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User Input and Basic Operators

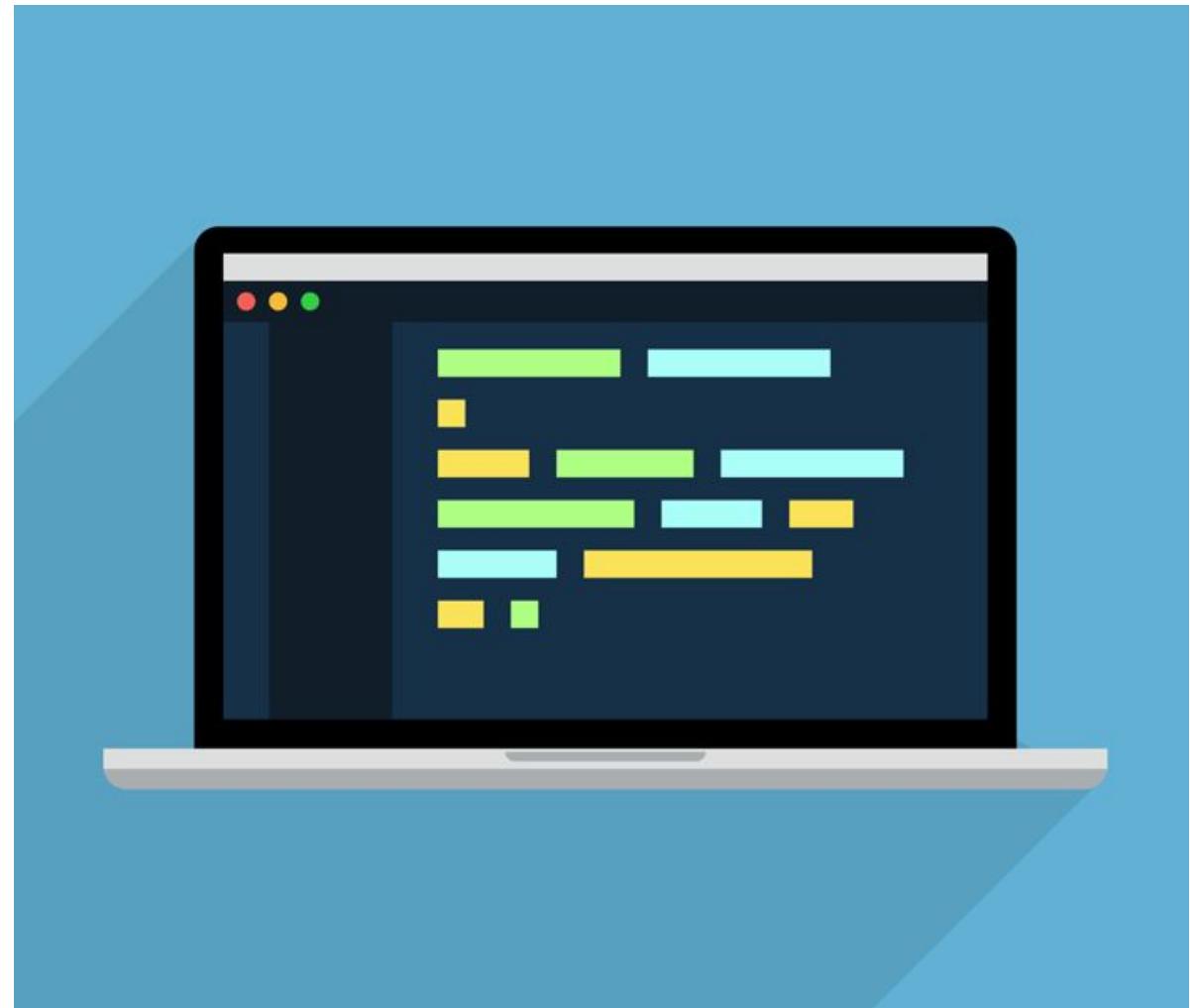
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CSA101 : Problem Solving with
Programming



Quick Recap :

- **What are variables ?**
- **Different data types in Python**
- **Significance of type() function**



Currency Exchange :

A traveler from India in America needs to buy something but only has INR (Indian Rupees). They visit a local bank to convert INR to USD (American Dollars).

