Introduction to programming in python for data analysis

First assigment

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1 Exercise

the function sum() it is a built-in function, that allow us sum up the elements of a list or some objects.

```
sum([1,2,3,4]
```

you must write a function to add a sequence of numbers.
The following code could be useful

```
def counter(lista):
    for x in lista:
        statements
```

also we can uses the ***argum** that allow us specify a function without a specified number of parameters.

```
def Function(*arguments):
    for x in arguments:
        statements
```

2 Exercise

Define a function for the binomial distribution and show as change the function with different values of p.

$$P(X = x) = \binom{k}{x}(1-p)^{k-x}x^k \tag{1}$$

3 Exercise

Create a program to compute the following problem, *How many total arrangements there are objects take k in k from a population of N, for this case there is replacement and the order does not matter.*

4 Exercise

Order the following list **lista**

```
lista = [[1,2,3], [4,5,6], [0,1,0]]
```

in the following **listaO**

```
listaO=[[3,2,1],[6,5,4],[0,1,0]]
```

to resolve the problem you need used **while** or **for** loop.

5 Considerations

```
import matplotlib.pyplot as plt # it is used to graph
import numpy as np # to create array-structures
plt.plot(x,y)
```

In the combinatorial problems you need remember that, a in a combination there is not replacement and the order does not matter. In permutations there are not replacement but the order matter.