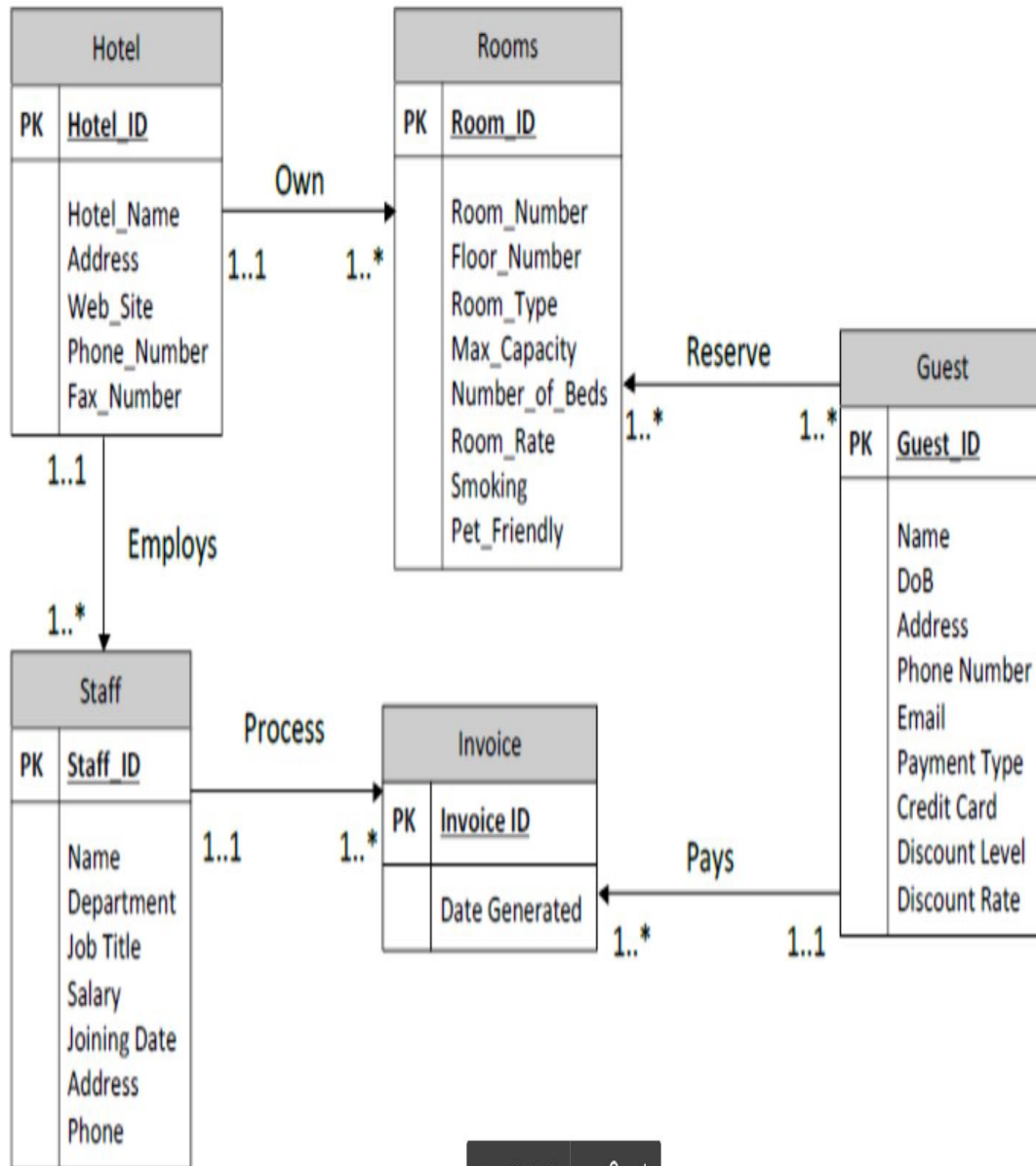
(b)   Varchar:
It is used to store alphanumeric characters. In this data type, the maximum number of characters up to 8000 ranges can be set to 50 characters in size by default SQL Server.

(c)   Date/Time:
The data form of date/time is used to represent date or time.

CHAPTER 4: DESIGN OF THE PROJECT

4.1: ER-Diagram of Hotel Room Reservation DBMS -

CHAPTER 5: IMPLEMENTATION

This project is implemented using DB browser database along with python. In this project, we use the below mentioned concepts for implementing the database system.

