Object Oriented Programing

Department of Computing
Hamdard Institute of Engineering & Technology
Hamdard University

Resturant Management System

Project Report

Group Members:

Nabeel Rizwan 1019-2019
Hamza Khan 1309-2019
Hassan Lodhi 1341-2019

Instructor:

Sir Faheem Ahmed

1. Introduction

This is a software that is used for ordering food using a graphic user interface. It is intended to be used as a way to place your order using a simple to use interface. Customers can fill the required information and can place an order with ease.

1.1 Purpose

The main aim of this project is to remove the manual labor of placing orders in a restaurant. The Restaurant Management System takes a step in the right direction by automating this process. Using this software managers can easily keep a record of all of the orders placed and also print the relevant receipt

1.2 Project Scope

This software can be implemented in a variety of different places from public libraries to schools and universities. Food is an essential requirement for life. This software will help make ordering and managing it simple and efficient for both customer and employee. It will also help employees keep records in a more efficient manner.

1.3 Product Features

This software has the following features:

1. Can generate a unique order number for each customer.
2. Can save the quantity of each item ordered along with its price in a text file.
3. Can save the cumulative total of all the items ordered.
4. Can generate a bill of the order.
5. Can record and store multiple orders and save them in a text file.
6. Can view previously stored bills in file via button.

2. System Features

This software provides a linear and simple path to follow to order food. When the program is first started up it prompts the user for personal information that will be relevant for the order. Then to select the items that you want. Lastly to checkout you press the total button after which you can collect your receipt.
They are explained in full in the following paragraph:

2.1 Description and Priority

- Customer data

First and foremost the program requires the data of the customer so that it can arrange the delivery by managing time.

- Items to purchase

Second priority is the food items selected by the customer which record the quantity of each item.

- Calculating and storing the data

Third priority is calculating the values with the respective values stored in variables. Then storing it in a text file for later viewing.

- Displaying the receipt

Fourth priority is to generate the receipt of the total amount with miscellaneous charges. It is refreshed after each total for each order.

- Displaying Database

Fifth priority is to display the all the past receipts which are stored in a separate text file then the receipt file. It can also be cleared.

2.2 Functional Requirements

Mentioned below are Certain conditions need to be met for the program to be run as intended.

1. The program needs to be opened in a machine with Python ver. 3.9 or above otherwise the program will not run
2. The program requires extra libraries which need to be installed using the pip command in CMD or else the program will not run.
3. Inputs must be in integers or floating point otherwise an error will cause the program to not run.

3. Python Functions used

Following are the python functions used in this program

- Library of tkinter, Random
- File Handling writing and reading
- Class and constructor
- Multiple method declared and used
- Multiple for Loops
- Global data declaration
- String and Integer as data types

