CSCI111 Exam 1 Study Guide

Topics

Introduction to Computer Science
- algorithms, programs
- programming languages – characteristics, motivation for

Programming Basics
- process of writing and executing Python programs
   - interactive and batch mode, interpreter
- Python keywords
- data types
- variables, identifiers, constants
- numbers and arithmetic operations
- float vs integer division
- operator precedence
- calling functions
- importing modules and using functions from modules
- data type constructors (converting between data types)
- Style: good variable naming, readability

Control Structures
- `for` loops (how does `range` work?)

Object-oriented programming
- Constructors – creating objects
- Calling methods on objects
- Using APIs

Linux
- terminology
- basic commands
- file structure

What I expect from you on exam:

- To know the Python/programming terminology
    - E.g., names for types of statements
- To know 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 (comments), 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)
    - Syntax must be very close to correct (correct keywords, indentation, special characters, variable naming, operations)
    - Since the exam is on paper, there is some leniency—may mark it up somehow if, for example, something should be indented
    - No need for constants or comments on a timed exam

Suggestions on how to prepare:

- Review the many in-class exercises, handouts, and review questions
- Practice reading through programs, tracing through them as the computer would, and saying what the output should be
- Practice programming on paper and verify program in Python.
    - Use problems from class, labs, and textbook.
- Read through slides for vocabulary and non-problem-solving exercises
- Review Linux commands