Sistemas Informáticos (Computer Systems)

Scripting in Python 04. Activities 01

Authors: Sergi García, Alfredo Oltra

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Scripting in Python - Part 04

1. Previous information

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

2. Exercise 01

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

3. Exercise 02

Repeat the last exercise again using a `while` loop.

4. 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.

5. Exercise 04

Repeat the last exercise again using a `while` loop.

6. 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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7. Exercise 06

Create a single program that calculates Fibonacci numbers. You can find more info here

8. 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.

9. Exercise 08

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

10. 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).

11. 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
```

12. Exercise 11

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

13. Exercise 12

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

14. 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
23 (10 = 110110 (2

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!
```