CSCE 110: Programming I

Exam #2 — List of Topics

March 29, 2012

1 Preparing for Exam #2

Below are a list of topics that Exam #2 will cover. The exam material will include all material from course lectures, course notes, labs, and quizzes that was discussed after Exam #1. The purpose of the exam is to test your ability to read and write Python programs.

In terms of preparing for the exam, I have the following advice.

1. Study weekly quizzes. Make sure you understand every question on the weekly quizzes.

2. Reading practice. Gather all of the programs that we have discussed during class lecture. For each program that we discussed in lecture, trace through the code on paper. Next, compare the output you got on paper with the output when the program is run on the computer. If there is a match, then you understand the program. Otherwise, there is an issue with your understanding of the program that must be resolved.

3. Writing practice. Pick a few of the programs that we discussed during class lecture. Write a different solution for the problem. Remember, there is more than one way to solve a problem.

4. Study lab problems. Make sure you understand the lab problems.

5. Study sample exam questions. There will a set of sample questions to also help you study for the exam.

If you study in the above manner, you will be well-prepared for the exam.

2 Exam #2 topics

1. Functions
   a) function parameters
   b) return statement

2. Local and global variables

3. List comprehension

4. Sets
a) Set operations such as union, intersection, difference, proper subset, proper superset, subset, superset, membership, non-membership

b) Methods such as add(), pop(), remove(), and discard()

c) How are sets, lists, tuples, and strings similar?

d) How are sets, lists, tuples, and strings different?

5. Simulation/Modeling

a) A few problems we solved using simulation/modeling.
   i. On average, how often do heads and tails appear when flipping a fair coin?
   ii. On average, how many times do you need to roll a single dice before all six different numbers turn up?
   iii. On average, how many times do you need to flip a fair coin before you have seen an odd number of heads, followed by a tail?

b) What were the main lessons we learned when it came to simulation/modeling and computer programming?

6. Creating plots with Matplotlib

a) Be able to draw a simple plot using the module matplotlib.

b) How are plotting and simulation/modeling related?