ECE 375 LAB 3

Introduction to AVR Simulation with Atmel Studio

Lab Time: Tuesday 4-6

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INTRODUCTION

PROGRAM OVERVIEW

ADDITIONAL QUESTIONS

1) What is the initial value of DDRB?

The Initial value of DDRB is 0x00.

2) What is the initial value of PORTB?

The Initial value of PORTB is 0x00.

3) Based on the initial values of DDRB and PORTB, what is Port B's default I/O configuration?

Port B's default I/O configuration is 0.

4) What 16-bit address (in hexadecimal) is the stack pointer initialized to?

The stack pointer is initialized to 0x10FF.

5) What are the contents of register r0 after it is initialized?

Register r0 contents are set to 0xFF after it is initialized.

6) How many times did the code inside of LOOP end up running?

The code inside of LOOP ended up running 4 times.

7) Which instruction would you modify if you wanted to change the number of times that the loop runs?

You would change the value loaded into i to change the number of times the loop runs. This is seen on the line: `ldi i, $04`

In this case, the hex value is $04.

8) What are the contents of register r1 after it is initialized?

   Register r1 contents are set to 0xAA after it is initialized.

9) What are the contents of register r2 after it is initialized?

   Register r2 contents are set to 0x0F after it is initialized.

10) What are the contents of register r3 after it is initialized?

    Register r3 contents are set to 0x0F after it is initialized

11) What is the value of the stack pointer when the program execution is inside the FUNCTION subroutine?

    The value of the stack pointer when the program execution is inside the FUNCTION subroutine is 0x10FD.

12) What is the final result of FUNCTION? (What are the hexadecimal contents of memory locations $0105:$0104)?

    The hexadecimal content of memory location $0105 is 0xba, as the hexadecimal content of memory location $0104 is 0x0e. In little-endian, the hexadecimal contents are 0xba0e.

DIFFICULTIES

CONCLUSION

SOURCE CODE