

CS 429H

Assignment 4

This assignment covers material from class and in Chapters 4 and 5 of "Computer Systems: A Programmer's Perspective". Familiarity with the reading in this chapter is essential.

Your assignment is to provide solutions for the following questions.

Questions:

1. Describe and give examples of three types of pipeline hazards. Give information on how each of these hazards can be handled.
2. Consider the following table that summarizes a processor's performance on a particular program. What is the CPI of the processor on this program?

Instruction Type	Mix %	CPI
ALU	40	1.0
load	30	1.5
store	15	1.2
branch	15	1.3

3. Now compute the CPI for two different optimizations. (A) reduce average branch CPI to 1.1. (B) reduce average load CPI to 1.3. Which optimization is better?

Only electronic submissions will be accepted. Electronic submissions must be in text (.txt) or pdf formats. Turnin your assignment using Canvas by 12:00 pm (noon), April 15, 2014.