

Programming I – Lab #2

Aim: Getting Familiar with Expressions, Arithmetic Operators and Arithmetic Expressions, Input/Output

Topics:

1. Expressions
2. Arithmetic Operators on int and float
3. Arithmetic Operators Precedence
4. Input/Output in Python

Lab Questions –

Q1 – Type the following expressions to see their output.

```
print(2*1+6)
print(20/4+1)
print(20/(4+1))
print(40/2*3)
print(5**2)
print(2*4**2)
print(8/2)
print(7/2)
print(7//2)
print(14//5)
print(14%10)
print(20%10)
```

Q2 – Write a Python code that asks the user to enter their first name and surname. The program output should be as follows:

```
Please enter your first name: Lana
Please enter your surname: Ahmed
Your full name is:  Lana   Ahmed
```

```
firstName = input("Please enter your first name: ")
surName = input("Please enter your surname: ")

print("Your full name is: ", firstName, " " , surName)
```

Q3 – Write a Python code that asks the user to enter their first name and age. The output should be like this:

```
Please enter your first name: Lana
Please enter your age: 19
My name is  Lana  and I am  19  years old!
```

```
firstName = input("Please enter your first name: ")
age = int(input("Please enter your age: "))

print("My name is ", firstName, " and I am " , age , " years old!")
```

Q4 – Write a Python code to let the user enter their first name and age, then the program should print as follows:

```
Please enter your first name: Lana
Please enter your age: 19
My name is  Lana  and was born in  2006
```

```
firstName = input("Please enter your first name: ")
age = int(input("Please enter your age: "))

print("My name is ", firstName, " and was born in " , 2025-age)
```

Q5 – Write a program to ask the user to enter a rectangle's length and width values. Then calculate the rectangle's area. The program's output is as follows:

```
This program calculates the area of a rectangle!  
Enter rectangle's length: 6  
Enter rectangle's width: 3  
The area of the rectangle is 18
```

```
print('This program calculates the area of a rectangle!')  
  
length = int(input('Enter rectangle\'s length: '))  
width = int(input('Enter rectangle\'s width: '))  
  
area = length * width  
  
print('The area of the rectangle is', area)
```

Q6 – Write a program that converts a day into hours, minutes, and seconds. Allow the user to input the number of the day(s). Then the program calculates its equivalent hours, minutes, and seconds.

(Hint: 1 day = 24 hours, 1 hour = 60 minutes, 1 minute = 60 seconds)

```
Please enter number of days: 2  
The 2 day(s) is equal to 48 hours 2880 minutes 172800 seconds
```

```
days = int(input('Please enter number of days: '))  
  
hours = days * 24  
minutes = hours * 60  
seconds = minutes * 60  
  
print("The", days, "day(s) is equal to", hours, "hours", minutes, "minutes", seconds, "seconds")
```

Q7 – Write a program to find the result of the following equation, where a = 4 and b = 2.

$$\frac{a^2}{4b}$$

```
a = 4  
b = 2  
  
c = (a**2)/(4*b)  
  
print("The result of equation is ", c )
```

Q8 – Write a program to let the user enter his/her marks for the quiz, midterm and final exams. Then calculate the total marks.

(Quizzes out of 20%, mid-term exam out of 30%, final exam out of 50%.)

```
Enter your quiz mark: 10
Enter your midterm mark: 20
Enter your final mark: 40
Your total mark is 70
```

```
quiz = int(input('Enter your quiz mark: '))
midterm = int(input('Enter your midterm mark: '))
final = int(input('Enter your final mark: '))

total = quiz + midterm + final

print('Your total mark is', total )
```