RESTAURANT SERVICE HOTLINE

Submitted By

Deepshikha Mohanty -UCSE22016

Gourav Sengupta - UCSE22019

Priyanshu Ghosh - UCSE22026

Shreya Mathur - UCSE22036

Prateek Raju - UCSE22057

Course Name:

Problem Solving with Python

Course Code:

Autumn 2023-24

Date of Submission:

2/11/2023

School of Computer Science & Engineering

XIM University

CONTENTS

Serial No.	Contents	Page No.
1	Cover Page	1
2	Table of Contents	2
3	Introduction	3
4	System Analysis	4
5	System Design	5-8
6	System Implementation	9
7	Screenshots of Output	10-12
8	Appendix	13
9	Pseudocode	14-15
10	Flowchart	16
11	Code	17-26

INTRODUCTION

This restaurant management system or the restaurant service hotline can be used by employees in a restaurant to handle the clients, their orders, their room bookings, their enquiries and can help them easily find free tables and rooms. The restaurant menu is organized by categories (breakfast, lunch, dinner and drinks) of menu items. Each menu item has a name and price. We also have various types of rooms for the stay in our hotel such as single bed, double bed, suite in AC and Non- AC both. We also addressed all types customer services for their ease to have a good stay with us.

a)Project Objective:-

Restaurant service hotline is the system for managing the restaurant and hotel business. It can vary across multiple management styles, however, there is always one common denominator when it comes to setting goals: maximizing a restaurant's and hotel's profitability. In order to maximize its profitability, one has to always examine and understand the operational costs and how these relate to their productivity and efficiency in delivering quality service to its customers. Management takes a very important role in controlling and manipulating the balance of costs and profitability. An effective manager must always concern himself/herself with restaurant and hotel issues that pertain to inventory/stocking, pricing, order-taking, and much more. Oftentimes, profitability either rises or falls depending on how well it is being managed. Managing a restaurant and hotel using a well-developed software minimizes the liabilities of mismanagement and productivity loopholes. The incorporation of a Restaurant hotline Software in the managing of various business processes entails that your restaurant is competitive, innovative, well-managed, and up-to-date with the latest management and business trends.

b)Project Background:-

We have designed and written the code by ourselves with reference to modules and functions taught in the class

c)Operation Environment:-

Whole code of the project as well its compilation has been done in Google Colaboratory.

SYSTEM ANALYSIS

a)Software Requirement Specification

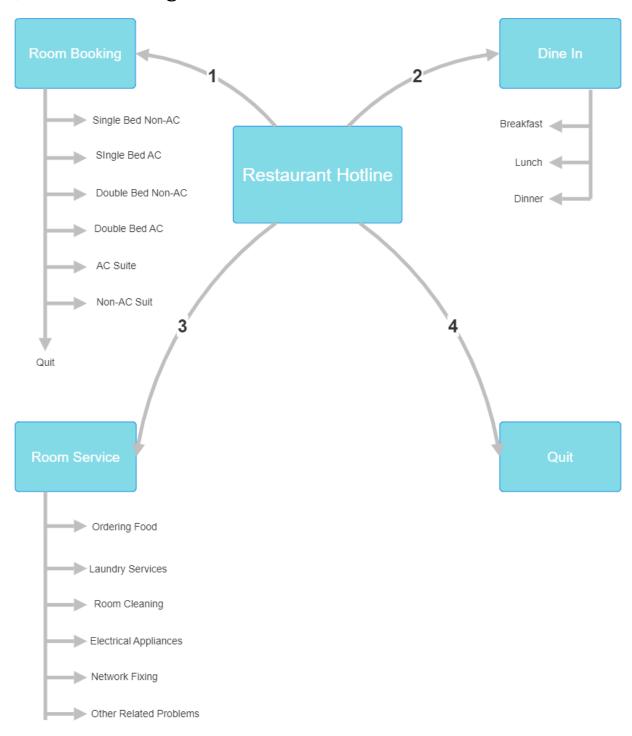
The process model we have used here is an iterative model. The iterative model is a particular implementation of a software development life cycle (SDLC) that focuses on an initial, simplified implementation, which then progressively gains more complexity and a broader feature set until the final system is complete. When discussing the iterative method, the concept of incremental development will also often be used liberally and interchangeably, which describes the incremental alterations made during the design and implementation of each new iteration. Unlike the more traditional waterfall model, which focuses on a stringent step-by-step process of development stages, the iterative model is best thought of as a cyclical process. The requirements of our project can be accomplished through an iterative model.

