

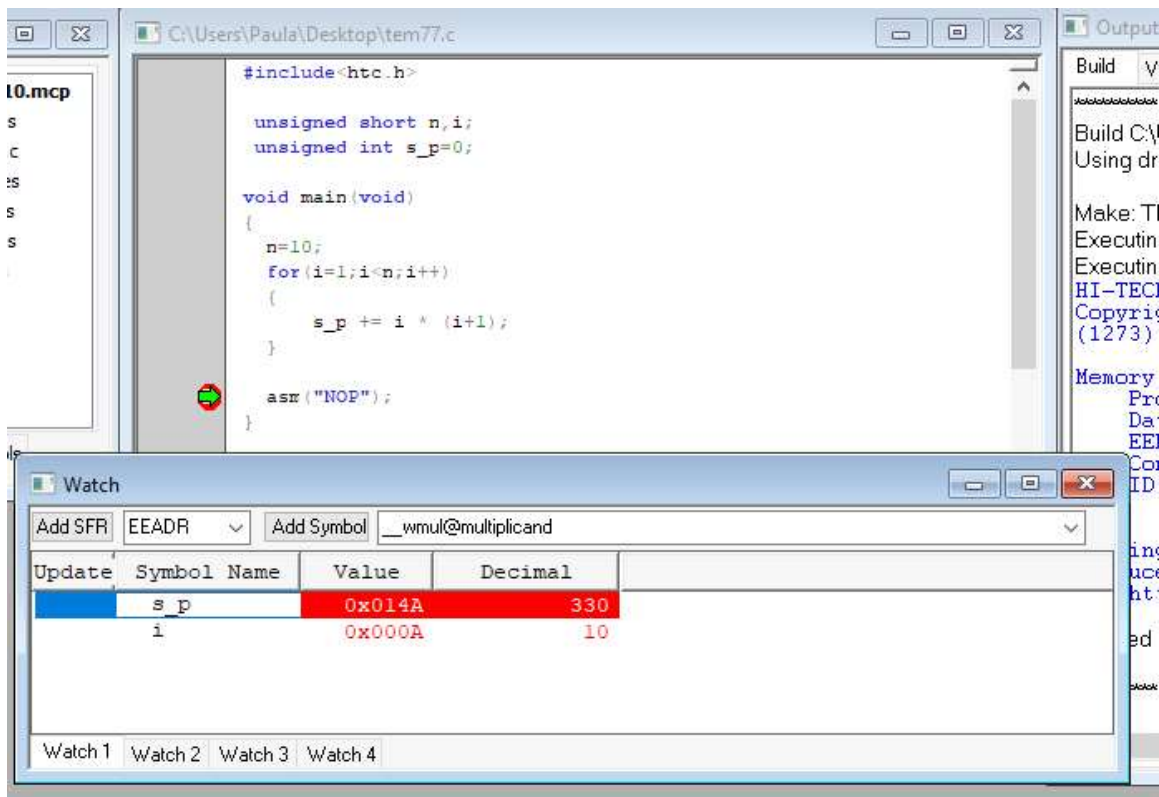
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TEMA 2 MM

1. Suma de produse: $1*2+2*3+...+(n-1)*n$

```
#include<htc.h>

unsigned short n,i;
unsigned int s_p=0;
void main(void)
{
    n=10;
    for(i=1;i<n;i++)
    {
        s_p += i * (i+1);
    }
    asm("NOP");
}
```



-in ASM

#include p16f84.inc

sum equ 0x20

i equ 0x21

j equ 0x22

n equ 0x23

prod equ 0x24

c equ 0x25

main:

; assign values to variables

MOVLW D'0'; W <- 0

MOVWF sum; sum <- 0

MOVLW D'1'; W <- 1

MOVWF i; i <- 1

MOVLW D'2'; W <- 2

MOVWF j; j <- 2

MOVLW D'5'; W <- 5

MOVWF n; n <- 5

MAIN_LOOP:

DECFSZ n; n <- n - 1

GOTO ADD_TO_SUM;

GOTO END_;

ADD_TO_SUM:

NOP

GOTO PROD_CALC

ADDITION:

MOVF prod, 0; W <- prod

ADDWF sum, 1; sum <- W + sum

NOP

INCF i; i <- i + 1

INCF j; j <- j + 1

GOTO MAIN_LOOP

PROD_CALC:

NOP

MOVF j, 0; W <- j

MOVWF c; c <- W

MOVLW D'0'; W <- 0

MOVWF prod; prod <- 0

_INNER_PROD_:

MOVF i, 0; W <- i

ADDWF prod, 1; prod <- W + j

DECFSZ c; c <- c-1

GOTO _INNER_PROD_

GOTO ADDITION

END_:

NOP

end

Watch window showing variables and their values:

Update	Symbol Name	Value	Decimal
	prod	0x14	20
	sum	0x28	40
	i	0x05	5
	j	0x06	6

Source code snippet (left pane):

```
#incl
sur e
i equ
j equ
n equ
prod
c equ

main:
    i
    j
    M
    M
    M
```

A green arrow points to the first line of the main function.