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

**An empty dictionary in Python is represented by a pair of curly braces {}:**

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**empty\_dict = {}**

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

**In Python, you would access the value associated with the key 'foo' like this:**

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**my\_dict = {'foo': 42}**

**value = my\_dict['foo']**

**The value of my\_dict['foo'] is 42.**

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

**The most significant distinction is:**

* **List: A list is an ordered collection of items indexed by integers, starting from 0.**
* **Dictionary: A dictionary is an unordered collection of key-value pairs where each key is unique and is used to access its associated value.**

**In other words, dictionaries use keys (which can be of any immutable type) for indexing, whereas lists use integers for indexing.**

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

**If spam is {'bar': 100}, trying to access spam['foo'] will result in a KeyError, because the dictionary does not contain the key 'foo'. Example:**

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**spam = {'bar': 100}**

**print(spam['foo']) # This will raise 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 checks if 'cat' is a key in the dictionary spam.**
* **'cat' in spam.keys() checks if 'cat' is in the keys view of the dictionary.**

**In modern Python, both expressions are effectively equivalent because spam automatically checks its keys when you use the in operator. However, the second expression explicitly references the keys view of the dictionary.**

**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 if 'cat' is a key in the dictionary spam.**
* **'cat' in spam.values() checks if 'cat' is a value in the dictionary spam.**

**So the difference is that one looks for 'cat' as a key, and the other checks if 'cat' exists as a value in the dictionary.**

**7. What is a shortcut for the following code?**

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**if 'color' not in spam:**

**spam['color'] = 'black'**

**A shorter way to do this is using the setdefault() method:**

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

**This will set 'color' to 'black' only if the key 'color' does not already exist in spam.**

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

**You can "pretty print" dictionary values using the pprint module and its pprint() function. This function makes the dictionary output more readable by formatting it in a cleaner way. Example:**

**python**

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**import pprint**

**my\_dict = {'name': 'John', 'age': 30, 'city': 'New York'}**

**pprint.pprint(my\_dict)**

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