CS 423 – Spring 2012
Homework #1
Due February 29th, 2012

Due Wednesday, February 29, 2012 by 5:00PM in Ismail Akturk's mailbox in the department secretary office. Remember to read and comply with the Homework Policy posted on the course Website.

In this homework, you are asked to do research on various microprocessors and compare their pipelines. For each of the listed microprocessor write a few sentences about the structure of the pipeline from different angles. Your comparison should at least include the following information for each pipeline:

- How deep is it?
- How wide is it?
- Which property of it distinguishes it from the other pipelines?

Following the comparison you made, try to reason about the following questions:

- Why do you think these processors have different (or similar) pipelines?
- What would be the driving forces to build different pipelines?

The microprocessors you are going to compare are as follows:

- MIPS R4000
- ARM Cortex-R7
- ARM 946E-S
- PowerPC 601
- PowerPC e5500
- Intel P4
- AMD Athlon
- Alpha 21064
- Alpha 21364
- Intel Itanium
- Intel Itanium 2
- Sparc T4