

CSCE 330 Fall 2007
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 pseudocodes of the early 1950s implemented?
 - (d) Speedcoding was invented to overcome two significant shortcomings of the computer hardware 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.)