Chapter 3.6, 10, 13
Reading Discussion
Functional languages

• Work in small groups
• Don’t look at the text or your notes
• List as many functional languages as you can recall
• For each language list some features that that language is known for.
Features

• What features make a language functional

• What features are not necessarily functional but are found more often in functional languages
Features

• What features make a language functional
  – First class functions
  – Higher order functions

• What features are not necessarily functional but are found more often in functional languages
  – Types and polymorphism
  – Algebraic datatypes (lists, trees)
  – Garbage collection
  – Pure features (no side effects)
  – recursion
E3 and Scheme

• The language E3 is based upon Scheme

• List as many features as you can recall from Scheme found in E3

• What features found in Scheme are not in E3?
E3 and Scheme

• The language E3 is based upon Scheme
• List as many features as you can recall from Scheme found in E3
  – Dynamic typing and predicates (like: char? = ischar, number? = isint, pair? = ispair)
  – Lists as pairs
  – prefix notation and parentheses
• What features found in Scheme are not in E3?
  – First class functions
  – Programs as lists (self representing)
Normal order evaluation

• What is normal order evaluation?

• What are other choices?

• How do they compare with normal order evaluation?
Currying

• What is currying?