b)Software Tools Used:-

Here we have used different functions to divide the management work such as one function is defined for room booking then the other is for dine in and third one is for room service. In the function for the hotel and restaurant management to further proceed we have used conditional statements with the loops.

SYSTEM DESIGN

a)Data Flow Diagram



b)DATA TABLE

Column Name	Data Type	Description
list_1	integer	for storing the room numbers of single bed
list_2	integer	for storing the room numbers of single bed AC rooms
list_3	integer	for storing the room numbers of double bed Non-AC rooms
list_4	integer	for storing the room numbers of double bed AC rooms
list_5	integer	for storing the room numbers of Non-AC suite
list_6	integer	for storing the room numbers of AC suite
number_rooms	integer	to take input from user for number of rooms
room	integer	Looping variable
choice	integer	to take input from user for the person's room choice
dict_	dictionary	to store customer details

list_room1	integer	list to store dict_ for single bed Non- AC rooms
list_room2	integer	list to store dict_ for single bed AC rooms
list_room3	integer	list to store dict_ for double bed Non- AC rooms
list_room4	integer	list to store dict_ for double bed AC rooms
list_room5	integer	list to store dict_ for Non-AC suite
list_room6	integer	list to store dict_ for AC suite
name	string	to take input from the user for the customer's name
bEntries	string	to store breakfast dish names
bSides	string	to store breakfast side dish names
lEntries	string	to store lunch dish names
lSides	string	to store lunch side dish names
dEntries	string	to store dinner dish names

dSides	string	to store dinner side dish names
Drinks	string	to store drink options available
dineWithus	character	to take input from user whether they want to dine with us or not

order	character	To take input from the user that what meal they have to order
sideB	integer	To take input from the user what they want to take in drinks.
sideL	integer	To take input from the user what they want to take in lunch
entrieD	integer	To take input from the user what they want to take in dinner
sideD	integer	To take input from the user what they want to take in dinner side dish.
n	integer	To take input from the user regarding room services.

SYSTEM IMPLEMENTATION

a) Module Description

i) Booking() Function:

This function handles the room booking process.

It initializes lists (list_1, list_2, list_3, list_4, list_5, and list_6) to represent available rooms of different types.

It takes the number of rooms the user wants to book as input.

It enters a loop to allocate rooms based on user choices:

The user can select a room type from Single Bed Non-AC, Single Bed AC, Double Bed Non-AC, Double Bed AC, Non-AC Suite, and AC Suite.

The selected room is assigned to the user, and details are stored in a list corresponding to the room type.

The room number, customer name, room type, and charges are displayed.

The loop continues until the user chooses to exit by pressing 7.

ii) Restaurant() Function:

This function handles the restaurant dining process.

It displays a menu of breakfast, lunch, and dinner options.

Users can choose from a variety of dishes and sides for each meal.

The total cost of the meal is calculated and displayed.

The program handles multiple customers ordering meals.

iii) Roomservices() Function:

This function provides various room services options.

It allows users to choose services like room cleaning, food ordering, network fixing, laundry service, electrical appliance service, or other services.

If the user chooses to order food, it calls the Restaurant() function.

iv) Checkout() Function:

This function displays a checkout message when a user decides to leave the hotel.

v) The Main Program:

The main program starts by displaying a welcome message and initializing the flag variable to True.

It enters a loop and displays a menu with options for room booking, dining, room services, and quitting.

Depending on the user's choice, it calls the corresponding function (Booking(), Restaurant(), Roomservices()) or exits the program (Checkout()).

The loop continues until the user chooses to guit, setting flag to False.

