Winter ’14 CIS 314 Assignment 3 – 100/100 points – Due Monday, 2/24, 11:59 PM

This assignment will involve solving problems and writing Y86 code related to processor architecture. For ease of submission, please submit a .zip file containing a single solution document for non-coding exercises (.txt, .doc, or .pdf) and individual source files for coding exercises (see naming conventions below). Your code and answers need to be documented to the point that the graders can understand your thought process. Problems will be graded based on work shown, not your final answer; full credit will not be awarded if no work is shown!


3. [20] Consider the following Y86 code:

   addl %eax %eax
   mrmovl 0(%ecx) %ebx
   cmpl %ebx %eax

   How many pipeline stalls (or bubbles) are required when running the above code with and without forwarding (see sections 4.5.5-4.5.8)?

4. [40] Modify the asum.ys Y86 program (posted on piazza) to calculate the product of the input numbers rather than the sum. Hint: there is no multiplication instruction in Y86, so instead use iterative additions. Name your source file aprod.ys.

   Upload .zip file to Blackboard (see Course Documents section for submission link).