4. Project Code

```
#----------------------------------------Importing
libraries----------------------------------------

from tkinter import *
import random
import Pmw
from PIL import ImageTk

#----------------------------------------Dimentions                          for
Gui----------------------------------------

root = Tk()

Heading = Frame(root)
Heading.pack(side=TOP)

f1 = Frame(root)
f1.pack(side=TOP)

f1 = Canvas(root)
f1.pack(expand = YES, fill = BOTH)

image = ImageTk.PhotoImage(file = "F:\Studies\VSCode\Final lab\images\RMS.jpg")
f1.create_image(0, 0, image = image, anchor = NW)

#----------------------------------------Declaring
variables----------------------------------------

order = StringVar()

item_1 = StringVar()
item_2 = StringVar()
item_3 = StringVar()
item_4 = StringVar()
item_5 = StringVar()

Subtotal = StringVar()
Service_Charge = StringVar()
Tax = StringVar()
Total = StringVar()

customerName = StringVar()
customerPhone = StringVar()
customerAdd = StringVar()

item_1_name = "Special Biryani 1/2 kg"
item_2_name = "White Korma 1/2 kg"
item_3_name = "Matka Karhai 1/2 kg"
item_4_name = "Tandoori Naan"
item_5_name = "Extra Cold Drink"

item_1_cost = 120
item_2_cost = 550
item_3_cost = 500
```

```
item_4_cost = 10
item_5_cost = 55

#---------------------------------------Decalring
Functions---------------------------------------

def total():

    #Recipet for Database
    f = open("recipt.txt", "a")

    clearReceipt
    #Recipet for Customer
    f1 = open("customerReciept.txt", "w")

    x=random.randint(10000, 50000)
    randomRef = str(x)
    order.set(randomRef)
    f.write("\n-------------------------------------------------------")
    f.write("\n\t\tOrder no: {}".format(randomRef))
    f1.write("\n-------------------------------------------------------")
    f1.write("\n\t\tOrder no: {}".format(randomRef))

    #Taken in float for calculations
    quantityofitem_1 =float(item_1.get())
    quantityofitem_2= float(item_2.get())
    quantityofitem_3= float(item_3.get())
    qunttityofitem_4= float(item_4.get())
    qunttityofitem_5 = float(item_5.get())

    #taken in string
    customersName = str(customerName.get())
    customersPhone = str(customerPhone.get())
    customersAdd = str(customerAdd.get())

    f.write("\n\nCustomer Name \t\t\t: {}".format(customersName))
    f.write("\nCustomer Contact no.  \t\t: {}".format(customersPhone))
    f.write("\nDilivery Address \t\t\t: {}".format(customersAdd))
    f.write("\n\nOrder ")

    f1.write("\n\nCustomer Name \t\t\t: {}".format(customersName))
    f1.write("\nCustomer Contact no.  \t\t: {}".format(customersPhone))
    f1.write("\nDilivery Address \t\t\t: {}".format(customersAdd))
    f1.write("\n\nOrder ")

    costofitem_1 = quantityofitem_1 * item_1_cost
    costofitem_2 = quantityofitem_2 * item_2_cost
    costofitem_3 = quantityofitem_3 * item_3_cost
    costofitem_4 = qunttityofitem_4 * item_4_cost
    costofitem_5 = qunttityofitem_5 * item_5_cost

      f.write("\n\n{}  ({}  x  {})   = Rs.  {}".format(item_1_name,  item_1_cost,
quantityofitem_1,costofitem_1))
     f.write("\n{}  ({}  x  {})      = Rs.  {}".format(item_2_name,  item_2_cost,
quantityofitem_2, costofitem_2))
      f.write("\n{}  ({}  x  {})     = Rs.  {}".format(item_3_name,  item_3_cost,
quantityofitem_3, costofitem_3))
```

```
      f.write("\n{}  ({}  x  {})        = Rs.  {}".format(item_4_name,  item_4_cost,
qunttityofitem_4,costofitem_4))
     f.write("\n{}  ({}  x  {})         = Rs.  {}".format(item_5_name,  item_5_cost,
qunttityofitem_5,  costofitem_5))

      f1.write("\n\n{}  ({}  x  {})    = Rs.  {}".format(item_1_name,  item_1_cost,
quantityofitem_1,costofitem_1))
