

Lab 2

Objectives:

- Learn how to perform analysis

Analysis

- Perform an analysis of the following functions:

function 1:

Analyze the following function with respect to number

```
def function1(number):  
    total=0;  
  
    for i in range(0, number):  
        x = (i+1)  
        total+=(x*x)  
  
    return total
```

function 2:

Analyze the following function with respect to number

```
def function2(number):  
    return ((number)*(number+1)*(2*number + 1))/6
```

function 3:

Analyze the following with respect to the length of the list. Note that the function call `len()` which returns the length of the list is constant ($O(1)$) with respect to the length of the list.

```
def function3(list):  
    for i in range (0,len(list)-1):  
        for j in range(0,len(list)-1-i):  
            if(list[j]>list[j+1]):  
                tmp=list[j]  
                list[j]=list[j+1]  
                list[j+1]=tmp
```

function 4:

Analyze the following function with respect to number

```
def function4(number):  
    total=1  
    for i in range(1, number):  
        total*=(i+1)  
    return total
```