

CS 102 Midterm 2 Study Guide

Disclaimer: This is a guide for studying for the midterm. It is not a guaranteed all-inclusive list of topics and should not be used as your sole source for studying. Review lecture, lecture programs, labs, notes, and learning material posted on Canvas.

- Unix/Linux
 - What is it?
 - Commands: ls, cd, mkdir, rm, cp, ssh, scp, **chmod (new since last exam)**
 - How to use them (the full command)
 - What task each one does/what they stand for
 - What the string for permissions stands for when you ls -l
 - Able to change permissions for user, group, and world using chmod for files and directories
 - What number system you use with chmod (octal).
- Searching algorithms (know the steps of the algorithm and how to code)
 - Linear search
 - Binary search
- Sorting algorithms (know the steps of the algorithm and how to code)
 - Bubble Sort
 - Selection Sort
 - Insertion Sort
- Number systems
 - How each of the number systems work (decimal, binary, hex)
 - Be able to convert from one to another (decimal to binary, hex to binary, etc)
 - Know how to write decimal numbers in binary as well as whole numbers
- Binary Operations
 - Be able to perform all of these operations: &, |, ^, <<, >>, ~
 - Which one is a unary operator?
 - Note: be especially careful with the difference between << and >>
- Binary Operation Applications
 - Using set bit, clear bit, and test bit
 - Understanding the ASCII table (you do not need to memorize the table, but understand that each character has a numeric value)