

Lab 1

(Prof. Carlos J. Costa)

1) Verify if a value is integer

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In [ ]: #Code here
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2) Verify if a value is even

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In [ ]: #Code here
```

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

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In [ ]: #Code here
```

4) Verify if one value is multiple of another

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In [ ]: #Code here
```

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)

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In [ ]: #Code here
```

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

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In [ ]: #Code here
```

7) Calculate your BMI (Body Mass Index)

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

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In [ ]: #Code here
```

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 sqrt (math.sqrt)

In [4]: #Code here

9) Calculate 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]: #Code here

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 follow:

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

In []: #Code here

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

Create the following 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 character of the first name is capitalized

In []: #Code here

12) Use the following method to show where in which character appears the first "da"

```
str.find(sub, start, end)
```

What happens if does not find?

In []: #Code here