Exercise: int set

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Finger Exercises due Oct 27, 2022 07:30 +08 Completed

Exercise: int set

5.0/5.0 points (graded)

ESTIMATED TIME TO COMPLETE: 10 minutes

Consider the following code from the last lecture video:

```
class intSet(object):
    """An intSet is a set of integers
    The value is represented by a list of ints, self.vals.
    Each int in the set occurs in self.vals exactly once."""

    def __init__(self):
        """Create an empty set of integers"""
        self.vals = []

    def insert(self, e):
        """Assumes e is an integer and inserts e into self"""
        if not e in self.vals:
            self.vals.append(e)

    def member(self, e):
        """Assumes e is an integer
           Returns True if e is in self, and False otherwise"""
        return e in self.vals

    def remove(self, e):
        """Assumes e is an integer and removes e from self
           Raises ValueError if e is not in self"""
        try:
            self.vals.remove(e)
        except:
            raise ValueError(str(e) + ' not found')

    def __str__(self):
        """Returns a string representation of self"""
        self.vals.sort()
        return '{' + ','.join([str(e) for e in self.vals]) + '}'
```

Your task is to define the following two methods for the `intSet` class:

1. Define an `intersect` method that returns a new `intSet` containing elements that appear in both sets. In other words,

   ```
   s1.intersect(s2)
   ```

   would return a new `intSet` of integers that appear in both `s1` and `s2`. Think carefully - what should happen if `s1` and `s2` have no elements in common?

2. Add the appropriate method(s) so that `len(s)` returns the number of elements in `s`.

   Hint: look through the Python docs to figure out what you'll need to solve this problem.

```
1  class intSet(object):
2      """An intSet is a set of integers
3      The value is represented by a list of ints, self.vals.
4      Each int in the set occurs in self.vals exactly once."""
5
6      def __init__(self):
7          """Create an empty set of integers"""
8          self.vals = []
9          self.returnlen = 0
10         self.returnlist = []
11
12     def insert(self, e):
13         """Assumes e is an integer and inserts e into self"""
14         if not e in self.vals:
15             self.vals.append(e)
```

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Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

See full output

CORRECT

See full output

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- Could we use set properties and intersection function to solve Q1? if not , why ? — 2
  I tried to solve this using set functions, and I could quite get the results needed. Instead I used methods defined in the class to solve...
- 'intSet' object has no attribute 'intersect' — 7
  I suspect I have a typo somewhere, but even after defining 'intersect' I get the error message referenced in the post title. def interse...
- TypeError: object of type 'intSet' has no len() — 3
  How can there be no len() when I defined the method def len(self): count = 0 for i in self.vals: count += 1 return count
- Not sure why I am getting this error. Can someone explain? — 4
  TypeError: argument of type 'intSet' is not iterable def intersect(self, s2): newSet = [] for e in self.vals: if e not in s2: newSet.append(...
- Is my understanding correct? — 2
  s1 has been called with s1 =intSet() s2 has been called with s2 = intSet() Now s2 is being passed into intersection method but I am n...
- PLEASE HELP! — 5
  def intersect(self, other): new=intSet() x=0 for i in self.vals: if self.vals[x] != other.vals[x]: new.vals.append[i] x+=1 return new.vals W...
- Question 2 and Python docs — 2
  I solved question 2, but looking at the linked Python docs didn't help me. I am just wondering what I missed that I was supposed to b...
- a lot of Java on the brain — 2
  Idiomatic python would at least rename $member$ to $onta$ and probably alias and to $er\,sec\,tion$ etc. so operators ...

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