

## Homework 9

### Dictionaries and Sets

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#### TRUE/FALSE

1. You would typically use a **for** loop to iterate over the elements in a set.

ANS:

2. Sets are immutable.

ANS:

3. Sets are created using curly braces { }.

ANS:

4. The set **remove** and **discard** methods behave differently only when a specified item is not found in the set.

ANS:

5. A dictionary can include the same value several times but cannot include the same key several times.

ANS:

6. The union of two sets is a set that contains only the elements that appear in both sets.

ANS:

7. The difference of **set1** and **set2** is a set that contains only the elements that appear in **set1** but do not appear in **set2**.

ANS:

8. The elements in a dictionary are stored in ascending order, by the keys of the key-value pairs.

ANS:

9. If you try to retrieve a value from a dictionary using a nonexistent key, a **KeyError** exception is raised.

ANS:

10. The **issubset()** method can be used to determine whether **set1** is a subset of **set2**.

ANS:

11. A set comprehension is written just like a list comprehension, except that a set comprehension is enclosed in angled brackets (<>), and a list comprehension is enclosed in square brackets ([]).

ANS:

## MULTIPLE CHOICE

1. In a dictionary, you use a(n) \_\_\_\_\_ to locate a specific value.
- datum
  - element
  - item
  - key

ANS:

2. What is the correct structure to create a dictionary of months where each month will be accessed by its month number (for example, January is month 1, April is month 4)?
- `{ 1 ; 'January', 2 ; 'February', ... 12 ; 'December' }`
  - `{ 1 : 'January', 2 : 'February', ... 12 : 'December' }`
  - `[ '1' : 'January', '2' : 'February', ... '12' : 'December' ]`
  - `{ 1, 2, ... 12 : 'January', 'February', ... 'December' }`

ANS:

3. What will be the result of the following code?

```
ages = {'Aaron' : 6, 'Kelly' : 3, 'Abigail' : 1 }  
value = ages['Brianna']
```

- False
- 1
- 0
- KeyError

ANS:

4. What is the number of the first index in a dictionary?

- 0
- 1
- the size of the dictionary minus one
- Dictionaries are not indexed by number.

ANS:

5. What is the value of the variable **phones** after the following code executes?

```
phones = {'John' : '5555555', 'Julie' : '5557777'}  
phones['John'] = 5556666'
```

- `{'John' : '5555555', 'Julie' : '5557777'}`
- `{'John' : '5556666', 'Julie' : '5557777'}`
- `{'John' : '5556666'}`
- This code is invalid.

ANS:

6. Which would you use to delete an existing key-value pair from a dictionary?
- a. **del**
  - b. **remove**
  - c. **delete**
  - d. **unpair**

ANS:

7. Which would you use to get the number of elements in a dictionary?
- a. **size**
  - b. **length**
  - c. **len**
  - d. **sizeof**

ANS:

8. Which method would you use to get all the elements in a dictionary returned as a list of tuples?
- a. **list**
  - b. **items**
  - c. **pop**
  - d. **keys**

ANS:

9. Which method would you use to get the value associated with a specific key and remove that key-value pair from the dictionary?
- a. **list**
  - b. **items**
  - c. **pop**
  - d. **popitem**

ANS:

10. What values will **d2** contain after the following code executes?
- ```
d = {1: 10, 2: 20, 3: 30}  
d2 = {k:v for k,v in d.items()}
```
- a. **{10: 1, 20: 2, 30: 3}**
  - b. **{1: 1, 2: 2, 3: 3}**
  - c. **{10: 10, 20: 20, 30: 30}**
  - d. **{1: 10, 2: 20, 3: 30}**

ANS:

11. Which method can be used to add a group of elements to a set?
- a. **add**
  - b. **addgroup**
  - c. **update**
  - d. **addset**

ANS:

12. In order to avoid **KeyError** exceptions, you can check whether a key is in the dictionary using the \_\_\_\_\_ operator.
- included**
  - in**
  - isnotin**
  - isin**

ANS:

13. What does the **get** method do if the specified key is not found in the dictionary?
- It throws an exception.
  - It does nothing.
  - It returns a default value.
  - You cannot use the **get** method to specify a key.

