The first midterm exam will be held in class on **Thursday, October 10**. The exam will last the entire length of class, and will be entirely hand-written. The best way to study for the exam would be by looking over solutions to old homeworks, and by picking a few problems in the back of each section and working through them. You are also welcome to come ask me questions during my office hour, Thursday 9:30-10:30am in WWH 328, or via email: ffisher@cs.nyu.edu.

This exam will cover all of the material on homeworks #1-4. Here’s a basic summary of all the topics you should know for the exam together with the relevant section(s) in your book.

- **How computers work**
  - Understand the difference between RAM, secondary storage, CPU, etc. - §1.2
  - Understand how computer store numbers (and other data) as bytes. - §1.3
  - Be familiar with the different types of programming languages and know which one Python is. - §1.4

- **The basics of programming**
  - Know how to design a flowchart. - §2.1 and §3.3
  - Know how to use the print function including special formatting techniques like the sep keyword argument and the format function. - §2.3 and §2.8
  - Know what comment is in Python and know when to use them appropriately. - §2.4
  - Know how to store data in variables, reassign variables to different types, and check their type using the type function. - §2.5
  - Know how to use the input function and format its output as an int, float, etc. - §2.6
  - Be familiar with Python’s basic mathematical calculation operators. - §2.7

- **Functions**
  - Know what functions and why they are useful. - §3.1
  - Know how to define and call a function. - §3.2
  - Understand the distinction between local and global variables and be able to determine which type of variable Python will use in which circumstance. - §3.4
  - Know how to pass arguments to a function. - §3.5
  - Know how to return a value from a function. - §6.1-§6.2
— Be familiar with the global keyword, and the concept of global constants. - §3.6

• Decision structures and Boolean logic
  — Know how to use the if statement. - §4.1 and §4.3
  — Understand how Boolean expressions and Boolean operators work. - §4.1
  — Know how to use the if-else statement. - §4.2
  — Know how to use the if-elif-else statement. - §4.4
  — Understand how nested decision structures work. - §4.4
  — Know how to use logical operators like and, or, etc. to test complex truth statements. - §4.5
  — Be familiar with the concept of Boolean variables. - §4.6