



Department of Computer Science and Engineering PES
University, Bangalore, India
Python for Computational Problem Solving - UE24CS151A

Problem Statement: Level-2 (Orange)

Prepared by: Dr. Preethi SJ
Dept. of CSE (AIML), PESU

Date: 12th December, 2024, Day: Thursday
Timing: 1:45PM to 4:00PM

Problem Statement: Indian Breakfast Food Billing System

Develop an Indian Breakfast Food Billing System featuring a Graphical User Interface for Canteen Cashiers. The GUI should allow the cashier to input the customer's name and phone number, automatically generate a bill number, and display all available food options along with their prices. The cashier should be able to enter the quantity of each ordered item, calculate the total amount, and generate the final bill. Additionally, there should be a clear option that resets the previous bill and prepares the GUI for new input.

1. **Input customer name:** If customer name is empty, while generating bill it should display error message pop up.
2. **Input customer phone number:** If customer phone number is empty, while generating bill it should display error message pop up. If customer phone number is not 10-digit number, it should display error message pop up.
3. **Automatically generate and display bill number:** Bill number should be incremented for every new bill.
4. **Read and Display Menu Data:** While Displaying the GUI, display menu items and the price list by loading " Menu_Price.csv" file
5. **Read quantity of food items:** For every menu item, have an entry box that accepts the quantity of each ordered item.
6. **Total button:** Clicking the Total button, should display the total amount of the ordered items.
7. **Generate Bill button:** On clicking the Generate Bill button, bill should be generated on the text widget along with customer name, phone number, bill no, date-time, list of items ordered along with quantity and then the final billing amount. Generate Bill button should be disabled till the clear button is selected.
8. **Clear button:** Clear button should increment the bill no count, clear the billing text area widget, set all the quantities ordered back to 0, and clear the total amount value, customer name and customer phone number entry widgets. Then it should enable back the Generate Bill and Print Bill buttons.
9. **Exit button:** Clicking on exit button should close the application

[Optional task:

10. **Print Bill button:** On clicking on the Print Bill button, write the generated bill to a text file with the

file name being bill_number.txt. Print Bill button should be disabled till the clear button is selected.]

Dataset: Indian Breakfast Food Menu (Menu_Price.csv)

Item	Price
Shira	35
Upma	35
Idli	40
Rava Idli	50
Sabudana Idli	50
Vada	25
Curd Vada	40
Sabudana Kichdi	40
Sabudana vada	50
Bonda Soup	40
Poori Bhaji	60
Mangalore buns	30
Shavige bath	40
Puliyogre	40
Vegetable Pulav	50
Bisibele bath	50
Poha	35
Paneer Paratha	80
Methi Paratha	60
Allu Paratha	60
Lemon Rice	40
Bonda	30
Neer Dosa	60
Rava Dosa	70
Plain Dosa	50
Masala Dosa	65
Onion Uttapam	70
Set Dosa	60
Paav Baji	65
Misal Pav	65
Maggi	50
Sandwich	60
Tea	20
Coffee	20
Milk	30

Deliverables:

The complete code in a .py file.

Tools/Technologies:

Language: Python 3.10 or above. **GUI Framework:** tkinter. **File Handling:** csv, txt

Sample GUI:

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name Phone No Bill No. 1

Food

Shira (Rs. 35)	<input type="text" value="0"/>	Shavige bath (Rs. 40)	<input type="text" value="0"/>	Plain Dosa (Rs. 50)	<input type="text" value="0"/>
Upma (Rs. 35)	<input type="text" value="0"/>	Puliyogre (Rs. 40)	<input type="text" value="0"/>	Masala Dosa (Rs. 65)	<input type="text" value="0"/>
Idli (Rs. 40)	<input type="text" value="0"/>	Vegetable Pulav (Rs. 50)	<input type="text" value="0"/>	Onion Uttapam (Rs. 70)	<input type="text" value="0"/>
Rava Idli (Rs. 50)	<input type="text" value="0"/>	Bisibele bath (Rs. 50)	<input type="text" value="0"/>	Set Dosa (Rs. 60)	<input type="text" value="0"/>
Sabudana Idli (Rs. 50)	<input type="text" value="0"/>	Poha (Rs. 35)	<input type="text" value="0"/>	Paav Baji (Rs. 65)	<input type="text" value="0"/>
Vada (Rs. 25)	<input type="text" value="0"/>	Paneer Paratha (Rs. 80)	<input type="text" value="0"/>	Misal Pav (Rs. 65)	<input type="text" value="0"/>
Curd Vada (Rs. 40)	<input type="text" value="0"/>	Methi Paratha (Rs. 60)	<input type="text" value="0"/>	Maggi (Rs. 50)	<input type="text" value="0"/>
Sabudana Kichdi (Rs. 40)	<input type="text" value="0"/>	Allu Paratha (Rs. 60)	<input type="text" value="0"/>	Sandwich (Rs. 60)	<input type="text" value="0"/>
Sabudana vada (Rs. 50)	<input type="text" value="0"/>	Lemon Rice (Rs. 40)	<input type="text" value="0"/>	Tea (Rs. 20)	<input type="text" value="0"/>
Bonda Soup (Rs. 40)	<input type="text" value="0"/>	Bonda (Rs. 30)	<input type="text" value="0"/>	Coffee (Rs. 20)	<input type="text" value="0"/>
Poori Bhaji (Rs. 60)	<input type="text" value="0"/>	Neer Dosa (Rs. 60)	<input type="text" value="0"/>	Milk (Rs. 30)	<input type="text" value="0"/>
Mangalore buns (Rs. 30)	<input type="text" value="0"/>	Rava Dosa (Rs. 70)	<input type="text" value="0"/>		

Total Amount:

Bill List

Bill Menu

Total Generate Bill Print Bill Clear Exit

Output: click button [total]

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name Preethi SJ Phone No 9987677822 Bill No. 1

Food

Shira (Rs. 35)	<input type="text" value="0"/>	Shavige bath (Rs. 40)	<input type="text" value="0"/>	Plain Dosa (Rs. 50)	<input type="text" value="0"/>
Upma (Rs. 35)	<input type="text" value="2"/>	Puliyogre (Rs. 40)	<input type="text" value="0"/>	Masala Dosa (Rs. 65)	<input type="text" value="0"/>
Idli (Rs. 40)	<input type="text" value="0"/>	Vegetable Pulav (Rs. 50)	<input type="text" value="0"/>	Onion Uttapam (Rs. 70)	<input type="text" value="0"/>
Rava Idli (Rs. 50)	<input type="text" value="0"/>	Bisibele bath (Rs. 50)	<input type="text" value="0"/>	Set Dosa (Rs. 60)	<input type="text" value="0"/>
Sabudana Idli (Rs. 50)	<input type="text" value="0"/>	Poha (Rs. 35)	<input type="text" value="0"/>	Paav Baji (Rs. 65)	<input type="text" value="0"/>
Vada (Rs. 25)	<input type="text" value="1"/>	Paneer Paratha (Rs. 80)	<input type="text" value="0"/>	Misal Pav (Rs. 65)	<input type="text" value="0"/>
Curd Vada (Rs. 40)	<input type="text" value="0"/>	Methi Paratha (Rs. 60)	<input type="text" value="0"/>	Maggi (Rs. 50)	<input type="text" value="0"/>
Sabudana Kichdi (Rs. 40)	<input type="text" value="0"/>	Allu Paratha (Rs. 60)	<input type="text" value="0"/>	Sandwich (Rs. 60)	<input type="text" value="0"/>
Sabudana vada (Rs. 50)	<input type="text" value="0"/>	Lemon Rice (Rs. 40)	<input type="text" value="0"/>	Tea (Rs. 20)	<input type="text" value="0"/>
Bonda Soup (Rs. 40)	<input type="text" value="0"/>	Bonda (Rs. 30)	<input type="text" value="1"/>	Coffee (Rs. 20)	<input type="text" value="3"/>
Poori Bhaji (Rs. 60)	<input type="text" value="0"/>	Neer Dosa (Rs. 60)	<input type="text" value="0"/>	Milk (Rs. 30)	<input type="text" value="0"/>
Mangalore buns (Rs. 30)	<input type="text" value="0"/>	Rava Dosa (Rs. 70)	<input type="text" value="0"/>		

Total Amount: 165 Rs.

