Strings — The Full Picture

// WHAT IS A STRING

```
name = "Bull"
empty = ""
phrase = "Hello, world!"
```

Single or double quotes — pick one, stay consistent

```
"Red" + "Horn"      # RedHorn
"Red" + " " + "Horn"  # Red Horn
```

// SLICING [start:stop]

Start included. Stop not included.

```
name = "RedHorn"
name[0:3]   # Red
name[3:]    # Horn
name[:3]    # Red
name[-4:]   # Horn
```

Full syntax: [start:stop:step]

// METHODS — SEARCH & STRUCTURE

```
"Bull" in "Hello Bull"   # True
"Hello Bull".find("Bull") # 6
"Hello".count("l")        # 2
"Hello".startswith("He")  # True
"Hello".endswith("lo")    # True
"Hello Bull".split()
# ['Hello', 'Bull']
```

// INPUT

input() always returns a string.

```
name = input("Your name: ")
age  = int(input("Age: "))
h    = float(input("Height: "))
print(f"Hi {name}, age {age}")
```

// INDEXING

Every character has a position. Starts at 0.

```
name = "Bull"
#       B u l l
#       0 1 2 3
name[0]     # B
name[-1]    # l  (last)
len(name)   # 4
```

// METHODS — TRANSFORM

```
len("Bull")          # 4
"  Bull  ".strip()   # Bull
"bull".upper()       # BULL
"BULL".lower()       # bull
"bull".replace("u","a")  # ball
```

Methods return a new string. Reassign to keep the change.

```
name = name.upper()
```

// PRINT FORMATTING

```
name = "Bull"  |  age = 25
f"Hi {name}, you are {age}"
f"Price: {3.14159:.2f}"  # 3.14
print("A","B", sep="-")  # A-B
print("Hello", end=" ")
print("Bull")   # Hello Bull
```

// COMMON MISTAKES

```
! Quotes must match — open & close same type
! Indexing starts at 0, not 1
! Index beyond last → IndexError
! Methods return new string — reassign
! "25" + 5 → TypeError — use str() or f-string
! Case sensitive — "Bull" != "bull"
```