CS 115 - Introduction to Programming in Python

Lab Guide 01A

Lab Objectives: Data, expressions, conditional statements

1. Write a program that inputs a value for x and outputs the value of y according to the given function:

$$y = \frac{x^3 + 3|x| + 9}{x^2}$$

   Sample Run:

   Input x: 2

   The result of the expression: 5.75

2. Write a program that inputs an integer value from the user. Your program should give an appropriate message for positive even values, positive odd values, zero and negative values.

   Sample Run 1:
   Enter an integer number: -5
   Number is not positive

   Enter an integer number: 4
   Value even and positive

   Enter an integer number: 3
   Value odd and positive

   Enter an integer number: 0
   Number is zero

3. Write a program to prepare a menu for a restaurant customer. The customer will input their budget, and the program will compute their bill based on the following. The customer must order a main dish (15TL). If they have money remaining, a starter, dessert or both will be added to their menu, depending on the remaining budget. The price of the starter is 10TL and the dessert is 8 TL.

   The program will display the final bill, as well as their remaining budget.

   Sample Run:

   ```
   Enter budget: 24
   Main dish added.
   Budget not sufficient for starter...
   Dessert added.
   Total Meal Cost: 23 Remaining Budget: 1
   ```

Sample Run:

```
Enter budget: 50
Main dish added.
Starter added.
Dessert added.
Total Meal Cost: 33 Remaining Budget: 17
```

Sample Run:

```
Enter budget: 12
More money needed
```