

**CSCE 330 Fall 2010**  
**HOMEWORK 1**

1. This list of questions is from (an earlier edition of) Robert W. Sebesta. *Concepts of Programming Languages*, 9th ed. Addison-Wesley, 2009. 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 was used until (approximately) 2009 for the introductory programming course at MIT?
    - ii. Which programming language is used now for the introductory programming course at MIT?
  - (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.)