CSCE 330 Spring 2006
Homework 1

1. This list of questions is from Robert Sebesta's textbook. Please indicate the source of your answer (e.g., a web site, a book, an article, class notes) with each question.
   (a) In what year was the Plankalkuel designed? In what year was that design published?
   (b) What two common data structures were included in Plankalkuel?
   (c) How were the pseudecodes of the early 1950s implemented?
   (d) Speedcoding was invented to overcome two significant shortcomings of the computer hardweare of the early 1950s. What were these two?
   (e) Which IBM computer introduced floating point arithmetic and indexing?
   (f) In what year was the Fortran design project begun?
   (g) What was the primary application area of computers at the time Fortran was designed?
   (h) Where was LISP developed? By whom?
   (i) Which dialect of LISP is used for introductory programming courses at MIT and some other universities?
   (j) What two professional organizations together designed ALGOL 60?
   (k) In what version of ALGOL did block structure appear?
   (l) What organization was most responsible for the early success of COBOL (in terms of extent of use)?
   (m) What design criterion was used extensively in ALGOL 68?
   (n) What are the concurrent program units of Ada called?
2. Recall that computer architecture is a major influence on programming languages, and "[most] programming languages can be viewed as abstractions of an underlying von Neumann architecture" [textbook, p.8]. Why the von Neumann architecture? Also, comment on the following statement, which Patterson and Hennessy label "a fallacy": "Computers have been built in the same, old-fashioned way for too long, and this antiquated model of computation is running out of steam." (Reference: Patterson, David A. and John L. Hennessy. *Computer Organization and Design*, p.29. Morgan Kaufmann, 1998.)