Assignment 5

## Q1

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

my\_dict = {}

## Q2

The value of a dictionary with the key 'foo' and the value 42 would be 42.

my\_dict = {'foo': 42}

## Q3

The most significant distinction between a dictionary and a list is the way they store and organise data.

**List**: A list is an ordered collection of items, where each item is assigned an index based on its position in the list. Lists maintain the order of elements as they are added.

**Dictionary**: A dictionary is an unordered collection of key-value pairs. Each key is unique within the dictionary and is used to access its corresponding value. Unlike a list, a dictionary does not maintain any specific order of its elements.

## Q4

If we try to access spam['foo'] and spam is {'bar': 100}, it will raise a KeyError.

## Q5

The expressions 'cat' in spam and 'cat' in spam.keys() check for the presence of the key 'cat' in the dictionary spam, but they differ in their implementation.

'cat' in spam:

This expression checks if the key 'cat' exists directly in the dictionary spam. It returns a boolean value (True or False) indicating whether the key is present as a direct key in the dictionary.

'cat' in spam.keys():

This expression retrieves all the keys of the dictionary spam using the keys() method, which returns a view object containing all the keys in the dictionary.

The expression then checks if the key 'cat' exists in this view object of keys. It also returns a boolean value indicating whether the key is present in the keys of the dictionary.

## Q6

The difference between the expressions 'cat' in spam and 'cat' in spam.values() is that the first expression checks whether the string 'cat' is a key in the dictionary spam, while the second expression checks whether the string 'cat' is a value in the dictionary spam.

## Q7

The shortcut for the code if 'colour' not in spam: spam['colour'] = 'black' is spam.setdefault('colour', 'black').

The setdefault() method of a dictionary takes two arguments: a key and a default value. If the key does not exist in the dictionary, then the key is added to the dictionary with the default value. If the key already exists in the dictionary, then the value of the key is not changed.

## Q8

To "pretty print" dictionary values in Python, we can use the pprint module and the pprint() function. The pprint() function takes an object as input and returns a string representation of the object with appropriate indentation and line breaks.