5.1 Implementation of Hotel Reservation using tables and python code –

 # Table 1

```
import sqlite3
connection = sqlite3.connect("Hotels.db3")
crsr = connection.cursor()
sql_command = """ CREATE TABLE "Hotels12" (
      "Hotel_ID"  INTEGER,
      "Hotel_Name"     VARCHAR(20) NOT NULL,
      "Address"   VARCHAR(20) NOT NULL,
      "Web_Site" VARCHAR(20) NOT NULL,
      "Phone_number"   INTEGER NOT NULL,
      "Fax_number"     INTEGER NOT NULL,
      PRIMARY KEY("Hotel_ID" AUTOINCREMENT)
);"""
crsr.execute(sql_command)
connection.execute("INSERT INTO
Hotels12(Hotel_id,Hotel_name,Address,Web_Site,Phone_number,Fax_number)
VALUES (1,'Vinyl','Baglur ','http//in.hotesl.com',90076452,3452768)");
connection.execute("INSERT INTO
Hotels12(Hotel_id,Hotel_name,Address,Web_Site,Phone_number,Fax_number)
VALUES (2,'pavan','punganur','http//in.hotesl.com',90076453,3452723)");
connection.execute("INSERT INTO
Hotels12(Hotel_id,Hotel_name,Address,Web_Site,Phone_number,Fax_number)
VALUES (3,'hari','madanapalli','http//in.hotesl.com',90076454,3452724)");
connection.execute("INSERT INTO
Hotels12(Hotel_id,Hotel_name,Address,Web_Site,Phone_number,Fax_number)
VALUES (4,'ajay','marathahalli','http//in.hotesl.com',90076455,3452725)");
connection.execute("INSERT INTO
Hotels12(Hotel_id,Hotel_name,Address,Web_Site,Phone_number,Fax_number)
VALUES (5,'mithun','hoskote ','http//in.hotesl.com',90076456,3452726)");
cursor = connection.execute("SELECT * from Hotels12")
print ("Table Hotels created successfully")
print("Hotel_id\tHotel_name\tAddress\t\tWeb_Site\t\thone_number\tFax_number")
print("-"* 100)
```

```python
for row in cursor:
    print ("{}\t\t{}\t\t{}\t{}\t{}\t{}".format(row[0],row[1],row[2],row[3],row[4],row[5]))
connection.close()
```

Table 2

```python
import sqlite3
connection = sqlite3.connect("Hotels.db3")
crsr = connection.cursor()
sql_command ="""CREATE TABLE "Rooms11" (
        "Room_id"   INTEGER,
        "Room_number"   INTEGER NOT NULL,
        "Floor_number"    INTEGER NOT NULL,
        "Room_Type"     VARCHAR(20) NOT NULL,
        "Max_Capacity"    INTEGER NOT NULL,
        "Beds"        INTEGER NOT NULL,
        "Room_rate"       INTEGER NOT NULL,
        "Smoking"   VARCHAR(20) NOT NULL,
        "Pet_Friendly"      VARCHAR(20) NOT NULL,
        PRIMARY KEY("Room_id" AUTOINCREMENT));"""
crsr.execute(sql_command)
connection.execute("INSERT INTO
Rooms11(Room_id,Room_number,Floor_number,Room_Type,Max_Capacity,Beds,Roo
m_rate,Smoking,Pet_Friendly) VALUES (1,201,2,'Hexagon',4,4,5000,'NO','YES')");
connection.execute("INSERT INTO
Rooms11(Room_id,Room_number,Floor_number,Room_Type,Max_Capacity,Beds,Roo
m_rate,Smoking,Pet_Friendly) VALUES (2,202,2,'Hexagon',3,2,2400,'NO','YES')");
connection.execute("INSERT INTO
Rooms11(Room_id,Room_number,Floor_number,Room_Type,Max_Capacity,Beds,Roo
m_rate,Smoking,Pet_Friendly) VALUES (3,203,2,'Hexagon',5,3,4500,'NO','YES')");
connection.execute("INSERT INTO
Rooms11(Room_id,Room_number,Floor_number,Room_Type,Max_Capacity,Beds,Roo
m_rate,Smoking,Pet_Friendly) VALUES (4,204,2,'Hexagon',2,1,3000,'NO','YES')");
connection.execute("INSERT INTO
Rooms11(Room_id,Room_number,Floor_number,Room_Type,Max_Capacity,Beds,Roo
m_rate,Smoking,Pet_Friendly) VALUES (5,205,2,'Hexagon',6,4,8000,'NO','YES')");
cursor = connection.execute("SELECT * from Rooms11")
print ("Table Rooms created successfully")
print("Room_id\tRoom_number\tFloor_number\tRoom_Type\tMax_Capacity\tBeds\tRoo
m_rate\tSmoking\t\tPet_Friendly")
print("-"* 125)
for row in cursor:
```

```python
    print
("{}\t{}\t\t{}\t\t{}\t\t{}\t\t{}\t{}\t\t{}\t\t{}".format(row[0],row[1],row[2],row[3],row[4],row[5],row[6],row[7],row[8]))
connection.close()
```

