CS 4501/6501: Assignment 5
Due 10-Oct-2017

Purpose: Practice input space testing

Answer the following questions for the method `intersection()` below. All homeworks are due before class on the due date. Please remember that the UVA Honor Code is in effect: You may use one of the collaborative options as specified on the syllabus, but any help not allowed by that policy will be an honor violation.

```
public Set intersection (Set s1, Set s2)
   // Effects:   If s1 or s2 is null throw NullPointerException
   //    else return a (non null) Set equal to the intersection
   //    of Sets s1 and s2

   Characteristic:  Validity of s1
      - s1 = null
      - s1 = {}
      - s1 has at least one element

   Characteristic:  Relation between s1 and s2
      - s1 and s2 represent the same set
      - s1 is a subset of s2
      - s2 is a subset of s1
      - s1 and s2 do not have any elements in common
```

Notice that characteristic "Validity of `s1`" is partitioned into 3 blocks and characteristic "Relation between `s1` and `s2`" is partitioned into 4 blocks.

[Total: 20 points]

- (2 points) Does the partition "Validity of `s1`" satisfy the completeness property? If not, give a value for `s1` that does not fit in any block.
- (2 points) Does the partition "Validity of `s1`" satisfy the disjointness properly? If not, give a value for `s1` that fits in more than one block.
- (2 points) Does the partition "Relation between `s1` and `s2`" satisfy the completeness property? If not, give a pair of values for `s1` and `s2` that does not fit in any block.
- (2 points) Does the partition "Relation between `s1` and `s2`" satisfy the disjointness property? If not, give a pair of values for `s1` and `s2` that fits in more than one block.
- (4 points) Write a set of test requirements that satisfies All Combination Coverage.
- (4 points) Write a set of test requirements that satisfies Base Choice Coverage. You decide on the base test.
- (4 points) Assuming you are applying the Multiple Base Choice Coverage with 2 base tests, write a set of test requirements that satisfies Multiple Base Choice Coverage with 2 base tests. You decide on the base tests.

Note: You may assume that we do not fix / change the characteristics and partitions.

Submission

Your file should have the name *yourfirstname-initial* followed by *yourlastname-hw5* (for instance, *UPraphamontripong-hw5*). Submit your file to **Collab**. If you work in group, be sure to include all names in the report. Each team submits only **one** copy.

Making your report available to me and the TAs is **your** responsibility; if we cannot access your file then you will not get credit. Be sure to test access to your file before the due date.