

Python Programming Book Notes

Chapter 1: Introduction to Python

Python is a high-level, interpreted programming language created by Guido van Rossum. It is easy to learn and widely used in web development, data science, AI, and automation.

Chapter 2: Python Basics

- Variables and Data Types: int, float, string, boolean
- Input and Output: input(), print()
- Comments: # for single line comments

Chapter 3: Control Statements

- if, elif, else
- for loops
- while loops
- break and continue

Chapter 4: Functions

Functions are blocks of reusable code.

Syntax:

```
def function_name():
    code
```

Chapter 5: Data Structures

- List
- Tuple
- Set
- Dictionary

Chapter 6: Object-Oriented Programming (OOP)

- Class and Object
- Inheritance
- Polymorphism
- Encapsulation

Chapter 7: Modules and Packages

- import math
- import os
- Creating custom modules

Chapter 8: File Handling

- Reading files
- Writing files
- Using with open()

Chapter 9: Exception Handling

- try, except, finally

Chapter 10: Applications of Python

- Web Development (Django, Flask)
- Data Science
- Machine Learning
- Automation