Bill List

Bill Menu

Total Generate Bill Print Bill Clear Exit

Output: click button [Generate Bill]

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name

Preethi SJ

Phone No

9987677822

Bill No.

1

Food

Shira (Rs. 35)

0

Shavige bath (Rs. 40)

0

Plain Dosa (Rs. 50)

0

Upma (Rs. 35)

2

Puliyogre (Rs. 40)

0

Masala Dosa (Rs. 65)

0

Idli (Rs. 40)

0

Vegetable Pulav (Rs. 50)

0

Onion Uttapam (Rs. 70)

0

Rava Idli (Rs. 50)

0

Bisibele bath (Rs. 50)

0

Set Dosa (Rs. 60)

0

Sabudana Idli (Rs. 50)

0

Poha (Rs. 35)

0

Paav Baji (Rs. 65)

0

Vada (Rs. 25)

1

Paneer Paratha (Rs. 80)

0

Misal Pav (Rs. 65)

0

Curd Vada (Rs. 40)

0

Methi Paratha (Rs. 60)

0

Maggi (Rs. 50)

0

Sabudana Kichdi (Rs. 40)

0

Allu Paratha (Rs. 60)

0

Sandwich (Rs. 60)

0

Sabudana vada (Rs. 50)

0

Lemon Rice (Rs. 40)

0

Tea (Rs. 20)

0

Bonda Soup (Rs. 40)

0

Bonda (Rs. 30)

1

Coffee (Rs. 20)

2

Poori Bhaji (Rs. 60)

0

Neer Dosa (Rs. 60)

0

Milk (Rs. 30)

0

Mangalore buns (Rs. 30)

0

Rava Dosa (Rs. 70)

0

Total Amount:

Bill List

Customer Name: Preethi SJ
Phone No.: 9987677822
Bill No: 1
Date and Time: 2024-12-11 03:30:18
Upma:2X35
Vada:1X25
Bonda:1X30
Coffee:2X20
Total amount= Rs. 165

Bill Menu

Total

Generate Bill

Print Bill

Clear

Exit

Output: click button [Print Bill]

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name

Preethi SJ

Phone No

9987677822

Bill No.

1

Food

Shira (Rs. 35)

0

Shavige bath (Rs. 40)

0

Plain Dosa (Rs. 50)

0

Upma (Rs. 35)

2

Puliyogre (Rs. 40)

0

Masala Dosa (Rs. 65)

0

Idli (Rs. 40)

0

Vegetable Pulav (Rs. 50)

0

Onion Uttapam (Rs. 70)

0

Rava Idli (Rs. 50)

0

Bisibele bath (Rs. 50)

0

Set Dosa (Rs. 60)

0

Sabudana Idli (Rs. 50)

0

Poha (Rs. 35)

0

Paav Baji (Rs. 65)

0

Vada (Rs. 25)

1

Paneer Paratha (Rs. 80)

0

Misal Pav (Rs. 65)

0

Curd Vada (Rs. 40)

0

Methi Paratha (Rs. 60)

0

Maggi (Rs. 50)

0

Sabudana Kichdi (Rs. 40)

0

Allu Paratha (Rs. 60)

0

Sandwich (Rs. 60)

0

Sabudana vada (Rs. 50)

0

Lemon Rice (Rs. 40)

0

Tea (Rs. 20)

0

Bonda Soup (Rs. 40)

0

Bonda (Rs. 30)

1

Coffee (Rs. 20)

2

Poori Bhaji (Rs. 60)

0

Neer Dosa (Rs. 60)

0

Milk (Rs. 30)

0

Mangalore buns (Rs. 30)

0

Rava Dosa (Rs. 70)

0

Total Amount:

Bill List

Customer Name: Preethi SJ
Phone No.: 9987677822
Bill No: 1
Date and Time: 2024-12-11 03:30:18
Upma:2X35
Vada:1X25
Bonda:1X30
Coffee:2X20
Total amount= Rs. 165

