Python String Functions Cheat Sheet

String Basics
```
s = "Hello, World!"
```

- `len(s)` → Returns the length of the string
- `s[0]` → Access a single character by index ('H')
- `s[-1]` → Last character ('!')
- `s[0:5]` → Slice string ('Hello')

Testing Strings
- `s.isalpha()` → True if all characters are letters
- `s.isdigit()` → True if all characters are digits
- `s.isalnum()` → True if all characters are letters or digits
- `s.isspace()` → True if string only contains whitespace
- `s.islower()` → True if all letters are lowercase
- `s.isupper()` → True if all letters are uppercase
- `s.startswith("H")` → True if string starts with "H"
- `s.endswith("!")` → True if string ends with "!"

Modifying Strings
- `s.lower()` → "hello, world!"
- `s.upper()` → "HELLO, WORLD!"
- `s.capitalize()` → "Hello, world!"
- `s.title()` → "Hello, World!"
- `s.strip()` → Removes whitespace from both ends
- `s.lstrip()` → Removes leading whitespace
- `s.rstrip()` → Removes trailing whitespace
- `s.replace("World", "Python")` → "Hello, Python!"
- `s.swapcase()` → Swaps case: "hELLO, wORLD!"

Searching in Strings
- `s.find("o")` → First index of 'o' (returns -1 if not found)
- `s.rfind("o")` → Last index of 'o'
- `s.index("W")` → Like find(), but raises error if not found
- `s.count("l")` → Counts how many times 'l' appears

Splitting and Joining
- `s.split()` → ['Hello,', 'World!'] (default splits on spaces)
- `s.split(",")` → ['Hello', ' World!']
- `",".join(["A", "B", "C"])` → "A,B,C"

String Formatting

```
name = "Alice"
age = 30
```

f"My name is {name} and I am {age}" → f-string

"My name is {} and I am {}".format(name, age) → format()

"Pi is {:.2f}".format(3.14159) → "Pi is 3.14"

Useful Tips

- Strings are immutable: methods return new strings.
- Use "in" to check for membership:

    "Python" in s → True or False