CS 150: Intro to OOP, Fall 2008
Programming Assignment 4

Due via email by 11:59pm on Wednesday, March 18, 2009

For this assignment, you must work individually. As usual, you are welcome to discuss general python syntax, but your design and coding should all be done individually. Please refer to the class syllabus or consult the instructor if you have any questions.

1. Exercises 6.15 and 6.16

   Please submit both class definitions (one called Set for 6.15 and one called SortedSet for 6.16) in a file called myset.py.

   Some things to keep in mind:

   • I expect your sets to be able to support any string or numeric value being added.
   • Make sure to use comments and meaningful variable names throughout the classes.
   • It might be helpful to write a __str__ method for your Set class, also, so that you can test that your code is working.
   • Remember to test your code! Import your classes in python, create several sets and sorted sets, and add/remove numbers and strings to them to see if everything is added correctly and with no duplicates.

2. Extra Credit: Write the following methods for either your Set or your SortedSet class:

   (a) Implement an __add__ function (overloading +) which takes two sets and returns the union of them in a new set.
   (b) Implement an __eq__ function (overloading ==) which take two sets and returns True if the sets are the same.
   (c) Implement an xor(self, other) function, which will be called by set1.xor(set2). The function should return all elements which are either in set1 or in set2 (but NOT in both).