

Topics For First Midterm

CS 110-03, Introduction to Computer Science I

Fall, 2011

- Hardware:
 - CPU, ALU, control, main memory, interconnect, peripherals.
 - Registers
 - Operations
 - Binary representation of all information
- Software
 - Programs
 - Machine language, assembly language, high-level language
 - Interpreter, compiler
 - Operating system: time sharing, Linux
 - Text editor
- Linux and the shell
 - Secondary storage
 - Files, directories, folders
 - Root directory, home directory
 - cd, ls, cat, less, pwd
 - redirection
 - command-line options
 - Ctrl-D, Ctrl-C
 - interactive Python shell
- Computer science
 - Algorithms
 - functions
 - call, return
 - arguments (actual arguments), parameters (formal arguments)

- state diagram, stack diagram
- control structures
- execution trace
- infinite loops
- running sum, count
- nested loops
- class, object, instantiation, attribute
- newton's method
- Python
 - print statement
 - variables
 - types
 - assignment
 - `str`, `float`, `int`, `bool`
 - arithmetic operators
 - operator precedence
 - `raw_input()`, `float()`, `int()`, `type()` functions
 - Python functions
 - comments: docstring, `#`
 - Indentation for blocking
 - logical/boolean expression
 - `if-elif-else`
 - comparison operators
 - logical operators
 - modules, access, documentation
 - `None`
 - `while` statement
 - `for` statement
 - `range()` function and lists
 - TurtleWorld (don't memorize functions, attributes)
 - string operations, bracket operator, subscript, index, use of `for`