

Feedback — Quiz 7a

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You submitted this quiz on **Sat 1 Nov 2014 9:28 PM WET**. You got a score of **100.00** out of **100.00**.

Question 1

Let's define a class for 2-dimensional points.

```
class Point2D:
    def __init__(self, x = 0, y = 0):
        self.x = x
        self.y = y

    def translate(self, deltax = 0, deltay = 0):
        """Translate the point in the x direction by deltax
        and in the y direction by deltay."""
        self.x += deltax
        self.y += deltay

    ...
```

Which of the following code snippets are valid usages of the `Point2D` initializer and its `translate` method? For your first attempt at this problem, we suggest that you try to answer without using CodeSkulptor.

| Your Answer | Score | Explanation |
|--|--|-------------|
| <input type="checkbox"/> <code>Point2D(3, 9)</code> <code>Point2D.translate(5,</code> | <input checked="" type="checkbox"/> 1.50 | |

-2)



6.00

Yes, you can define multiple `Point2D` objects. Furthermore, the initializer is defined so that you don't have to provide arguments to `Point2D()`.

```
point1 = Point2D(3, 9)
point2 = Point2D()
point2.translate(20, 4)
```



6.00

```
point = Point2D(3, 9)
point.translate(5, -2)
```



1.50

```
point = Point2D([3, 9])
point.translate(5, -2)
```

| | |
|-------|-------|
| Total | 15.00 |
| | / |
| | 15.00 |

Question 2

Let's continue to use the same class for 2-dimensional points.

```
class Point2D:
    def __init__(self, x=0, y=0):
        self.x = x
        self.y = y

    def translate(self, deltax=0, deltay=0):
```




```

"""Translate the point in the x direction by deltax
   and in the y direction by deltay."""
self.x += deltax
self.y += deltay

```

...

Which of the following code snippets are valid usages of the `Point2D` initializer and its `translate` method? For your first attempt at this problem, we suggest that you try to answer without using CodeSkulptor.

| Your Answer | Score | Explanation |
|--|--|---|
| <input type="checkbox"/> <pre> points = [(2, 5), (8, 3), (0, 2)] for point in points: point.translate(-1, -1) </pre> |  1.50 | No, <code>translate</code> is defined only on a <code>Point2D</code> object, not on a tuple. |
| <input checked="" type="checkbox"/> <pre> points = [Point2D(2, 5), Point2D(8, 3), Point2D(0, 2)] for point in points: point.translate(-1, -1) </pre> |  12.00 | |
| <input type="checkbox"/> <pre> point0 = Point2D(2, 5) point1 = Point2D(8, 3) point2 = Point2D(0, 2) points = [point0, point1, point2] points.translate(-1, -1) </pre> |  1.50 | No, <code>translate</code> is defined only on a <code>Point2D</code> object, not on a list of <code>Point2D</code> objects. |
| Total | 15.00 | |
| | / | |
| | 15.00 | |

Question 3





Let's continue to use the same class for 2-dimensional points.

```
class Point2D:
    def __init__(self, x=0, y=0):
        self.x = x
        self.y = y

    def translate(self, deltax=0, deltay=0):
        """Translate the point in the x direction by deltax
        and in the y direction by deltay."""
        self.x += deltax
        self.y += deltay

    ...
```

Which of the following code snippets are valid usages of the `Point2D` initializer and its `translate` method? For your first attempt at this problem, we suggest that you try to answer without using CodeSkulptor.

| Your Answer | Score | Explanation |
|--|---|-------------|
| <input checked="" type="checkbox"/> <pre>point = Point2D(3, 6) s = str(point)</pre> |  10.50 | |
| <input type="checkbox"/> <pre>point = Point2D(3, 6) lst = list(point) x = lst[0]</pre> |  1.50 | |
| <input type="checkbox"/> <pre>point = Point2D(3, 6) lst = list(point)</pre> |  1.50 | |
| <input type="checkbox"/> <pre>point = Point2D(3, 6) tup = tuple(point)</pre> |  1.50 | |
| Total | 15.00 / 15.00 | |

Question 4

In SimpleGUI, the function `draw_image` takes an optional sixth parameter that determines the angle of rotation of the destination rectangle around its center. Do positive values for the angle rotate the image clockwise or counterclockwise? Is the angle specified in degrees or radians?

Refer to the CodeSkulptor [documentation](#).

| Your Answer | Score | Explanation |
|---|---------------|-------------|
| <input type="radio"/> counterclockwise, degrees | | |
| <input checked="" type="radio"/> clockwise, radians | ✓ 10.00 | |
| <input type="radio"/> clockwise, degrees | | |
| <input type="radio"/> counterclockwise, radians | | |
| Total | 10.00 / 10.00 | |

Question 5

One interesting extension of *Rice Rocks* would be to have two ships, with each controlled by a separate player, instead of one single ship. Using the provided class definitions, what is the best way to represent the two ships in this new variant?

| Your Answer | Score | Explanation |
|---|-------|-------------|
| <input type="radio"/> <p>Copy the <code>Ship</code> class code, e.g.,</p> <pre>class Another_Ship: def __init__(self, pos, vel, angle): </pre> <p>Then create two ship objects, one of each class, assigning each to a global variable.</p> <pre>ship1 = Ship(...) ship2 = Another_Ship(...)</pre> | | |



In the `Ship` class definition, change the variables `pos`, `vel`, `angle` to be lists of two values each. Then, change each method to take an additional number argument that indicates which ship should be used. Thus, when we call the constructor now, we are creating both ships.

```
ships = Ship(...)
```



15.00

Add another call to the `Ship` constructor, assigning the result to another global variable.

```
ship1 = Ship(...)
```

```
ship2 = Ship(...)
```



In the `Ship` class definition, duplicate **every** method. For example, `Ship.draw1(...)` would be used to draw the first ship, while `Ship.draw2(...)` would be used to draw the second ship.

Total

15.00 /

15.00

Question 6

Which of the following browsers fully support MP3 audio files? Refer to the [CodeSkulptor documentation](#).

| Your Answer | Score | Explanation |
|--|---------------|--|
| <input checked="" type="checkbox"/> Safari | 4.00 | |
| <input type="checkbox"/> Firefox | 2.00 | Firefox currently supports MP3 files on some, but not all systems. |
| <input checked="" type="checkbox"/> Chrome | 4.00 | |
| Total | 10.00 / 10.00 | |

Question 7

Consider a spaceship where the ship's thrusters can accelerate the ship by 10 pixels per second for each second that the thrust key is held down. If the friction induces a deceleration that is 10% of the ship's velocity per second, what is the maximal velocity of the ship? If you are having trouble, consider writing a short program to help understand this problem.

| Your Answer | Score | Explanation |
|--|---------|---|
| <input checked="" type="radio"/> Around 100 pixels per second | ✓ 20.00 | At a velocity of 100 pixels per second, friction would induce a deceleration of 10 pixels per second. This deceleration would exactly cancel an acceleration of 10 pixels per second from the thrusters. We used “around” here since the true maximal velocity depends on the rate at which the frame is drawn. |
| <input type="radio"/> Around 10 pixels per second | | |
| <input type="radio"/> Around 1000 pixels per second | | |
| <input type="radio"/> The ship has no maximal velocity. It can reach any velocity the player desires if you hold the thrust key down long enough. | | |

| | |
|-------|-------|
| Total | 20.00 |
| | / |
| | 20.00 |