Project 3

Implementation of a Code Generator

Due Friday, June 22, 2018

1. Problem

In this assignment you are requested to use ANTLR to generate a code generator for MIPS processors. You can use the SPIM simulator, which simulates a MIPS processor, to verify the correctness of your code generator. You can download the SPIM simulator and related information from the web site http://www.cs.wisc.edu/~larus/spim.html. You can apply the techniques introduced for intermediate code generation in this assignment.

In this assignment, we will use a word to store an integer values. To simplify register allocation, you can maintain a counter of 0~9 to denote the next available general registers consisting of $t0~$t9 for expression evaluation. You may assume that 10 registers are enough to evaluate every expression in the program. You should return all the registers you use to evaluate an expression back after evaluating that expression. The code generator should read input from stdin and writes output to stdout.

2. Handing in your program

To turn in the assignment, upload a compressed file proj3 containing Rose.g, Rose.tokens, Rose*.java, and Rose*.class to Ecourse site.

3. Grading

The grading is based on the correctness of your program. The correctness will be tested by a set of test cases designed by the instructor and teaching assistants.