Table 3

```python
import sqlite3
connection = sqlite3.connect("Hotels.db")
crsr = connection.cursor()
sql_command ="""CREATE TABLE "Invoice3" (
      "Invoice_Id"        INTEGER,
      "Date_Gen" INTEGER NOT NULL,
      PRIMARY KEY("Invoice_Id" AUTOINCREMENT));"""
crsr.execute(sql_command)
connection.execute("INSERT INTO Invoice3(Invoice_Id,Date_Gen) VALUES
(1,03/03/23)");
connection.execute("INSERT INTO Invoice3(Invoice_Id,Date_Gen) VALUES
(2,03/04/23)");
connection.execute("INSERT INTO Invoice3(Invoice_Id,Date_Gen) VALUES
(3,03/05/23)");
connection.execute("INSERT INTO Invoice3(Invoice_Id,Date_Gen) VALUES
(4,03/06/23)");
connection.execute("INSERT INTO Invoice3(Invoice_Id,Date_Gen) VALUES
(5,03/07/23)");
cursor = connection.execute("SELECT * from Invoice3")
print ("Table Invoice created successfully")
print("Invoice_Id\tDate_Gen")
print("-"* 30)
for row in cursor:
   print ("{}\t\t{}".format(row[0],row[1]))
connection.close()
```

Table 4
```python
import sqlite3
connection = sqlite3.connect("Hotels.db3")
crsr = connection.cursor()
sql_command ="""CREATE TABLE "Staff8" (
      "Staff_Id"   INTEGER,
      "Name"      VARCHAR(20) NOT NULL,
      "Dept"       VARCHAR(20) NOT NULL,
      "Job_Title"  VARCHAR(20) NOT NULL,
      "Salary"     INTEGER NOT NULL,
      "Joining_Date"     VARCHAR(20) NOT NULL,
      "Address"   VARCHAR(20) NOT NULL,
      "Phone"      INTEGER NOT NULL,
```

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```python
        PRIMARY KEY("Staff_Id" AUTOINCREMENT)
);"""
crsr.execute(sql_command)
connection.execute("INSERT INTO
Staff8(Staff_id,Name,Dept,Job_Title,Salary,Joining_Date,Address,Phone) VALUES
(1,'sethu','cooking','chef',20000,'03/02/23','bagalur',9160234765)");
connection.execute("INSERT INTO
Staff8(Staff_id,Name,Dept,Job_Title,Salary,Joining_Date,Address,Phone) VALUES
(2,'sandy','surving','service',10000,'03/02/23','hebbal',9160234723)");
connection.execute("INSERT INTO
Staff8(Staff_id,Name,Dept,Job_Title,Salary,Joining_Date,Address,Phone) VALUES
(3,'johny','cooking','chef',20000,'03/02/23','hennur',9160234724)");
connection.execute("INSERT INTO
Staff8(Staff_id,Name,Dept,Job_Title,Salary,Joining_Date,Address,Phone) VALUES
(4,'ramu','manage','manger',50000,'03/02/23','habbal',9160234725)");
connection.execute("INSERT INTO
Staff8(Staff_id,Name,Dept,Job_Title,Salary,Joining_Date,Address,Phone) VALUES
(5,'devi','surving','service',10000,'03/02/23','bagalur',9160234726)");

cursor = connection.execute("SELECT * from Staff8")
print ("Table Staff created successfully")
print("Staff_id\tName\tDept\tJob_Title\tSalary\tJoining_Date\tAdress\tPhone")
print("-"* 90)
for row in cursor:
    print
("{}\t\t{}\t{}\t{}\t\t{}\t{}\t{}\t{}".format(row[0],row[1],row[2],row[3],row[4],row[5],ro
w[6],row[7]))
connection.close()
```

Table 5

