Assignment 5

Submission Date: 27th April 2015

This is the last part of the assignment in which you generate code for a simulated machine called the C-machine. The accompanying files contain (i) `code.asm`—the code for the factorial program compiled to C-machine code, (ii) `machine.cc`—the code for C-machine itself, and a helpful (iii) `Makefile`. C-machine was coded by Nikhil George with some help from K. Prasanna. The initial ideas came from me.

You have to use C-machine without any changes. If you require new instructions to be added to the C-machine, you have to talk to me to and provide justification. I shall make the changes and inform everybody else.

You may design the code generator on your own. For initial ideas, you can read section 8.6 of the book. This is titled *A simple code generator*. The primary requirement is correctness. The next requirement is completeness—all features should be implemented in a general sense. For instance, your code generator should not fail because an expression was too large and you could not find registers. Going beyond these may earn you bonus points. If you design and implement a code generator that you can argue to be more efficient, that will win you bonus points. The extent of the credit will be decided by me during the grand viva.

Please start off as soon as possible. I shall keep on adding to the assignment description as usual.