

CS111 Exam 1 Prep

Topics

Intro to Computer Science

- algorithms, programs
- programming languages
- interpreted vs compiled languages

Programming Basics

- process of writing and executing Python programs
- Python keywords
- data types
- variables, identifiers, constants
- numbers and operations
- strings and operations
- operator precedence
- calling functions
- importing modules and using functions from modules
- formatting output (format specifiers)
- data type constructors (converting between data types)

Control Structures

- for loops (how does xrange work?)
- conditionals
- relational operators
- boolean operators
- if statements
- while loops

Strings

- representation
- operators

Object-oriented Programming

- Classes, objects, constructors, methods
- Problem-solving using an API

Broader Issues in Computer Science

- how articles relate to our class
- how our class relates to world in general

Linux

- terminology
- basic commands
- file structure

What I expect from you on exam:

- To know the Python/programming terminology
 - o E.g., names for types of statements
- 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)
 - 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
- Review Linux commands