Comp 333 Concepts to Know for the Comp 333 Final Spring 2015

(See also the Practice Problems for the final)

Concepts for the Final. Be prepared to answer short answer questions on each topic and subtopic.

1. Programming Language Syntax
   1. BNF and EBNF
   2. Parse trees for sentences from grammars
   3. Leftmost and Rightmost Derivations of sentences from grammars
   4. Ambiguous grammars
   5. Regular expressions
2. Interpretation vs compilation
3. Compiler phases. Relation of compilers to grammars.
4. Subprograms and Parameter Passage. (pass by reference, pass by value, pass by value-result)
5. Scoping of Variables (static scope rules and dynamic scope rules)
6. Storage Management: static allocation, stack-based and heap-based allocation. Stack frames. Static and dynamic links.
7. Data types. Static and dynamic type binding
8. Expressions, operator precedence, type conversions
9. Scheme
   1. How does Scheme relate to the concepts in items 2,4,7,8 above
   2. What does Dr Racket do when you select Run?
   3. Scheme language concepts covered in class
10. Prolog
    1. fundamental concepts related to Prolog such as backtracking and instantiation and logic proofs.
    2. Prolog language concepts covered in class
11. Concurrent programing ( at level of power point slides from Chapter 12)