SCREENSHOTS

```
Hi! Welcome to Hotel Paradise!
 How can we help you today?
 Press 1 for Room Booking
 Press 2 for Dine In
 Press 3 for Room Service
 Press 4 for quit
 enter your choice: 1
 Welcome to the Room Booking Portal of Hotel Paradise!!!
 enter the number of rooms: 3
 The room options available are:
 Press 1 for Single Bed Non AC Room
 Press 2 for Single Bed AC Room
 Press 3 for Double Bed Non AC Room
 Press 4 for Double Bed AC Room
 Press 5 for Non AC Suite
 Press 6 for AC Suite
 Press 7 for quit
 enter your choice: 4
 You have been allocated the room number 1
 enter your name: Rahul Sharma
 Customer Details -
 [{'customer name': 'Rahul Sharma', 'room no': 1, 'room type': 'double bed AC', 'charges': 600}]
The room options available are:
Press 1 for Single Bed Non AC Room
Press 2 for Single Bed AC Room
Press 3 for Double Bed Non AC Room
Press 4 for Double Bed AC Room
Press 5 for Non AC Suite
Press 6 for AC Suite
Press 7 for quit
enter your choice: 6
You have been allocated the room number 1
enter your name: Priyanka Raj
Customer Details -
[{'customer_name': 'Priyanka Raj', 'room_no': 1, 'room_type': 'AC Suite', 'charges': 1200}]
The room options available are:
Press 1 for Single Bed Non AC Room
Press 2 for Single Bed AC Room
Press 3 for Double Bed Non AC Room
Press 4 for Double Bed AC Room
Press 5 for Non AC Suite
Press 6 for AC Suite
Press 7 for quit
enter your choice: 4
You have been allocated the room number 2
enter your name: Harshad Gupta
Customer Details
```

```
Press 1 for Room Booking
Press 2 for Dine In
Press 3 for Room Service
Press 4 for quit
enter your choice: 2
Welcome to the Restaurant! Would you like to dine with us today? [Y/N]Y
How many will be dining with us today?2
Customer Order Number: 1
Would you like to order breakfast, lunch or dinner?[B/L/D]L
Lunch options are 1 Veg Pulao
Lunch options are 2 Fried Rice
Lunch options are 3 Egg curry
Lunch options are 4 Chicken Biriyani
Lunch options are 5 Chilli Paneer
Which would you like? 2
You have chosen Fried Rice
Side options are 1 Plain Rice
Side options are 2 Masala Kulcha
Side options are 3 Soup
Side options are 4 Tandoori Chicken
Side options are 5 Raita
Which would you like? 4
You have chosen Tandoori Chicken
Woudld you like a drink?[Y/N]Y
Drink options are 1 Water
Drink options are 1 Water
Drink options are 2 Fruit Juice
Drink options are 3 Assorted Mocktails
Drink options are 4 Cold Drinks
Drink options are 5 Masala Soda
Which would you like? 5
You have chosen Masala Soda
Customer Order Number: 2
Would you like to order breakfast, lunch or dinner?[B/L/D]B
Breakfast menu is 1 Upma
Breakfast menu is 2 FrenchToast
Breakfast menu is 3 Cheese Sandwich
Breakfast menu is 4 Chole Bhature
Breakfast menu is 5 Masala Dosa
Which would you like? 2
You have chosen FrenchToast
Breakfast sides are 1 Eggs
Breakfast sides are 2 Puri
Breakfast sides are 3 Toast
Breakfast sides are 4 Fruit salad
Breakfast sides are 5 Samosa
Which would you like? 4
You have chosen Fruit salad
Woudld you like a drink?[Y/N]N
Your total cost is 500 rupees. Thank you for dining with us! Come again!
Hi! Welcome to Hotel Paradise!
```

[{'customer_name': 'Harshad Gupta', 'room_no': 2, 'room_type': 'double bed AC', 'charges': 600}]

Hi! Welcome to Hotel Paradise! How can we help you today?

How can we help you today?

Hi! Welcome to Hotel Paradise! How can we help you today?

