CS 383 Assignment 1

Instructions:

- *Except for the programs, all the handing-in materials should be in hard copy (hand writing or printing).*
- *This assignment is released on 11/4/2011, and due on 11/9/2011.*
- *Please remember to include your name and student ID on all copies.*

1. Pick a language that you are most familiar with, discuss three most important features, e.g., data model, the type system, the I/O or object-orientation.

2. Exercise on book, page 21, title 1.2.

3. Download Clite interpreter from http://highered.mcgraw-hill.com/sites/0072866098/, run a Clite program (pick one from the samples or write one on yourself) and get the output.
   PS: In order to get Clite interpreter work, you need to have JDK installed on your computer first.

4. Give 3 example statements in your favorite languages that are particularly unreadable. E.g., what does the C expression while (*p++ = *q++) mean? And explain what each of the statement means.

5. Using the grammar $G_{integer}$, develop a leftmost and a rightmost derivation for the integers 4520, 115511.

6. Do Exercise 2.6 on page 55. Then write a Clite program including these two expressions. Run it to see what the output is.

7. Do Exercise 2.14, page 56. Expand the IF statements in these languages into three short programs, write down these programs and get them to run in their environments.

8. Design another grammar that has the ability to derivate the following expressions:
   a) 5+4*3
   b) 5*4+3

9. Get familiar with Clite's syntax, write a program that can compute x^y (x, y are integers) and run them on Clite interpreter, hand in the source code as a separate file, as well as the output in email to alex_wang@126.com .