```python
import sqlite3
connection = sqlite3.connect("Hotels.db3")
crsr = connection.cursor()
sql_command ="""" CREATE TABLE "Guest4" (
      "Guest_id"   INTEGER,
      "Name"       VARCHAR(20) NOT NULL,
      "Dob"VARCHAR(20) NOT NULL,
      "Address"    VARCHAR(20) NOT NULL,
      "Phone"      INTEGER NOT NULL,
      "Payment_Type"   VARCHAR(20) NOT NULL,
      "Discount_Rate"    INTEGER NOT NULL,
      PRIMARY KEY("Guest_id" AUTOINCREMENT)
);"""
crsr.execute(sql_command)
```

```python
connection.execute("INSERT INTO
Guest4(Guest_id,Name,Dob,Address,Phone,Payment_Type,Discount_Rate) VALUES
(1,'sethu','03/03/04','BAGLUR',900087074,'Online',25000)");
connection.execute("INSERT INTO
Guest4(Guest_id,Name,Dob,Address,Phone,Payment_Type,Discount_Rate) VALUES
(2,'ramu','03/06/04','BAGLUR',900087075,'Online',26000)");
connection.execute("INSERT INTO
Guest4(Guest_id,Name,Dob,Address,Phone,Payment_Type,Discount_Rate) VALUES
(3,'raju','03/07/04','BAGLUR',900087079,'Online',27000)");
connection.execute("INSERT INTO
Guest4(Guest_id,Name,Dob,Address,Phone,Payment_Type,Discount_Rate) VALUES
(4,'sneha','03/08/04','BAGLUR',900087077,'Online',28000)");
connection.execute("INSERT INTO
Guest4(Guest_id,Name,Dob,Address,Phone,Payment_Type,Discount_Rate) VALUES
(5,'gagan','03/02/04','BAGLUR',900087078,'Online',29000)");
cursor = connection.execute("SELECT * from Guest4")
print ("Table Guest created successfully")
print("Guest_id\tName\tDob\t\tAddress\t\tPhone\t\tPayment_Type\tDiscount_Rate")
print("-"* 90)
for row in cursor:
    print
("{}\t\t{}\t{}\t{}\t\t{}\t{}\t\t{}".format(row[0],row[1],row[2],row[3],row[4],row[5],row[
6]))
connection.close()
```

5.2 Output of implementation –

```
Table Hotels created successfully
Hotel_id    Hotel_name    Address        Web_Site              hone_number    Fax_number
--------------------------------------------------------------------------------------------
1           Vinyl         Baglur         http//in.hotesl.com   90076452       3452768
2           pavan         punganur       http//in.hotesl.com   90076453       3452723
3           hari          madanapalli    http//in.hotesl.com   90076454       3452724
4           ajay          marathahalli   http//in.hotesl.com   90076455       3452725
5           mithun        hoskote        http//in.hotesl.com   90076456       3452726
```

```
Table Rooms created successfully
Room_id Room_number   Floor_number   Room_Type   Max_Capacity   Beds   Room_rate   Smoking   Pet_Friendly
---------------------------------------------------------------------------------------------------------
1       201           2              Hexagon     4              4      5000        NO        YES
2       202           2              Hexagon     3              2      2400        NO        YES
3       203           2              Hexagon     5              3      4500        NO        YES
4       204           2              Hexagon     2              1      3000        NO        YES
5       205           2              Hexagon     6              4      8000        NO        YES
```

```
Table Invoice created successfully
Invoice_Id      Date_Gen
-------------------------------
1               0
2               0
3               0
4               0
```

```
Table Staff created successfully
Staff_id    Name    Dept      Job_Title    Salary  Joining_Date   Adress   Phone
--------------------------------------------------------------------------------
1           sethu   cooking   chef         20000   03/02/23       bagalur  9160234765
2           sandy   surving   service      10000   03/02/23       hebbal   9160234723
3           johny   cooking   chef         20000   03/02/23       hennur   9160234724
4           ramu    manage    manger       50000   03/02/23       habbal   9160234725
5           devi    surving   service      10000   03/02/23       bagalur  9160234726
```

```
Table Guest created successfully
Guest_id    Name    Dob        Address     Phone        Payment_Type   Discount_Rate
------------------------------------------------------------------------------------
1           sethu   03/03/04   BAGLUR      900087074    Online         25000
2           ramu    03/06/04   BAGLUR      900087075    Online         26000
3           raju    03/07/04   BAGLUR      900087079    Online         27000
4           sneha   03/08/04   BAGLUR      900087077    Online         28000
5           gagan   03/02/04   BAGLUR      900087078    Online         29000
```

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