CPE 301L
Microcontroller Based System Design
Laboratory Exercise #2

Atmel Studio Tutorial Part 1

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Goals:
Learn how to install AVR Studio and WinAVR. Learn how to assemble, compiler, and debug using Atmel Studio.

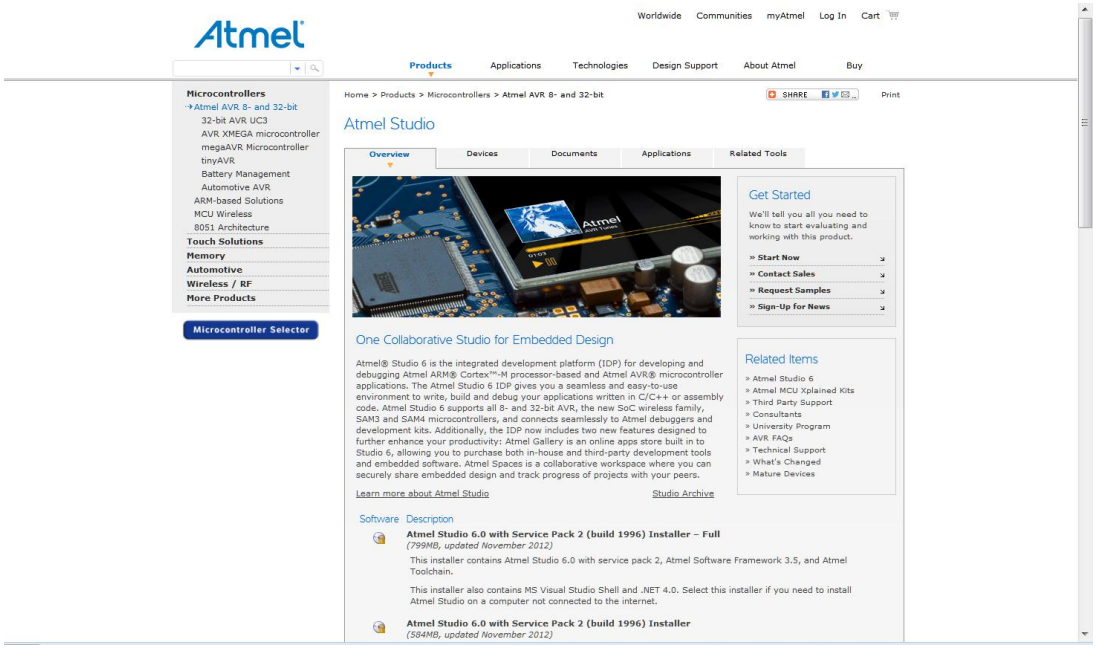
Equipment Usage

Note: The following links provides a step by step process of downloading and installing Atmel Studio

- Atmel AVR Studio 6 - Download and Install
  http://www.atmel.com/System/Overlay/Video.aspx?uri=tcm:26-39806

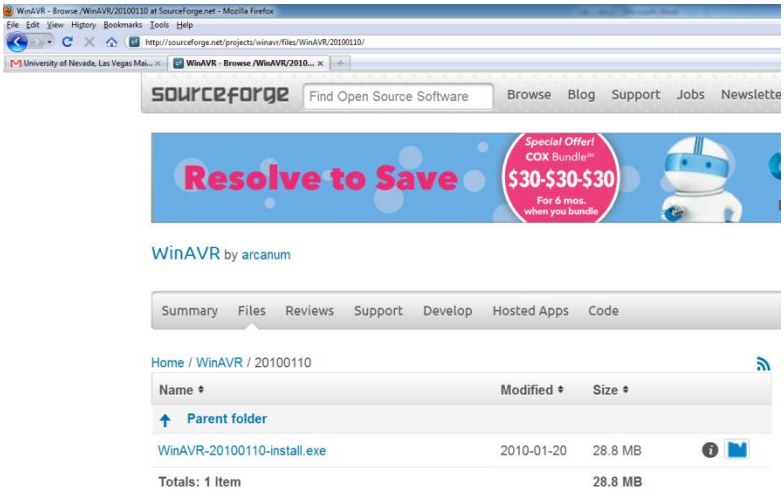
Downloading Atmel Studio

AVR studio can be downloaded from the Atmel website: *www.atmel.com*. Once there go under products and select ***Atmel AVR 8-and-32-bit.*** Once there select either tinyAVR (or megaAVR) and click on the **Tools** tab. Under the section Related Items should be a link for AVR Studio 6. Click on the CD with the words register written across it and it will take you to the download page. Before you can download the file you must either enter the registration information or fill the 'download as guest' section first.



Downloading WinAVR:

Go to *http://winavr.sourceforge.net/* and click on the *Download* link. Follow the link to sourceforge.net and click on the WinAVR link next to the folder. Click on the first link tilted 20100110 (should be first link) and click on the next link begin downloading the exe file. You can ignore the registration it is not necessary for the download.



Installation:

Follow the setup-wizard for each program to install them on your machine. NOTE: When installing AVR Studio, make sure you also install the Jungo USB Driver as well.

Prelab:
Watch the videos explaining how to install and use Atmel Studio

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Lab Experiments:
Experiment 1: Download and install both Atmel Studio and WinAVR on your computer
Experiment 2: Download the datasheet for the Atmega328P.
Experiment 3: Use installed software to create and build the project.

Questions:

a) Go to the Atmel website and find the Atmega328P datasheet. List some of the various functions that can be performed using the chip.
b) Go to Atmel's website and find another microcontroller that is similar enough to replace the Atmega328P. Explain why it would be a suitable replacement and list some of the differences from the 328P.

Post-Lab Deliverables:
1) Submit your answers to the questions listed in the lab.