

## Python String Data Type - Interview Questions with Answers

### 1. What is a string & how to create a string in Python?

A string is a sequence of characters enclosed in single (' '), double (" "), or triple quotes ("'' " or "" ""). Example: `s = "Hello"`

### 2. What are some common string methods in Python?

Common methods include: `upper()`, `lower()`, `capitalize()`, `title()`, `strip()`, `split()`, `replace()`, `find()`, `startswith()`, `endswith()`.

### 3. How do you reverse a string in Python?

Using slicing: `reversed_str = s[::-1]`

### 4. Explain the `upper()` and `lower()` string methods.

`upper()` converts all characters to uppercase; `lower()` converts them to lowercase.

### 5. Describe the usage of the `split()` method.

`split()` splits a string into a list based on a delimiter (default is whitespace). Example: `'a b c'.split()` gives `['a', 'b', 'c']`.

### 6. What is the use of `splitlines()` method?

`splitlines()` splits the string at line breaks and returns a list. Example: `'Hello\nWorld'.splitlines()` returns `['Hello', 'World']`

### 7. How to find out if every word's first letter is capitalized in a string?

Use: `s.istitle()`

### 8. How to convert only the first letter to uppercase and the rest to lowercase?

Use: `s.capitalize()`

### 9. How to capitalize the first letter of each word and lowercase the rest?

Use: `s.title()`

### 10. How to check if a string contains only digits?

Use: `s.isdigit()`

### 11. How to check if a string contains only alphanumeric characters?

Use: `s.isalnum()`

### 12. How to check if all characters are lowercase or uppercase?

Use: `s.islower()` or `s.isupper()`

**13. How can you check if a string starts or ends with a specific substring?**

Use: `s.startswith('sub')` and `s.endswith('sub')`

**14. What is the purpose of the `strip()` method?**

Removes leading and trailing whitespace. Use: `s.strip()`

**15. What does the `replace()` method do in Python strings?**

Replaces substrings. Example: `s.replace('a', 'b')`

**16. Explain the use of the `format()` method for string formatting.**

Inserts variables into strings. Example: `"Hello {}".format("World")`

**17. What is f-string formatting? Provide an example.**

An f-string allows embedded expressions. Example: `name = "Alice"; f"Hello {name}"`

**18. What is string interpolation in Python?**

Injecting variables into strings using `str.format()`, f-strings, or `%` formatting.

**19. How does the `%` formatting operator work with strings?**

Example: `"Hello %s" % name` where `name = "Alice"`

**20. Write a Python program to check if a string is a palindrome.**

```
s = "madam"
print(s == s[::-1])
```

**21. How would you reverse words in a given string?**

```
s = "Hello World"
print(' '.join(s.split()[::-1]))
```

**22. Write a program to count the occurrences of a specific character in a string.**

```
s = "hello world"
print(s.count('l'))
```

**23. Python code to check if a given character is a digit.**

```
ch = '5'
print(ch.isdigit())
```