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

my\_dict ={}

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

42

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

The most significant distinction between a dictionary and a list in Python is the way they store and access elements:

**Structure:**

A list is an ordered collection of elements, where each element is assigned an index based on its position in the list.

A dictionary is an unordered collection of key-value pairs, where each element is accessed by its unique key rather than its position.

**Accessing Elements:**

In a list, elements are accessed using their index. For example, my\_list[0] retrieves the element at index 0.

In a dictionary, elements are accessed using their keys. For example, my\_dict['key'] retrieves the value associated with the key 'key'.

**Mutable vs. Immutable:**

Lists are mutable, meaning their elements can be modified, added, or removed.

Dictionaries are also mutable, allowing modification of values associated with existing keys, addition of new key-value pairs, and removal of existing key-value pairs.

**Ordering:**

Lists maintain the order of elements as they are inserted. The first element added is at index 0, the second at index 1, and so on.

Dictionaries do not have a specific order. The elements are stored based on the hash value of their keys, and the order of retrieval may not necessarily match the order of insertion.

**Indexing:**

Lists are accessed using integer indices, starting from 0. Elements can be accessed by their position in the list.

Dictionaries are accessed using unique keys. Elements are retrieved by specifying the key associated with the value.

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

Raises 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()?

Cat in spam expression checks if the key cat exits in the spam dictionary and returns True else False.

Cat in spam.keys() expression retrieves keys of dictionary spam using the keys() and checks if cat exists in list of key and returns True else False.

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 expression checks if the key cat exits in the spam dictionary and returns True else False.

Cat in spam.keys() expression retrieves keys of dictionary spam using the keys() and checks if cat exists in list of key and returns True else False.

7. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

dict.setdefault() allows you to set a default value for a key if it doesnot exists in dictionary.

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

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

By using pprint module and pprint() to pretty print dictionary values in the dictionary. pprint module provides a way to format complex data structures, such as dictionary in a more readable format.

import pprint

my\_dict = {'key1': 'value1', 'key2': 'value2', 'key3': 'value3'}

pprint.pprint(my\_dict)