

PYTHON WORKBOOK – SECTION 1

Programmer's Hub – by CodeWithVivek

<https://www.youtube.com/@code-with-vivek>

1.1 What is Python?

Quick Explanation

Python is a high-level, beginner-friendly programming language used in:

- Web development
- Data science
- AI & Machine Learning
- Automation
- Application development

Its main strength is **readability** — Python code is designed to look like English.

Try This:

Write down three areas where you think Python could help in your own career or projects.

1. _____
 2. _____
 3. _____
-

Do You Understand?

- ✓ What does “high-level language” mean?
- ✓ Why is Python used in AI?

1.2 Installing Python

Quick Steps

1. Visit: python.org
2. Download the latest version
3. On Windows → check “**Add Python to PATH**”
4. Verify installation:

Windows: `python --version`

Mac/Linux: `python3 --version`

Try This:

Write the version installed on your computer.

My Python Version: _____

Debug This:

If the command `python --version` gives an error:

What should you check? _____

1.3 First Python Program

The Classic Program

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

When you run this, the interpreter executes it line by line.

Your Turn:

Write a program to print your name and age.

Write here:

Do You Understand?

- ✓ What does the print() function do?
- ✓ What happens if you remove the quotes?

1.4 How Python Executes Code

Your Code



Python Interpreter



Executed Output

Concept

Python has **two main execution modes**:

1. **Interactive Mode** (Python shell)
2. **Script Mode** (.py files)

Script mode is used for real programs.

Try This:

Write the difference between interactive and script mode in your own words:

Interactive Mode: _____

Script Mode: _____

 **1.5 Editors & IDEs**

 **Popular Editors**

- **VS Code** → lightweight, extensible
 - **PyCharm** → professional IDE
 - **Jupyter Notebook** → best for data science
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 **Your Turn:**

Which editor are you going to use for this course?

Why?

Editor: _____

Reason: _____

1.6 Input & Output

Basics

- Use `print()` to show output.
 - Use `input()` to take user input.
 - Always convert numeric input (`input` returns a string).
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Try This:

Write a program that:

1. Asks for two numbers
2. Adds them
3. Prints the result

Write here:

Debug This:

Why does this program fail?

```
num = input("Enter a number: ")  
print(num + 5)
```

Think: `input()` returns _____ (string/number?)

 **1.7 Comments** **Notes**

Comments are ignored by Python.

- Single line: # comment
 - Multi-line: triple quotes
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 **Your Turn:**

Add comments to your earlier programs explaining what each line does.

Add comments here:

Section Summary

- ✓ Python is beginner-friendly and widely used.
 - ✓ Installation & PATH setup are essential.
 - ✓ You can run Python in interactive or script mode.
 - ✓ print() and input() are the first tools you learn.
 - ✓ Comments help document your code.
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Mini Assignment (Submit at end of Section 1)

Create a script named **intro.py** that:

1. Prints your name
2. Prints your learning goal
3. Asks your age
4. Prints: "Next year, you will be X years old."
5. Includes at least **three comments**

Write your draft here:
