

# Python Variables Fundamentals for Beginners

In Python, variables are used to store data values. A variable is like a container where you can keep information such as numbers, text, or other data types. Variables are created automatically when you assign a value to them.

## 1. Creating Variables

You do not need to declare variables in Python explicitly. A variable is created the moment you assign a value to it. **Example:** `x = 10 name = "Deepesh" price = 99.99 print(x, name, price)`

## 2. Variable Naming Rules

Variable names must follow these rules:

- Must start with a letter or underscore (\_).
- Cannot start with a number.
- Can only contain alpha-numeric characters and underscores (A–Z, a–z, 0–9, \_).
- Case-sensitive (Name and name are different variables).
- Should not use Python reserved keywords (like **if**, **for**, **while**, **class**, **def**).

## 3. Multiple Assignment

Python allows assigning values to multiple variables in a single line. **Example:** `a, b, c = 5, 10, 15  
print(a, b, c) # Assign same value to multiple variables x = y = z = 100 print(x, y, z)`

## 4. Types of Variables

Python automatically detects the type of variable based on the value assigned. **Example:** `x = 5 # int  
y = 3.14 # float name = "John" # str is_valid = True # bool`

## 5. Global and Local Variables

A variable declared inside a function is **local** by default. A variable declared outside any function is **global**. **Example:** `x = "global" def my_function(): x = "local" print("Inside function:", x) my_function()  
print("Outside function:", x)`

## 6. Constants in Python

Python does not have built-in constant types, but by convention, we use uppercase variable names for constants. **Example:** `PI = 3.14159 GRAVITY = 9.8 print(PI, GRAVITY)`

## 7. Common Variable Examples

Variable	Value	Type
name	'Alice'	str
age	25	int
salary	55000.75	float

is_active	True	bool
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## 8. Summary

- Variables are containers for storing data values.
- No need to declare type explicitly — Python infers it automatically.
- Follow naming rules and avoid reserved keywords.
- Use uppercase names for constants.
- Use global and local variables wisely to avoid confusion.