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ECE 375

Lab#3 PreLab

1) Debugging mode allows a line-by-line simulation, while run mode continuously runs the program. To access debug mode you must:

i. Follow the menu Debug ) Start Debugging and Break.

ii. Click on the Start Debugging And Break icon.

iii. Press Alt+F5.

But to access the run mode you must:

i. Follow the menu Debug ) Continue.

ii. Click on the Start Debugging icon.

iii. Press F5.

Debugging allows the programmer to verify data in registers and memory. If initially in run mode, the user can halt the program and switch to the line-by-line mode. When running in line-by-line mode, there are additional buttons activated which allow you to navigate through the program.

2) A breakpoint is a user specified location in code where a program is paused to allow for debugging purposes. This includes things like checking variable at that exact point in time, or even registers or memory locations. These can be utilized to halt the simulation at the area known for buggy behavior. Breakpoints can save a lot of time and frustration.

3) The I/O View and Processor provide a look at the current state of the microcontroller during the course of simulation. The I/O View contains all the configuration registers associated with the simulated chip. Other information found under this tab includes the current bit values and address of configuration registers. You can also simulate input on the ports in the I/O view.

The Processor tab displays the current contents of the Program Counter, Stack Pointer, the 16-bit pointer registers X, Y, and Z, and the Status Register. This tab also shows the current values contained in each of the general purpose registers.

In the I/O View, the user can simulate input on any of the ports.

4) (e) All three types

Data memory, program memory, and EEPROM can be accessed using the Memory window of the simulator.