Bill Menu

Total

Generate Bill

Print Bill

Clear

Exit

Open 1.txt file

1.txt

File Edit View

Customer Name: Preethi SJ
Phone No.: 9987677822
Bill No: 1
Date and Time: 2024-12-11 03:30:18
Upma:2X35
Vada:1X25
Bonda:1X30
Coffee:2X20
Total amount= Rs. 165

Output: click button [Clear]

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name Phone No Bill No. 2

Food

Shira (Rs. 35)	<input type="text"/>	Shavige bath (Rs. 40)	<input type="text"/>	Plain Dosa (Rs. 50)	<input type="text"/>
Upma (Rs. 35)	<input type="text"/>	Puliyogre (Rs. 40)	<input type="text"/>	Masala Dosa (Rs. 65)	<input type="text"/>
Idli (Rs. 40)	<input type="text"/>	Vegetable Pulav (Rs. 50)	<input type="text"/>	Onion Uttapam (Rs. 70)	<input type="text"/>
Rava Idli (Rs. 50)	<input type="text"/>	Bisibele bath (Rs. 50)	<input type="text"/>	Set Dosa (Rs. 60)	<input type="text"/>
Sabudana Idli (Rs. 50)	<input type="text"/>	Poha (Rs. 35)	<input type="text"/>	Paav Baji (Rs. 65)	<input type="text"/>
Vada (Rs. 25)	<input type="text"/>	Paneer Paratha (Rs. 80)	<input type="text"/>	Misal Pav (Rs. 65)	<input type="text"/>
Curd Vada (Rs. 40)	<input type="text"/>	Methi Paratha (Rs. 60)	<input type="text"/>	Maggi (Rs. 50)	<input type="text"/>
Sabudana Kichdi (Rs. 40)	<input type="text"/>	Allu Paratha (Rs. 60)	<input type="text"/>	Sandwich (Rs. 60)	<input type="text"/>
Sabudana vada (Rs. 50)	<input type="text"/>	Lemon Rice (Rs. 40)	<input type="text"/>	Tea (Rs. 20)	<input type="text"/>
Bonda Soup (Rs. 40)	<input type="text"/>	Bonda (Rs. 30)	<input type="text"/>	Coffee (Rs. 20)	<input type="text"/>
Poori Bhaji (Rs. 60)	<input type="text"/>	Neer Dosa (Rs. 60)	<input type="text"/>	Milk (Rs. 30)	<input type="text"/>
Mangalore buns (Rs. 30)	<input type="text"/>	Rava Dosa (Rs. 70)	<input type="text"/>		

Total Amount:

Bill List

Bill Menu

Total Generate Bill Print Bill Clear Exit

Output: Pop ups if Customer name and Phone number is empty while generating bill

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name Phone No Bill No. 2

Food

Shira (Rs. 35)	<input type="text"/>	Shavige bath (Rs. 40)	<input type="text"/>	Plain Dosa (Rs. 50)	<input type="text"/>
Upma (Rs. 35)	<input type="text"/>	Puliyogre (Rs. 40)	<input type="text"/>	Manala Dosa (Rs. 65)	<input type="text"/>
Idli (Rs. 40)	<input type="text"/>	Vegetable Pulav (Rs. 50)	<input type="text"/>	Onion Uttapam (Rs. 70)	<input type="text"/>
Rava Idli (Rs. 50)	<input type="text"/>	Bisibele bath (Rs. 50)	<input type="text"/>	Set Dosa (Rs. 50)	<input type="text"/>
Sabudana Idli (Rs. 50)	<input type="text"/>	Poha (Rs. 35)	<input type="text"/>	Paav Baji (Rs. 50)	<input type="text"/>
Vada (Rs. 25)	<input type="text"/>	Paneer Paratha (Rs. 80)	<input type="text"/>	Misal Pav (Rs. 50)	<input type="text"/>
Curd Vada (Rs. 40)	<input type="text"/>	Methi Paratha (Rs. 60)	<input type="text"/>	Maggi (Rs. 50)	<input type="text"/>
Sabudana Kichdi (Rs. 40)	<input type="text"/>	Allu Paratha (Rs. 60)	<input type="text"/>	Sandwich (Rs. 50)	<input type="text"/>
Sabudana vada (Rs. 50)	<input type="text"/>	Lemon Rice (Rs. 40)	<input type="text"/>	Tea (Rs. 20)	<input type="text"/>
Bonda Soup (Rs. 40)	<input type="text"/>	Bonda (Rs. 30)	<input type="text"/>	Coffee (Rs. 20)	<input type="text"/>
Poori Bhaji (Rs. 60)	<input type="text"/>	Neer Dosa (Rs. 60)	<input type="text"/>	Milk (Rs. 30)	<input type="text"/>
Mangalore buns (Rs. 30)	<input type="text"/>	Rava Dosa (Rs. 70)	<input type="text"/>		