      f1.write("\n{}  ({}  x  {})      = Rs.  {}".format(item_2_name,  item_2_cost,
quantityofitem_2,  costofitem_2))
      f1.write("\n{}  ({}  x  {})     = Rs.  {}".format(item_3_name,  item_3_cost,
quantityofitem_3,  costofitem_3))
     f1.write("\n{}  ({}  x  {})       = Rs.  {}".format(item_4_name,  item_4_cost,
qunttityofitem_4,costofitem_4))
     f1.write("\n{}  ({}  x  {})         = Rs.  {}".format(item_5_name,  item_5_cost,
qunttityofitem_5,  costofitem_5))

      Totalcost=(costofitem_1  +   costofitem_2  +  costofitem_3  +  costofitem_4   +
costofitem_5 )
    costofmeal = "Rs.",str('%.2f'% (Totalcost))
    Totalcost = int(Totalcost)
    f.write("\n\nSub total                    = Rs. {}".format(Totalcost))
    f1.write("\n\nSub total                     = Rs. {}".format(Totalcost))

    Ser_Charge=((Totalcost)/99)
    Service="Rs.",str('%.2f'% Ser_Charge)
    Ser_Charge = int(Ser_Charge)
    f.write("\nService Charges              = Rs. {}".format(Ser_Charge))
    f1.write("\nService Charges               = Rs. {}".format(Ser_Charge))

    PayTax=((Totalcost)*0.33)
    PaidTax="Rs.",str('%.2f'% PayTax)
    PayTax = int(PayTax)
    f.write("\nTax                          = Rs. {}".format(PayTax))
    f1.write("\nTax                           = Rs. {}".format(PayTax))

    OverAllCost = PayTax + Totalcost + Ser_Charge
    OverAllCostPaid = "Rs.",str( OverAllCost)
    OverAllCost = int(OverAllCost)
    f.write("\nTotal                        = Rs. {}".format(OverAllCost))
    f.write("\n-------------------------------------------------")
    f1.write("\nTotal                         = Rs. {}".format(OverAllCost))
    f1.write("\n-------------------------------------------------")

    Subtotal.set(costofmeal)
    Service_Charge.set(Service)
    Tax.set(PaidTax)
    Total.set(OverAllCostPaid)

    f.close()
    f1.close()

def Randomise():

    x=random.randint(10, 99)
    randomRef = int(x)
    item_1.set(randomRef)
    x=random.randint(10, 99)
```

```
    randomRef = int(x)
    item_2.set(randomRef)
    x=random.randint(10, 99)
    randomRef = int(x)
    item_3.set(randomRef)
    x=random.randint(10, 99)
    randomRef = int(x)
    item_4.set(randomRef)
    x=random.randint(10, 99)
    randomRef = int(x)
    item_5.set(randomRef)
    x=random.randint(10, 99)


def printReceipt():
    top = Toplevel (root)
    top.geometry("450x400")
    top.title("Customer Reciept")

    filename = "customerReciept.txt"
    text = Pmw.ScrolledText(top,
        borderframe=10,
        vscrollmode='dynamic',
        hscrollmode='dynamic',
        labelpos='n',
        label_text='{}'.format(filename),
        text_width=500,
        text_height=500,
        text_wrap='none',
        )
    text.pack()

    text.insert('end', open(filename,'r').read())
    Button(top, text='Quit', command=root.destroy).pack(pady=15)
    root.mainloop()

def clearReceipt():
    f = open("customerReciept.txt", "w")
    f.truncate(0)
    f.close()

def print():
    top = Toplevel (root)
    top.geometry("450x400")
    top.title("Recipt")

    filename = "Recipt.txt"
    text = Pmw.ScrolledText(top,
        borderframe=10,
        vscrollmode='dynamic',
        hscrollmode='dynamic',
        labelpos='n',
        label_text='{}'.format(filename),
        text_width=500,
        text_height=500,
        text_wrap='none',
        )
```

```
    text.pack()

    text.insert('end', open(filename,'r').read())
    Button(top, text='Quit', command=root.destroy).pack(pady=15)
    root.mainloop()

def clearDatabase():
    f = open("Recipt.txt", "w")
    f.truncate(0)
    f.close()

def reset():
    order.set(0)
    item_1.set(0)
    item_2.set(0)
    item_3.set(0)
