

Solución de Problemas con Programación (TC-1017)

In-class activity 03 – Control Flow II

Name: _____

Student ID: _____

Date: 17 de febrero de 2019

Note: this activity may scare you at first sight. It's perfectly normal. In fact, it is harder than any other activity we've done so far, and you may have questions. If there's something not clear enough, please don't hesitate to ask.

1. Conditionals and Loops I

Solve the operations and answer correctly. You can use MATLAB/Octave.

1. Describe the set A by extension, if $A = \{n : n \in \mathbb{N}, n \leq 10\}$:

2. Let $x = \langle 2, 5, 45, 17, 10, 22, 121 \rangle$, and

$$f(x_i) = \begin{cases} 2x_i, & \text{si } x_i \text{ es igual a } 2 \\ 3x_i, & \text{si } x_i < 11 \text{ y } x_i \bmod 5 = 0 \\ x_i^2, & \text{si } 11 < x_i < 20 \\ x_i, & \text{si } 20 \leq x_i \leq 100 \text{ o bien si } x_i \geq 200 \\ 0, & \text{de lo contrario} \end{cases}$$

a) $f(x_1) =$ _____

b) $f(x_2) =$ _____

c) $f(x_3) =$ _____

d) $f(x_4) =$ _____

e) $f(x_5) =$ _____

f) $f(x_6) =$ _____

g) $f(x_7) =$ _____

h) $f(x_i = 1) =$ _____

3. $\sum_{i=1}^{n=100} i =$ _____

4. $\sum_{i=1}^{n=10} 2i + 3 =$ _____

5. $\prod_{i=1}^{n=6} i =$ _____

2. Conditionals and Loops II

Before implementing in MATLAB/Octave the instructions of the previous section, we need to formulate some questions:

- For exercise 2 of previous section:

1. How many parameter does $f(x_i)$ have? _____
2. How many different return values does it have? _____
3. What happens if we evaluate $f(x_i = 11)$? _____
4. What happens if we evaluate $f(x_i = 255)$? _____

- For exercise 3 of previous section:

1. How many numbers are we adding? _____
2. Is there a faster way to do this procedure? _____

- For exercise 4 of previous section:

1. How many times is the procedure repeated? _____
2. Is there a faster way to do this procedure? _____

- For exercise 5 of previous section:

1. How many different values does i take? _____
2. Is there a faster way to do this procedure? _____
3. Can I do this procedure using a condition to stop instead of using a certain number of values for i ? _____

3. Commands

Write the symbols and MATLAB/Octave commands that you consider useful to remember what we saw in class, and a brief description of each:

In accordance with the Tecnológico de Monterrey Student Code of Honor, my performance in this activity will be guided by academic honesty.