

Python Programming — Day 1: Introduction & First Code

Course: Python Programming (Basic to Advanced)

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◆ 1. What is Python?

Python is a **simple yet powerful programming language** that's easy to learn and widely used across industries.

It was **created by Guido van Rossum in 1991** and has since become one of the most popular programming languages worldwide.

Its **clean and readable syntax** makes it perfect for beginners, while its **powerful libraries and frameworks** make it ideal for professionals building large-scale applications.

Creator

- **Name:** Guido van Rossum
- **Year of Creation:** 1991

★ 2. Key Features of Python

Feature	Description
 Easy to Learn	Python's syntax is close to English, making it beginner-friendly.
 Powerful & Versatile	One language for everything — from websites to AI.
 Huge Libraries	Thousands of ready-to-use modules and packages.
 Portable	Write once, run anywhere — Windows, Mac, or Linux.

Feature	Description
 Future-Ready	Powers AI, Machine Learning, Automation, and IoT.

3. Where Python is Used

Field	Applications
 Web Development	Instagram, YouTube, Spotify, and Netflix use Python.
 Data Science & AI	For machine learning, data analysis, and AI models.
 Cyber Security	Security testing, penetration testing, and networking tools.
 Automation	Automating repetitive tasks, web scraping, and workflows.
 Game Development	Using libraries like Pygame for interactive games.
 Robotics & IoT	Controlling robots, drones, and IoT devices.

4. How Python Works

- 1. Write Script:** Code is written in a `.py` file.
- 2. Interpreter:** Python reads and executes the code **line by line**.
- 3. Output:** Results appear instantly in the console.

Key Advantage:

No compilation required — Python directly executes code, making it faster to test and debug.

5. Installing Your Tools

Follow these three simple steps to get started:

- 1. Download Python:**
Visit [python.org](https://www.python.org) and install the latest version for your OS.
- 2. Install VS Code:**
Download from code.visualstudio.com.
- 3. Add Python Extension:**

In VS Code, go to *Extensions* → Search for **Python (by Microsoft)** → Install it.

6. Your First Python Program

Code:

```
print("Hello, World!")
```

Breakdown:

- `print()` → A built-in function that displays output.
- `"Hello, World!"` → A string (text enclosed in quotes).

Output:

```
Hello, World!
```



You've just written your first Python program — a traditional "Hello, World!" that marks the start of every programmer's journey.

÷ 7. Python as a Calculator

Python can instantly perform math operations.

Example:

```
print(10 + 20)
print(5 * 6)
print(100 / 4)
print(2 ** 3)
```

Output:

```
30  
30  
25.0  
8
```

Key Difference:

- Without quotes → Python performs calculation

```
print(10 + 20) # Output: 30
```

- With quotes → Treated as text

```
print("10 + 20") # Output: 10 + 20
```

8. Comments in Python

Definition:

Comments are notes in your code that **Python ignores**.

They help explain what your code does and make it easier to read later.

Syntax:

Use the `#` symbol to start a comment.

Examples:

```
# This is a comment  
print("Hello") # This prints Hello  
  
# Comments can explain code
```

```
print("Welcome") # Greeting message
```

Pro Tip:

Write comments to explain **why** you wrote something, not just **what** it does.

9. Recap — What You Learned Today

-  What Python is and its main features
 -  Real-world applications of Python
 -  Setting up Python and VS Code
 -  Writing your first `print()` program
 -  Using Python as a calculator
 -  Writing comments and debugging basics
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Next Class Preview

- **Variables:** Storing and reusing data
 - **Data Types:** Numbers, strings, and more
 - **Practical Exercises:** Small coding challenges
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Assignment

 Write 5 **print statements** introducing yourself.

 Example:

```
print("My name is Mahak.")  
print("I am learning Python.")  
print("I love technology.")  
print("Python is fun!")  
print("I will be a great coder!")
```



Create a **small math program** that calculates your **age after 10 years**.