Press 1 for Room Booking
Press 2 for Dine In
Press 3 for Room Service
Press 4 for quit
enter your choice: 3
Welcome to our room service portal
Dial 101 for room cleaning
Dial 102 for ordering the food
Dial 103 for network fixing
Dial 104 for laundry service
Dial 105 for electrical appliances
Dial 106 for any other related problems
please dial the number on telephone for the respective enquiry.103

Your query has been recorded.Our staff will be soon reaching to you.

Hi! Welcome to Hotel Paradise! How can we help you today?

Press 1 for Room Booking Press 2 for Dine In Press 3 for Room Service Press 4 for quit enter your choice: 4

Hope you enjoyed your stay. Thank You, visit again.

APPENDIX

a)Math:-

This module provides access to the mathematical functions defined by the C standard.

These functions cannot be used with complex numbers; use the functions of the same name from the cmath module if you require support for complex numbers. The distinction between functions which support complex numbers and those which don't is made since most users do not want to learn quite as much mathematics as required to understand complex numbers. Receiving an exception instead of a complex result allows earlier detection of the unexpected complex number used as a parameter, so that the programmer can determine how and why it was generated in the first place.

b)Def :-

Python def keyword is used to define a function, it is placed before a function name that is provided by the user to create a user-defined function. In Python, a function is a logical unit of code containing a sequence of statements indented under a name given using the "def" keyword.

c)While:-

A while loop is a control flow statement which allows code to be executed repeatedly, depending on whether a condition is satisfied or not. As long as some condition is true, 'while' repeats everything inside the loop block. It stops executing the block if and only if the condition fails.

d)If-else:-

The conditional expressions are evaluated from the top downward. As soon as a true condition is found, the statement associated with it is executed, and the rest of the ladder is bypassed. If non of the conditions is true, then the final else statement will be executed.

PSEUDOCODE:-

Import the math library

Define the Booking function:

Print a welcome message

Create lists for available rooms in different categories (list_1, list_2, list_3, list_4, list_5, list_6)

Prompt the user to enter the number of rooms they want to book

Initialize room counter to 1

Repeat for each room from 1 to the specified number of rooms:

Display available room options

Prompt the user to choose a room type

Based on the choice, allocate a room and delete the room already allocated from the list of the

rooms, collect customer details, and store it in a dictionary then the dictionary to the respective

room list

End the loop when all rooms are booked or the user chooses to quit

Define the Restaurant function:

Define menu options for breakfast, lunch, and drinks

Prompt the user to decide if they want to dine in

If the user wants to dine in:

Prompt for the number of customers

Initialize the grandTotal to 0

Repeat for each customer:

Display the customer order number

Prompt for the meal type (breakfast, lunch, or dinner)

Based on the meal type, display menu options and let the customer choose items

Calculate the total cost and add it to the grandTotal

End the loop when all customers have ordered

Display the grandTotal cost and thank the customers

Define the Roomservices function:

Display room service options

Prompt the user to dial a number for a specific service

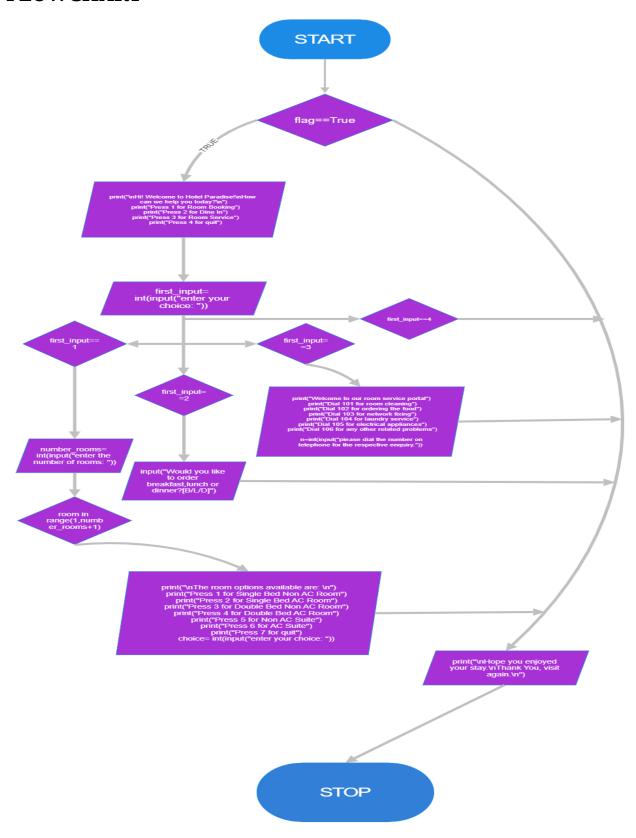
If the user dials 102 (for ordering food), call the Restaurant function Otherwise, record the query and inform the user that staff will respond