    item_4.set(0)
    item_5.set(0)
    Subtotal.set(0)
    Service_Charge.set(0)
    Tax.set(0)
    Total.set(0)
    customerName.set("")
    customerPhone.set("")
    customerAdd.set("")

def menu():
    roo = Tk()
    roo.geometry("390x250")
    roo.title("MENU")

    lblinfo = Label(roo, font=('aria', 20, 'bold'), text="ITEM")
    lblinfo.grid(row=0, column=0)
    lblinfo = Label(roo, font=('aria', 20,'bold'), fg="white")
    lblinfo.grid(row=0, column=2)
    lblinfo = Label(roo, font=('aria', 20, 'bold'), text="PRICE", fg="black")
    lblinfo.grid(row=0, column=3)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_1_name))
    lblinfo.grid(row=1, column=0)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_1_cost))
    lblinfo.grid(row=1, column=3)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_2_name))
    lblinfo.grid(row=2, column=0)
    lblinfo = Label(roo, font=('aria', 20), text =  "{}".format(item_2_cost))
    lblinfo.grid(row=2, column=3)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_3_name))
    lblinfo.grid(row=3, column=0)
    lblinfo = Label(roo, font=('aria', 20), text =  "{}".format(item_3_cost))
    lblinfo.grid(row=3, column=3)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_4_name))
    lblinfo.grid(row=4, column=0)
    lblinfo = Label(roo, font=('aria', 20), text =  "{}".format(item_4_cost))
    lblinfo.grid(row=4, column=3)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_5_name) )
    lblinfo.grid(row=5, column=0)
    lblinfo = Label(roo, font=('aria', 20), text = "{}".format(item_5_cost))
    lblinfo.grid(row=5, column=3)
```

```
    roo.mainloop()

def qexit():
    root.destroy()

#-----------------------------------------------Declaring                      GUI
CLass-----------------------------------------------

class REM:
    def __init__(self):
                            #---------------------------------------GUI   frame
size-----------------------------------------

        root.geometry("1200x660")
        root.title("Restaurant Management System")

                                    #---------------------------------------INFO
TOP-----------------------------------------

          display = Label(Heading, font=( 'aria' ,30, 'bold' ),text="Restaurant
Management System" )
        display.grid(row=0,column=0)

                             #---------------------------------------GUI   Left
text-----------------------------------------

        display = Label(f1, font=( 'aria', 14, 'bold' ),text="Customer Info" )
        display.grid(row=1,column=0)

        display = Label(f1, font=( 'aria', 14, 'bold' ),text="Name" )
        display.grid(row=1,column=1)
         input = Entry(f1,font=('ariel', 14,'bold'), textvariable=customerName ,
bd=6,insertwidth=4,justify='left')
        input.grid(row=2,column=1)

        display = Label(f1, font=( 'aria', 14, 'bold' ),text="(Quantity)" )
        display.grid(row=3,column=1)

                        display   =   Label(f1,   font=(   'aria',   14,   'bold'
),text="{}".format(item_1_name) )
        display.grid(row=4,column=0)
            input  =  Entry(f1,font=('ariel',  14,'bold'),  textvariable=item_1  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=4,column=1)

                        display   =   Label(f1,   font=(   'aria',   14,   'bold'
),text="{}".format(item_2_name) ,)
        display.grid(row=5,column=0)
            input  =  Entry(f1,font=('ariel',  14,'bold'),  textvariable=item_2  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=5,column=1)

                        display   =   Label(f1,   font=(   'aria',   14,   'bold'
),text="{}".format(item_3_name) )
        display.grid(row=6,column=0)
```

