Due date: Tuesday, September 8, 2015, 9:30am, upload in home folder of class.

Exercise 1.1 (20 points)

a) Why is it useful for a programmer to have some background in language design, even though he or she may never actually design a programming language? [2 points]

b) What programming language has dominated scientific computing over the past 45 years? [1 point]

c) What programming language has dominated business applications over the past 45 years? [1 point]

d) What programming language has dominated artificial intelligence over the past 45 years? [1 point]

e) In what programming language is UNIX written? [1 point]

f) What is the disadvantage of having too many features in a language? [1 point]

g) Give examples of a lack of orthogonality in the design of C. [2 points]

h) What construct of a programming language provides process abstraction? [1 point]

i) What is aliasing? [1 point]

j) What two programming language deficiencies were discovered as a result of the research in software development in the 1970s? [2 points]

k) What role does a symbol table play in a compiler? [2 points]

l) Why is the von Neumann bottleneck important? [1 point]

m) What are the advantages in implementing a language with a pure interpreter? [2 points]

n) What are the three general methods of implementing a programming language? [2 points]