ECGR4982/6185/8185, Spring 2006: Lab 2
Building a Simple TI MSP430 Program

Learning Objectives

This lab will help you demonstrate how to build a project and load the executable onto the Texas Instruments-based MSP430 Stiquito Controlled board.

General Information

The general steps for this lab are:

1. Obtaining a development board, programming cable, and chapter handout from Prof. Conrad.

2. Soldering several headers to the board (some)

3. Loading the TI MSP430 development environment tool on PCs in Woodward 203

4. Build the project and load onto your board. Run the program and observe the operation.

5. Demonstrate for a TA and turn in a lab report.

Prelab Activity

You may use the PCs in Woodward 203 or your own PC to do this lab experiment. However, you must load one of the machines in Woodward 203 with these software tools. If you want to work on lab assignments on your own PC, then load the tools on your PC to perform this exercise. To load the tools, insert the CD in your machine and follow the instructions.

Laboratory Assignments

1. Obtain the Stiquito Controlled board from Prof. Conrad. Also obtain the Olimex JTAG dongle, several jumpers, and a shunt.
2. Solder the jumpers onto the board as instructed in the class handout.
3. Follow the instructions provided by Brian Newberry on loading the software tool on PC and on how to create a project.
4. Reload the software onto the boards and test. Verify that the new functionality works as specified.
5. Complete your lab report.
6. Bring the new board to the lab TA and demonstrate the new code. When the TA checks your board, he will also take your lab report. You **will not** need to include a printout or soft copy all of the code – just "snippets".

Requirements

Req. 1 – The code generated is written in C for the TI MSP430F1122.
Req. 2 – The code is well commented and easy to follow
Req. 3 – Your lab report should include the final build output from the builder
Req. 4 – Each LED on he board should flash on for 0.5 second and off for 0.5 seconds. The two LEDs should alternatively flash (only one is ON at a time). Verify the timing with a scope.

Req. 5 – A timer MUST be used (no busy loops).

Lab Report

Include in the checkout part of your lab report the lines:

1. LEDs flashing as specified   _____

Include in your lab report observations and procedure like the following:
The general learning objectives of this lab were . . .

The general steps needed to complete this lab were . . .

Some detailed steps to complete this lab were . . . .
1. Step one
2. Step two
3. . . . .
Code generated or modified to complete this lab...
        No need to include all the files for the lab. Just include the modified code.

Some important observations while completing/testing this lab were . . .
        Here include the memory report given at the end of the compile process.

In this lab we learned . . . .