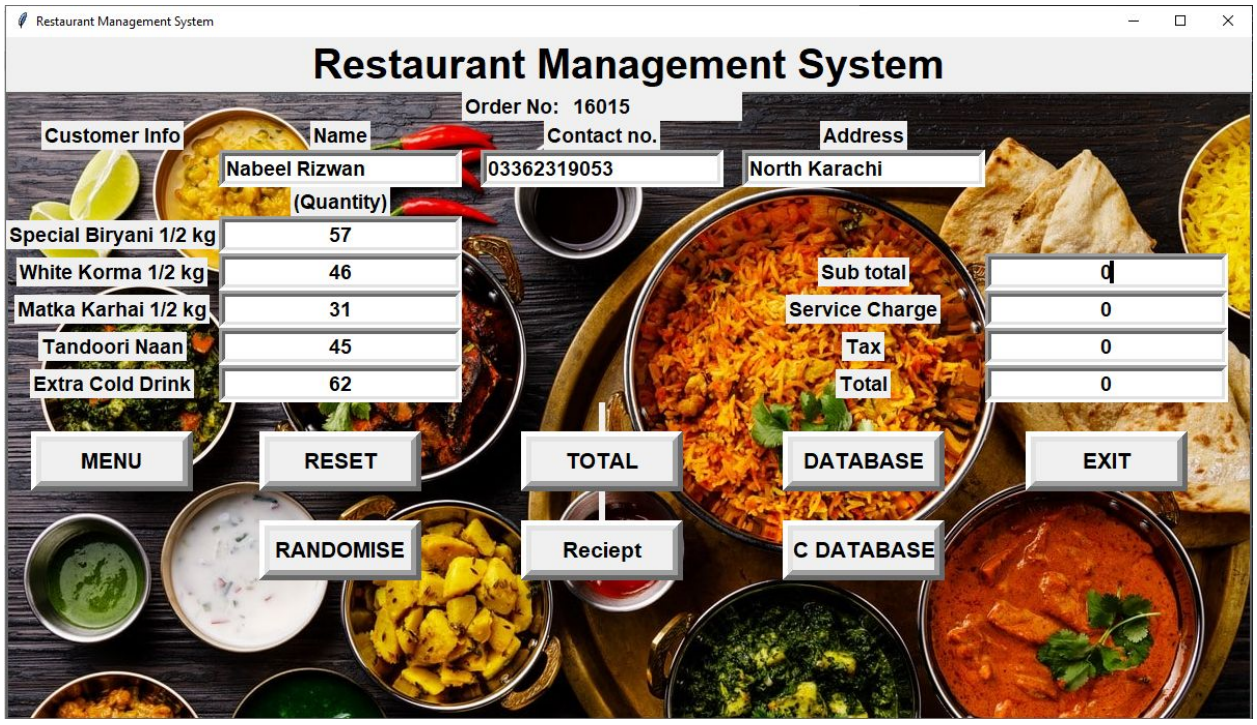
```
            input  =  Entry(f1,font=('ariel',  14,'bold'),  textvariable=item_3  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=6,column=1)

                        display   =   Label(f1,   font=(   'aria',   14,   'bold'
),text="{}".format(item_4_name) )
        display.grid(row=7,column=0)
            input  =  Entry(f1,font=('ariel',  14,'bold'),  textvariable=item_4  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=7,column=1)

                        display   =   Label(f1,   font=(   'aria',   14,   'bold'
),text="{}".format(item_5_name) )
        display.grid(row=8,column=0)
            input  =  Entry(f1,font=('ariel',  14,'bold'),  textvariable=item_5  ,
bd=6,insertwidth=4 ,justify='center')
        input.grid(row=8,column=1)

                          #----------------------------------------GUI   Middle
Text----------------------------------------

        display = Label(f1, font=( 'aria', 14, 'bold' ), text="Order No:\t\t")
        display.grid(row=0,column=2)
            display  =  Label(f1,  font=('ariel',  14,'bold'),  textvariable=order
,justify='center')
        display.grid(row=0,column=2)

        display = Label(f1, font=( 'aria', 14, 'bold' ),text="Contact no." )
        display.grid(row=1,column=2)
         input = Entry(f1,font=('ariel', 14,'bold'), textvariable=customerPhone
, bd=6,insertwidth=4,justify='left')
        input.grid(row=2,column=2)

                          #----------------------------------------GUI   Right
Text----------------------------------------

        display = Label(f1, font=( 'aria', 14, 'bold' ),text="Address" )
        display.grid(row=1,column=3)
         input = Entry(f1,font=('ariel', 14,'bold'), textvariable=customerAdd ,
bd=6,insertwidth=6,justify='left')
        input.grid(row=2,column=3)

        display = Label(f1, font=( 'aria' ,14, 'bold' ),text="Sub total" )
        display.grid(row=5,column=3)
           input  =  Entry(f1,font=('ariel'  ,14,'bold'),  textvariable=Subtotal  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=5,column=4)

