Sistemas Informáticos (Computer Systems)  
Scripting in Python 04. Activities 01

short line

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Scripting in Python - Part 04

# Previous information

The objective of this unit is to use For and While loops properly.

# Exercise 01

Write a program that reads 10 numbers using a for loop and shows us the average value.

# Exercise 02

Repeat the last exercise again using a while loop.

# Exercise 03

Write a program that reads a number N. Then, this program has to read N numbers and tell us what is the maximum and minimum value using a for loop.

# Exercise 04

Repeat the last exercise again using a while loop.

# Exercise 05

Write a program that reads a number N and displays the associated pattern like a right angle triangle using an asterisk.

For example, for N=4:

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# Exercise 06

Create a single program that calculates Fibonacci numbers. You can find more info [here](https://en.wikipedia.org/wiki/Fibonacci_number)

# Exercise 07

Create a program that asks a number and shows “YES” if it is a prime number, else if it is not. You can find information about prime numbers [here](https://en.wikipedia.org/wiki/Prime_number).

# Exercise 08

Create a program that ask a number N and print the odd numbers from N to 0.

# Exercise 09

Create a program that asks indefinitely for a text string. For each one of them, a folder will be created inside the PYB4EX9 which name will be the string. The request will be made until the directory name was END (in capital letters).

# Exercise 10

Write a program to display the pattern like pyramid using the alphabet. The program requests for the number of rows. Sample Output:

A

A B A

A B C B A

A B C D C B A

A B C D E D C B A

# Exercise 11

Write a program to find one's complement of a binary number.

# Exercise 12

Write a program to convert a decimal number to binary number.

# Exercise 13

Write a calculator that allows conversion between number systems, showing a menu of which operation to perform.

**Sample:**

1. Decimal to binary

2. Binary to decimal

3. Decimal to hexadecimal

4. Hexadecimal to decimal

5. Binary to hexadecimal

6. Hexadecimal to binary

7. Exit

Select an option: 1

Number: 54

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1. Decimal to binary

2. Binary to decimal

3. Decimal to hexadecimal

4. Hexadecimal to decimal

5. Binary to hexadecimal

6. Hexadecimal to binary

7. Exit

Select an option: 7

Bye!