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

Ans : my\_dict = {}

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

Ans : 42

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

* Ans : Dictionary: A dictionary is an unordered collection of key-value pairs. Each key in a dictionary is unique, and it maps to a corresponding value. Dictionaries are created using curly braces **{}** and key-value pairs separated by colons **:**.
* List: A list is an ordered collection of elements. It can contain elements of different types, and the order of elements is preserved. Lists are created using square brackets **[]**, and elements are separated by commas.

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

Ans : If you try to access spam['foo'] and spam is {'bar': 100}, you will encounter a KeyError.

In Python, when you attempt to access a key in a dictionary that does not exist, a **KeyError** is raised. This error occurs 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()?

Ans : 'cat' in spam:

* This expression checks if the key **'cat'** exists in the dictionary **spam**. It returns a boolean value (**True** or **False**) indicating whether the key is present in the dictionary or not.
* cat' in spam.keys(): This expression checks if the key 'cat' exists in the keys of the dictionary spam. It returns a boolean value indicating whether the key is present among the dictionary keys.

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

Ans :

* + 'cat' in spam: This expression checks if the key **'cat'** exists in the dictionary **spam**. It returns a boolean value (**True** or **False**) indicating whether the key is present in the dictionary or not.
  + 'cat' in spam.values(): This expression checks if the value 'cat' exists in the values of the dictionary spam. It returns a boolean value indicating whether the value is present among the dictionary values.

7. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

Ans : A shortcut for the given code can be achieved using the dict.setdefault() method. The setdefault() method allows you to set a default value for a key if it doesn't already exist in the dictionary. Here's the equivalent code using setdefault():

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

In this code, **spam.setdefault('color', 'black')** checks if the key **'color'** exists in the **spam** dictionary. If the key is not present, it sets the value of **'color'** as **'black'**. If the key already exists, it does not modify the existing value.

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

Ans : To "pretty print" dictionary values in Python, you can use the pprint module and its pprint() function. The pprint module provides a way to display data structures in a more readable and visually appealing format.

Here's an example of how to use **pprint** to pretty print a dictionary:

import pprint my\_dict = {'key1': 'value1', 'key2': 'value2', 'key3': 'value3'} pprint.pprint(my\_dict)

Output:

{'key1': 'value1', 'key2': 'value2', 'key3': 'value3'}

In the code above, we import the **pprint** module and create a dictionary **my\_dict**. Then, we use **pprint.pprint()** to pretty print the dictionary. The output shows the dictionary with each key-value pair on a separate line and indented for readability.

The **pprint()** function is especially useful when working with complex data structures like nested dictionaries or lists. It provides a more structured and formatted representation of the data, making it easier to understand.