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# ThePointClass.py
""" Contains a class that supports the
manipulatio of points
in the plane.
"""

from math import sqrt, sin, cos, pi
from random import
uniform as randu

class Point:
    """
    Attributes:
        x: float, the
x-coordinate of a point
        y: float, the y-coordinate of a point
    """

 def __init__(self,x,y):
        """ Creates a point.
        PreC: x and y are
floats
        """
        self.x = x
        self.y = y

    def
__str__(self):
        """ Pretty prints a point object.

        To
apply this function to a point P, write
              print P
        """

 return '(%6.3f,%6.3f)' %(self.x,self.y)


    def Dist(self,other):

""" Returns a float that is the distance from self to other.

        PreC:
self and other are points
        """
        d =
sqrt((self.x-other.x)**2+(self.y-other.y)**2)
        return d


    def Rotate(self,theta):

     """ Returns a point that is obtained by rotating self about the

origin theta degrees in the counterclockwise direction.

        PreC: self is a point
and theta is a number.
        """
        x = self.x
        y = self.y

c = cos(pi*(theta/180.0))
        s = sin(pi*(theta/180.0))
        return
Point(x*c-y*s,x*s+y*c)


    def Reflect(self):
        """ Returns a point that
is obtained by reflecting self about the
        the 45-degree line y = x
```

```
PreC: self is a point.
        """
        x = self.x
        y = self.y

P = Point(y,x)
        return P
```