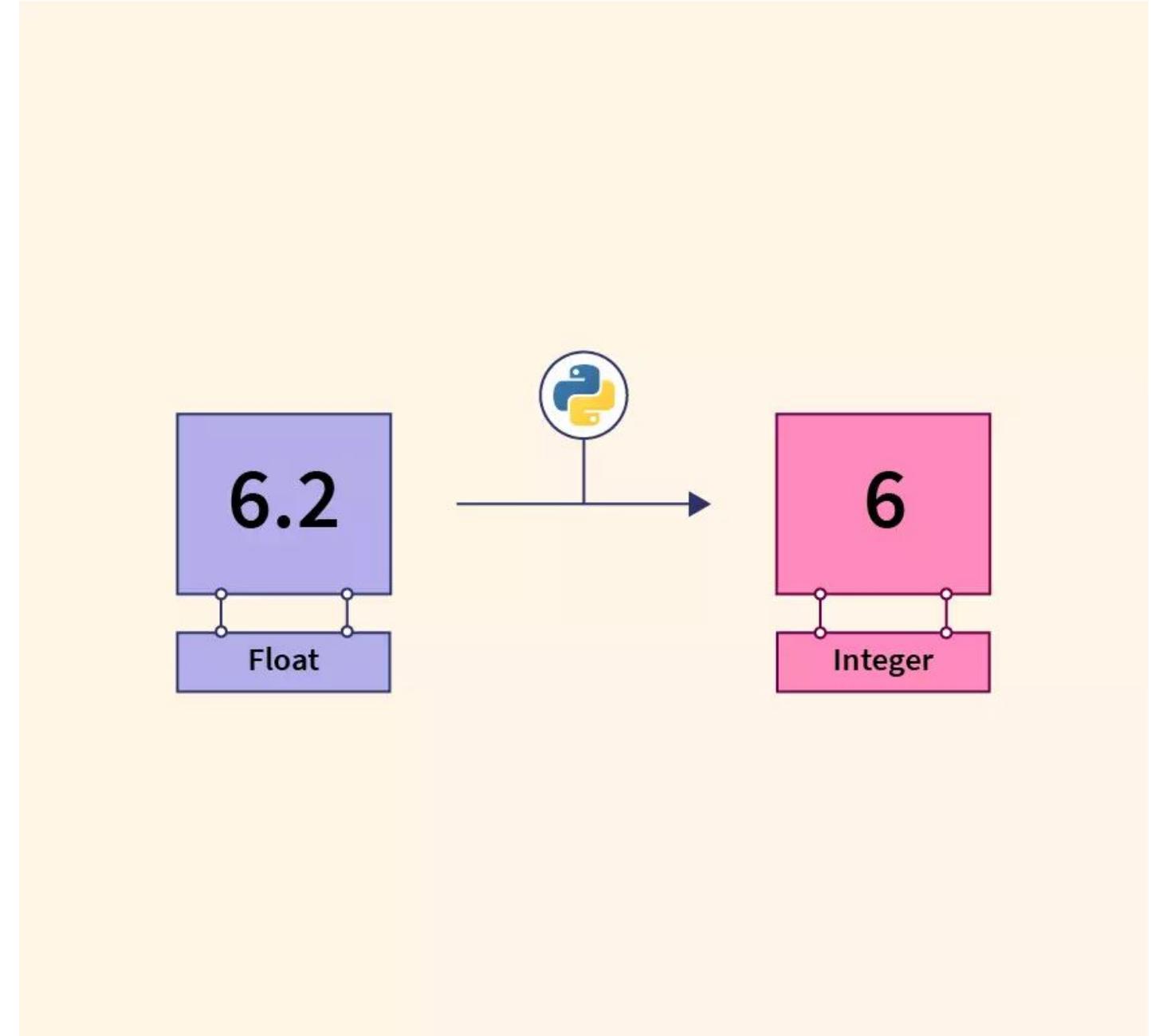


Typecasting

Typecasting Analogy :

This analogy is similar to what typecasting in python is.

If we have a specified value or an object and we want to **convert it into another type**, we use typecasting.



