

Day 5 (29/8/25): Comparing Strings in Python

1. Introduction

Comparing strings means checking **if one string is equal to, less than, or greater than another string**.

Python allows string comparison using **relational operators** and **built-in methods**.

2. Methods of Comparing Strings

A. Using Relational Operators

Python supports the following operators for string comparison:

Operator	Meaning
==	Checks if two strings are equal
!=	Checks if two strings are not equal
<	Checks if first string is lexicographically less than second
>	Checks if first string is lexicographically greater than second
<=	Less than or equal
>=	Greater than or equal

Lexicographical Order:

Strings are compared character by character based on **ASCII values**.

Example: 'apple' < 'banana' → True because 'a' < 'b'.

B. Using Built-in Methods

1. `str.startswith(substring)` – Returns True if string starts with the given substring.
2. `str.endswith(substring)` – Returns True if string ends with the given substring.
3. `str.casefold()` or `str.lower()` – Converts strings to lowercase before comparison (case-insensitive comparison).

3. Example Program – Comparing Strings

String Comparison Example

```
str1 = "Apple"
str2 = "Banana"
str3 = "apple"

# Using relational operators
print("str1 == str2:", str1 == str2)
print("str1 != str2:", str1 != str2)
print("str1 < str2:", str1 < str2)
print("str1 > str2:", str1 > str2)

# Case-insensitive comparison
print("str1 equals str3 (case-insensitive):", str1.lower() == str3.lower())

# Using startswith() and endswith()
print("str2 starts with 'Ba':", str2.startswith("Ba"))
print("str2 ends with 'na':", str2.endswith("na"))
```

4. Sample Output

```
str1 == str2: False
str1 != str2: True
str1 < str2: True
str1 > str2: False
str1 equals str3 (case-insensitive): True
str2 starts with 'Ba': True
str2 ends with 'na': True
```

5. Summary

- Strings can be compared using **relational operators**.
- Comparison is **lexicographical** (ASCII-based).
- **Case-insensitive comparison** avoids issues with capital letters.
- Built-in methods like `startswith()` and `endswith()` make comparisons easy.