A Project Report on Store Ledger Tracker System

CAP776(Programming in Python)

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Project Name: Store Ledger Tracker.

Introduction:

Shopkeeper Ledger Tracker is a Python application built for small business owners to keep track of their sales entries. Then we had the shopkeeper application so they can now say that x number is spent on these users with y product sold but it won't be realtime. This system proves very beneficial for the shopkeepers because most of them
work on credit, so they can easily track pending dues and guarantee precise transaction recording.

The ultimate aim of this project is to make the ledger(monthly accounting) process more easy as it was a very time-taking procedure when done manually. Shops owners can then spend time on servicing customers and growing sales aspects rather than worrying about managing their ledgers.

How It Works

1. Product Data Management:
   - The application comes with a predefined list of products, each with a unique ID, name, and price.
   - The shopkeeper selects products from this list to record a sale.
2. Customer Data Entry:
   - The shopkeeper enters the customer's name.
   - The shopkeeper selects the products the customer is purchasing, along with the quantity.
   - The total cost is automatically calculated based on the selected products and quantities.
   - The shopkeeper then specifies whether the customer has paid or if there is any outstanding amount.
3. Ledger Maintenance:
   - The application stores all customer transactions in a dictionary (the ledger), with the customer's name as the key.
   - For each customer, the ledger maintains a list of all items purchased, the price per item, quantity, total amount, and payment status.
   - The shopkeeper can retrieve and review all the transaction details for any customer by entering the customer's name.

Advantages

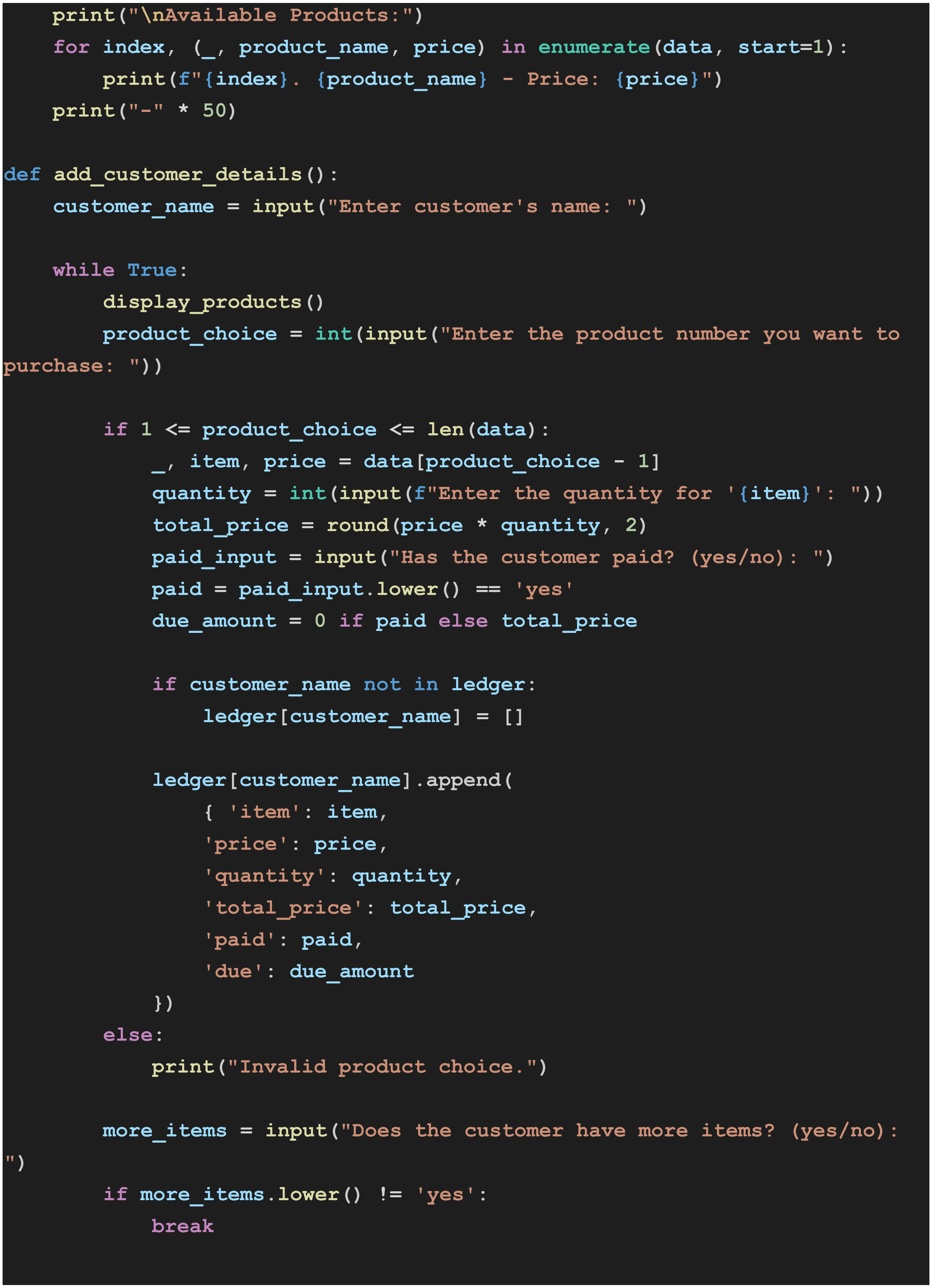
1. Efficiency:
    - Automates the process of recording sales transactions, reducing the need for manual entry and calculation.
2. Accuracy:
    - Eliminates human error in calculating totals and maintaining records.
3. Easy Access:
    - The shopkeeper can easily retrieve transaction details for any customer, making it simple to track payments and outstanding dues.
4. User-Friendly:
    - The interface is straightforward, requiring only basic inputs from the shopkeeper.
5. Time-Saving:
    - By automating ledger maintenance, the shopkeeper can save considerable time that can be used for other business activities.

Disadvantages

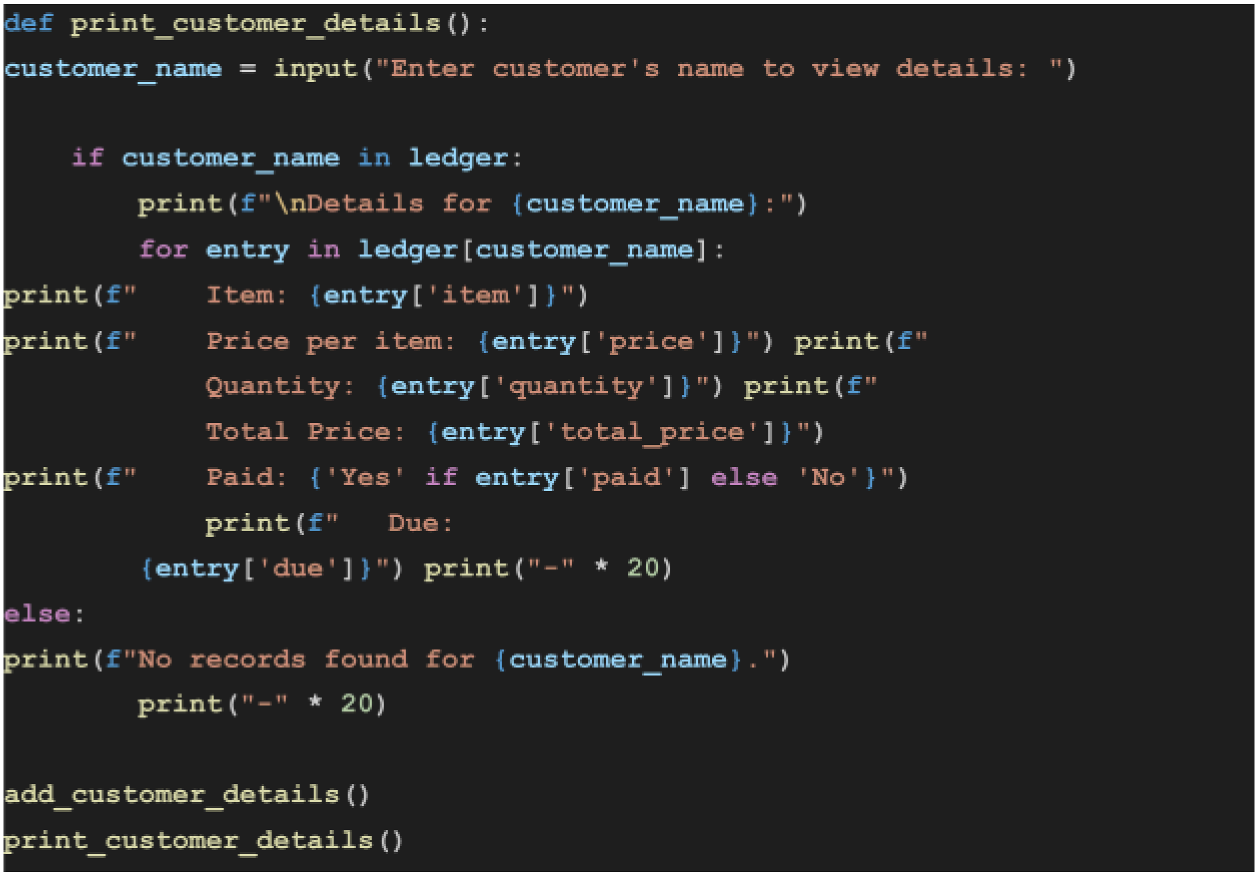
1. Limited Functionality:
    - The current system is basic and lacks advanced features like inventory management, reporting, and integration with other systems.
2. Manual Data Entry:
    - The shopkeeper still needs to manually enter customer names, select products, and input quantities, which can be time-consuming for large transactions.
3. No Real-Time Updates:
    - The application does not support real-time updates or notifications, which might be necessary for more dynamic environments.
4. Scalability:
    - The system may not be suitable for larger businesses with a high volume of transactions and customers, as it is designed for small-scale operations.

Actual Code of the project

```
ledger   =   {}

data = [

    (1, "Garlic Oil - Vegetarian Capsule 500 mg", 220),
    (2, "Water Bottle - Orange", 180),
    (3, "Brass Angle Deep - Plain, No.2", 119),
    (4, "Cereal Flip Lid Container/Storage Jar - Assorted Colour", 149),
    (5, "Creme Soft Soap - For Hands & Body", 162),
    (6, "Germ - Removal Multipurpose Wipes", 169),
    (7, "Multani Mati", 58),
    (8, "Hand Sanitizer - 70% Alcohol Base", 250),
    (9, "Biotin & Collagen Volumizing Hair Shampoo + Biotin & Collagen Hair Conditioner", 1098),
    (10, "Scrub Pad - Anti- Bacterial, Regular", 20),
    (11, "Wheat Grass Powder - Raw", 261),
    (12, "Butter Cookies Gold Collection", 600),
    (13, "Face Wash - Oil Control, Active", 110),
    (14, "Mold & Mildew Remover with Bleach", 350),
    (15, "Just Spray - Mosquito Repellent Room Spray", 200),
    (16, "Dove Plastic Soap Case - Assorted Colour", 49),
    (17, "Smooth Skin Oil - For Dry Skin", 324),
    (18, "Salted Pumpkin", 180),
    (19, "Flax Seeds - Roasted", 120),
    (20, "Organic Tofu - Soy Paneer", 85.14),
    (21, "Ceramic Barrel Brush - Colour May Vary", 525),
    (22, "Instant Noodles - Chicken Satay Flavor", 45),
    (23, "Chia Seeds", 120),
    (24, "Cleanse Green Tea - Whole Leaf Loose Tea", 75),
    (25, "Veggie Cutter", 195),
    (26, "Insulated Hot Fresh Casserole For Roti/Chapati - White", 659),
    (27, "Granola - Happy Berries", 245),
    (28, "Flaxseed - Pesticide Free", 53.9),
    (29, "Paratha Puff", 90),
    (30, "Lip Butter - Rose", 169.15),
    (31, "Fruit Power - Masala Sugarcane", 19),
    (32, "Chocobakes Choc Filled Cookies", 102),
    (33, "Amber - Deodorant Body Spray", 211.65),
    (34, "Green Tea - Tulsi Loose Leaf", 225),
    (35, "Pet Solitaire Container Set - Silver", 499),
    (36, "Dhania - Dal", 98),
    (37, "Pudina Chutney Masala", 46.75),
    (38, "Bodylicious Deodorant Spray - Mate (For Men)", 136.5),
    (39, "Sport Deo Spray - Fresh, for Men", 112.75),
    (40, "Choco Deck - Mini Delights", 160),
    (41, "Eau De Toilette - Homme Green", 427.5),
    (42, "Lemon & Tea Tree Oil Soap", 360),
    (43, "Flavoured Cream Wafer Roll - Strawberry", 275),
    (44, "Storage/Lunch Steel Container with PP Lid - Red", 109),
    (45, "Plain Green Olives", 179),
    (46, "Quinoa - Organic", 250),
    (47, "After Shave Splash - Arctic Ice", 459.62),
    (48, "Colour Catcher Sheets", 799),
    (49, "Sauce - Sweet & Sour", 245),
    (50, "Super Hot and Sweet Mango Chutney", 100),
    (51, "Pani Puri Mix Paste", 48.95),
    (52, "Peach Syrup", 850),
    (53, "Acne & Oil Control Face Wash", 80),
    (54, "Choco Deck - French Dessert Inspired Layered Bar", 56),
    (55, "Extra Fine Green Peas", 202.5),
    (56, "Soothing Cucumber Facial Scrub With Apricot Seeds", 299.4),
    (57, "Foochka", 60),
    (58, "Argan-Liquid Gold Hair Spa", 199.5),
    (59, "Baby Bed Protector - Sublimation Print, Pink", 199),
    (60, "Corporate Planner Diary With Premium PU Leather Cover With Card Holder", 399),
    (61, "Atta Chalan - Stainless Steel, Size- No.8", 149),
    (62, "Dog Supplement - Absolute Skin + Coat Tablet", 348.6),
    (63, "Peanut Butter - Creamy, Super", 209.4),
    (64, "Sugar Free Petit Beurre - The Taste of France", 35),
    (65, "Aqua Halo Rejuvenating Conditioner", 168.75),
    (66, "Ayurvedic Anti-Tan Face Pack", 269.4),
    (67, "Dog Supplement - Absolute Calcium Tablet", 339.15),
    (68, "Battery Power Kids Toothbrush - Barbie", 374.25),
    (69, "Organic Carom Seeds/Ajwain/Om Kalu", 72),
    (70, "Padded Harness - 3/4 inch, Grey Colour", 840)
]

def display_products():
```

