CSE6037 - DEEP LEARNING AND ITS APPLICATIONS
Lab Activity 1

Code 1 :**Range()** is a Built in function in python, which generates a sequence of numbers, which is generally used to iterate over the for loop

In [3]:
```
range(10)
```

Out[3]:
```
range(0, 10)
```

In [4]:
```
print(range(10))
```

```
range(0, 10)
```

In [8]:
```
for i in range(10):
    print(i)
```

```
0
1
2
3
4
5
6
7
8
9
```

In [10]:
```
for i in range(10):
    print("Today is a Good Day")
```

```
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
Today is a Good Day
```

Code 2 : To find the Cube of a number with in the range

```
In [11]: for i in range(10):
             x=i*i*i
             print(x)
```

```
0
1
8
27
64
125
216
343
512
729
```

Code 3: Execution time of for loop

time.time() function is used to get the starting time and then cube of a number with in the range is calculated using for loop

```
In [10]: import time
         start_time=time.time()
         for i in range(1,11):
             print(i**3)
         end_time=time.time()
         print(start_time)
         print(end_time)
         print("Total time Taken by for loop is",time.time() - start_time)
```

```
1
8
27
64
125
216
343
512
729
1000
1576612505.9723465
1576612505.9733696
Total time Taken by for loop is 0.0010230541229248047
```

Code 4: Execution time of the while loop

time.time() function is used to get the starting time and then cube of a number with in the range is calculated using while loop

In [9]:
```
import time
start_time=time.time()
num=1
while(num<11):
    print(num**3)
    num=num+1
end_time=time.time()
print(start_time)
print(end_time)
print("Total time Taken by while loop is",time.time() - start_time)
```

```
1
8
27
64
125
216
343
512
729
1000
1576612482.0170794
1576612482.0181081
Total time Taken by while loop is 0.0010287761688232422
```

Function in Python

Syntax: def function-name(Parameter list):
the function body

Code 5: Example, to find the cube of the number using function

In [32]:
```
def cube(x):
    x=x**3
    return x

num=10
result=cube(num)
print(result)
```

```
1000
```

Code 6: Performing complex mathematical calculations using in built functions of Math Library

```
In [31]: import math as m
         print(m.sqrt(4))
         print(m.factorial(5))
         print(m.ceil(3.4))
         print(m.floor(3.2))
         print(m.fabs(-2))
         print(m.gcd(4,2))
```

```
2.0
120
4
3
2.0
2
```

Code 7 : Import in one cell and using the referenced variable in the next cell works perfectly. But, After shut down the jupyter notebook and running this line of code directly gives an error "not defined"

```
In [1]: print(m.sqrt(4))
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-1-337848da3cd1> in <module>
----> 1 print(m.sqrt(4))

NameError: name 'm' is not defined
```

Code 8: After restart Jupyter notebook, execution of import code and then the referenced variable line of code works perfectly

```
In [10]: print(m.gcd(4,2))
```

```
2
```