# Feedback — Quiz 5b

Help Center

Thank you. Your submission for this quiz was received.

You submitted this quiz on **Fri 19 Feb 2016 11:39 PM PST**. You got a score of **96.00** 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 | |
| ☐ `[]` | ✔ | 1.00 | |
| ☑ `{}` | ✔ | 5.00 | |
| ☑ `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"]` | ✔ | 1.00 | |
| ☑ `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 |
| Total | | 10.00 / 10.00 |

## Question 3

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

| Your Answer | | Score | Explanation |
|---|---|---|---|
| Booleans | ✔ | 2.50 | |
| Numbers | ✔ | 2.50 | |
| Strings | ✔ | 2.50 | |
| Dictionaries | ✔ | 1.25 | |
| Lists | ✔ | 1.25 | |
| 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 | |
| Strings | ✔ | 2.50 | |
| Dictionaries | ✔ | 2.50 | |
| Tuples | ✔ | 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.items()` | ✔ | 10.00 | |
| ○ `my_dict.values()` | | | |
| ○ `list(my_dict)` | | | |
| ○ `items(my_dict)` | | | |
| ○ `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 `x` and `y` coordinates of 2-dimensional points taken from a function, so that each `x` coordinate occurs at most once. | ✖ | 0.00 | Yes, map each `x` (key) to the corresponding `y` (value). |
| ☑ Storing where each person lives | ✔ | 4.00 | Yes, map each person (key) to the corresponding address (value). |
| ☐ Computing averages | ✔ | 1.00 | No, dictionaries don't compute anything. |
| ☐ Storing a sorted collection of strings | ✔ | 1.00 | No, dictionaries are unordered. A list is a better option. |
| Total | | 6.00 / 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 |
|---|---|---|---|
| ☐ `[for player in players: random_point()]` | ✔ | 0.50 | Syntactically incorrect |
| ☑ `[random_point() for p in players]` | ✔ | 4.00 | |
| ☐ `[random_point for player in players]` | ✔ | 0.50 | Need to call the `random_point` function. |
| ☐ `[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. |
| ☑ `[random_point() for player in players]` | ✔ | 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 destination arguments in `draw_image` are incorrect. We aren't specifying values that would draw the image on this size canvas. | | |
| ○ One or more of the `draw_image` arguments are of the wrong type. | | |
| ○ The file doesn't exist. | | |
| ○ The file is not an image. | | |
| ◉ 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 | |
| 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 | |