LAB-2 Loop Operations

Aim:

To explore loop operations using python 3

Task:

1. Write a function that returns the maximum of two numbers. **(Use if loop)**
2. Write a function called divisible that takes a number**. (Use if loop)**

    - If the number is divisible by 3, it should return "Three".
    - If it is divisible by 5, it should return "Five".
    - If it is divisible by both 3 and 5, it should return "Three and Five"

    Otherwise, it should return the same number.
3. Write a function for checking the speed of drivers. This function should have one parameter: speed.
    a) If speed is less than 70, it should print "Ok".
    b) Otherwise, for every 5km above the speed limit (70), it should give the driver one demerit point and print the total number of demerit points. For example, if the speed is 80, it should print: "Points: 2".
    c) If the driver gets more than 12 points, the function should print: "License suspended"
4. Write a function(Use for loop) called showNumbers that takes a parameter called limit. It should print all the numbers between 0 and limit with a label to identify the even and odd numbers. For example, if the limit is 3, it should print:
    a) 0 EVEN
    b) 1 ODD
    c) 2 EVEN
    d) 3 ODD
5. Write a program using while loop to check the number n is less than seven. If it is less than seven, print n is less than 7 and add 1 to n. If it is greater than 7, print n is not less than 7.

Algorithm:

Task 1:

1) Take two inputs
2) If number 1 is greater than number 2
3) Print number 1
4) Else print number 2

Task 2:

1) Take an input
2) Create a function "divisible"
3) If number is divisible by 3 and 5
4) Return three and five
5) If number is divisible by 5
6) Return five
7) If number is divisible by 3
8) Return three

Task 3:

1) Create a function checkSpeed
2) If speed is less than 70
3) Print ok
4) Else calculate demerit points
5) Print demerit points
6) If demerit points is greater than 12
7) Print that license is suspended

Task 4:

1) Take the input
2) Use for loop to traverse from zero to number
3) Check If the number is odd or even
4) Print the number

Task 5:

1) Take the input
2) Use while loop to check the number
3) If number is less than 7
4) Print it is less than 7
5) Else print it is greater than 7 and break the loop

Programs:

Task 1:

```
a = int(input("Enter first number:"))
b = int(input("Enter second number:"))
if(a>b):
    print('{0} is larger'.format(a))
else:
    print('{0} is larger'.format(b))
```

```
Enter first number:5
Enter second number:7
7 is larger
```

Task 2:

```
def divisible(num):
    if num%3==0 and num%5==0:
        return "Three and Five"
    elif num%5==0:
        return "Five"
    elif num%3==0:
        return "Three"

num = int(input("Enter a number:"))
print(divisible(num))
```

```
Enter a number:15
Three and Five
```

Task 3:

```
def checkSpeed(speed):
    if speed<70:
        print("ok")
    else:
        demeritpoints = (speed-70)/5
        print("Demerit points = {0}".format(demeritpoints))
        if demeritpoints>12:
            print("License suspended")

speed = int(input("Enter speed value:"))
checkSpeed(speed)
```

```
Enter speed value:200
Demerit points = 26.0
License suspended
```

Task 4:

```
def printLimit(num):
    for i in range(num+1):
        if i%2==0:
            print("{0} even".format(i))
        else:
            print("{0} odd".format(i))

num = int(input("Enter a number:"))
printLimit(num)
```

```
Enter a number:6
0 even
1 odd
2 even
3 odd
4 even
5 odd
6 even
```

Task 5:

```
num = int(input("Enter a number:"))
while(True):
    if num<=7:
        print("{0} is less than 7".format(num))
    else:
        print("{0} is greater than 7".format(num))
        break;
    num+=1
```

```
Enter a number:3
3 is less than 7
4 is less than 7
5 is less than 7
6 is less than 7
7 is less than 7
8 is greater than 7
```

Pre Lab Questions:

1. What is the use of break statement?
2. How do you repeat some program code an exact number of times?
3. List the logical operators used in python.

Post Lab Questions:

1. Write a function that prints all the prime numbers between 0 and limit where limit is aparameter.

```
import numpy as np
def SimpleSieve(num):
    arr = [1 for i in range(0,num+1)]
    for i in range(2,num):
        if arr[i]==1:
            print(i)
            for i in range(i,num,i):
                arr[i]=0

num = int(input("Enter a number:"))
SimpleSieve(num)
```

```
Enter a number:15
2
3
5
7
11
13
```

2 . Write a Python program to find a Factorial of a Number using Loop

```
num = int(input("Enter a number:"))
mul=1
for i in range(1, num+1):
    mul*=i
print(mul)
```

```
Enter a number:5
120
```

Result: Therefore, loop operations using python is successfully implemented and executed.