Assignment 2: Code Generator for C --
Code generator for a C subset (C--) targeting Intel X86

You are required to write a simple code generator that takes an intermediate form for a C source program and generates assembly code for the Intel X86 architecture. Only 'int' and 'char' primitive data types need to be supported. You also need to support arrays and structs, along with dynamic storage allocation. Use linear scan register allocation (global variety) along with simple register allocation (GETREG(), as in ASU) for temporary register allocation.

The front end you will be using is LANCE which generates tree intermediate code. You may convert this tree code to three address code (if you desire). The code generation algorithm can be the simple basic block code generator as in ASU, or anything superior to it. You must handle function calls and returns appropriately, and carry out storage allocation for data. You are required to generate assembly code that should run using the GNU assembler for the X86.

Any extra machine-dependent optimizations and intelligent code generation strategies will receive bonus points depending on merit.