Common Typecasting Functions :

- **int(): Converts to integer**
- **float(): Converts to float**
- **str(): Converts to string**

Let's Practice on Playground!

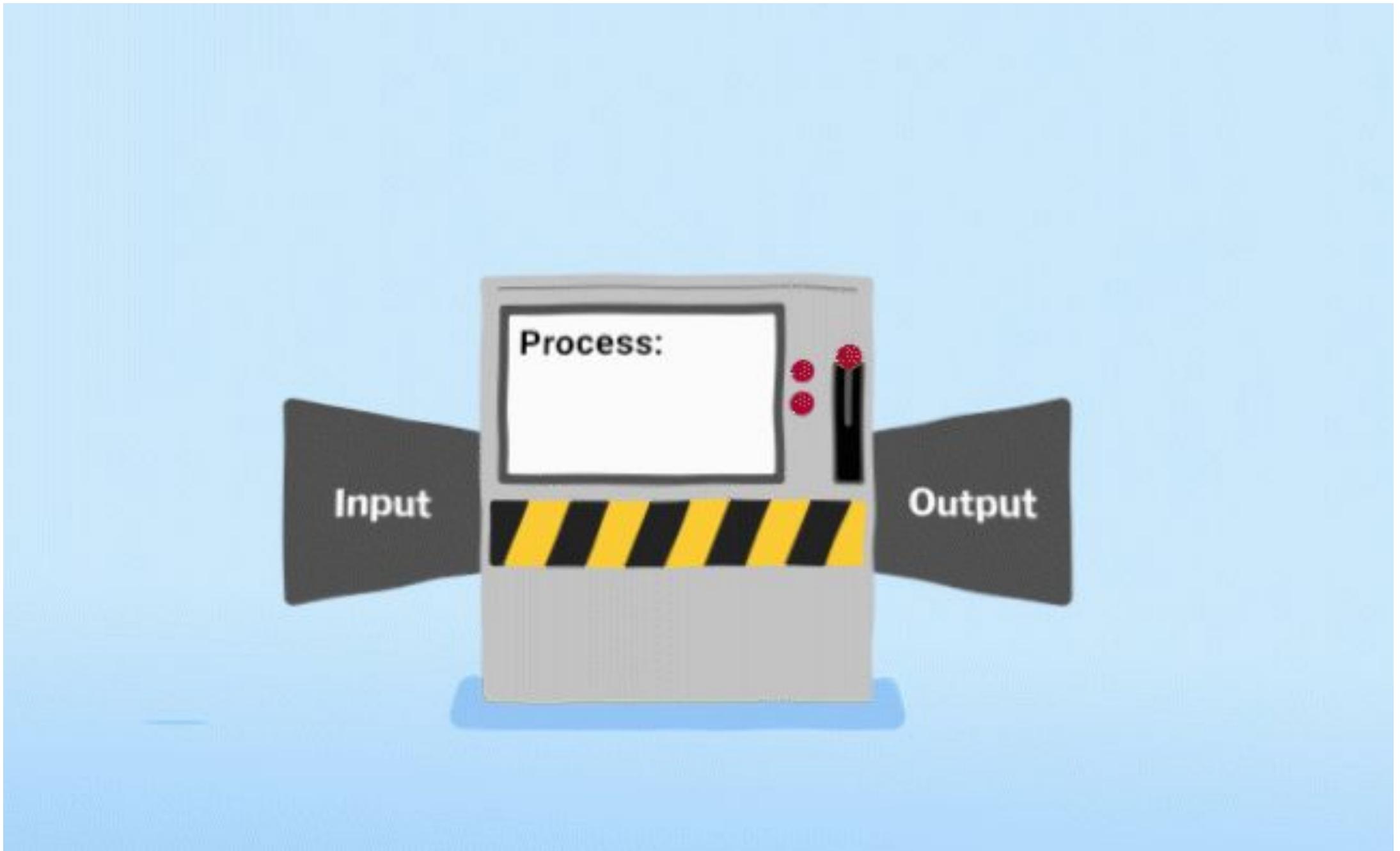
Automatic Type Promotion :

```
# Type Promotion in Arithmetic
integer_value = 10
float_value = 5.5
result = integer_value + float_value # Integer is promoted to float
print(result) # Output: 15.5
```

