Feedback — Quiz 5b

Thank you. Your submission for this quiz was received.

You submitted this quiz on **Fri 19 Feb 2016 11:45 PM PST**. You got a score of **97.50** out of **100.00**. You can attempt again, if you'd like.

Question 1

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

Your Answer		Score	Explanation
☐ `()`	✔	1.00	
☑ `dict()`	✔	3.00	
☑ `{}`	✔	5.00	
☐ `None`	✔	1.00	
Total		10.00 / 10.00	

Question 2

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

Your Answer		Score	Explanation
☑ `favorites["fruit"] = "blackberry"`	✔	7.00	
☐ `favorites = {"fruit : "blackberry"}`	✔	1.00	This statement creates a new dictionary instead of adding to an existing dictionary.
☐ `favorites["fruit = "blackberry"]`	✔	1.00	

☐ `favorites["fruit" : "blackberry"]`	✔	1.00
Total		10.00 / 10.00

Question 3

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

Your Answer		Score	Explanation
☑ Numbers	✔	2.50	
☐ Dictionaries	✔	1.25	
☐ Lists	✔	1.25	
☑ Booleans	✔	2.50	
☐ Tuples	✘	0.00	
Total		7.50 / 10.00	

Question 4

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

Your Answer		Score	Explanation
☑ Booleans	✔	2.50	
☑ Numbers	✔	2.50	
☑ Tuples	✔	2.50	
☑ Lists	✔	2.50	
Total		10.00 / 10.00	

Question 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.

Your Answer		Score	Explanation
⦿ `my_dict.items()`	✔	10.00	
◯ `items(my_dict)`			
◯ `my_dict.values()`			
◯ `list(my_dict)`			
◯ `my_dict.keys()`			
◯ `my_dict.keys_values()`			
Total		10.00 / 10.00	

Question 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.

Your Answer	Score	Explanation
☐ Storing a sensor's data samples	✔ 1.00	No, there is no explicit relationship in this example. Conceptually, that would just be a list or, possibly, set of data.
☐ Storing `x` and `y` coordinates of an arbitrary collection of 2-dimensional points	✔ 1.00	Not in general. This would make sense if the points were for a *function*, so that each `x` coordinate occurred at most once.
☑ Storing where each person lives	✔ 4.00	Yes, map each person (key) to the corresponding address (value).
☑ Storing `x` and `y` coordinates of 2-dimensional points taken from a function, so that each `x` coordinate occurs at most once.	✔ 4.00	Yes, map each `x` (key) to the corresponding `y` (value).
Total	10.00 / 10.00	

Question Explanation

Note that it is possible to use dictionaries to represent sets and ordered collections. However, the focus of this question is on the relationship between data.

Question 7

Assume we have the following definition:

```
def is_even(number):
    """Returns whether the number is even."""
    return number % 2 == 0
```

Which of the following will compute a list of all of the even elements of list `my_list`?

Refer to this week's Programming Tips video about list comprehensions. Also, try each example in CodeSkulptor before answering the question.

Your Answer	Score	Explanation
	✔ 1.00	Syntactically

☐ `[if is_even(number): number for number in my_list]`		incorrect
☑ `[number for number in my_list if is_even(number)]`	✔ 4.00	
☐ `[is_even(number) for number in my_list]`	✔ 1.00	Returns a list of Booleans
☑ `[n for n in my_list if is_even(n)]`	✔ 4.00	
Total	10.00 / 10.00	

Question 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.googleapis.com/codes
kulptor-assets/gutenberg.jpg")

frame.start()
```

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

Your Answer	Score	Explanation
◉ 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.	✔ 10.00	

○

One or more of the `draw_image` arguments are of the wrong type.

○

The file is not an image.

○

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.

Total	10.00 / 10.00

Question 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.

You entered:

tin

Your Answer	Score	Explanation
tin	✔ 20.00	
Total	20.00 / 20.00	