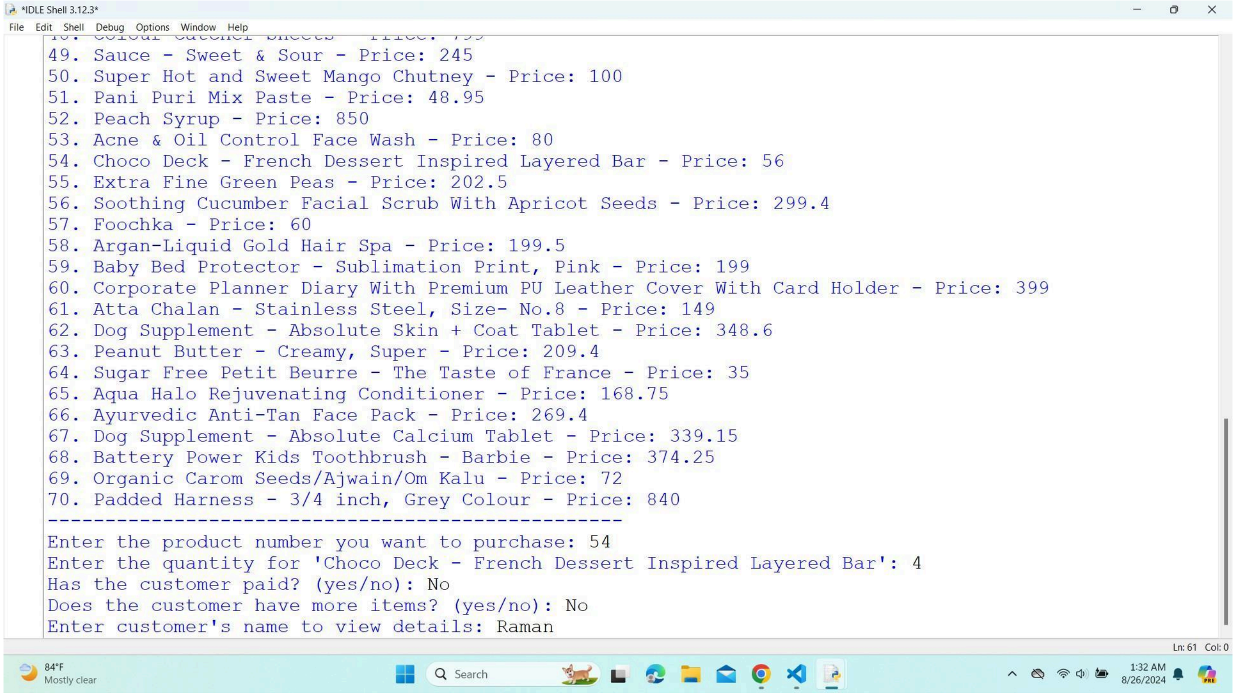


```
    print("\nAvailable Products:")
    for index, (_, product_name, price) in enumerate(data, start=1):
        print(f"{index}. {product_name} - Price: {price}")
    print("-" * 50)

def add_customer_details():
    customer_name = input("Enter customer's name: ")

    while True:
        display_products()
        product_choice = int(input("Enter the product number you want to
purchase: "))

        if 1 <= product_choice <= len(data):
            _, item, price = data[product_choice - 1]
            quantity = int(input(f"Enter the quantity for '{item}': "))
            total_price = round(price * quantity, 2)
            paid_input = input("Has the customer paid? (yes/no): ")
            paid = paid_input.lower() == 'yes'
            due_amount = 0 if paid else total_price

            if customer_name not in ledger:
                ledger[customer_name] = []

            ledger[customer_name].append(
                { 'item': item,
                'price': price,
                'quantity': quantity,
                'total_price': total_price,
                'paid': paid,
                'due': due_amount
            })
        else:
            print("Invalid product choice.")

        more_items = input("Does the customer have more items? (yes/no):
")
        if more_items.lower() != 'yes':
            break
```



