EEE204 - Introduction to Embedded Systems

Experiment 1

Objectives

- Become familiar with the MSP430F5529 USB LaunchPad development kit and its basic components.
- Understand the basic anatomy of an assembly language program.
- Become familiar with the process of assembling, uploading, debugging, and executing an assembly language program using CCS.
- Learn how to examine and modify MSP430 memory and register contents.
- Learn how to do arithmetic operations MSP430.

Materials

- Code Composer Studio IDE
- MSP430F5529 USB LaunchPad development kit

PROCEDURE

1. Connect the LaunchPad to the computer via the USB cable provided with it.
2. Start Code Composer Studio (CCS).
3. Create new project **(File→New→CCS Project).**
4. Enter the name of the project.
5. Choose **"MSP430x5xx Family"** as project type and and choose **"MSP430F5529"** as your target device .
6. Select **"Empty-Assembly-only Project"** in **Project template and examples** section.
7. You don't need any more aditional settings, you can click **"Finish"** and create the project.
8. The program will automatically create a **"main.asm"** file. Do not change anything in this file for now, you will write your codes in "**Main loop here**" part.
9. Do the following tasks.

Experimental Work

E1

- Write a program to perform following operation in Assembly.
  23BC+12DE=369A
- Save your program by clicking **(File→Save).**
- Build the project **(Project→Build Project)** .
- Debug the application **(Run→Debug)** .
- Click **Run→Resume** to start the application.
- Observe the CPU registers and memory.
- Click **Run→Terminate** to stop the application and to exit the debugger.

E2

- Write a program to perform following operation in Assembly.
  4565-2565=2000
- Do the same steps in task 1.

E3

- Write a program to perform following operation in Assembly.
  2565-4565=E000.
- Do the same steps in task 1.