Computer Systems – Activities 2

UNIT 01. FUNCTIONAL ELEMENTS OF A COMPUTER

Computer Systems
CFGS DAM/DAW

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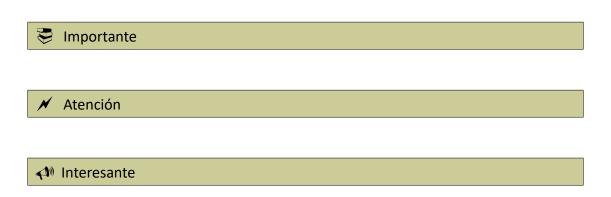
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Nomenclatura

A lo largo de este tema se utilizarán distintos símbolos para distinguir elementos importantes dentro del contenido. Estos símbolos son:



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(Exercise 1) We have a computer with this instruction set:

<u>Code</u>	Instruction	<u>Description</u>
ENT M(m)	000mmmmm	Read data from keyboard to memory.
SAL M(m)	001mmmmm	Show data on screen from memory.
CAR RO, M(m)	010mmmmm	Load content from a memory address to register RO.
ALM M(m), R0	011mmmmm	Store content from R0 to a memory address.
MOV Rx, Ry	1000xxyy	Copy content of RY to RX (X, Y are register numbers).
SUM Rx, Ry	1001xxyy	Add RX+RY and it is stored in RX.
RES Rx, Ry	1010xxyy	Subtract RX-RY and it is stored in RX.
MUL Rx, Ry	1011xxyy	Multiply RX * RY and it is stored in RX.
DIV Rx,Ry	1100xxyy	Divide RX / RY and it is stored in RX.

Following the instruction sequence (simulating machine code):

Where A, B, C, D represents the input using the keyboard and their values are:

A=1

B=2

C=3

D=4

- a) What is the formula associated to A, B, C, D?
- b) What is the result shown on screen?
- c) What is the state of memory?
- d) If Program Counter (PC) initial value was 258... Which is it actual value?
- e) How many registers of general purpose (RX) has our architecture?

Share your solution and your doubts in the forum!!! If a classmate has problems with it, try to help him.

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