



# Variables

A variable stores a **reference** to a value.

Created by assignment:

```
name = "Alice"  
age = 20  
height = 1.75
```

Rules:

- Start with a letter or `_`
  - Letters, digits, underscores allowed
  - Case-sensitive: `count` ≠ `Count`
-

# Data Types



`int`  
Whole numbers, positive or negative.  
Example:

```
age = 25
```



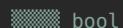
Decimal numbers.

```
pi = 3.14
```



Text data in quotes.

```
city = "Baku"
```



Logical values: `True` or `False`.

```
is_student = True
```



Represents “no value”.

```
result = None
```

# Input & Output

Output (stdout)

```
name = "ElnurBDa"
print("Hello")
print("User:", name)
print(f"The F String is used by {name}")
```

----- [finished] -----

```
Hello
User: ElnurBDa
The F String is used by ElnurBDa
```

Input (stdin)

```
name = input("Enter your name: ")
```

**input()** always returns str.

Convert for numeric use:

```
age = int(input("Enter age: "))
```

# Arithmetic Operators

## Operator Summary

```
+  addition
-  subtraction
*  multiplication
/  division (float)
// floor division (drops decimals)
%  remainder
** exponent
```

## Examples

```
10 + 3  # 13
10 - 3  # 7
10 * 3  # 30
10 / 3  # 3.333...
10 // 3 # 3
10 % 3  # 1
2 ** 3  # 8
```

## Comparison Operators

```
x == y    # equal
x != y    # not equal
x > y
x < y
x >= y
x <= y
```

Example:

```
score = 85
score >= 90    # False
score < 100    # True
```

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# Logical Operators

```
and  # both conditions True
or   # at least one True
not  # reverses boolean
```

Example:

```
age = 20
has_id = True

age >= 18 and has_id    # True
age < 18 or has_id     # True
not has_id              # False
```

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# Assignment Operators

Shorthand updates:

```
x = 5
x += 2    # 7
x -= 1    # 6
x *= 3    # 18
x /= 2    # 9.0
```

Used often in loops and accumulations.

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## Type Casting (Conversion)

Convert between types:

```
int("10")      # 10
float("3.14")  # 3.14
str(123)       # "123"
bool("hi")     # True
bool("")        # False
```

Used for:

- numeric input
  - formatting
  - arithmetic
-

## Example

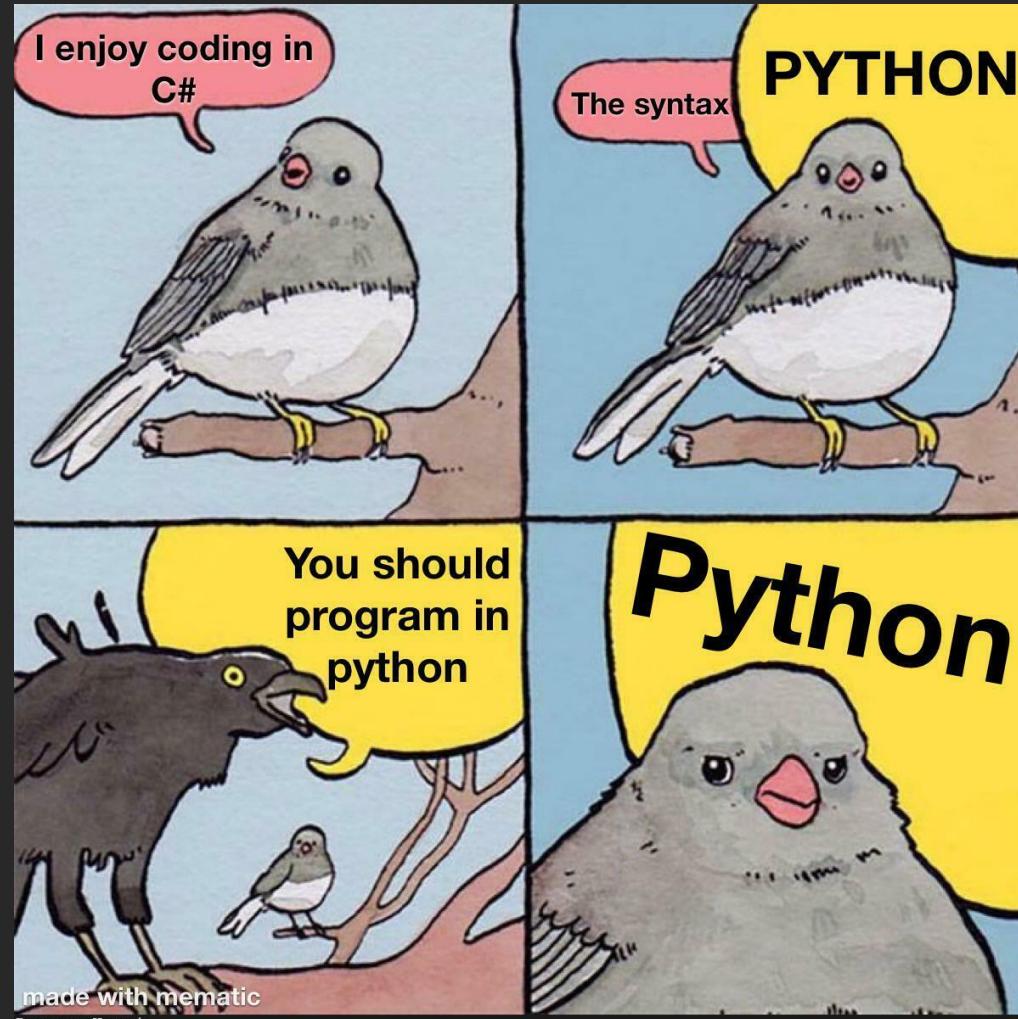
```
1 name = input("Enter your name: ")
2 age = int(input("Enter your age: "))
3
4 next_age = age + 1
5 is_adult = age >= 18
6 message = f"{name}, next year you will be {next_age}."
7
8 print(message)
9 print("Adult status:", is_adult)
```

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## Mini Task

Create a script that:

1. Asks for two numbers
2. Converts them to integers
3. Calculates:
  - sum
  - difference
  - product
4. Prints results



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