DS-Lab 1

1. Write the function factorial( ) that we discussed in the class.

2. Write the following function and see its output:

```
def first( ):

second( )
print("I am the first")

def second( ):

third( )
print("I am the second")

def third():

fourth( )
print("I am the third")

def fourth( ):

print("I am the fourth")
```

3. Write a function addup( ) that accepts a number and adds up all the numbers from 0 to the number.

4. Write a function fib( ) that accepts a number n and outputs the nth number in the Fibonacci sequence.

$$F(1) = 0$$

$$F(2) = 1$$

$$F(N) = F(N-1) + F(N-2)$$

5. Write a function prodArray( ) that returns the product of the numbers in the array. It returns 1 if the array is empty. For example, prodArray([2,5,10]) = 100.

6. Write a function HCF( ) that accepts two numbers and finds the highest common factor of the two numbers. For e.g. HCF(6,9) = 3.

7. Write a function IsPali( ) that accepts a string and returns True if it is a palindrome and returns False it is not.

       Examples of palindromes:

       malayalam

       idappadi (a place in Tamil Nadu)

       Saras

8. Write a function reverse( ) that accepts a string and reverses it.
       Examples
       reverse('reverse') $\rightarrow$ 'esrever'

       reverse('string') $\rightarrow$ 'gnirts'