CS 480: Compiler Design
PS4: Program 2: Parser

Due: 07/15/2017

Goal: Build Your Parser
In our previous programming assignment, we practiced with Flex. In this assignment, we will practice with Bison for the parsing stage of compiling.

In this assignment, you are asked to build a parser using Bison. You can access your unix account on campus. If you do not want to install the packages into your own windows box, you can simply use the virtual machine at https://c9.io to use their unix environment without installing packages.

Important: Please submit the file on blackboard. Please test-submit your assignment before the deadline to be sure that the script is working for you, even if you are not finished. It is your responsibility to check for problems ahead of time.

Points 50

Problem 1 Parser

Please follow the tutorial uploaded on blackboard to learn the basics of bison. I also upload the calc.y, calc.l and Makefile for this assignment. However, in this calc.y file, it is the standard calculator (that is the * operator and the / operator have a higher priority than the + operator and the - operator). For this assignment, please do the following:

(1) Explain the execution order in the Makefile and the file dependencies.

(2) When you execute the make command, you would have this calc executable. However, since it is a standard caculator, we want to do some twist. We want the + and - operators to have a higher priority than * / operators. Modify the calc.y file such that we will see that

Sample input: 3*4-2 **Sample output:** 6
Sample input: 5*(3-8*4) **Sample output:** -100
Sample input: 25/(5*5-4) **Sample output:** 5
Sample input: 4*4-2-3+3 **Sample output:** 32
Sample input: 4*4-2+3*3 **Sample output:** 60