        display = Label(f1, font=( 'aria' ,14, 'bold' ),text="Service Charge" )
        display.grid(row=6,column=3)
         input = Entry(f1,font=('ariel' ,14,'bold'), textvariable=Service_Charge
, bd=6,insertwidth=4,justify='center')
        input.grid(row=6,column=4)

        display = Label(f1, font=( 'aria' ,14, 'bold' ),text="Tax" )
        display.grid(row=7,column=3)
```

```
              input  =  Entry(f1,font=('ariel'  ,14,'bold'),  textvariable=Tax  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=7,column=4)

        display = Label(f1, font=( 'aria' ,14, 'bold' ),text="Total" )
        display.grid(row=8,column=3)
             input  =  Entry(f1,font=('ariel'  ,14,'bold'),  textvariable=Total  ,
bd=6,insertwidth=4,justify='center')
        input.grid(row=8,column=4)

                                    #----------------------------------------GUI
buttons----------------------------------------

        space = Label(f1, font=( 'aria', 14, 'bold' ),text="" )
        space.grid(row=9,column=2)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="TOTAL",command=total)
        buttons.grid(row=10, column=2)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="MENU",command=menu)
        buttons.grid(row=10, column=0)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="DATABASE",command=print)
        buttons.grid(row=10, column=3)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="RESET",command=reset)
        buttons.grid(row=10, column=1)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="EXIT",command=qexit)
        buttons.grid(row=10, column=4)

        space = Label(f1, font=( 'aria', 14, 'bold' ),text="" )
        space.grid(row=11,column=2)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="Reciept",command=printReceipt)
        buttons.grid(row=12, column=2)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="RANDOMISE",command=Randomise)
        buttons.grid(row=12, column=1)

                            buttons=Button(f1,    bd=10    ,fg="black",font=('ariel'
,16,'bold'),width=10, text="C DATABASE",command=clearDatabase)
        buttons.grid(row=12, column=3)


nabeel = REM()
root.mainloop()
```

