FBT0015 STRUCTURED ALGORITHM & PROGRAMMING
LAB EXERCISE WEEK 10

Learning Outcomes

Upon completion of this lab session, learners will be able to:

1. **trace repetition logic**
2. **write for and while loop in Python**

Activity #1:

1. a. Correct the given program so that it could compile without any errors.

```
countEmp:=0;


while CountEmp<5 do
    hour=int(input('Please Enter Hours of Working'))
    rate=float(input('Please Enter Rate for each Hours'))

    print('Weekly payment is RM', Hours * Rate)
    countEmp = countEmp + 1

print('All employees salary are processed.')
```

Once the program is corrected,

b. Write the output of the program if the input: hour= 50 and rate =5.75 for 5 persons.

2. Assuming that the user entered 10 as an input, hand trace the output for the following Python program.

```
CountStar = 0
Num = eval(input('Please enter a number'))

while CountStar < Num:
    print('*', end= '\t')
    CountStar += 1
```

3.

```
X = 3
Count = 0

while Count < 3:
    X = X * X
    print(X)
Count = Count + 1
print(Count)
```

a. How many times is the following body of loop being repeated? What is displayed during each repetition of the loop body?

b.

```
X = 3
Count = 0

while Count < 3:
     X = X * X
     print(X)
     Count = Count + 1
print(Count)
```

What will happen is we re-indent the highlighted statement ?

c. What will happen if the highlighted statement in question b is changed to

```
Count = Count +2?
```

d. What will happen if we omit the highlighted statement in question b?

Activity #2:

Type and execute the following Python program. Write the output.

a.
```
for NextCh in range ('A','Z'):
        print(NextCh)
        print( )
```

b.
```
A,Z=2,8

   for NextCh in range (A,Z,4):
        print(NextCh)
        print( )
```

c.
```
import math
MAX = 4
print("\t",'i',"\t\t",'i * i',"\t\t",'Square root')
for i in range (1, MAX):
    Square = i*i
    Root_i = math.sqrt(i)

    print('{:>6}{:>12}{:>12.2f}'.format(i,Square,Root_i))
```

d.
```
   for num in range(4):
        for i in range(num):
             print (num, end=" ")
        print("\n")
```

Activity #3:

Write a Python program that will asks the user to enter a list of integers one by one and then, check for the largest value from the list. The program should ask the user for an integer repeatedly until the value -32767 is entered (to indicate that the user wish to stop from entering more numbers). Display the total number of integers entered by user and the largest integer.

Sample execution of the program is as given below:

```
Enter an integer to start the program34567
Enter another integer.[Enter -32767 to stop the program]67984
Enter another integer.[Enter -32767 to stop the program]-23456
Enter another integer.[Enter -32767 to stop the program]9876
Enter another integer.[Enter -32767 to stop the program]-32767
The largest number among 4 number of integers entered is  67984
```