# Module Python -Fundamentals of Python Language

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**Understanding how to access and manipulate strings.**

** Basic operations: concatenation, repetition, string methods (upper(), lower(), etc.).**

** String slicing.**

**What is a String in Python?**

* **A string is a sequence of characters enclosed in quotes:**

**my\_string = "Hello, Python!"**

**🔹 1. Accessing Characters in a String**

* **Strings are indexed (first character at index 0).**

**text = "Python"**

**print(text[0]) # Output: P**

**print(text[2]) # Output: t**

* **You can also use negative indexing:**

**print(text[-1]) # Output: n**

**print(text[-2]) # Output: o**

**🔹 2. Basic String Operations**

**✅ a) Concatenation (+ operator)**

**Joins two strings:**

**first = "Hello"**

**second = "World"**

**result = first + " " + second**

**print(result) # Output: Hello World**

**✅ b) Repetition (\* operator)**

**Repeats a string:**

**text = "Hi "**

**print(text \* 3) # Output: Hi Hi Hi**

**🔹 3. Common String Methods**

| **Method** | **Description** | **Example** |
| --- | --- | --- |
| **.upper()** | **Converts to uppercase** | **"python".upper() → 'PYTHON'** |
| **.lower()** | **Converts to lowercase** | **"Python".lower() → 'python'** |
| **.title()** | **Capitalizes each word** | **"hello world".title() → 'Hello World'** |
| **.strip()** | **Removes leading/trailing whitespace** | **" hello ".strip() → 'hello'** |
| **.replace()** | **Replaces part of string** | **"apple".replace("a", "o") → 'opple'** |
| **.split()** | **Splits string into a list** | **"a,b,c".split(",") → ['a', 'b', 'c']** |
| **.find()** | **Finds first index of substring** | **"hello".find("e") → 1** |

**🔹 4. String Slicing**

**Used to extract parts of a string using [start:stop:step].**

**✅ Examples:**

**text = "Python"**

**print(text[0:4]) # Output: Pyth (from index 0 to 3)**

**print(text[:3]) # Output: Pyt (start is optional)**

**print(text[2:]) # Output: thon (end is optional)**

**print(text[-3:]) # Output: hon (negative slicing)**

**print(text[::2]) # Output: Pto (step of 2)**