



INTRODUCTION TO PYTHON



Date : _____

Page No. : _____

Python is a high-level, interpreted, general-purpose programming language.
It is simple to learn, easy to read and has a large standard library.

1 WHAT IS PYTHON?

- Python is a high-level programming language.
- It was created by Guido van Rossum and first released in 1991.
- It is interpreted, meaning code is executed line by line.
- Python supports multiple programming paradigms: procedural, object-oriented and functional.
- It is platform independent.



2 HISTORY OF PYTHON



- 1989 ○ Guido van Rossum started working on Python.
- 1991 ○ Python 0.9.0 released.
- 1994 ○ Python 1.0 released with functional programming features.
- 2000 ○ Python 2.0 released with garbage collection and Unicode support.
- 2008 ○ Python 3.0 released (major revision).
- 2020+ ○ Python continues to evolve with regular updates.

3 APPLICATIONS OF PYTHON



1. Web Development

Used in Django, Flask, etc. for building web applications.



2. Data Science & Analytics

Used for data analysis, visualization, machine learning.



3. Artificial Intelligence

Used in machine learning, deep learning, and neural networks.



4. Automation & Scripting

Used for automating tasks and writing scripts.



5. Game Development

Used in game engines like Pygame.



6. Embedded Systems

Used in IoT, robotics and embedded applications.

4 FEATURES OF PYTHON

- ✓ Simple and easy to learn
- ✓ High-level language
- ✓ Interpreted language
- ✓ Readable and clean syntax
- ✓ Object-oriented
- ✓ Portable (platform independent)
- ✓ Extensive standard library
- ✓ Open source
- ✓ Dynamically typed
- ✓ Automatic memory management
- ✓ Supports multiple paradigms
- ✓ Large community support



5 ADVANTAGES OF PYTHON



- Easy to learn and use.
- Reduces development time.
- Large standard library - "batteries included".
- Cross-platform compatibility.
- Free and open source.
- Supports multiple programming paradigms.
- Strong community support.
- High productivity.
- Easy integration with other technologies.

6 WHY PYTHON IS POPULAR?



- ★ Simple syntax similar to English.
- ★ Versatile - used in many domains.
- ★ Huge demand in the job market.
- ★ Strong community and resources.
- ★ Regular updates and improvements.
- ★ Ideal language for beginners and experts.

7 CAREER OPPORTUNITIES WITH PYTHON

- 👤 Python Developer
- 👤 Web Developer (Django/Flask)
- 👤 Data Analyst
- 👤 Data Scientist
- 👤 Machine Learning Engineer
- 👤 AI Engineer
- 👤 Automation Engineer
- 👤 Software Engineer
- 👤 Research Scientist
- 👤 Game Developer
- 👤 DevOps Engineer
- 👤 Backend Developer

Industries Using Python

- ★ IT & Software
- ★ Finance & Banking
- ★ Healthcare
- ★ Education
- ★ E-commerce
- ★ Media & Entertainment
- ★ Automotive
- ★ Aerospace
- ★ Government & Research

Sample Areas Where Python is Used

- Google, YouTube - backend services
- Instagram - built using Django
- Netflix - data analysis & recommendation
- Spotify - data processing
- NASA - data analysis & simulations



Remember

Python is not just a language,
it is a powerful tool to build your
future!



Exam Tip

Learn the basics well,
practice regularly and
build small projects.

Practice more at www.codestepacademy.in
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DOWNLOADING PYTHON & RUNNING YOUR FIRST PROGRAM ★

Date : _____

Page No. : _____

- Python can be used in two modes: Interactive Mode and Script Mode.
- Let's learn how to download Python, write a simple program, save it and run.

1. DOWNLOADING PYTHON

- Go to the official website:
<https://www.python.org>
- Click on the "Downloads" menu.
- Download the latest stable version of Python 3.x for Windows.
- Run the installer.
- IMPORTANT: Check the box "Add Python to PATH" and then click "Install Now".



Don't forget to check this! ★

2. MODES IN PYTHON

Python can work in two modes:

(A) INTERACTIVE MODE >>>

- You type commands directly in the Python shell.
- Output is shown immediately.
- Useful for quick testing.

How to start?

- Open Command Prompt / Terminal
- Type: python and press Enter

```
>>> print("Hello Python!")
Hello Python!
```

(B) SCRIPT MODE

- You write code in a file (script) and run it.
- Useful for larger programs.
- Code is saved for future use.

How to start?

- Write your code in an editor (IDLE, VS Code, PyCharm, etc.)
- Save the file with .py extension
- Run the file using Python

3. SIMPLE PROGRAM

More Examples

Program: Display "Hello, World!"

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

Output:

Hello, World!

1. Addition of Two Numbers

```
a = 10
b = 25
c = a + b
print("Sum =", c)
```

Output:

Sum = 35

2. Area of Circle

```
import math
r = 5
area = math.pi * r * r
print("Area =", area)
```

Output:

Area = 78.53981633974483

3. Check Even or Odd

```
n = int(input("Enter a number: "))
if n % 2 == 0:
    print("Even")
else:
    print("Odd")
```

Output:

Enter a number: 7
Odd

Tip

- In script mode, you write once and run many times.
- Indentation is very important in Python.

4. HOW TO SAVE A PYTHON FILE

- Open any editor (IDLE / VS Code / Notepad++ / etc.)
- Write your Python code.
- Go to File → Save As
- Choose the folder where you want to save.
- In "File name", give a name for your program.
- In "Save as type", select "All Files".
- Click on Save.



5. FILE EXTENSION

- Python files are saved with .py extension.
- Example:

File Name (Correct)	File Name (Incorrect)
hello.py ✓	hello.py.txt ✗
add.py ✓	add.docx ✗
area_circle.py ✓	program.pdf ✗

Always save your Python program with .py extension.

6. HOW TO RUN A PYTHON FILE

- Open Command Prompt / Terminal
- Navigate to the folder where your file is saved.

Example:

```
cd C:\Users\YourName\Desktop\PythonPrograms
```

- Run the program using:

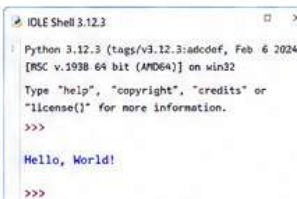
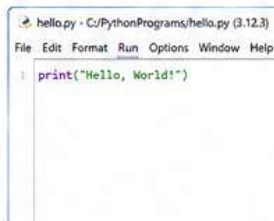
```
python filename.py
```

- Output will be displayed in the terminal.



7. RUNNING A PROGRAM USING IDLE (Built-in Editor)

- Open IDLE (comes with installation)
- File → New File
- Write your code
- File → Save (give .py extension)
- Press F5 or Run → Run Module



QUICK SUMMARY ★

- ✓ Download Python from python.org
- ✓ Choose "Add Python to PATH" during installation
- ✓ Use Interactive Mode for quick testing
- ✓ Use Script Mode for writing complete programs
- ✓ Save files with .py extension
- ✓ Run using: python filename.py

Exam Tip

Practice writing small programs daily. This helps you understand logic and syntax better.

Practice more at www.codestepacademy.in
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