

Topic: Python Introduction – Strong Foundation

What is Python?

- **Python ek high-level, interpreted, object-oriented programming language hai**
 - Readable aur simple syntax → English jaise
 - Open-source aur free to use
 - Cross-platform (Windows, Mac, Linux sab pe chalega)
 - Huge libraries ecosystem (specially AI/ML ke liye best)
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Why Python?

- **Easy to Learn:** Beginners ke liye perfect
 - **Less Code, More Work:** Short syntax → fast development
 - **AI/ML Friendly:** TensorFlow, PyTorch, Pandas, NumPy jaise libraries ready
 - **Multi-purpose:** AI, web dev, automation, data science sab possible
 - **Community Support:** Millions of developers help karte hain
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Python ka History

- Invented by **Guido van Rossum** in **1989** (Netherlands)
 - First release: **1991**
 - Inspired by: ABC language, but simpler & more powerful
 - Current stable version (2025 mein): Python 3.x series (Python 3.13 aagaya)
 - Name ka reason: Monty Python comedy group, not the snake
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Where is Python Used? (Applications)

Especially AI/ML mein:

- Machine Learning models (Scikit-learn, TensorFlow, PyTorch)
- Deep Learning (Computer Vision, NLP, Speech Recognition)
- Data Analysis (Pandas, NumPy)
- AI Chatbots & Virtual Assistants (LangChain, Transformers)

Other Areas:

- Web Development (Django, Flask)
 - Automation/Scripting (Web scraping, task automation)
 - Cybersecurity (Pen testing tools)
 - IoT & Robotics (Raspberry Pi)
 - Game Dev (Pygame)
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How to Start with Python?

1. **Install Python:**
2. • python.org se latest version download

- Or Anaconda (AI/ML ke liye best package)

2. Write First Program:

```
python
CopyEditprint("Hello, Rishabh! AI Engineer ban rahe ho 🚀")
```

3. Run Program:

4.
 - VS Code / PyCharm / Jupyter Notebook
 - Command Line:

```
bash
CopyEditpython file_name.py
```

Code Example

```
python
CopyEdit# Python Basics Example
name = "Rishabh"
goal = "AI Engineer 2025"

print("Hello,", name, "! Goal:", goal)
print("2 + 3 =", 2 + 3)
```

Output:

```
yaml
CopyEditHello, Rishabh! Goal: AI Engineer 2025
2 + 3 = 5
```

Common Errors (Beginners Face)

Error	Reason	Fix
IndentationError	Space/tab galat lagana	Consistent 4 spaces use karo
SyntaxError	Bracket, quotes missing	Code check karo carefully
NameError	Variable use kiya but define nahi kiya Pehle assign karo	
ModuleNotFoundError	Library install nahi hai	pip install library_name

Interview Explanation (Smart Hinglish)

Q1: What is Python and why is it so popular?

Python ek high-level, interpreted language hai jo readable syntax, large libraries aur cross-platform support ke liye popular hai.
AI/ML, data science, automation, web dev sab mein use hota hai.

Q2: Who invented Python and why?

Guido van Rossum ne 1989 mein Python banaya taaki programming easy aur fun ho, aur C/Java ke complexity ko reduce kiya ja sake.

Q3: Why is Python preferred for AI/ML?

- Huge libraries (NumPy, Pandas, TensorFlow, PyTorch)
 - Simple syntax → focus on logic, not code length
 - Large community support
 - Easy integration with C/C++ for performance
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Mini Practice Task

python

CopyEdit# Apna Python intro code likho

```
my_name = "Rishabh"
```

```
my_goal = "Become AI Engineer 2025"
```

```
my_skill = "Python"
```

```
print(f"Hi, I am {my_name}, my goal is {my_goal}, and my main skill is {my_skill}")
```