Total Amount:

Bill Menu

Total Generate Bill Print Bill Clear Exit

Error

Please enter customer name

OK

Indian Breakfast Billing System

Indian Breakfast Billing System

Customer Details

Customer Name Preethi SJ Phone No Bill No. 2

Food

Shira (Rs. 35)	<input type="text"/>	Shavige bath (Rs. 40)	<input type="text"/>	Plain Dosa (Rs. 50)	<input type="text"/>
Upma (Rs. 35)	<input type="text"/>	Puliyogre (Rs. 40)	<input type="text"/>	Manala Dosa (Rs. 65)	<input type="text"/>
Idli (Rs. 40)	<input type="text"/>	Vegetable Pulav (Rs. 50)	<input type="text"/>	Onion Uttapam (Rs. 70)	<input type="text"/>
Rava Idli (Rs. 50)	<input type="text"/>	Bisibele bath (Rs. 50)	<input type="text"/>	Set Dosa (Rs. 50)	<input type="text"/>
Sabudana Idli (Rs. 50)	<input type="text"/>	Poha (Rs. 35)	<input type="text"/>	Paav Baji (Rs. 50)	<input type="text"/>
Vada (Rs. 25)	<input type="text"/>	Paneer Paratha (Rs. 80)	<input type="text"/>	Misal Pav (Rs. 50)	<input type="text"/>
Curd Vada (Rs. 40)	<input type="text"/>	Methi Paratha (Rs. 60)	<input type="text"/>	Maggi (Rs. 50)	<input type="text"/>
Sabudana Kichdi (Rs. 40)	<input type="text"/>	Allu Paratha (Rs. 60)	<input type="text"/>	Sandwich (Rs. 50)	<input type="text"/>
Sabudana vada (Rs. 50)	<input type="text"/>	Lemon Rice (Rs. 40)	<input type="text"/>	Tea (Rs. 20)	<input type="text"/>
Bonda Soup (Rs. 40)	<input type="text"/>	Bonda (Rs. 30)	<input type="text"/>	Coffee (Rs. 20)	<input type="text"/>
Poori Bhaji (Rs. 60)	<input type="text"/>	Neer Dosa (Rs. 60)	<input type="text"/>	Milk (Rs. 30)	<input type="text"/>
Mangalore buns (Rs. 30)	<input type="text"/>	Rava Dosa (Rs. 70)	<input type="text"/>		

Total Amount:

Bill Menu

Total Generate Bill Print Bill Clear Exit

Error

Please enter customer phone number

OK

Indian Breakfast Billing System

Customer Details

Customer Name: Phone No: Bill No.:

Food

Shira (Rs. 35)	<input type="text" value="0"/>	Shavige bath (Rs. 40)	<input type="text" value="0"/>	Plain Dosa (Rs. 50)	<input type="text" value="0"/>
Upma (Rs. 35)	<input type="text" value="0"/>	Puliyogre (Rs. 40)	<input type="text" value="0"/>	Masala Dosa (Rs. 65)	<input type="text" value="0"/>
Idli (Rs. 40)	<input type="text" value="0"/>	Vegetable Pulav (Rs. 50)	<input type="text" value="0"/>	Onion Uttapam (Rs. 70)	<input type="text" value="0"/>
Rava Idli (Rs. 50)	<input type="text" value="0"/>	Bisibele bath (Rs. 50)	<input type="text" value="0"/>	Set Dosa	<input type="text" value="0"/>
Sabudana Idli (Rs. 50)	<input type="text" value="0"/>	Poha (Rs. 35)	<input type="text" value="0"/>	Paav Bajji	<input type="text" value="0"/>
Vada (Rs. 25)	<input type="text" value="0"/>	Paneer Paratha (Rs. 80)	<input type="text" value="0"/>	Misal Pa	<input type="text" value="0"/>
Curd Vada (Rs. 40)	<input type="text" value="0"/>	Methi Paratha (Rs. 60)	<input type="text" value="0"/>	Maggi	<input type="text" value="0"/>
Sabudana Kichdi (Rs. 40)	<input type="text" value="0"/>	Allu Paratha (Rs. 60)	<input type="text" value="0"/>	Sandwich	<input type="text" value="0"/>
Sabudana vada (Rs. 50)	<input type="text" value="0"/>	Lemon Rice (Rs. 40)	<input type="text" value="0"/>	Tea (Rs. 20)	<input type="text" value="0"/>
Bonda Soup (Rs. 40)	<input type="text" value="0"/>	Bonda (Rs. 30)	<input type="text" value="0"/>	Coffee (Rs. 20)	<input type="text" value="0"/>
Poori Bhaji (Rs. 60)	<input type="text" value="0"/>	Neer Dosa (Rs. 60)	<input type="text" value="0"/>	Milk (Rs. 30)	<input type="text" value="0"/>
Mangalore buns (Rs. 30)	<input type="text" value="0"/>	Rava Dosa (Rs. 70)	<input type="text" value="0"/>		

Total Amount:

Bill List

Customer Name: Preethi SJ

Bill Menu

Indian Breakfast Billing System

Customer Details

Customer Name: Phone No: Bill No.:

Food

Shira (Rs. 35)	<input type="text" value="0"/>	Shavige bath (Rs. 40)	<input type="text" value="0"/>	Plain Dosa (Rs. 50)	<input type="text" value="0"/>
Upma (Rs. 35)	<input type="text" value="0"/>	Puliyogre (Rs. 40)	<input type="text" value="0"/>	Masala Dosa (Rs. 65)	<input type="text" value="0"/>
Idli (Rs. 40)	<input type="text" value="0"/>	Vegetable Pulav (Rs. 50)	<input type="text" value="0"/>	Onion Uttapam (Rs. 70)	<input type="text" value="0"/>
Rava Idli (Rs. 50)	<input type="text" value="0"/>	Bisibele bath (Rs. 50)	<input type="text" value="0"/>	Set Dosa	<input type="text" value="0"/>
Sabudana Idli (Rs. 50)	<input type="text" value="0"/>	Poha (Rs. 35)	<input type="text" value="0"/>	Paav Bajji	<input type="text" value="0"/>
Vada (Rs. 25)	<input type="text" value="0"/>	Paneer Paratha (Rs. 80)	<input type="text" value="0"/>	Misal Pa	<input type="text" value="0"/>
Curd Vada (Rs. 40)	<input type="text" value="0"/>	Methi Paratha (Rs. 60)	<input type="text" value="0"/>	Maggi	<input type="text" value="0"/>
Sabudana Kichdi (Rs. 40)	<input type="text" value="0"/>	Allu Paratha (Rs. 60)	<input type="text" value="0"/>	Sandwich	<input type="text" value="0"/>
Sabudana vada (Rs. 50)	<input type="text" value="0"/>	Lemon Rice (Rs. 40)	<input type="text" value="0"/>	Tea (Rs. 20)	<input type="text" value="0"/>
Bonda Soup (Rs. 40)	<input type="text" value="0"/>	Bonda (Rs. 30)	<input type="text" value="0"/>	Coffee (Rs. 20)	<input type="text" value="0"/>
Poori Bhaji (Rs. 60)	<input type="text" value="0"/>	Neer Dosa (Rs. 60)	<input type="text" value="0"/>	Milk (Rs. 30)	<input type="text" value="0"/>
Mangalore buns (Rs. 30)	<input type="text" value="0"/>	Rava Dosa (Rs. 70)	<input type="text" value="0"/>		

Total Amount:

Bill List

Customer Name: Preethi SJ

Bill Menu

Link is shared by Faculty members for a set of students in each venue. Choose the correct section you belong to in the current semester.

Google form link:

-END-