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

my\_dict = {}

dict() constructor can also be used to create an empty dictionary.

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

dict = {'foo': 42}

Here, value = 42

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

Lists are used to store the data, which should be ordered and sequential. On the other hand, dictionary is used to store large amounts of data for easy and quick access. **List is ordered** and mutable, whereas **dictionaries are** **unordered** and mutable.

We can access the **elements in a list using indices**. We can access the elements present in a **dictionary using the key-values**.

The **indices** in the case of a list are basically **integers** that start from the value 0 in python. The **keys** present in a dictionary can easily be of **any given data type**.

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

You will get a key error since because the key 'foo' does not exist in the dictionary spam.

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

Using 'cat' in spam directly checks for the presence of the key within the dictionary itself, which is typically faster. It avoids the additional step of generating a list of keys using spam.keys().

On the other hand, 'cat' in spam.keys() generates a list of keys first and then performs the search within that list. This additional step may have a slight impact on performance, especially for larger dictionaries.

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

'cat' in spam checks whether there is a 'cat' key in the dictionary, while 'cat' in spam.values() checks whether there is a value 'cat' for one of the keys in spam. In terms of functionality, both expressions will yield the same result. In terms of efficiency, using 'cat' in spam is generally faster and more efficient. It avoids the overhead of generating a collection of values using spam.values() and directly performs the search within the dictionary.

7. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

spam = {}

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

print(spam)

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

Module used is pprint module, and the function is specifically the pprint function. The pprint function formats the dictionary in a more readable and organized way, with each key-value pair on a separate line and indentation for nested structures.