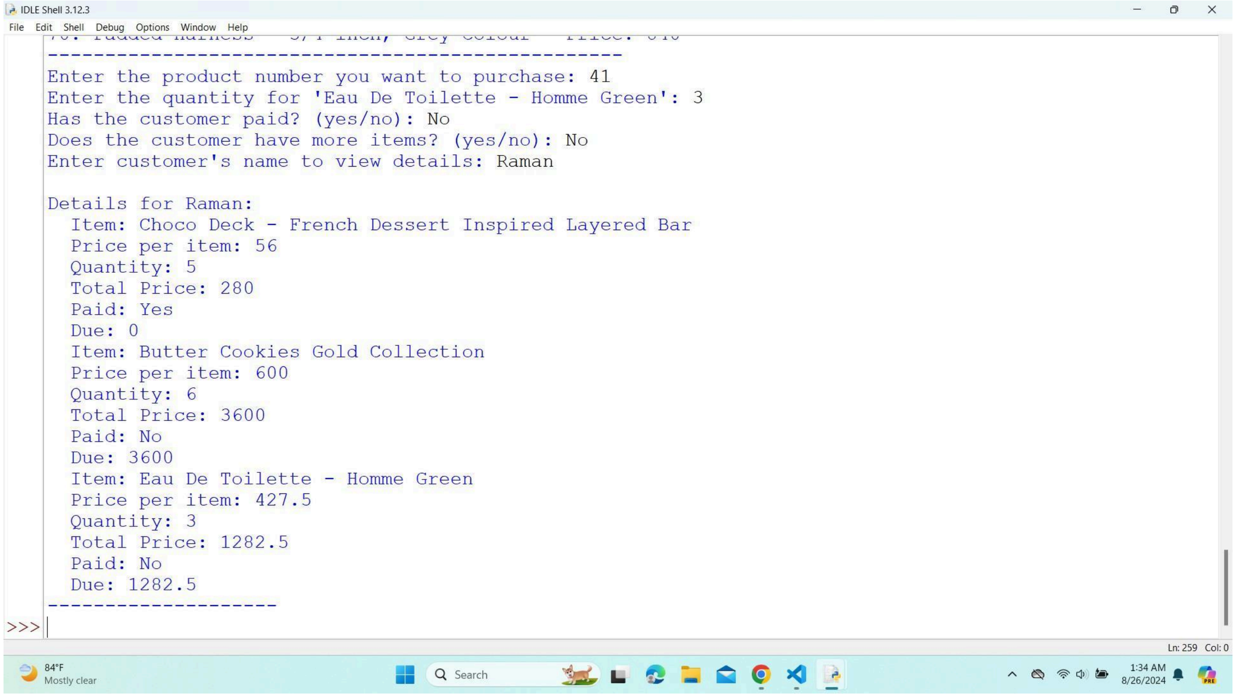
```
def print_customer_details():
customer_name = input("Enter customer's name to view details: ")

    if customer_name in ledger:
        print(f"\nDetails for {customer_name}:")
        for entry in ledger[customer_name]:
print(f"     Item: {entry['item']}")
print(f"     Price per item: {entry['price']}") print(f"
             Quantity: {entry['quantity']}") print(f"
             Total Price: {entry['total_price']}")
print(f"     Paid: {'Yes' if entry['paid'] else 'No'}")
             print(f"   Due:
        {entry['due']}") print("-" * 20)
else:
print(f"No records found for {customer_name}.")
        print("-" * 20)

add_customer_details()
print_customer_details()
```

