SE 113 – LAB#3 2023-2024 SPRING

Aim: Input statements; variables; operators; algorithm.

Create a Python project in which you have the following file: **lab3.py**

1. a. Write a Python script that inputs a student's name, ID and two exam scores. The script will print out the name, ID, and average of scores.

b. Write a Python script that reads the student's name and scores in order to calculate the student's grade of SE113 course. First, you need to define a variable **name**, and ask the user to enter his/her name. Then, ask the user for the scores of the following items: lab, homework, midterm and final. Finally, calculate and print the student's course grade using the weights available in SE113 syllabus. (20% lab, 20% homework, 20% midterm and 40% final)

SAMPLE OUTPUT (bold parts are entered by user):

```
What is your name? Ege
Hello Ege, enter your scores for SE 113 items.
Lab score: 100
Homework score: 90
Midterm score: 80
Final score: 80
Your grade of SE113 course is 86.0
```

2. a. Define two variables number1 and number2. Then, ask the user to enter two real numbers for these variables. Then, using these two values, calculate and print the results of addition, subtraction, multiplication, division, exponentiation, remainder and quotient operations.

SAMPLE OUTPUT (bold parts are entered by user):

```
Enter 1st number: 5.2
Enter 2nd number: 2.1
Addition is 7.3
Subtraction is 3.1
Multiplication is 10.9
Division is 2.5
Exponentiation is 25.0
Remainder is 1.0
Quotient is 2.0
```

b. Calculate the following expressions and print their results.

2+5 , 2-5 , 2/5 , 2//5 , 2*5 , 2**5 , 2%5 , 5%2 , 10/5*2 , 10/(5*2) , 2*10/5 ,

4-2+5*2/6-1

3. Calculate and print out the value of **z** in below formula given that the value of **x** is 4.2.

$$z = x^7 + 2*x^3 - 5*x + 1$$

4. Write a script that reads a radius value from the user and computes the perimeter of a circle with the radius value given. (Assume that pi value is 3.14)

5. Write a script that reads a radius value and a height from the user and computes the lateral surface area of a cylinder with the radius and height values given. (Consider that pi is 22/7)
Hint: https://en.wikipedia.org/wiki/Lateral_surface

6. Write statements to print out the results of the following expressions where '!' refers to factorial: (Neither a function nor a loop will be used, use only multiplication and division)

7!
7!/3!
7!/(3!*2!)

TODO@HOME

Write a Python script that reads an integer from the user and prints out its factorial. (Do not use a function, use a loop)

SAMPLE OUTPUT (bold parts are entered by user):

```
Enter a number to calculate factorial: 5
5! is 120
```