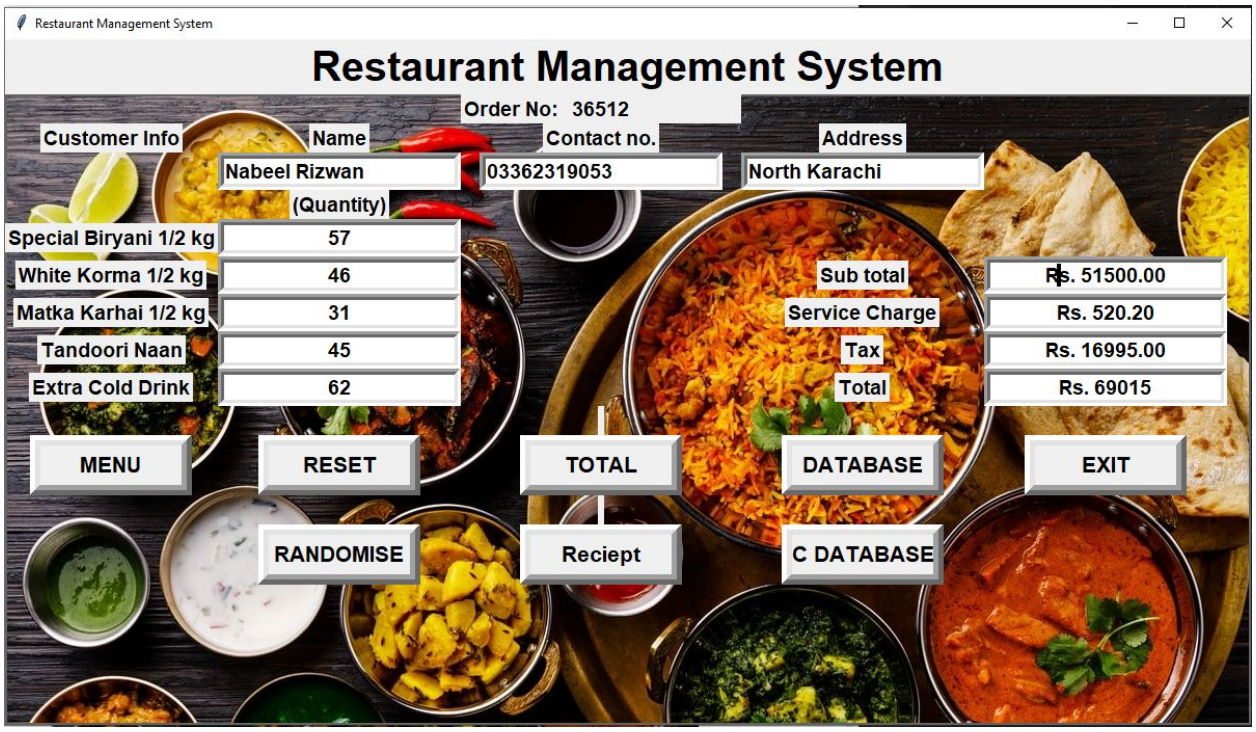
5. Output

When the Program is opened

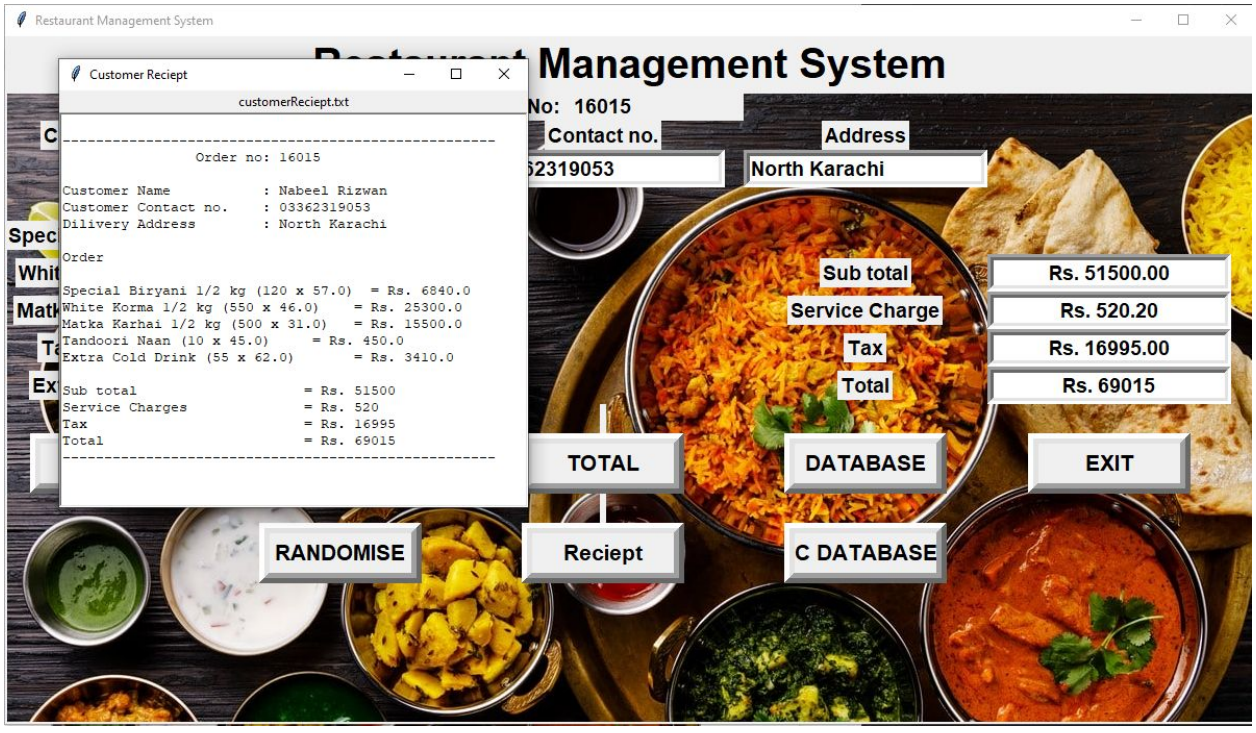
When the values are entered



