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

empty_dict = {} # Empty dictionary

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

mydict = {'foo': 42} # a dictionary value with the key 'foo' and the value 42

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

the most significant distinction between a dictionary and a list is how they organize data. Lists are ordered and accessed by integer indices, while dictionaries use keys to provide a mapping between elements and their corresponding values, making them suitable for look-up operations and handling structured data with specific labels.

For example:

my_list = [1, 2, 3, 4]

my_dict = {'a': 1, 'b': 2, 'c': 3}

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

It will give KeyError indicating that the specified key does not exist in the dictionary

KeyError: 'foo'

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

the expressions 'cat' in spam and 'cat' in spam.keys() are equivalent in functionality, but there is a difference in how they work internally. Example:

spam = {'cat': 5, 'dog': 2, 'fish': 3}

print('cat' in spam) # Output: True

print('cat' in spam.keys()) # Output: True

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

This expression 'cat' in spam checks if the key 'cat' exists in the dictionary spam. It returns True if the key is present as one of the keys in the dictionary, and False otherwise.

The expressions 'cat' in spam.values() checks if the value 'cat' exists as one of the values in the dictionary spam. It returns True if the value is present in any of the dictionary's values, and False otherwise.

This is an example to show the difference between 'cat' in spam and 'cat' in spam.values() is that the first expression checks for the existence of the key 'cat' in the dictionary spam, while the second expression checks for the existence of the value 'cat' in the dictionary's values.

spam = {'cat': 5, 'dog': 2, 'fish': 3}

print('cat' in spam)   # Output: True

print('cat' in spam.values()) # Output: False

print(5 in spam.values())   # Output: True

7. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

The setdefault() method allows you to set a default value for a key if the key does not already exist in the dictionary. So, the shortcut will be:

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

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

you can use the pprint module, specifically the pprint() function from that module. "Pretty printing" means formatting the dictionary output in a more readable and organized way