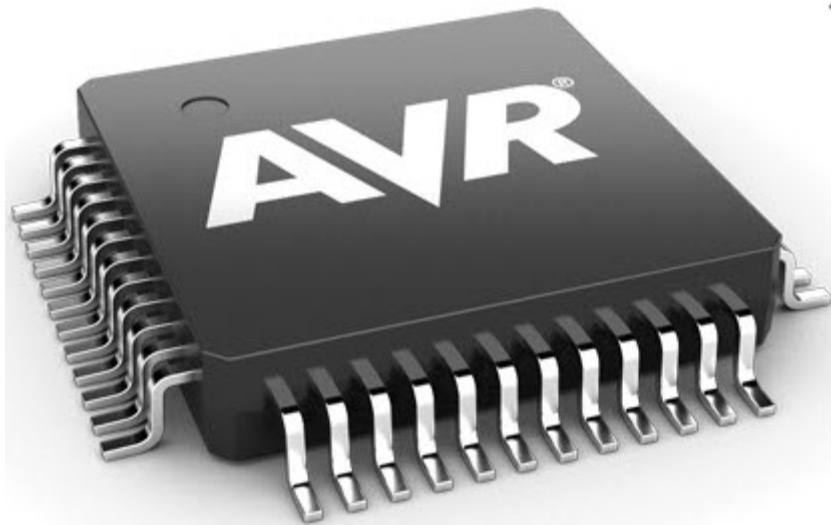


Microprocesoare si Microcontrolere

TEMA



Popa Nicolae Dănuț

Grupa 5402

12.10.2017

Enunț:

Să se scrie un program care interschimbă valorile a două variabile. Restricții: nu este permisă utilizarea unei variabile ajutătoare.

Implementare C:

```
1  #include <htc.h>
2  #include <pic16f84.h>
3
4  void main(void)
5  {
6      unsigned char x, y;
7
8      x = 200;
9      y = 150;
10
11     x ^= y;
12     y ^= x;
13     x ^= y;
14 }
```

## Implementare ASM:

```
1  #include p16f84.inc
2
3  ; Enunt: Sa se scrie un program ASM care sa interschimbe valorile a doua
4  ; variabile. Restricte: nu se poate folosi o variabila intermediara.
5  ; ScorpionIPX
6
7  ;assign memory for variables
8  x equ 0x20
9  y equ 0x21
10
11 main:
12     ; assign values to variables
13     MOVLW D'13'; W <- 13 - acumulator get value 100
14     MOVWF x;x <- W - x gets acumulator value
15
16     MOVLW D'10'; W <- 10 - acumulator get value 100
17     MOVWF y;y <- W - y gets acumulator value
18
19     NOP;no operation, usefull for breakpoints
20
21     ; swap variables' values
22     XORWF x, 1; x = W(=y) XOR x
23     NOP;no operation, usefull for breakpoints
24
25     MOVF x, 0
26     XORWF y, 1
27     NOP;no operation, usefull for breakpoints
28
29     MOVF y,0
30     XORWF x, 1; W = y XOR x
31     NOP;no operation, usefull for breakpoints
32
33     end
```