Define the Checkout function: Display a farewell message

Initialize a flag variable to True
Repeat while the flag is True:
Display the main menu options
Prompt the user to choose an action
Based on the user choice, call the corresponding function (Booking, Restaurant, Roomservices)
or quit
If the user chooses to quit, set the flag to False

Call the Checkout function to finalize the interaction

FLOWCHART



CODE:-

```
import math
def Booking():
       print("\nWelcome to the Room Booking Portal of Hotel Paradise!!!\n")
      list_1 = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20]
      list_2= [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20]
      list_3= [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20]
      list_4= [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20]
      list_5= [1,2,3,4,5]
      list_6= [1,2,3,4,5,6,7,8,9,10]
  number_rooms= int(input("enter the number of rooms: "))
       room=1
       for room in range(1,number_rooms+1):
       print("\nThe room options available are: \n")
       print("Press 1 for Single Bed Non AC Room")
       print("Press 2 for Single Bed AC Room")
       print("Press 3 for Double Bed Non AC Room")
       print("Press 4 for Double Bed AC Room")
       print("Press 5 for Non AC Suite")
       print("Press 6 for AC Suite")
       print("Press 7 for quit")
       choice= int(input("enter your choice: "))
  if choice==1:
      list_room1=[]
       print("You have been allocated the room number ", list_1[0])
       r = list_1[0]
       del list_1[0]
       name = input("enter your name: ")
       dict_= {'customer_name':name, 'room_no':r, 'room_type':'single bed Non AC',
'charges':150 }
      list_room1.append(dict_)
       print("Customer Details -\n")
       print(list_room1)
       elif choice==2:
      list_room2=[]
```

```
print("You have been allocated the room number ", list_2[0])
      r = list_2[0]
      del list_2[0]
      name = input("enter your name: ")
      dict_=
               {'customer_name':name,
                                                          'room_type':'single bed
                                           'room_no':r,
                                                                                      AC',
'charges':250 }
      list_room2.append(dict_)
      print("Customer Details -\n")
      print(list_room2)
      elif choice==3:
      list_room3=[]
      print("You have been allocated the room number ", list_3[0])
      r = list_3[0]
        del list_3[0]
      name = input("enter your name: ")
      dict_= {'customer_name':name, 'room_no':r, 'room_type':'double bed Non AC',
'charges':500 }
      list_room3.append(dict_)
      print("Customer Details -\n")
      print(list_room3)
      elif choice==4:
      list_room4=[]
      print("You have been allocated the room number", list_4[0])
      r = list_4[0]
      del list_4[0]
      name = input("enter your name: ")
      dict_=
               {'customer_name':name,
                                           'room_no':r,
                                                         'room_type':'double
                                                                                      AC',
'charges':600 }
      list_room4.append(dict_)
      print("Customer Details -\n")
      print(list_room4)
      elif choice==5:
      list_room5=[]
      print("You have been allocated the room number ", list_5[0])
      r = list_5[0]
      del list_5[0]
      name = input("enter your name: ")
```

```
'room_type':'Non AC
