Python For Absolute Beginners

Course Details
Start Date: February 03, 2025
End Date: March 03, 2025
Trainers: Muhammad Zohad Ijaz, Mariam Ashraf
Moderators: Muhammad Hateem Hussain, Muhammad Atif
Schedule: Monday to Friday, 10 PM to 11 PM
Duration: 4 Weeks

Week 1: Introduction and Basics

- **Class 1: Introduction to iCodeGuru and Programming Basics**
  - Introduction of iCodeGuru
  - What is a **programming language**?
  - Installing **IDE (Integrated Development Environment)**
- **Class 2: Python Syntax and Basic Concepts**
  - Python syntax
  - **Comments**
  - Reserved words or **keywords**
- **Class 3: Python Variables**
  - Python variables
  - Rules for assigning names to variables
  - Types of variable name cases
  - Assigning values to variables
  - **Multiple values** to multiple variables
  - **One value** to multiple variables
  - Getting the **address of a variable**
- **Class 4: Data Types and Type Casting**
  - Data types
  - **Type casting** in Python
- **Class 5: Practice and Review**
  - Exercises on the topics covered
  - Q&A session

Week 2: Operators and Strings

- **Class 6: Assignment Review**
  - Review and discuss assignments from the previous week
- **Class 7: Operators**

- ○ **Arithmetic operators**
  - ○ Operator precedence
  - ○ **Assignment operators**
  - ○ Comparison operators
  - ○ **Logical operators**
  - ○ Membership operators
  - ○ Identity operators
- **Class 8: Python Strings**
  - ○ Python strings
  - ○ Multiline strings
  - ○ String concatenation
  - ○ Strings as **arrays**
  - ○ String length
  - ○ String index
  - ○ Looping through a string
- **Class 9: String Methods and Manipulation**
  - ○ Membership operators
  - ○ Slicing
  - ○ Negative indexing
  - ○ **String methods**
  - ○ Remove whitespaces
  - ○ Replace string
  - ○ Split string
- **Class 10: Quiz 1**
  - ○ Quiz covering topics from Week 1 and Week 2

Week 3: Lists, Tuples, and Sets

- **Class 11: Assignment Review**
  - ○ Review and discuss assignments from the previous week
- **Class 12: Lists**
  - ○ Lists
  - ○ List length
  - ○ Access list items
  - ○ Membership operators in lists
  - ○ Change list items
  - ○ Add list items
  - ○ Remove list items
  - ○ Sort list
  - ○ Copy list
  - ○ Join lists
  - ○ Nested lists

- **Class 13: Tuples**
  - Tuples
  - Accessing tuple elements
  - Membership operators in tuples
  - Packing a tuple
  - Tuple methods
- **Class 14: Sets**
  - Sets
  - Length of a set
  - Access set items
  - Remove items from a set
  - Add items to a set
  - Join sets
  - Some set methods
- **Class 15: Practice and Review**
  - Exercises on the topics covered
  - Q&A session

Week 4: Dictionaries and Control Flow

- **Class 16: Assignment Review**
  - Review and discuss assignments from the previous week
- **Class 17: Dictionaries**
  - Dictionaries
  - Length of a dictionary
  - Key-value data types
  - Accessing elements in a dictionary
  - Add elements to the dictionary
  - Change values in the dictionary
  - Membership operators in a dictionary
  - Dictionary methods
  - Removing elements from a dictionary
  - **dict() constructor**
- **Class 18: Quiz 2 and Final Project Introduction**
  - Quiz covering topics from Week 3 and Week 4
  - Introduction to the final project
  - Project guidelines and expectations
- **Class 19: Control Flow**
  - Conditions
  - Short if and if-else
  - Logical operators in conditions
  - Nested if

- ○ Pass statement
- ○ Looping constructs (while, for)
- ○ Break statement
- ○ Else in while loop
- ○ Nested loops
- ○ Break and continue statements in for loop
- ○ Else in for loop
- **Class 20: Functions and Course Wrap-Up**
  - ○ Functions
  - ○ Built-in functions
  - ○ List comprehension
  - ○ Project presentation
  - ○ Review of key concepts
  - ○ Q&A session and tips for further learning