

# Python Dictionary Interview Questions

## What is a dictionary in Python?

- A dictionary in Python is an unordered collection of key-value pairs. Each key-value pair maps the key to its associated value. Dictionaries are mutable, meaning they can be modified after creation.

## How do you create an empty dictionary in Python?

- An empty dictionary can be created using either of the following methods:

```
my_dict = {} # Using curly braces
```

```
my_dict = dict() # Using the dict() constructor
```

## How do you access values in a dictionary?

- Values in a dictionary can be accessed using their corresponding keys. For example:

```
my_dict = {'name': 'John', 'age': 30}
```

```
print(my_dict['name']) # Output: John
```

## How do you add a new key-value pair to an existing dictionary?

- Answer: You can add a new key-value pair to a dictionary by assigning a value to a new key. For example:

```
my_dict = {'name': 'John', 'age': 30}
```

```
my_dict['gender'] = 'Male'
```

## How do you check if a key exists in a dictionary?

- You can use the `in` keyword to check if a key exists in a dictionary. For example:

```
my_dict = {'name': 'John', 'age': 30}
```

```
if 'name' in my_dict:
```

```
    print("Key 'name' exists")
```

## How do you iterate over items in a dictionary?

- You can use a for loop to iterate over key-value pairs in a dictionary. For example:

```
my_dict = {'name': 'John', 'age': 30}
```

```
for key, value in my_dict.items():
```

```
    print(key, value)
```

## How do you remove a key-value pair from a dictionary?

- You can use the `del` keyword to remove a key-value pair from a dictionary. For example:

```
my_dict = {'name': 'John', 'age': 30}
```

```
del my_dict['age']
```

## What happens if you try to access a key that doesn't exist in a dictionary?

- If you try to access a key that doesn't exist in a dictionary, Python will raise a `KeyError` exception.

## How to Count the frequency of characters in a string:

```
string = "hello world"
char_freq = {}
for char in string:
    char_freq[char] = char_freq.get(char, 0) + 1
print(char_freq)
```

**Output:** {'h': 1, 'e': 1, 'l': 3, 'o': 2, ' ': 1, 'w': 1, 'r': 1, 'd': 1}

## How to Merge two dictionaries:

```
dict1 = {'a': 1, 'b': 2}
dict2 = {'c': 3, 'd': 4}
merged_dict = {**dict1, **dict2}
print(merged_dict)
```

**Output:** {'a': 1, 'b': 2, 'c': 3, 'd': 4}

## Find keys with the maximum value in a dictionary:

```
scores = {'Alice': 85, 'Bob': 90, 'Charlie': 85, 'David': 95}
max_score = max(scores.values())
max_score_keys = [key for key, value in scores.items() if value == max_score]
print(max_score_keys)
```

**Output :** ['David']

## Reverse key-value pairs in a dictionary:

```
original_dict = {'a': 1, 'b': 2, 'c': 3}
reversed_dict = {value: key for key, value in original_dict.items()}
print(reversed_dict)
```

**Output:** {1: 'a', 2: 'b', 3: 'c'}

### Filter dictionary by values greater than a threshold:

```
data = {'a': 10, 'b': 20, 'c': 30, 'd': 40}
```

```
threshold = 25
```

```
filtered_data = {key: value for key, value in data.items() if value > threshold}
```

```
print(filtered_data)
```

**Output: {'c': 30, 'd': 40}**

### How to Check if a key exists in a dictionary:

```
student_grades = {'Alice': 85, 'Bob': 90, 'Charlie': 75}
```

```
name = 'Bob'
```

```
if name in student_grades:
```

```
    print(f"{name}'s grade is {student_grades[name]}")
```

```
else:
```

```
    print(f"No grade found for {name}")
```

**Output: Bob's grade is 90**

### How to Sort a dictionary by its keys:

```
data = {'b': 2, 'a': 1, 'd': 4, 'c': 3}
```

```
sorted_data = {key: data[key] for key in sorted(data.keys())}
```

```
print(sorted_data)
```

**Output : {'a': 1, 'b': 2, 'c': 3, 'd': 4}**

### How to Find the intersection of two dictionaries:

```
dict1 = {'a': 1, 'b': 2, 'c': 3}
```

```
dict2 = {'b': 2, 'c': 4, 'd': 5}
```

```
intersection = {key: dict2[key] for key in dict1.keys() & dict2.keys()}
```

```
print(intersection)
```

**Output : {'c': 3, 'b': 2}**