ECE 375 PRELAB 3

Lab Time: Friday 2-4

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QUESTIONS

1. What are some differences between the debugging mode and run mode of the AVR simulator? What do you think are some benefits of each mode?

Line-by-line debugging mode provides the best way to take control of the simulation, by clicking on the Start Debugging and Break Icon, because it allows the programmer to navigate through the program line by line and verify data in registers and memory. On the other hand, run mode continuously runs the program without stopping.

2. What are breakpoints and why are they useful when you are simulating your code?

   Breakpoints are the points set in the code by programmer when debugging their code. When a break point is set, the simulation will automatically pause at the break point and put the simulation into line-by-line mode. They are useful because we can use them to halt the simulation at the area that we think is buggy. This can save a lot of time.

3. Explain what the I/O View and Processor windows are used for. Can you provide input to the simulation via these windows?

   The I/O View window contains all the configuration registers associated with the simulated chip. It shows the current bit values, and address of configuration registers. Input on the ports can be simulated here.

   The Processor window shows the current contents of the PC, SP, the 16-bit registers X, Y, and Z, and the SREG. It also shows the current values of the GPRs

4. The ATmega128 microcontroller features three different types of memory: data memory, program memory, and EEPROM. Which of these memory types can you access by using the Memory window of the simulator?

   You can access data memory, program memory, and EEPROM by suing the Memory window of the simulator.

REFERENCE

AVR Starter Guide