

- **How do you concatenate two strings in Python?**

Using the + operator:

```
python
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str1 = "Hello"
str2 = "World"
result = str1 + str2
```

- **What is the difference between the + operator and the join() method for concatenating strings?**

- + is used for combining a small number of strings.
- join() is more efficient when concatenating many strings (e.g., in a loop).

```
python
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" ".join(["Hello", "World"])
```

- **How do you access individual characters in a string?**

Using indexing:

```
python
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s = "Python"
char = s[0] # 'P'
```

- **What method is used to find the length of a string in Python?**

len() function:

```
python
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len("Python") # 6
```

- **How can you convert a string to uppercase in Python?**

Using .upper() method:

```
python
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"hello".upper() # "HELLO"
```

- **How can you convert a string to lowercase in Python?**

Using .lower() method:

```
python
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"HELLO".lower() # "hello"
```

- **What method is used to replace substrings within a string?**

`.replace(old, new)` method:

```
python
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"hello world".replace("world", "Python")  # "hello Python"
```

- **How can you split a string into a list of substrings based on a delimiter?**

Using `.split(delimiter)` method:

```
python
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"a,b,c".split(",")  # ['a', 'b', 'c']
```

- **How do you check if a string starts with a particular substring?**

Using `.startswith(substring)` method:

```
python
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"Python".startswith("Py")  # True
```

- **How do you check if a string ends with a particular substring?**

Using `.endswith(substring)` method:

```
python
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"Python".endswith("on")  # True
```

- **How can you remove leading and trailing whitespace from a string?**

Using `.strip()` method:

```
python
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"  hello  ".strip()  # "hello"
```

- **What method is used to find the index of the first occurrence of a substring within a string?**

`.find(substring)` or `.index(substring)` (but `index()` raises error if not found):

```
python
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"hello world".find("world")  # 6
```

- **How can you count the number of occurrences of a substring within a string?**

Using `.count(substring)` method:

```
python
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"banana".count("a")  # 3
```

- **How do you check if a string contains only alphabetic characters?**

Using `.isalpha()` method:

```
python
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"abc".isalpha()  # True
```

- **How do you check if a string contains only numeric characters?**

Using `.isdigit()` method:

```
python
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"123".isdigit()  # True
```

- **How can you check if a string is a palindrome?**

Compare it to its reverse:

```
python
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s = "madam"
is_palindrome = s == s[::-1]
```

- **How can you reverse a string in Python?**

Using slicing:

```
python
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reversed_str = "Python"[::-1]  # "nohtyP"
```

- **How do you format a string with placeholders for variable values?**

- Using f-strings (Python 3.6+):

```
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name = "Alice"
f"Hello, {name}"
```

- Or `.format()`:

```
python
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"Hello, {}".format(name)
```

- **How do you access a substring of a string using slicing?**

```
python
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s = "Hello, World"
substring = s[0:5]  # "Hello"
```

- **How can you remove specific characters from a string in Python?**

Using `.replace()` or regex:

```
python
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"hello!".replace("!", "")  # "hello"
```