ANS:

14. Which of the following does not apply to sets?
- The stored elements can be of different data types.
  - All the elements must be unique; you cannot have two elements with the same value.
  - The elements are unordered.
  - The elements are in pairs.

ANS:

15. What is the process used to convert an object to a stream of bytes that can be saved in a file?
- pickling
  - streaming
  - writing
  - dumping

ANS:

16. What will be displayed after the following code executes? (Note: the order of the display of entries in a dictionary are not in a specific order.)

```
cities = {'GA' : 'Atlanta', 'NY' : 'Albany', 'CA' : 'San Diego'}
if 'CA' in cities:
    del cities['CA']
    cities['CA'] = 'Sacramento'
print(cities)
```

- `{'CA': 'Sacramento'}`
- `['CA': 'Sacramento']`
- `{'NY': 'Albany', 'GA': 'Atlanta'}`
- `{'CA': 'Sacramento', 'NY': 'Albany', 'GA': 'Atlanta'}`

ANS:

17. What will be displayed after the following code executes? (Note: the order of the display of entries in a dictionary are not in a specific order.)

```
cities = {'GA' : 'Atlanta', 'NY' : 'Albany', 'CA' : 'San Diego'}
if 'FL' in cities:
```

```
del cities['FL']
cities['FL'] = 'Tallahassee'
print(cities)
```

- a. {'FL': 'Tallahassee'}
- b. KeyError
- c. {'CA': 'San Diego', 'NY': 'Albany', 'GA': 'Atlanta', 'FL': 'Tallahassee'}
- d. {'CA': 'San Diego', 'NY': 'Albany', 'GA': 'Atlanta'}

ANS:

18. What will be displayed after the following code executes? (Note: the order of the display of entries in a dictionary are not in a specific order.)

```
cities = {'GA' : 'Atlanta', 'NY' : 'Albany', 'CA' : 'San Diego'}
if 'FL' in cities:
    del cities['FL']
cities['FL'] = 'Tallahassee'
print(cities)
```

- a. {'FL': 'Tallahassee'}
- b. KeyError
- c. {'GA': 'Atlanta', 'FL': 'Tallahassee', 'NY': 'Albany', 'CA': 'San Diego'}
- d. {'CA': 'San Diego', 'NY': 'Albany', 'GA': 'Atlanta'}

ANS:

## COMPLETION

1. A(n) \_\_\_\_\_ is an object that holds multiple unique items of data in an unordered manner.

ANS:

2. The built-in function, \_\_\_\_\_, returns the number of items in a set.

ANS:

3. To add a single item to a set, you can use the set \_\_\_\_\_ method.

ANS:

4. The \_\_\_\_\_ of two sets is a set that contains all the elements of both sets.

ANS:

5. Each element in a(n) \_\_\_\_\_ has two parts: a key and a value.

ANS:

6. The elements in a dictionary are not stored in a specific order. Therefore, a dictionary is not a(n) \_\_\_\_\_.

ANS:

7. To determine whether or not a key is included in a dictionary, or if an element is included in a set, you can use the \_\_\_\_\_ operator.

ANS:

8. The \_\_\_\_\_ method returns a value associated with a specific key and, if found, removes that key-value pair from the dictionary.

ANS:

9. The \_\_\_\_\_ method clears the contents of a dictionary.

ANS:

10. To write an object to a file, you use the \_\_\_\_\_ function of the \_\_\_\_\_ module.

ANS:

11. The \_\_\_\_\_ method returns all of a dictionary's keys as a dictionary view.

ANS:

12. Each element in a dictionary view is a \_\_\_\_\_.

ANS: