Assignment #4: Conditionals and Iteration

Master in Informatics and Computing Engineering
Programming Fundamentals
Instance: 2018/2019

1. Introduction

***Goals**: to write programs using conditionals and iteration with while, break and continue.*

***Pre-requirements (prior knowledge)**: See bibliography of Lecture #4 and Lecture #5*

***Rules**: You may work with colleagues, however, each student must write and submit in Moodle his or her this assignment separately. Be sure to indicate with whom you have worked. We may run tools to detect plagiarism (e.g.duplicate code submitted).*

***Deadline**: 8:00 Monday of the week after (22/10/2018)*

***Collaborators**:*

list here their codes

2. Prime numbers

Write a Python program that takes a single integer **`n`,** provided by the user, and stores in the variable **`result`**, **`True`** when it is a prime number, and **`False`** otherwise.

Then take note of your program here:

By the end of your work with this assignment, to submit the activity, using Codeboard, you'll be asked to copy the program to the body of the function **`is_prime`** in the file **`prime.py`**.

3. Fizz buzz

Write a Python program which "plays" a version of the known game FizzBuzz, over a sequence of integers from **`0`** to an integer **`n`** provided by the user.

The program should build a string **`result`** with each number in the sequence separated by a space. However:

- If the number is a multiple of 3, appends the word "**`Fizz`**" instead
- If the number is a multiple of 5, appends the word "**`Buzz`**" instead
- If the number is both a multiple of 3 and 5, nothing is done

For example, for **`n=7`**, the final string should be "**`1 2 Fizz 4 Buzz Fizz 7`**"

Then take note of your program here:

By the end of your work with this assignment, to submit the activity, using Codeboard, you'll be asked to copy the program to the body of the function **`fizz_buzz`** in the file **`fizzbuzz.py`**.

4. Triangles

Write a program that checks if a triangle is equilateral, isosceles or scalene, with the 3 sides provided by the user, each one in a different **`input()`** statement.

The variable **`result`** is computed accordingly ("**`Equilateral`**", "**`Isosceles`**", "**`Scalene`**"), and must be equal to "**`Not a triangle`**", when the sides given do not form a valid triangle.

Then take note of your program here:

By the end of your work with this assignment, to submit the activity, using Codeboard, you'll be asked to copy the program to the body of the function **`triangle_form`** in the file **`triangle.py`**.

5. Joining 2 numbers

Write a program that, given two numbers **`n1`** and **`n2`** provided by the user (each one in a different **`input()`** statement) produces a new number **`result`** by joining both of them, in the order they are given.

For example, if the numbers given are **`n1=23`** and **`n2=567`**, the resulting number **`result=23567`**.

You are **not** allowed to use to use string manipulation (for example string concatenation).

Then take note of your program here:

By the end of your work with this assignment, to submit the activity, using Codeboard, you'll be asked to copy the program to the body of the function **`concatenate`** in the file **`concatenate.py`**.

6. Palindrome integers

Write a program that given an integer in the variable **`num`**, provided by the user, computes its reverse (the number with the digits by the reverse order).

The variable **`result`** is a string computed as:

- "**`<num> is a palindrome.`**", when the original number and its reverse are equal
- "**`<num> is not a palindrome.`**", otherwise

You are **not** allowed to use string manipulation (for example string concatenation).

Then take note of your program here:

By the end of your work with this assignment, to submit the activity, using Codeboard, you'll be asked to copy the program to the body of the function **`capicua`** in the file **`capicua.py`**.

The end.

FPRO, 2018/19