Quiz 5b

9 questions

1 point

1.
Which of the following expressions corresponds to a dictionary with no elements?

- [ ] {}
- [ ] []
- [ ] ()
- [ ] <>
- [ ] `None`
- [ ] `dict()`

1 point

2.
Given an existing dictionary `favorites`, what Python statement adds the key `"fruit"` to this dictionary with the corresponding value `"blackberry"`?

- [ ] `favorites{"fruit" : "blackberry"}`
- [ ] `favorites = {"fruit" : "blackberry"}`

- [ ] `favorites["fruit"] = "blackberry"`
- [ ] `favorites["fruit" = "blackberry"]`
- [ ] `favorites["fruit" : "blackberry"]`

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1 point

3.
Keys in a dictionary can have which of the following types?

- [ ] Lists
- [ ] Strings
- [ ] Dictionaries
- [ ] Tuples
- [ ] Booleans
- [ ] Numbers

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1 point

4.
Values in a dictionary can have which of the following types?

- [ ] Dictionaries
- [ ] Lists
- [ ] Booleans
- [ ] Strings
- [ ] Numbers

- [ ] Tuples

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1 point

5.

We often want to loop over all the key/value pairs in a dictionary. Assume the variable `my_dict` stores a dictionary. One way of looping like this is as follows:

```
for key in my_dict:
    value = my_dict[key]
    …
```

However, there is a better way. We can instead write the following:

```
for key, value in ???:
    …
```

What code should replace the question marks so that the two forms are equivalent?

Refer to the video on dictionaries or the CodeSkulptor documentation.

- `list(my_dict)`
- `my_dict.keys()`
- `items(my_dict)`
- `my_dict.values()`
- `my_dict.items()`
- `my_dict.keys_values()`

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1 point

6.

Conceptually, the purpose of a dictionary is to represent a relationship between two collections of data — each key in the dictionary is related to one value. Which of the following situations are instances of such a relationship?

Do not include situations where you have to introduce additional information in order to fit them into such a relationship.

- [ ] Storing a sensor's data samples
- [ ] Storing names
- [ ] Storing where each person lives
- [ ] Storing names and IDs (identification numbers)

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1 point

7.

In the previous quiz, you were asked to complete the following code:

```
import random

def random_point():
    """Returns a random point on a 100x100 grid."""
    return (random.randrange(100), random.randrange(100))

def starting_points(players):
    """Returns a list of random points, one for each playe
r."""
    points = []
    for player in players:
        point = random_point()
        ???
    return points
```

Now, we want to rewrite `starting_points` using a list comprehension. Which list comprehensions could replace the following question marks?

```
def starting_points(players):
    """Returns a list of random points, one for each playe
r."""
    return ???
```

Refer to this week's "Visualizing iteration" video for examples of list comprehensions. Also, try each example in CodeSkulptor before answering the question.

- ☐ `[random_point(player) for player in players]`
- ☐ `[random_point() for player in players]`
- ☐ `[for player in players: random_point()]`
- ☐ `[random_point for players]`
- ☐ `[random_point() for p in players]`
- ☐ `[random_point for player in players]`

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1 point

8.

You have the following code. The goal is to display a portion of the image, rescaling it to fill the canvas.

```
import simplegui

frame_size = [200, 200]
image_size = [1521, 1818]

def draw(canvas):
    canvas.draw_image(image, image_size,
                      [image_size[0] / 2, image_size[1] /
2],
                      [frame_size[0] / 2, frame_size[1] /
2],
                      frame_size)

frame = simplegui.create_frame("test", frame_size[0], frame
_size[1])
frame.set_draw_handler(draw)
image = simplegui.load_image("http://commondatastorage.goog
leapis.com/codeskulptor-assets/gutenberg.jpg")
frame.start()
```

Run it, and observe that nothing is displayed in the frame. What is the problem?

- The source arguments in `draw_image` are incorrect. We are trying to load pixels that are not within the image, and thus the draw fails.
- The destination arguments in `draw_image` are incorrect. We aren't specifying values that would draw the image on this size canvas.
- The file doesn't exist.
- One or more of the `draw_image` arguments are of the wrong type.
- The file is not an image.

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1 point

9.

Write a CodeSkulptor program that loads and draws the following image:

```
http://commondatastorage.googleapis.com/codeskulptor-assets/alphatest.png
```

with a source center of [220, 100] and a source size of [100, 100]. What one word appears in the canvas? If a letter is capitalized in the image, enter it as a capital.

Note that you do have to position the image as stated to see the correct word.

Enter answer here

3 questions unanswered

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