1. What does an empty dictionary's code look like?

2. What is the value of a dictionary value with the key 'foo' and the value 42?

3. What is the most significant distinction between a dictionary and a list?

4. What happens if you try to access spam['foo'] if spam is {'bar': 100}?

5. If a dictionary is stored in spam, what is the difference between the expressions 'cat' in spam and 'cat' in spam.keys()?

6. If a dictionary is stored in spam, what is the difference between the expressions 'cat' in spam and 'cat' in spam.values()?

7. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

8. How do you "pretty print" dictionary values using which module and function?

ANSWER

1. An empty dictionary's code looks like this:

```python

empty\_dict = {}

```

2. The value of a dictionary with the key 'foo' and the value 42 would look like this:

```python

{'foo': 42}

```

3. The most significant distinction between a dictionary and a list is that a dictionary is a collection of key-value pairs, while a list is an ordered collection of values. In a dictionary, you access values by their keys, which are unique, whereas in a list, you access values by their indices, which are numeric and ordered.

4. If you try to access `spam['foo']` when `spam` is `{'bar': 100}`, you will get a KeyError, because the key 'foo' does not exist in the dictionary `spam`.

5. If a dictionary is stored in `spam`, the expression `'cat' in spam` checks if there is a key 'cat' in the dictionary. It returns `True` if 'cat' is a key in the dictionary. On the other hand, `'cat' in spam.keys()` is essentially the same check; it also verifies the presence of the key 'cat' in the dictionary.

6. If a dictionary is stored in `spam`, the expression `'cat' in spam` checks if there is a key 'cat' in the dictionary, and it returns `True` if 'cat' is a key in the dictionary. However, `'cat' in spam.values()` checks if 'cat' is a value in the dictionary, and it returns `True` if 'cat' is a value associated with any key in the dictionary.

7. A shortcut for adding a key-value pair to a dictionary if the key doesn't exist is to use the `setdefault()` method. Here's the equivalent code:

```python

spam.setdefault('color', 'black')

```

This code will set the key 'color' to 'black' in the `spam` dictionary if 'color' doesn't already exist as a key.

8. To "pretty print" dictionary values, you can use the `pprint` module (pretty-print). The `pprint.pprint()` function can be used to print dictionaries and other data structures in a more human-readable format. Here's how to use it:

```python

import pprint

my\_dict = {'key1': 'value1', 'key2': 'value2'}

pprint.pprint(my\_dict)

```

This will format and print the dictionary in a way that is easier to read, especially for large or nested dictionaries.