

## **Toggle Port 1 (P1) from value P1=0x55; to P1=0xAA; with some Delay created by wait() function in Embedded System (Using Kiel C Program)**

### **Program:**

```
#include <reg51.h>

//delay
void wait(void)      ;
void main(void)
{
    unsigned int x;
    for(;;)
    {
        P1=0x55;
        wait();
        // for(x=0;x<=10;x++) ;

        P1=0xAA;
        wait();
        // for(x=0;x<=10;x++) ;

    }
}

void wait()
{
    unsigned int x;
    for(x=0;x<=10;x++) ;
}
```

## **Before Execution:**

The screenshot shows the µVision4 IDE interface with the project 'esclToggle' open. The left pane displays the project structure under 'Target 1' with files 'STARTUP.A51' and 'toggle1.c'. The right pane shows the source code for 'toggle1.c'.

```
01 #include <reg51.h>
02
03 //delay
04 void wait(void) ;
05 void main(void)
06 {
07     unsigned int x;
08     for(;;)
09     {
10         P1=0x55;
11         wait();
12 //        for(x=0;x<=10;x++) ;
13
14         P1=0xAA;
15         wait();
16 //        for(x=0;x<=10;x++) ;
17
18     }
19 }
20 void wait()
21 {
22     unsigned int x;
23     for(x=0;x<=10;x++) ;
24 }
```

## **After Execution:**

The screenshot shows the Keil uVision4 IDE interface for a project named "esc1toggle".

- Registers:** Shows the state of various registers (r0-r7, Sys, PC, PPSW) with their current values.
- Disassembly:** Displays assembly code for the "toggle1" function. The current instruction is at address C:0x080F, which is a MOV instruction. A tooltip for this instruction shows "Parallel Port 1" with Port 1 set to value 0x55 and Pins set to 0x55. The assembly code includes a loop that increments x from 0 to 10, setting P1 to 0x55 and 0xAA respectively each time through the loop.
- Code Editor:** Shows the source code for the "toggle1" function, which contains the same logic as the assembly code.
- Call Stack:** Shows the call stack with the main entry point at address 0000.TOGGLE1.MAIN.

