

An Introduction To Interactive Programming In Python (Part 2)

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Quiz 8b – Animation

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Question 1

Which of the following is valid notation for a set in [CodeSkulptor](#)?

Your Answer	Score	Explanation
<code>{1,2,3}</code>	Correct 2.00	While valid in Python 2.7 or 3.X, it is not valid in Python 2.6 or CodeSkulptor.
✓ <code>set()</code>	Correct 4.00	
✓ <code>set([1, 2, 3])</code>	Correct 4.00	
Total	10.00 / 10.00	

Question 2

Which of the following operations can mutate set `s`? You may want to try some examples in CodeSkulptor and refer to the [documentation](#).

Your Answer		Score	Explanation
<code>s.update(s)</code>	Correct	1.00	While <code>s.update()</code> can change <code>s</code> , a set unioned with itself is just the same set.
✓ <code>s.intersection_update(t)</code>	Correct	5.00	
<code>t.difference(s)</code>	Correct	1.00	
<code>t.update(s)</code>	Correct	1.00	
<code>s.intersection(t)</code>	Correct	1.00	
✓ <code>s.discard(x)</code>	Incorrect	0.00	
Total		9.00 / 10.00	

Question 3

Which operation corresponds to the following description? Refer to the CodeSkulptor [documentation](#).

Given two sets, `s` and `t`, we want a new set containing all the elements that are in one of the sets, but not both of the sets. For example, if `s` has the elements 1, 2, 3, 4, and `t` has the elements 3, 4, 5, 6, then the result should have the elements 1, 2, 5, 6.

Your Answer

Score

Explanation

`t.symmetric_difference(s)`

`s.difference(t)`

`t.symmetric_difference_update(s)`

Incorrect 0.00

This expression does not return a new expression. It mutates `t`.

`s.intersection(t)`

Total

0.00 / 10.00

Question 4

A set is an unordered collection of distinct elements. Which of the following problem contexts represent instances of this idea?

Your Answer		Score	Explanation
Phonebook	Correct	1.00	While you could have a set of pairs, each with a name and phone number, that wouldn't be an easy way to look up a person's phone number.
✓ Rooms in a building	Correct	8.00	
Names for everyone taking this course	Correct	1.00	No, we could easily have multiple students with the same name.
Total		10.00 / 10.00	

Question 5

How many frames per second are **typically** projected in modern movies? How many times per second is the draw handler typically called in CodeSkulptor?

Enter two numbers representing these frame rates in frames per second. Use only spaces to separate the numbers.

Answer for Question 5

You entered:

Your Answer	Score	Explanation
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24	Correct	5.00
60	Correct	5.00
Total		10.00 / 10.00

Question 6

The bonus portion of this week's mini-project defines and uses a `Sprite` class to support animations. Each animated sprite includes an associated tiled image, each of whose sub-images are drawn in turn during the process of animating the sprite.

What attribute (also known as a field) of this `Sprite` class can be used to select the appropriate sub-image to draw during this animation process? (If you are stuck, review the bonus phase in the mini-project description.)

Your Answer

Score

Explanation

`image`

`image_center`



age

Correct

10.00

animated

vel

sound

radius

lifespan

pos

angle_vel

angle

`image_size`

Total

10.00 / 10.00

Question Explanation

Here is the text of the relevant instruction from the bonus phase: "In the draw method of the Sprite class, check if `self.animated` is `True`. If so, then choose the correct tile in the image based on the age. The image is tiled horizontally. If `self.animated` is `False`, it should continue to draw the sprite as before."

Question 7

Consider a horizontally-tiled image where each sub-image has the same size. If each sub-image is of size 60×90 (in pixels), what is the horizontal distance (in pixels) between the centers of adjacent sub-images?

Your Answer

Score

Explanation

90

120

180

✓ 60

Correct

10.00

Total

10.00 / 10.00

Question 8

How many **distinct** numbers are printed by the following code? Enter the count.

```
def next(x):  
    return (x ** 2 + 79) % 997  
  
x = 1  
for i in range(1000):  
    print x  
    x = next(x)
```

Hint: Consider how editing the code to use a set could help solve the question.

Answer for Question 8

You entered:

Your Answer

Score

Explanation

46	Correct	20.00
Total		20.00 / 20.00

Question 9

Which instructor exhibits the best coding style?

Your Answer	Score	Explanation
Stephen		
John		
Joe		
✓ Scott	Correct 10.00	His code is well commented and well structured. And he wears awesome looking ties.

Total	10.00 / 10.00
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