Sets

Help Center

Quick Reference:

```
empty_set = set() # Create an empty set.
north_colleges = set(["Jones", "Brown", "Martel", "Duncan", "McMurtry"]) # Create a se
t with initial elements.
north_colleges.add("Nakhleh") # Add to a set.
north_colleges.remove("Nakhleh") # Remove from a set.
>>> "Baker" in north_colleges # Test for membership in a set.
False
```

Exercise 1

What would you expect the value of this expression to be?

```
>>> set([0,1,2]) == set([2,0,1,1])
```

What would you expect the result of this Python code to be?

```
>>> some_set = set([0,1,2])
>>> some_set.add(2)
>>> some_set
```

Exercise 2 - Union

Write a function

```
def union(set1, set2):
    """
    Returns the union of two sets.

    Arguments:
    set1 -- The first set of the union.
    set2 -- The second set of the union.

    Returns:
    A new set containing all the elements of set1 and set2.
    """
    ...
```

that takes two sets as arguments and returns their union. (A union of two sets A and B is a new set that contains all the elements of both A and B. For example, the union of `{1,2,3}` and `{2,3,4}` is `{1,2,3,4}`.)

Assert your function produces the following output:

```
>>> union(set([1,2,3]), set([4,5,6]))
set([1, 2, 3, 4, 5, 6])
```

```
>>> union(set([1,2,3]), set([2,3,4]))
set([1, 2, 3, 4])
```

```
>>> union(set(), set([3]))
set([3])
```

```
>>> union(set(), set())
set([])
```

This method already exists in the `set` class by the name of `union` (along with many others, type `help(set)` for details). In the future, feel free to use this method instead of implementing union on your own. But do implement it yourself for this exercise.

Exercise 3 - Intersection

Write a function

```
def intersection(set1, set2):
    """
    Returns the intersection of two sets.

    Arguments:
    set1 -- The first set of the intersection.
    set2 -- The second set of the intersection.

    Returns:
    A new set containing only the elements common to set1 and set2.
    """
    ...
```

that takes two sets as arguments and returns their intersection. (An intersection of two sets A and B is a new set that contains only the elements common to both A and B. For example, the intersection of {1,2,3} and {2,3,4} is {2,3}.)

Assert your function produces the following output:

```
>>> intersection(set([1,2,3]), set([2,3,4]))
set([2, 3])
```

```
>>> intersection(set([1,2]), set([3,4]))
set([])
```

```
>>> intersection(set(), set([3]))
set([])
```

More Information

Consult the Python documentation for more details about sets.

Created Sat 23 Aug 20149:17 PM BST

Last Modified Sun 24 Aug 2014 5:39 AM BST