Programming Analogy:

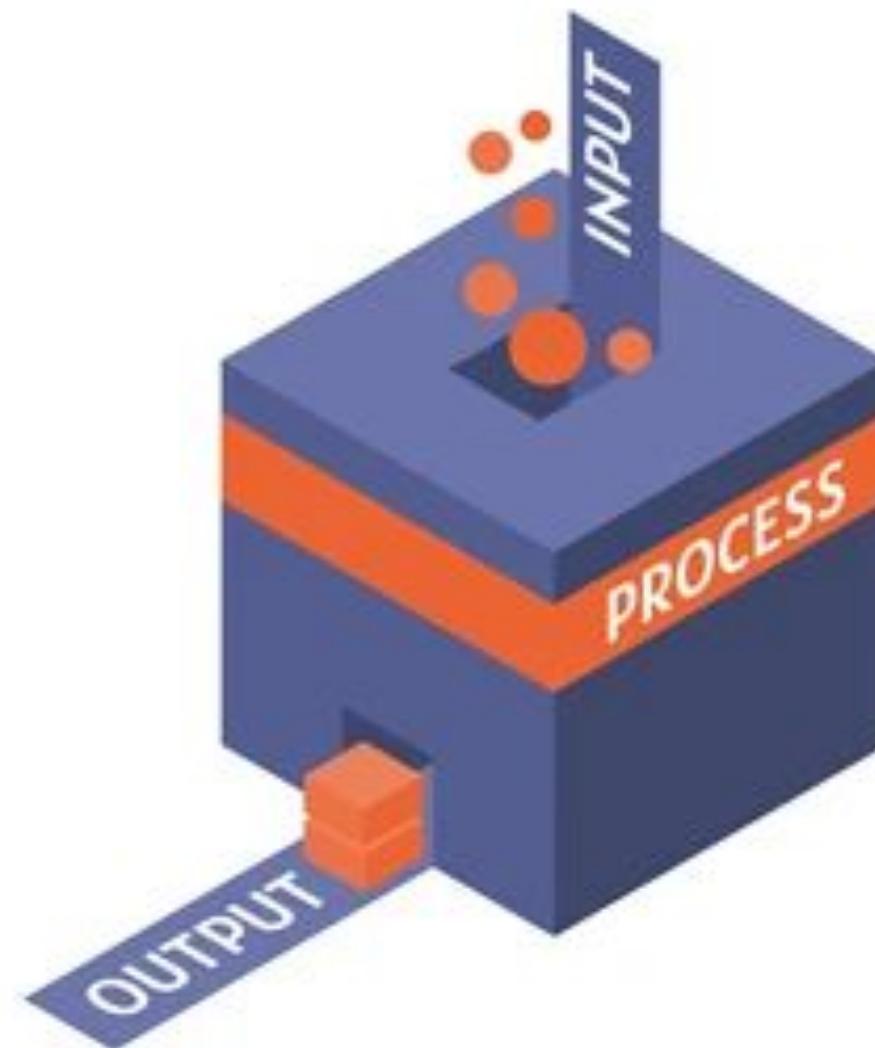


Input and Output :



Input and Output :

- Program output is displayed using the **print() function**
- While user input is obtained with the **input() function.**



The input() Function

The `input()` Function in Python

The `input()` function is **used to take input from the user.**

Basic Syntax:

```
python
```

 Copy code

```
input(prompt)
```

Example : Greeting User

Ask the user for their name (Input) and Print a Greeting message.

python

 Copy code

```
# Prompting the user to enter their name
name = input("Enter your name: ")

# Displaying a greeting message using the input received
print("Hello, " + name)
```

Let's practice on Playground

Handling different Datatypes

Default Behaviour :

input() returns user input as a string.



Handling different Data Types

So we need to **convert the input**
to the appropriate data type if needed.