       dict_= {'customer_name':name,
                                          'room_no':r,
                                                                                     Suite',
'charges':1000 }
      list_room5.append(dict_)
       print("Customer Details -\n")
       print(list_room5)
       elif choice==6:
       list_room6=[]
       print("You have been allocated the room number ", list_6[0])
      r = list_6[0]
        del list_6[0]
       name = input("enter your name: ")
       dict_= {'customer_name':name, 'room_no':r, 'room_type':'AC Suite', 'charges':1200 }
      list_room6.append(dict_)
       print("Customer Details -\n")
       print(list_room6)
       elif choice==7:
       break
       room=room+1
def Restaurant():
 #Class for breakfast entries
bEntries = ["Upma","FrenchToast","Cheese Sandwich","Chole Bhature","Masala Dosa"]
 #class for breakfast sides
bSides = ["Eggs","Puri","Toast","Fruit salad","Samosa"]
#Class for lunch entries
lEntries = ["Veg Pulao","Fried Rice","Egg curry","Chicken Biriyani","Chilli Paneer"]
#class for lunch sides
lSides = ["Plain Rice","Masala Kulcha","Soup","Tandoori Chicken","Raita"]
 #class for dinner entries
 dEntries = ["Butter chicken", "Paneer kadhai", "Mutton curry", "Mushroom curry"]
 #class for dinner sides
```

```
dSides = ["Roti", "Masala Papad", "Salad", "Butter Naan"]
#Class for drinks
Drinks = ["Water","Fruit Juice","Assorted Mocktails","Cold Drinks","Masala Soda"]
#FIRST PROMPT WELCOME
 dineWithus=input("\nWelcome to the Restaurant! Would you like to dine with us today?
[Y/N]")
if dineWithus =="N":
      print("Have a nice day!.")
if dineWithus=="Y":
      amountCustomer=int(input("How many will be dining with us today?"))
#define my breakfast menu
 breakfastMenu = ["Pancake 100rs, French Toast 100rs, Chicken Fried Steak 100rs, Omlet
100rs, Scramble 100rs, Eggs 100rs, Bacon 100rs, Toast, 100rs, Fruit 1$, Sausage 100rs"]
#define my lunch menu
 lunchMenu = ["Burger 100rs, Chili 100rs, Sandwich 100rs, Hotdog 100rs, Chicken 100rs,
Fries 100rs, Rolls 100rs, Salad 100rs, Gourmet Nachos 100rs"]
#define my drink menu
drinkmenu=["Water 100rs, Juice 100rs, Milk 100rs, Soda 100rs, Beer 100rs"]
grandTotal=0
#Possible Counters
orderNumber=1
x=0
V=0
counter = 1
counter2 = 1
drinkOrder = 0
while orderNumber <= amountCustomer:
      print("Customer Order Number:",orderNumber)
```

```
order=input("Would you like to order breakfast,lunch or dinner?[B/L/D]")
   i=0
   j=0
    #LOOP FOR BREAKFAST ENTRIES
   if order == "B":
    while i < len(bEntries):
    print("Breakfast menu is",i+1,bEntries[i])
   i += 1
    entrieB = int(input("Which would you like? "))
    if entrieB == 1:
    print("You have chosen",bEntries[0])
    grandTotal+=100
   if entrieB == 2:
    print("You have chosen",bEntries[1])
    grandTotal+=100
   if entrieB == 3:
    print("You have chosen",bEntries[2])
    grandTotal+=100
if entrieB == 4:
    print("You have chosen",bEntries[3])
    grandTotal+=100
    if entrieB == 5:
    print("You have chosen",bEntries[4])
    grandTotal+=100
    #LOOP FOR BREAKFAST SIDES
    while j < len(bSides):
    print("Breakfast sides are",j+1,bSides[j])
   i += 1
    sideB = int(input("Which would you like? "))
   if sideB == 1:
    print("You have chosen",bSides[0])
    grandTotal+=100
    if sideB == 2:
    grandTotal+=100
    print("You have chosen",bSides[1])
```

```
grandTotal+=100
if sideB == 3:
print("You have chosen",bSides[2])
grandTotal+=100
if sideB == 4:
print("You have chosen",bSides[3])
grandTotal+=100
