

Python String Notes for Beginners

1. String Formatting

String formatting in Python allows you to insert variables into strings or format them in specific ways. There are three main methods for string formatting in Python:

- 1 1. Using f-Strings (Python 3.6+): `f"Hello {name}!"`
- 2 2. Using `str.format()`: `'Hello {}'!.format(name)`
- 3 3. Using %-formatting: `'Hello %s!' % name`

Example:

```
name = "Alice"
age = 25
print(f"My name is {name} and I am {age} years old.")
print("My name is {} and I am {} years old.".format(name, age))
print("My name is %s and I am %d years old." % (name, age))
```

2. Common String Methods

- 1 `upper()` – Converts all characters to uppercase.
- 2 `lower()` – Converts all characters to lowercase.
- 3 `title()` – Converts the first character of each word to uppercase.
- 4 `strip()` – Removes leading and trailing spaces.
- 5 `replace(old, new)` – Replaces a substring with another.
- 6 `split()` – Splits the string into a list.
- 7 `join()` – Joins elements of a list into a string.
- 8 `find()` – Returns the index of the first occurrence of a substring.
- 9 `count()` – Returns the number of occurrences of a substring.
- 10 `startswith() / endswith()` – Checks if the string starts or ends with a specific substring.

3. String Slicing

String slicing is used to extract a substring using index positions. Syntax: `string[start:end:step]`

Example:

```
text = "Python"
print(text[0:3]) # Output: Pyt
print(text[:]) # Output: Python
print(text[::-1]) # Output: nohtyP
```

```
print(text[::-2]) # Output: Pto
```

4. Practice Programs

- 1 1. Write a program to count the number of vowels in a string.
- 2 2. Write a program to reverse a string without using slicing.
- 3 3. Write a program to check if a string is a palindrome.
- 4 4. Write a program to count the occurrence of each character in a string.
- 5 5. Write a program to capitalize the first letter of each word in a string.
- 6 6. Write a program to remove all special characters from a string.
- 7 7. Write a program to replace spaces with hyphens in a string.
- 8 8. Write a program to find the longest word in a given sentence.
- 9 9. Write a program to check if two strings are anagrams.
- 10 10. Write a program to extract digits from a given string.