



Challenge Implementing Modular Programming Using Functions

Veggie Pizza

Veggie Pizza delivers custom-made vegetarian pizzas along with other accompaniments. As a seasonal-promotional offer, the pizza joint is providing a discount of 10% on any bill that is greater than \$50.

Write a Java program to store the personal and order details of a customer. Also, calculate the bill amount for the items ordered and the total discount received on them.

Write the methods used to perform these calculations.

CHALLENGE



Tasks

- Write a Java class named **PizzaOrder** with the main method.
- Accept the values of variables as input from the user utilizing the `Scanner`.
- Go through the few sample values provided in the table.
- Use appropriate data types for all the variables.

Variable Name	Sample Values
customerName	Gary
customerEmail	gary@123.com
phoneNo	412312345
address	20, Marble Drive, Eville
noOfPizzasOrdered	5
priceOfPizza	Regular – \$9.99, Medium – \$11.99, Large – \$13.99
pizzaSize	1 – Regular, 2 – Medium, 3 – Large
noOfGarlicBreadOrdered	3
priceOfGarlicBread	\$5.99
noOfBeveragesOrdered	3
priceOfBeverage	\$1.99

Tasks (cont'd)

Write the below methods to display the personal details of a customer, the menu, and customer order details.

- `void displayCustomerDetails(String name, String email, long phoneNo, String address)` – To display the accepted customer details.
- `void displayMenu()` – To display the menu as shown.

```
Select the items to order
Sl No   Item Category
-----
1) Pizza
    Price of One Regular Pizza : $9.99
    Price of One Medium Pizza  : $11.99
    Price of One Large Pizza   : $13.99
2) Garlic Bread
    Price of One Garlic Bread  : $5.99
3) Beverages
    Price of One Beverage      : $1.99
Enter 1 for Pizza, 2 for Garlic Bread and 3 for Beverages
```


Tasks (cont'd)

Write the below methods to get the price of each of the items.

- `public float getPriceOfPizzaBasedOnSize(int size)` – To accept the sizes of the pizza and return the price based on the given size.

```
float priceOfPizza = 0;
if(size == 1){
    priceOfPizza = 9.99f;
}
else if(size == 2){
    priceOfPizza = 11.99f;
}
else if(size == 3){
    priceOfPizza = 13.99f;
}
else{
    System.out.println("Invalid size, Enter 1,2 or 3");
    priceOfPizza = 0;
}
return priceOfPizza;
```

- Write the below methods that will return the price of garlic bread and beverage.
 - `public float getPriceOfGarlicBread(){return 5.99f;}`
 - `public float getPriceOfBeverage(){return 1.99f;}`

Tasks (cont'd)

Write the below methods to calculate the price of each item ordered and return the value.

- `public float calculatePriceOfPizza(int noOfPizza, float priceOfPizza)` – to calculate the price of the total number of pizzas ordered and return the value, `priceOfPizza` should be a local variable inside the method having price for Pizza.
- `public float calculatePriceOfGarlicBread(int noOfGarlicBread, float priceOfGarlicBread)` – to calculate the price of the total number of garlic bread ordered and return the value, `priceOfGarlicBread` should be a local variable inside the method having price for garlic bread.
- `public float calculatePriceOfBeverage(int noOfBeverages, float priceOfBeverages)` – to calculate the price of the total number of beverages ordered and return the value, `priceOfBeverages` should be a local variable inside the method having price for garlic Beverages.

Tasks (cont'd)

Write the below methods to calculate the total bill amount and the discounted price:

- `public float calculateTotalBill(float totalPizzaPrice, float totalGarlicBreadPrice, float totalBeveragePrice)` – To calculate the total bill amount of all the three items (pizza, garlic bread, and beverages) combined and return the value.
- `public float calculateDiscountAndReturnBillAmount(float totalBillAmount)` – To calculate the discount on the total bill amount and return a value.
 - If the total bill is greater than \$50, calculate the discount and return the discounted bill amount.
 - Else return the actual bill amount.

Tasks (cont'd)

- Write the below methods to calculate the total bill amount and the discounted price.
- `public void displayOrderDetails(int noOfPizza, int noOfGarlicBread, int noOfBeverages, int size, float totalPrice, float totalPrizeAfterDiscount)`
– to display the order details of a customer.

```
Order Details
-----
The number of pizzas ordered      : 10
The number of garlic bread ordered : 5
The number of beverages ordered   : 10
-----
The Total Bill Amount is         : $149.74998
The Discounted Bill Amount is    : $134.775
```


Tasks (cont'd)

- In the main method, perform the following functions.
 - Accept the details of the customer
 - Display the menu to get the choice of item from the customer to get the order details by calling the method `displayMenu ()`
 - After the customer selects an item from the menu, for example, a pizza, the program must allow him to place an order for beverages or garlic bread.
 - The program must not exit until the user wishes to stop ordering and exits by providing a choice to exit.

Tasks (cont'd)

In the main method, perform the following functions.

- Call the appropriate methods to calculate the total price of each item.
- Call the appropriate methods to calculate the total bill amount, discounted bill amount, and display customer details as shown below.

```
pizzaOrdering.displayCustomerDetails(name, email, phoneNo, address);  
float totalBillAmount = pizzaOrdering.calculateTotalBill(totalPizzaBill, totalGarlicBreadBill, totalBeverageBill);  
float totalBillAmountAfterDiscount = pizzaOrdering.calculateDiscountAndReturnBillAmount(totalBillAmount);  
pizzaOrdering.displayOrderDetails(noOfPizza, noOfGarlicBread, noOfBeverages, size, totalBillAmount, totalBillAmountAfterDiscount);
```

Tasks (cont'd)

- The final output is to be as shown below:

```
Customer Details
-----
Name of the Customer is      : Gary
Email of the Customer is     : gary@123.com
Contact No of the Customer is : 412312345
Address of the Customer is    : 20, Marble Drive, Eville
-----

Order Details
-----
The number of pizzas ordered      : 10
The number of garlic bread ordered : 5
The number of beverages ordered   : 10
-----

The Total Bill Amount is        : $149.74998
The Discounted Bill Amount is   : $134.775
```

Input and Output: 1

Sample Input

```
Gary
gary@123.com
20, Marble Drive, Eville
412312345
1
1
3
0
```

Expected Output

Note that the output must contain the below lines in the same format

Customer Details

```
Name of the Customer is : Gary
Email of the Customer is : gary@123.com
Contact No of the Customer is : 412312345
Address of the Customer is : 20, Marble Drive, Eville
```

Order Details

```
The number of pizzas ordered      : 3
The number of garlic bread ordered : 0
The number of beverages ordered   : 0
```

```
The Total Bill Amount is      : $29.97
No Discount on Bill
```

Input and Output: 2

Sample Input

Gary

gary@123.com

20, Marble Drive, Eville

412312345

1

2

5

1

2

5

0

Expected Output

Note that the output must contain the below lines in the same format

Customer Details

Name of the Customer is : Gary

Email of the Customer is : gary@123.com

Contact No of the Customer is : 412312345

Address of the Customer is : 20, Marble Drive, Eville

Order Details

The number of pizzas ordered : 5

The number of garlic bread ordered : 5

The number of beverages ordered : 0

The Total Bill Amount is : \$89.899994

The Discounted Bill Amount is : \$80.909996