Fall ’14 CIS 314 Assignment 3 – 100/100 points – Due Tuesday, 11/18, 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:

```y86
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] Write a Y86 program that sorts an array of data using a sorting method of your choice (I highly recommend Selection Sort). Use a hardcoded input array similar to that used by asum.ys (included with the Y86 simulator source) with at least ten entries. Sort the array in place (i.e., no need to allocate additional memory for the sorted array). Name your source file sort.ys.

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