Computer Science 230
Assignment 1
Due before 11:55pm September 30, 2016 on conneX

Objectives

- Practice with base conversions
- Practice with two's complement
- Introduction to assembly language

Academic Integrity

Prior to submitting your assignment, you should familiarize yourself with the University policy on Academic Integrity:

http://web.uvic.ca/calendar2015-09/FACS/UnIn/UARe/PoAcI.html

We will use a plagiarism detection tool on all assignment submissions.

Please note that this assignment comes in two parts. Part 1 is a problem set on conneX. You fill the answers directly on conneX (will be marked automatically). However you need to submit a paper copy of your notes on how you arrived at the solution.

Part I – Problem set on conneX

Complete the Assignment 1 problem set on conneX. This is available in Tests & Quizzes section.

The problem set is to be completed online and only requires you to supply the final answer. You are required to answer these questions without electronic tools. Treat these questions as if they were conducted during an exam.

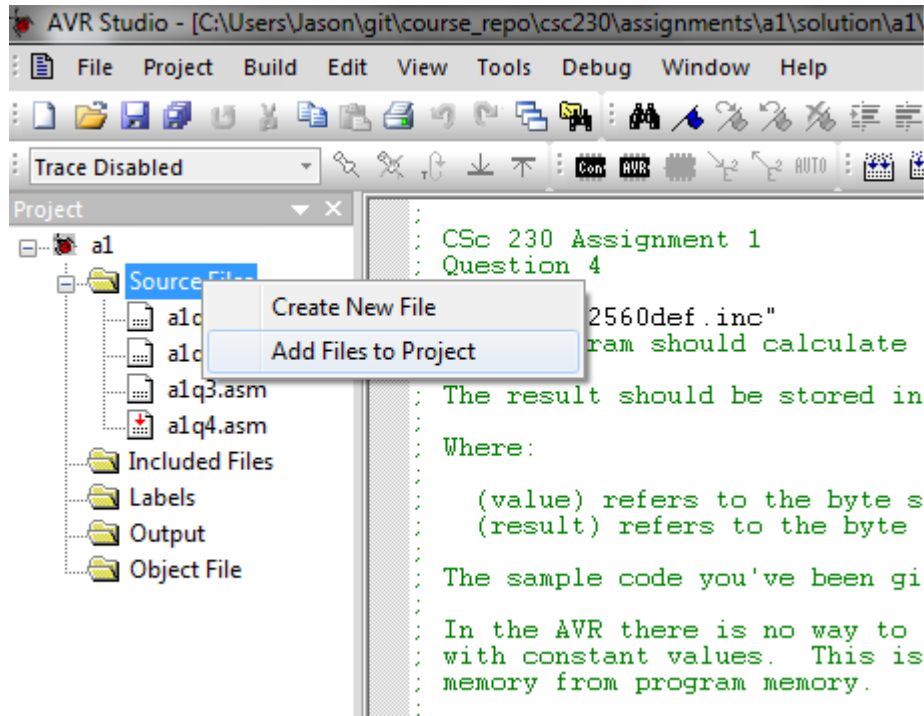## Part II – AVR Assembly Language programming

Setting up AVR Studio 4

Create a new AVR Assembly project named "a1" in AVR Studio 4 and then download the four files:

a1q1.asm, a1q2.asm, a1q3.asm and a1q4.asm from the conneX site under:
**Resources->Assignments->Assignment1**

Place them in the directory where your a1 project was created. Then add the files to the project by right clicking on the source files tree entry and selecting "Add Files to Project":

When you've added all the files, your project pane should look like:
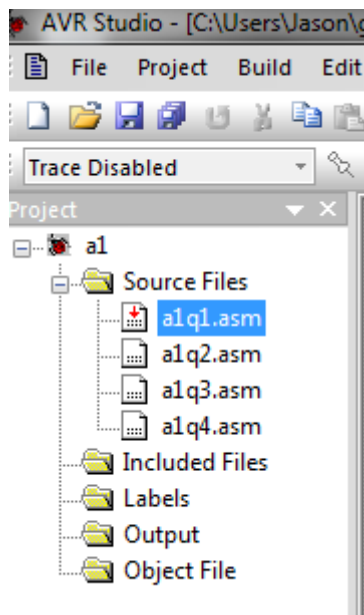
In this assignment we are writing four unrelated assembly language programs in the same project. You can select which file you want to work on by right clicking on it and selecting "Set as Entry File":
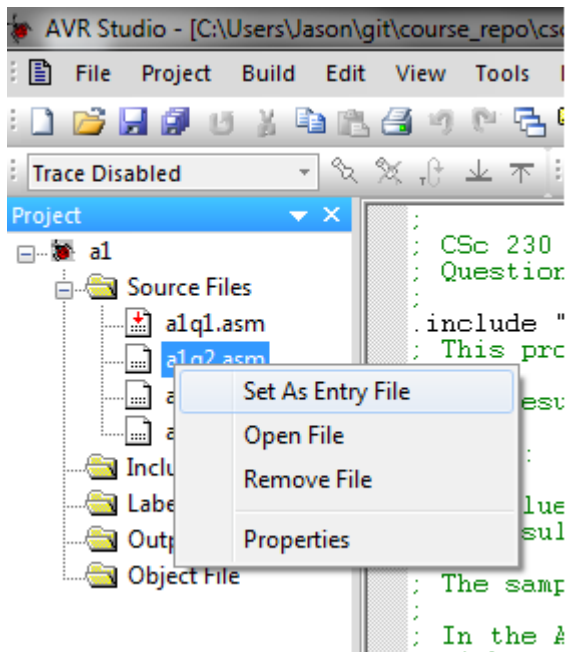
So, when you are working on question 2, you will make **a1q2.asm** as the entry file. When you select "run", it will start the program in **a1q2.asm**.

Writing the assembly language

Read the comments in each of the **.asm** files, they contain the specifications on what each of the programs is supposed to do. Make careful note of the special markers: ;--* and ;*-- and be sure you do not change any code between those markers. These special characters are used to facilitate marking.

You should write your code between the line starting with ;*** and the line starting with ;****

Questions

There are questions posed within these assignments. Just write your answer below in the comments section itself.

Submission

Complete the Assignment 1 problem set on conneX.

Submit your **a1q1.asm, a1q2.asm, a1q3.asm** and **a1q4.asm** using conneX. Do NOT submit your project file – just the **.asm** files.

Grading

If you submit a program that does not assemble (i.e. There are errors during the project build process) you will receive 0 for that part of the assignment.

If you change any code between the ;--* and ;*-- markers in the code, you will receive 0 for that part of the assignment.

Your programs will be run on different inputs than those specified in the sample files. If you hard-code your answers, you will receive 0 for that part of the assignment.

Part I	Connex problem set	25 marks
Part II	Question 1	4 marks
	Question 2	4 marks
	Question 3	8 marks
	Question 4	9 marks

Total   50 marks