CSE 378 Autumn 1999

Machine Organization and Assembly Language Programming

Problem Set #1

Due: Thursday, October 7

1. By the end of the first week, you should have read Chapter 1, Chapter 4 (Sections 4.1 to 4.3) and Chapter 3 (Sections 3.1 to 3.4)
2. In Chapter 1, do, but do not hand-in, Exercises 1.1 to 1.26
3. Convert 511 into a 32-bit two's complement binary number. Give the answer in binary and in hexadecimal.
4. Convert -1024 into a 32-bit two's complement binary number. Give the answer in binary and in hexadecimal.
5. What decimal number does this two's complement number represent 1111 1111 1111 1111 1111 1111 1010 0111
6. Chapter 4 Ex. 4.6 (you can use an expression of the form $2^x + y$ for the decimal number if you find it convenient)
7. Chapter 4 Ex. 4.7 (you can use an expression of the form $2^x + y$ for the decimal number if you find it convenient)
8. Chapter 4 Ex. 4.11
9. Assume a 8-bit register and a 2's complement representation of integers. What are the largest positive number and the smallest negative number that you can represent (give representations in 2's complement and their values in decimal). Give examples of adding two positive numbers with and without overflow and of subtracting a negative number from a positive number with and without overflow. Show the 2's complement representation of the operands and the result in a manner similar to what is done in the book pp 220-221.