Screenshot of the output:



```
49. Sauce - Sweet & Sour - Price: 245
50. Super Hot and Sweet Mango Chutney - Price: 100
51. Pani Puri Mix Paste - Price: 48.95
52. Peach Syrup - Price: 850
53. Acne & Oil Control Face Wash - Price: 80
54. Choco Deck - French Dessert Inspired Layered Bar - Price: 56
55. Extra Fine Green Peas - Price: 202.5
56. Soothing Cucumber Facial Scrub With Apricot Seeds - Price: 299.4
57. Foochka - Price: 60
58. Argan-Liquid Gold Hair Spa - Price: 199.5
59. Baby Bed Protector - Sublimation Print, Pink - Price: 199
60. Corporate Planner Diary With Premium PU Leather Cover With Card Holder - Price: 399
61. Atta Chalan - Stainless Steel, Size- No.8 - Price: 149
62. Dog Supplement - Absolute Skin + Coat Tablet - Price: 348.6
63. Peanut Butter - Creamy, Super - Price: 209.4
64. Sugar Free Petit Beurre - The Taste of France - Price: 35
65. Aqua Halo Rejuvenating Conditioner - Price: 168.75
66. Ayurvedic Anti-Tan Face Pack - Price: 269.4
67. Dog Supplement - Absolute Calcium Tablet - Price: 339.15
68. Battery Power Kids Toothbrush - Barbie - Price: 374.25
69. Organic Carom Seeds/Ajwain/Om Kalu - Price: 72
70. Padded Harness - 3/4 inch, Grey Colour - Price: 840
--------------------------------------------------
Enter the product number you want to purchase: 54
Enter the quantity for 'Choco Deck - French Dessert Inspired Layered Bar': 4
Has the customer paid? (yes/no): No
Does the customer have more items? (yes/no): No
Enter customer's name to view details: Raman
```

Screenshot of the output:



```
70: Padded Harness - 3/4 inch, Grey Colour - Price: 840
--------------------------------------------------
Enter the product number you want to purchase: 41
Enter the quantity for 'Eau De Toilette - Homme Green': 3
Has the customer paid? (yes/no): No
Does the customer have more items? (yes/no): No
Enter customer's name to view details: Raman

Details for Raman:
  Item: Choco Deck - French Dessert Inspired Layered Bar
  Price per item: 56
  Quantity: 5
  Total Price: 280
  Paid: Yes
  Due: 0
  Item: Butter Cookies Gold Collection
  Price per item: 600
  Quantity: 6
  Total Price: 3600
  Paid: No
  Due: 3600
  Item: Eau De Toilette - Homme Green
  Price per item: 427.5
  Quantity: 3
  Total Price: 1282.5
  Paid: No
  Due: 1282.5
--------------------
>>>
```

Future Works:

An Example:
File Handling — To make the system little effective, file handling can be used to incorporate in the ledger of its data and save it as a file likewise we load from there also. This will allow the shopkeeper to save data over sessions, keeping a historical record of transactions. This will also prevent the loss of data due to any sudden unpredicted behavior and can provide backup & recovery capabilities.

Pandas and Numpy for Data Analysis Being used data analysis libraries like Pandas and Numpy would make the system more useful. This tool could be used by the shopkeeper to perform various analytical tasks e.g. tracking trends in customer purchases, calculating average spend per customer or generating sales reports etc… This is true whether this is used for improved inventory management, customer retention strategies and overall business insights.