Programming I – Lab #4

Aim: Getting Familiar with Conditions and IF-ELSE Statement

Topics:

1. Conditions
2. IF Statement
3. IF-Else Statements

Lab Questions –

Q1 – Write a program that asks user to **enter a number** (not zero), and checks if the number is positive or negative.

```
Enter a number (not zero): 9
9 is positive!
```

```
Enter a number (not zero): -7
-7 is negative!
```

```
num = int(input('Enter a number (not zero): '))

if (num > 0):
    print(num, "is positive!")
else:
    print(num, "is negative!")
```

input() is for asking user to enter a number. As **input()** always returns string, we use **int()** to change it to integer number. Now the entered number by user is saved in **num** variable.

This part is for deciding either the value entered by user in **num** variable is positive or negative. So, we need **if** statement.
We know that if a number is greater than 0, it is positive, otherwise it is negative. So the condition is **num>0**. If the condition is **True**, the program prints the number is positive, otherwise (if it is **False**), the program prints the number is negative.

Q2 – Write a program to ask user to **enter two numbers**, and checks which one is greater than the other one. If the first number is greater, prints "First number is greater.", otherwise prints "Second number is greater.".

```
num1 = int(input('Enter first number: '))
num2 = int(input('Enter second number: '))

if (num1 > num2):
    print("First number is greater.")
else:
    print("Second number is greater.")
```

Q3 – Write a program that asks user to **input three numbers** and find the average. The program checks the average is greater than or equal to 10 or not. The program prints the average value too.

```
Enter first number: 9
Enter second number: 5
Enter third number: 4
The average is less than 10!

The average value is 6.0
```

```python
num1 = int(input('Enter first number: '))
num2 = int(input('Enter second number: '))
num3 = int(input('Enter third number: '))

average = (num1 + num2 + num3)/3

if (average >= 10):
    print("The average is greater than or equal to 10!")
else:
    print("The average is less than 10!")

print("The average value is", average)
```

Q4 – Write a program that asks the user to **input two numbers**, and solve this equation.

$$\frac{x^2}{y}$$

Where $y \neq 0$.

```python
x = int(input('Enter first number: '))
y = int(input('Enter second number: '))

if (y != 0):
    result = (x**2)/y
    print("The result is" , result)
else:
    print("The division by zero is not allowed!")
```

Q5 – Write a program that asks user to **input a number** and check if it is Even or Odd.

```
num = int(input('Enter a number: '))

if (num%2 == 0):
    print("The number is even!")
else:
    print("The number is odd!")
```

Remember that in mathematics we say a number is **even** if we divide it by 2, its remainder is 0, and we say a number is **odd**, if we divide it by 2, its remainder is not 0.
So, we use **if** in our code to check this condition. The condition **num%2 == 0** will check the remainder of dividing num by 2 to be equal to 0. If it is **True**, it means the number is positive, otherwise it is negative.

Q6 – Write a program to determine if a **user-input character** is a vowel (a, e, i, o, u) and display whether it is vowel or not.

(**Note –** In English language, these five characters (a, e, i, o, u) are called vowels.)

```
ch = input('Enter a character: ')
vowels = ('a','e','i','u', 'o')

if (ch in vowels):
    print (ch, "is a vowel.")
else:
    print(ch, "is not a vowel.")
```

Q7 – Write a program that lets the user **enter his/her first name and monthly salary**. Then the program checks the salary. If it is more than $3000, it displays "Your salary is high" followed by the user name, otherwise, it displays "Your salary is low" followed by the user name.

```
firstname= input('Enter your first name: ')
salary = int(input('Enter your monthly salary in dollars: '))

if (salary > 3000):
    print("Your salary is high", firstname)
else:
    print("Your salary is low", firstname)
```