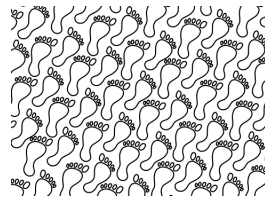



SERIE 3 – STEP BY STEP ASSEMBLY IN SIMULATION

Information systems




Some of those exercises have to be done on paper and others - indicated with the  symbol - require the use of a computer.

Question 1 – First steps with the simulator

In this exercise, we will work with the simulator contained in the *MPLAB-X IDE*. First, launch the IDE, create a new project with the simulator as target, add a new file and insert the following code¹:

```
1  #include <conf_bits.inc>
2
3  x equ 0x3
4
5  begin:
6    movlw .10
7    incf WREG
8    movff WREG, x
9
10 end
```

- (a) Launch the simulator (explanations will be given in class) and display the content of the data memory (*Window -> PIC Memory Views -> File registers*)
- (b) Run the program step by step (press the “Step into” button (shortcut  key) and observe how the register WREG (aka W) is modified.
- (c) Analyze the content of the program memory at the end of the program.
- (d) Describe what this program does (be as thorough as possible).

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- (e) Try to modify the program to make it decrement the value.
- (f) Why is there a ‘.’ character before the 10 in the code ?

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¹You can download the conf_bits.inc file there http://sin.begincoding.net/documentation/Assembly/include/conf_bits.inc

