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Python Programming for Beginners Training

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Python Programming for Beginners Training

Overview

- Introduction to Python programming language and its practical applications
 - Understanding programming fundamentals using Python
 - Learning how to write, run, and debug Python programs
 - Introduction to problem-solving and logical thinking in programming
 - Understanding Python syntax, data types, operators, and control structures
 - Developing basic scripting and automation skills
 - Introduction to functions, files, and object-oriented programming concepts
 - Building hands-on practical exercises and mini-projects for beginners
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Training Objectives

By the end of this training, participants will be able to:

- Understand the fundamentals of programming concepts
 - Write and execute basic Python programs
 - Understand Python syntax and coding structure
 - Work with variables, data types, and operators
 - Use conditional statements and loops for decision-making and repetition
 - Create and use functions to organize code
 - Handle errors and exceptions in Python
 - Read from and write to files
 - Understand basic object-oriented programming concepts
 - Develop simple automation scripts and applications
 - Apply problem-solving and logical thinking techniques using Python
 - Build foundational skills for advanced programming and data-related technologies
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Training Outline

Module 1: Introduction to Programming and Python

- What is programming?
 - Introduction to Python language
 - Applications of Python
 - Installing Python and development environments
 - Running Python scripts
 - Understanding Python syntax and structure
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Module 2: Variables and Data Types

- Variables and naming conventions
 - Numbers and numeric operations
 - Strings and string manipulation
 - Boolean data types
 - Type conversion
 - User input and output
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Module 3: Operators and Expressions

- Arithmetic operators
 - Comparison operators
 - Logical operators
 - Assignment operators
 - Operator precedence
 - Writing expressions
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Module 4: Conditional Statements

- Introduction to decision-making
 - if statements
 - if-else conditions
 - elif statements
 - Nested conditions
 - Practical condition-based examples
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Module 5: Loops and Iteration

- Introduction to loops
 - for loops
 - while loops
 - Loop control statements
 - break
 - continue
 - pass
 - Nested loops
 - Practical looping exercises
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Module 6: Functions

- What are functions?
- Defining and calling functions
- Function parameters and arguments
- Return values
- Variable scope
- Built-in functions

- Creating reusable code
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Module 7: Data Structures

- Lists
 - Tuples
 - Dictionaries
 - Sets
 - Accessing and manipulating data
 - Iterating through collections
 - Practical exercises using data structures
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Module 8: File Handling

- Reading files
 - Writing files
 - Working with text files
 - File paths and file operations
 - Practical file handling exercises
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Module 9: Error Handling and Debugging

- Understanding errors and exceptions
 - try-except blocks
 - Common Python errors
 - Debugging techniques
 - Writing reliable code
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Module 10: Introduction to Object-Oriented Programming (OOP)

- Classes and objects
 - Attributes and methods
 - Constructors
 - Creating simple classes
 - Basic OOP concepts in Python
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Module 11: Python Libraries and Modules

- Importing modules
 - Using built-in Python libraries
 - Installing external packages using pip
 - Introduction to useful libraries
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Module 12: Practical Exercises and Mini Projects

- Calculator application
 - Simple file management script
 - Number guessing game
 - Data processing examples
 - Basic automation scripts
 - Final hands-on mini project
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Module 13: Best Practices and Next Steps

- Writing clean and readable code
- Python coding standards
- Introduction to advanced Python topics
- Career paths and learning roadmap
- Additional learning resources and practice recommendation