For e.g : String to Integer



Convert to Integer

Example : Ask the user for their age (Input) and print it.

python

 Copy code

```
# Prompting the user to enter their age
age = int(input("Enter your age: "))

# Displaying the age
print(age)
```

Convert to Float

Example : Ask the user for their height (input) in meters and print it.

```
python  Copy code
```

```
# Prompting the user to enter their height in meters
height = float(input("Enter your height in meters: "))

# Displaying the height
print(height)
```

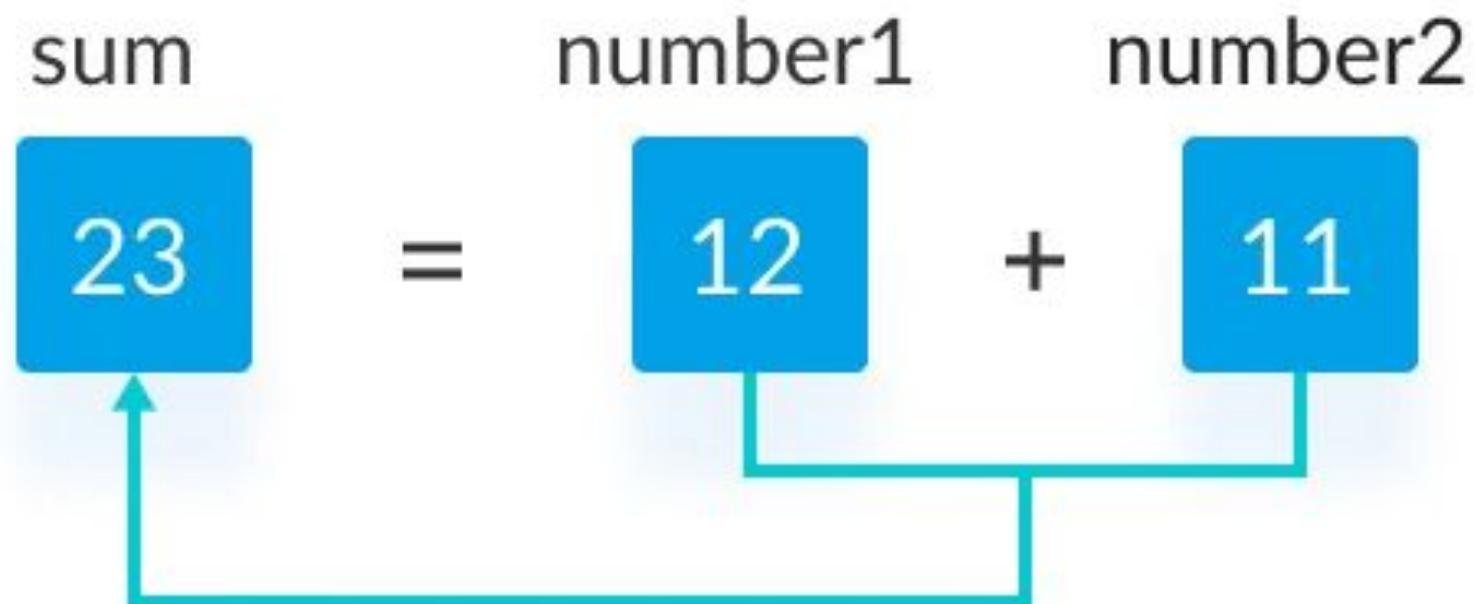
Taking Multiple Inputs

- In programming, you often need to take multiple inputs from the user to perform various operations.
- Using the `input()` function, you can prompt the user for several pieces of information and then use that data to carry out computations or other tasks.



Example : Input and add two numbers

Ask the user to input two numbers and print their sum.



Example : Input and add two numbers

Ask the user to input two numbers and print their sum.

```
python Copy code
# Prompting the user to enter the first number
num1 = float(input("Enter first number: "))

# Prompting the user to enter the second number
num2 = float(input("Enter second number: "))

# Performing addition operation
sum = num1 + num2

# Displaying the result of the addition
print("The sum of the two numbers is: " + str(sum))
```

Arithmetic Operators :



