Lab 1

(Prof. Carlos J. Costa)

1) Verify if a value is integer

In [ ]:

2) Verify if a value is even

In [3]:

3) Insert two numbers. Is the first is bigger than the second?

In [ ]:

4) Verify if one value is multiple of another

In [ ]:

5) Calculate the interest earn by an investor that invested a capital of 200 during 3 years with an interest rate of 3%. (I= P*R*T)

In [ ]:

6) Capital that an investor obtained after investing a capital of 200 during 3 years with an interest rate of 3%. (Compound interest)

In [ ]:

7) Calculate your BMI (Body Mass Index)

$$BMI = mass(kg)/height^2(m)$$

In [ ]:

8) Calcule the Golden ration:

$$gr = (1 + \sqrt{5})/2$$

1. Solve the problem without using libraries
2. Use module math (import math) and function sqr (math.sqrt)

In [4]:

9) Calculete the NPV (Net present value) of an investment, considering an initial investment of 10000, the following Cashflows 2000,3000, 4000, 4000 and 5000 and a discount rate of 10%.

$$NPV = \sum_{t=1}^{n} \frac{FV_t}{(1+k)^t} - I$$

Where:

FV = Future cost of the cash inflows, I = Initial Investment k = Discount rate equal to the owner's cost of capital

`In [7]:`

10) Ask the user to insert name and age. Calculate the the birth. Print a result saying the 'this person was born in'

1. Solve the problem without using modules and libraries
2. Solve the problem using the date library from module datetime, as fallow:

```python
from datetime import date
today = date.today()
today.year
```

`In [ ]:`

11) Ask the user to insert forenames, surnames. create a new variable (name) with your complete name.

Create the follwoing variables:

nameBig, where all the characters of the name are capitalized
nameTitle, where the only the first character of each name (word) is capitalized
nameSmall, where all the characters of the name are lower
nameCapitalized, where only the first charater of the first name is capitalized

`In [ ]:`

12) Supopose thata your name is stored in the variable name. Use the follwoing method to show where in which carater appears the firs "da".

```
str.find(sub,start,end)
str - variable to be abalysed
sub - expression to find in the variable str
start and end are optional values corresponding to the beginning and end posit
ion to search.
```

What happens if does not find?

`In [ ]:`