CSC165 tutorial exercise #1
fall 2014

Work on these exercises **before** tutorial. Then you have the opportunity to work with your teaching assistant to master the exercise material, before writing a very brief quiz at the end of tutorial. Here are the tutorial rooms, according to the time you have signed up for in ROSI:

Tutorial section and time	TA, tutorials 1–5	TA, tutorials 5–9	Room	Surnames
L0101, Tuesday 9:10–10:30	Jason	Jason	BA3012	A–F
	Eleni	Eleni	BA3116	G–L
	Madina	Madina	BA2185	M–T
	Siamak	Siamak	BA2175	V–Z
L0201, Monday 7:10–8:30	Ekaterina	Ekaterina	BA2159	A–D
	Gal	Gal	BA3008	E–Li
	Yana	Adam	BA3012	Liang–S
	Christina	Nadira	BA3116	T–Z
L5101, Thursday 7:10–8:30	Christine	Christine	BA3116	A–F
	Elias	Elias	BA2135	G–Li
	Yiyan	Yiyan	BA2159	Lin–U
	Natalie	Natalie	BA3008	V–Z

Exercises

1. Suppose you have a collection of three python programs **q1.py**, **q2.py**, and **q3.py** that claim to solve the same problem, and three test suites **t1**, **t2**, and **t3** that are supposed to test them. Suppose you know that **q1.py** passes all three test suites, **q2.py** fails all three test suites, and that **q3.py** fails **t3** but passes the other two. You have a colleague who tends to make sweeping statements, without proof (below). For each statement, say whether it is true or false, and which test would need to be run on which program to verify your claim (the smallest number of combinations possible of program/test suite.). Justify your answer.

   (a) All three python programs pass all three test suites.

   (b) Some of the three python programs pass all three test suites.

   (c) All three python programs don't pass all three test suites (that is, each fails at least one test suite).

   (d) Some of the three python programs don't pass all three test suites (that is, some fail at least one test suite).

2. Now suppose you know nothing about which of the three python programs pass which tests. Let A be the set of all possible python programs, T be the set of three python programs from the previous question, and P be the set of python programs that pass all three tests from the previous question. For each statement (a)–(d) in the previous question, draw a pair of Venn diagrams, with universe A containing interlocking T and P, diagramming the situation when the statement is True beside the situation when the statement is False. For each of the four regions in the diagram place an "X" if the region must be empty, and a "O" if the region must be occupied.