if sideB == 5:
print("You have chosen",bSides[4])
grandTotal+=100
#LUNCH ENTRIES LOOP
1 = 0
if order == "L":
while l < len(lEntries):
print("Lunch options are",l+1,lEntries[l])
1 += 1
entrieL = int(input("Which would you like? "))
if entrieL == 1:
print("You have chosen",lEntries[0])
grandTotal+=100
if entrieL == 2:
print("You have chosen",lEntries[1])
grandTotal+=100
if entrieL == 3:
print("You have chosen", lEntries[2])
grandTotal+=100
if entrieL == 4:
print("You have chosen",lEntries[3])
grandTotal+=100
if entrieL == 5:
print("You have chosen", lEntries[4])
grandTotal+=100
#LUNCH SIDES LOOP
k = 0
while k < len(lSides):
```

```
print("Side options are",k+1,lSides[k])
k += 1
sideL = int(input("Which would you like? "))
if sideL == 1:
print("You have chosen", lSides[0])
grandTotal+=100
if sideL == 2:
print("You have chosen", lSides[1])
grandTotal+=100
if sideL == 3:
print("You have chosen", lSides[2])
grandTotal+=100
if sideL == 4:
print("You have chosen", lSides[3])
grandTotal+=100
if sideL == 5:
print("You have chosen", lSides[4])
grandTotal+=100
#DINNER ENTRIES LOOP
q = 0
if order == "D":
while q < len(dEntries):
print("Lunch options are",q+1,dEntries[q])
q += 1
entrieD = int(input("Which would you like? "))
if entrieD == 1:
print("You have chosen",dEntries[0])
grandTotal+=100
if entrieD == 2:
print("You have chosen",dEntries[1])
grandTotal+=100
if entrieD == 3:
print("You have chosen",dEntries[2])
grandTotal+=100
if entrieD == 4:
print("You have chosen",dEntries[3])
```

```
grandTotal+=100
#DINNER SIDES LOOP
p = 0
while p < len(dSides):
print("Side options are",p+1,dSides[p])
p += 1
sideD = int(input("Which would you like? "))
if sideD == 1:
print("You have chosen",dSides[0])
 grandTotal+=100
if sideD == 2:
print("You have chosen",dSides[1])
grandTotal+=100
if sideD == 3:
print("You have chosen",dSides[2])
grandTotal+=100
if sideD == 4:
print("You have chosen",dSides[3])
grandTotal+=100
#DRINK LOOP
drink = input("Would you like a drink?[Y/N]")
if drink =="Y":
while d < len(Drinks):
print("Drink options are",d+1,Drinks[d])
drinkC = int(input("Which would you like? "))
if drinkC == 1:
print("You have chosen",Drinks[0])
grandTotal+=100
if drinkC == 2:
print("You have chosen",Drinks[1])
grandTotal+=100
if drinkC == 3:
```

```
print("You have chosen",Drinks[2])
      grandTotal+=100
      if drinkC == 4:
      print("You have chosen",Drinks[3])
      grandTotal+=100
      if drinkC == 5:
      print("You have chosen",Drinks[4])
      grandTotal+=100
       orderNumber+=1
#PRINT TOTAL
  print("\nYour total cost is",grandTotal,"rupees. Thank you for dining with us! Come
again!")
def Roomservices():
print("Welcome to our room service portal")
print("Dial 101 for room cleaning")
 print("Dial 102 for ordering the food")
 print("Dial 103 for network fixing")
 print("Dial 104 for laundry service")
 print("Dial 105 for electrical appliances")
 print("Dial 106 for any other related problems")
n=int(input("please dial the number on telephone for the respective enquiry."))
if n==102:
      Restaurant()
 else:
      print("\nYour query has been recorded.Our staff will be soon reaching to you.")
def Checkout():
print("\nHope you enjoyed your stay.\nThank You, visit again.\n")
flag=True
while flag==True:
print("\nHi! Welcome to Hotel Paradise!\nHow can we help you today?\n")
print("Press 1 for Room Booking")
 print("Press 2 for Dine In")
 print("Press 3 for Room Service")
 print("Press 4 for quit")
```

Project link in github: -

https://github.com/ucse22016/Python-Project