CS111 Final Prep

General Topics

Everything up through the first two exams

Classes
- Designing classes: representing information; appropriate functionality
- Defining classes/data types
- Defining and implementing methods
- Defining attributes (instance variables)
- Special methods (__init__, __str__, __cmp__) and their use
- Use of self
- Using classes you've defined
- Difference between functions and methods
- Testing classes

Searching
- AI: breadth-first vs depth-first
- linear vs binary

Two-Dimensional Lists
- creating, accessing, processing

Exceptions
- try/except statements

Security concerns
- recognizing, handling/preventing security vulnerabilities

Computer Science
- what is computer science?

What I expect from you on exam:

- To know the Python/programming terminology
- To know the appropriate Linux commands and how to use them, given a typical situation from lab
- To be able to read a program and describe what the program is doing at a high level in plain English, trace through the program's execution given input (control flow), and say what the program outputs
- To be able to write a program (given an algorithm or creating your own algorithm, given a problem) or class
    - o Syntax must be very close to correct (correct keywords, indentation, special characters, variable naming, operations)
    - o Since it's on paper, there is some leniency—may mark it up somehow if, for example, something should be indented

Suggestions on how to prepare:

- Practice programming on paper and verify program in Python. (Use problems from class, labs, or book.)
- Practice reading through programs, tracing through them, and saying what the output should be
- Read through slides for vocabulary and non-problem-solving exercises