PROJECT DETAILS

PROJECT TITLE:

Billing System

PROJECT AIM:

To create a billing system for calculating bills in shops or supermarket.

DATA STRUCTURE USED FOR THE IMPLEMENTATION:

Linked List is the data structure used in creating the project.

Linked List is choosen as the data structure because a bill of supermarket or shop is collection of items.Inorder to insert ,delete,update or traverse the item Linked List is the best solution.

CREATIVITY IN YOUR PROJECT

Bill Item can be deleted or updated using name of the item before or after collecting cash from the customer.

WORKING OF PROGRAM

1. **createItem Function**: This function is used to create a new item. It allocates memory for an **Item** structure, initializes its fields with the provided data (name, price, quantity), and sets the **next** pointer to **NULL**.

2. **addItem Function**: This function is used to add a new item to the linked list of items. It takes the current head of the list, an item's name, price, and quantity as input. If the list is empty (head is **NULL**), it simply returns the newly created item as the head. If the list is not empty, it iterates through the list to find the last item and links the new item to it.

3. **deleteItem Function**: This function allows you to delete an item from the linked list based on its name. It searches for the item in the list, unlinks it, and frees the memory associated with it. If the item is not found, it prints a message.

4. **updateItem Function**: This function allows you to update the quantity of an item in the list. It searches for the item by name and updates the quantity. If the item is not found, it prints a message.

5. **calculateTotal Function**: This function calculates the total bill by iterating through the list of items, multiplying each item's price by its quantity, and summing them up.

6. **calculateBalance Function**: This function calculates the balance to be given to the customer. It takes the total bill and asks the user to enter the amount given by the customer. It then subtracts the total bill from the amount given and returns the balance.

7. **displayBill Function**: This function displays the bill, including the names, prices, and quantities of items in a tabular format. It also displays the total bill and the calculated balance.

8. **Main Function**: In the **main** function, a linked list (**itemList**) is initialized as empty. The user is prompted to enter information about items (name, price, and quantity)

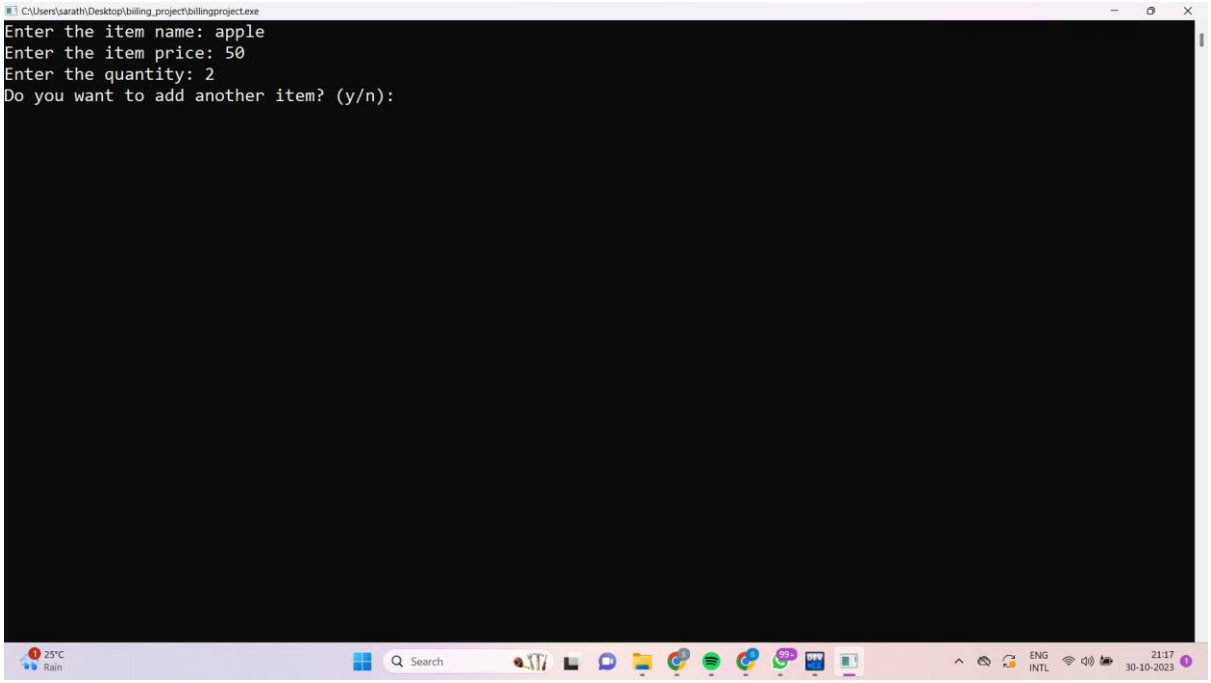
and has the option to continue adding more items. The initial bill is displayed using the **displayBill** function.

9. Afterward, the user is given the option to update or delete items. The user can continue updating or deleting items until they choose to exit. The updated bill is displayed after the changes have been made.

10. Finally, the memory allocated for the linked list is freed using the **freeList** function to avoid memory leaks.

OUTPUT

1.ADDING/INSERTING ITEM



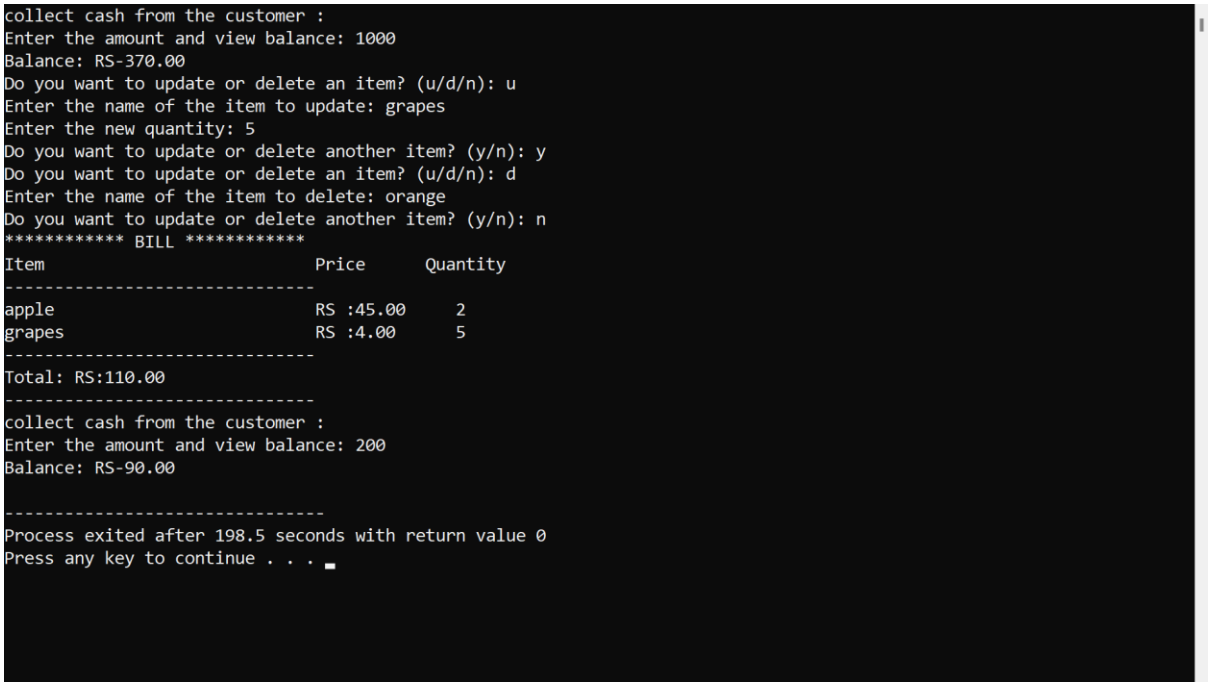
2.DISPLAY OF ITEMS ENTERD

```
Enter the item name: apple
Enter the item price: 45
Enter the quantity: 2
Do you want to add another item? (y/n): y
Enter the item name: orange
Enter the item price: 123
Enter the quantity: 4
Do you want to add another item? (y/n): y
Enter the item name: grapes
Enter the item price: 4
Enter the quantity: 12
Do you want to add another item? (y/n): n
************ BILL ************
Item                            Price      Quantity
-------------------------------
apple                           RS :45.00     2
orange                          RS :123.00    4
grapes                          RS :4.00      12
-------------------------------
Total: RS:630.00
-------------------------------
collect cash from the customer :
Enter the amount and view balance:
```

COLLECTING CASH AND CHECKS FOR UPDATION/DELETION

```
Enter the item price: 4
Enter the quantity: 12
Do you want to add another item? (y/n): n
************ BILL ************
Item                            Price      Quantity
-------------------------------
apple                           RS :45.00     2
orange                          RS :123.00    4
grapes                          RS :4.00      12
-------------------------------
Total: RS:630.00
-------------------------------
collect cash from the customer :
Enter the amount and view balance: 1000
Balance: RS-370.00
Do you want to update or delete an item? (u/d/n):
```

UPDATING /DELETING ITEM AND FINALISNG BILL



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