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Exercise: coordinate

Finger Exercises due Aug 5, 2020 20:30 -03

Exercise: coordinate

5/5 points (graded)

ESTIMATED TIME TO COMPLETE: 7 minutes

Consider the following code from the last lecture video:

```
class Coordinate(object):
    def __init__(self, x, y):
        self.x = x
        self.y = y

    def getX(self):
        # Getter method for a Coordinate object's x coordinate.
        # Getter methods are better practice than just accessing an attribute
directly
        return self.x

    def getY(self):
        # Getter method for a Coordinate object's y coordinate
        return self.y

    def __str__(self):
        return '<' + str(self.getX()) + ',' + str(self.getY()) + '>'
```

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

1. Add an `__eq__` method that returns True if coordinates refer to same point in the plane (i.e. have the same x and y coordinate)

2. Define `__repr__`, a special method that returns a string that looks like a valid Python expression that could be used to recreate an object with the same value. In other words, `eval(repr(c)) == c` given the definition of `__eq__` from part 1.

   For more on `__repr__`, see this SO post.

```
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        # Getter methods are better practice than just accessing an attribute dir
        return self.x

    def getY(self):
        # Getter method for a Coordinate object's y coordinate
        return self.y

    def __str__(self):
        return '<' + str(self.getX()) + ',' + str(self.getY()) + '>'
```

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

Correta

```
class Coordinate(object):
    def __init__(self,x,y):
        self.x = x
        self.y = y

    def getX(self):
        # Getter method for a Coordinate object's x coordinate.
        # Getter methods are better practice than just accessing an attribute directly
        return self.x

    def getY(self):
        # Getter method for a Coordinate object's y coordinate
        return self.y

    def __str__(self):
        return '<' + str(self.getX()) + ',' + str(self.getY()) + '>'

    def __eq__(self, other):
        # First make sure `other` is of the same type
        assert type(other) == type(self)
        # Since `other` is the same type, test if coordinates are equal
        return self.getX() == other.getX() and self.getY() == other.getY()

    def __repr__(self):
        return 'Coordinate(' + str(self.getX()) + ',' + str(self.getY()) + ')'
```

Test results

Hide output

CORRECT

Test: equal 1

Output:

```
> print(c1)
<1,-8>
> print(c2)
<1,-8>
> print(c1 == c2)
True
```

Test: equal 2

Output:

```
> print(c1)
<20,20>
> print(c2)
<20,20>
> print(c1 == c2)
True
```

Test: not equal 1

Output:

```
> print(c1)
<-15,-6>
> print(c2)
<7,2>
> print(c1 == c2)
False
```

Test: not equal 2

Output:

```
> print(c1)
<2,0>
> print(c2)
<-11,-17>
> print(c1 == c2)
False
```

Test: repr

Output:

```
> print(c1)
<17,38>
> print(repr(c1))
Coordinate(17,38)
```

Test: repr randomized

Output:

```
> print(c1)
<-8,-13>
> print(repr(c1))
Coordinate(-8,-13)
```

Hide output

Enviar

Answers are displayed within the problem

Exercise: coordinate

Ocultar discussão

Topic: Lecture 9 / Exercise: coordinate

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why needs getX(self)?

The professor states the reason. But I still didn't get it. why can we just write, say, for __eq__: def __e... 3