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# ThePointClass.py

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

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P = Point(y,x)
    return P
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