

Python Overview for Beginners

What is Python?

Python is a high-level, interpreted programming language known for its simplicity and readability. It's perfect for beginners and used across industries from web development to AI.

[Official Python Documentation](#)

Interpreted vs. Compiled Languages

Programming languages fall into two major categories based on how the code is run: interpreted and compiled.

- Interpreted languages run code line-by-line using an interpreter.
- Compiled languages translate code into machine language all at once, then run it.

Python is an interpreted language, which makes it easy to test and modify quickly, but can be slower than compiled ones.

Examples:

- Interpreted: Python, JavaScript, Ruby
- Compiled: C, C++, Go, Swift

Core Data Types

Python has several built-in data types you will use frequently:

```
age = 30          # int
temperature = 98.6 # float
name = "Chris"    # str
is_active = True  # bool
```

Collections

Collections are ways to group multiple values in one variable.

```
colors = ["red", "blue"]          # list
point = (3, 4)                    # tuple
person = {"name": "Alex", "age": 25} # dict
tags = {"python", "code"}         # set
```

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Functions

A function is a reusable block of code that performs a task.

```
def greet(name):  
    return "Hello, " + name
```

Types of Functions

```
# 1. Takes input, returns output  
def double(x):  
    return x * 2  
  
# 2. Takes input, returns nothing  
def greet(name):  
    print("Hello", name)  
  
# 3. No input, returns something  
def get_five():  
    return 5  
  
# 4. No input, no return  
def say_hi():  
    print("Hi!")
```

Recommended Free Tutorials

[Python Full Course for Beginners \(freeCodeCamp\)](#)

[W3Schools Python Exercises](#)

[Data Analysis with Python - Full Course](#)

[Django Full Course - Traversy Media](#)

[Automate with Python - Full Course](#)

[Unit Testing in Python with unittest](#)