Chapter 1

How Python Code Executes

- Python code runs line by line (interpreter-based)
- No need to compile manually — interpreter handles it
- Each line is converted into bytecode, then executed by the Python Virtual Machine (PVM)
- Errors stop execution immediately
- Example:

```
print('Hello')
print('World')
```

Variables & Memory Concept

- Variable = name that stores a value in memory
- In Python, variables are used to store data that can be referenced and manipulated during program execution
- Example:

  ```
  x = 10
  y = 'Hello'
  ```

- Python automatically decides the data type
- Variables are references (labels) pointing to memory objects
- Use id() to check memory location:

  ```
  print(id(x))
  ```

Taking User Input

- Use input() to get user input

- Example:

  ```
  name = input('Enter your name: ')
  print('Hello', name)
  ```

  input() always returns string
- Convert it before performing calculations

Expressions

Combination of operators and operands

x=10 [not expression]
x+3 [expression, 2 operands, 1 operator and returns a value]

Python Fundamentals – Quick Cheat Sheet

- Concept | Example | Output

Print | print('Hi') | Hi
Variable | x = 5 | stores 5
Input | input('Enter:') | takes user input
Type Conversion | int('10') | 10
Round | round(3.1415, 2) | 3.14

More Topics

- Expressions and statement - Book
- Comment
- Indentation

Summary

- ✅ Python executes code line-by-line
- ✅ Variables store references in memory
- ✅ Input always returns string
- ✅ Expressions and statement - Book
- ✅ Comment
- ✅ Indentation