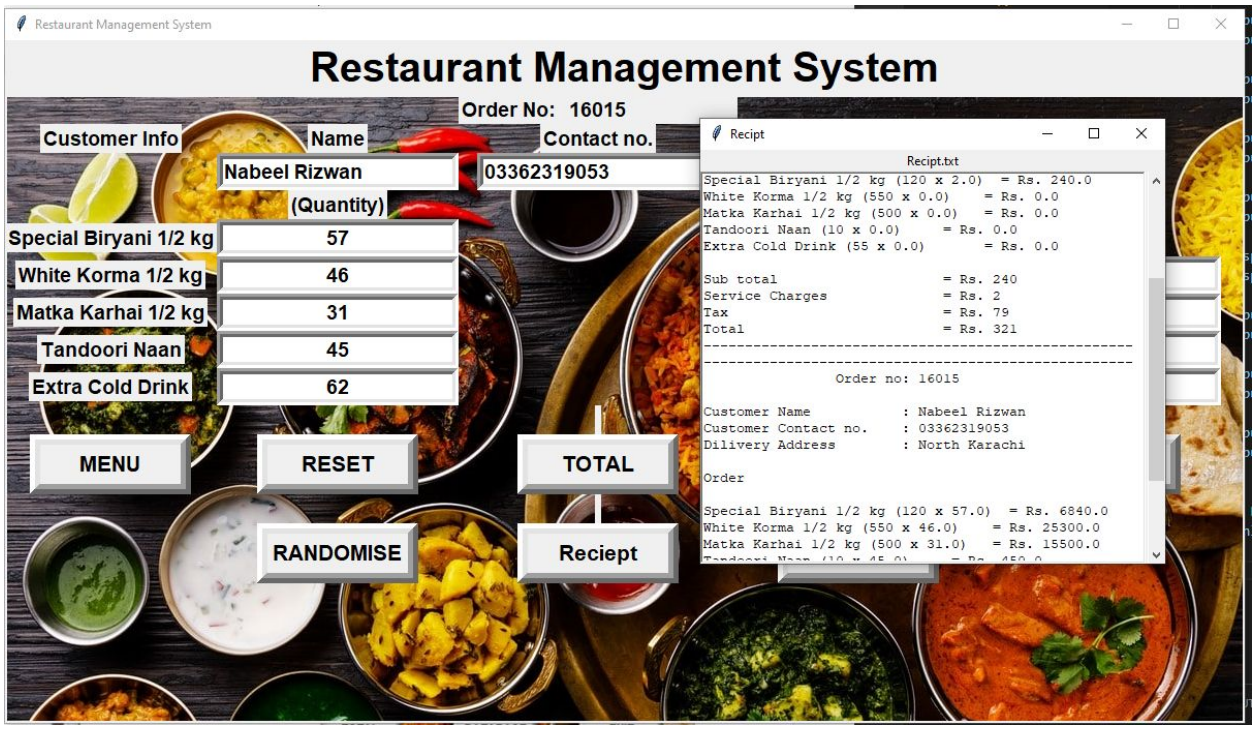
When The Total button is pressed



When The Receipt button is pressed



When The DATABASE button is pressed



When the MENU button is pressed