Feedback — Quiz 5b

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You submitted this quiz on **Tue 21 Oct 2014 2:34 PM WEST**. You got a score of **100.00** out of **100.00**.

Question 1

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

Your Answer		Score	Explanation
☑	`{}`	✔	5.00
☐	`<>`	✔	1.00
☐	`[]`	✔	1.00
☑	`dict()`	✔	3.00
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	
☐ `favorites{"fruit" : "blackberry"}`	✔ 1.00	
☐ `favorites = {"fruit" : "blackberry"}`	✔ 1.00	This statement creates a new dictionary instead of adding to an existing dictionary.
Total	10.00 / 10.00	

Question 3

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

Your Answer	Score	Explanation
☑ Tuples	✔ 2.50	
☐ Dictionaries	✔ 1.25	
☐ Lists	✔ 1.25	
☑ Strings	✔ 2.50	
☑ Booleans	✔ 2.50	
Total	10.00 / 10.00	

Question 4

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

Your Answer	Score	Explanation
☑ Booleans	✔ 2.50	

☑ Dictionaries	✔	2.50
☑ Tuples	✔	2.50
☑ Strings	✔	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.keys_values()`			
○ `my_dict.values()`			
○ `list(my_dict)`			
○ `items(my_dict)`			
⦿ `my_dict.items()`	✔	10.00	
○ `my_dict.keys()`			
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 sorted collection of strings	✔	1.00	No, dictionaries are unordered. A list is a better option.
☑ Storing where each person lives	✔	4.00	Yes, map each person (key) to the corresponding address (value).
☑ Storing names and IDs (identification numbers)	✔	4.00	Yes, map each ID (key) to the corresponding name (value). Each ID should be unique — otherwise it shouldn't be considered an ID.
☐ 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.
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

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 player."""
    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 player."""
    return ???
```

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

Your Answer		Score	Explanation
☑ `[random_point() for p in players]`	✔	4.00	
☐ `[random_point for players]`	✔	0.50	Syntactically incorrect and also need to call the `random_point` function.
☐ `[random_point(player) for player in players]`	✔	0.50	`random_point()` doesn't take an argument.
☐ `[for player in players: random_point()]`	✔	0.50	Syntactically incorrect
☐ `[random_point for player in players]`	✔	0.50	Need to call the `random_point` function.

☑ `[random_point() for player` ✔ 4.00
`in players]`

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.

```python
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 file doesn't exist.			
◉ The source arguments in `draw_image` are incorrect. We are trying to load pixels that are not within the image, and thus the	✔	10.00	

draw fails.

○

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

○

The destination arguments in `draw_image` are incorrect. We aren't specifying values that would draw the image on this size canvas.

○

The file is not an image.

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	