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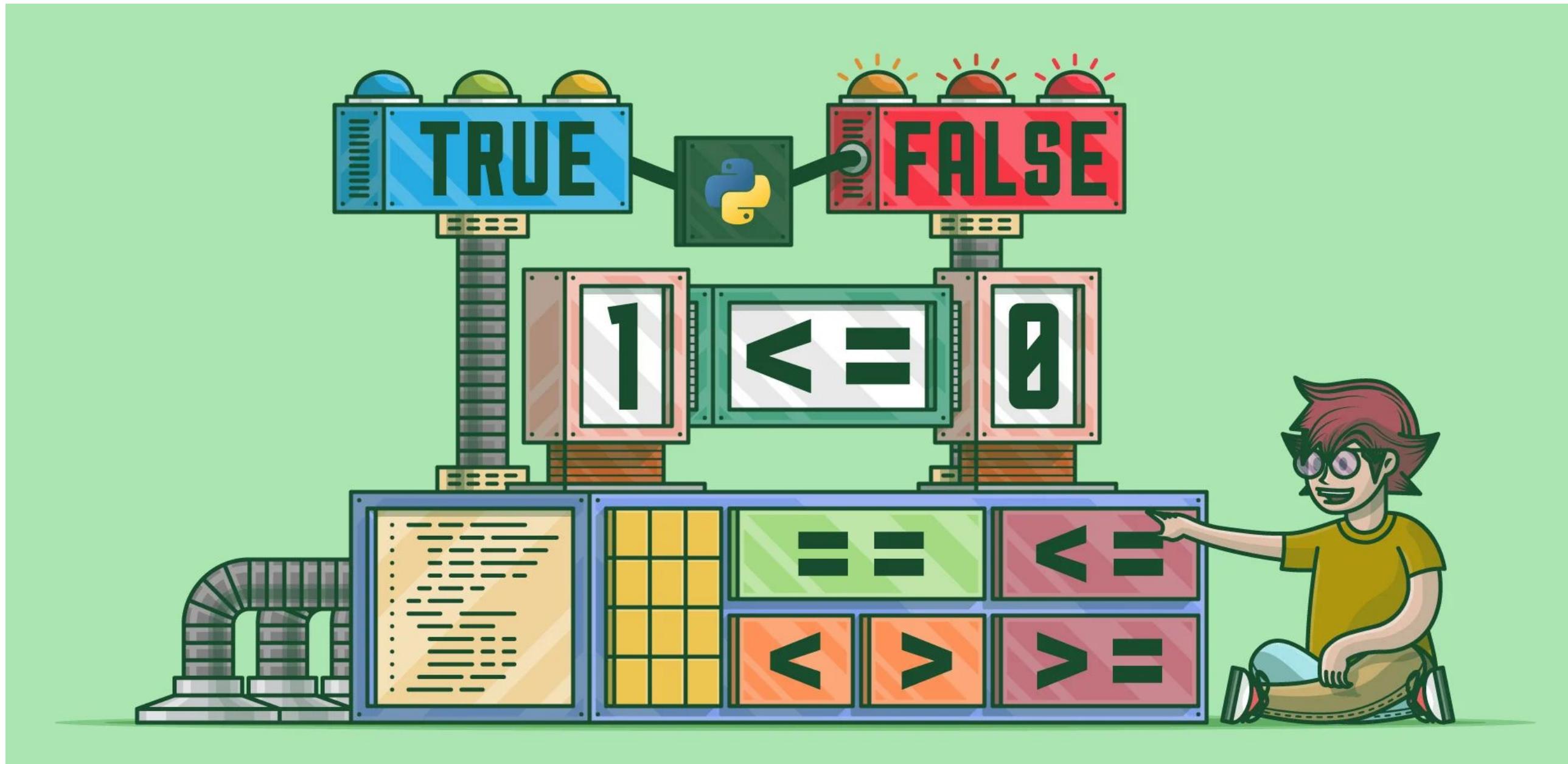
1. Addition (+)
2. Subtraction (-)
3. Multiplication (*)
4. Division (/)
5. Floor Division (//)
6. Modulus (%)
7. Exponentiation (**)

Lets solve Coding Questions!

Arithmetic Transformation

Calculate Age

Comparison Operators :



Comparison Operators :

1. **`==` : Equal to**
2. **`!=` : Not equal to**
3. **`>` : Greater than**
4. **`<` : Less than**
5. **`>=` : Greater than or equal to**
6. **`<=` : Less than or equal to**

Village Feast

Thank You!