

Introduction to Python

Course Code

DEV531

Duration

2 Days

Format

Classroom | Virtual

Overview

Our two-day Introduction to Python training course will provide you with an understanding of what Python (3) is, why it has become a popular programming language. Delegates will look at installing Python, setting up the environment and running Python programs (scripts vs. interactive mode).

Content

Section 1: Introduction to Python

1.1 Introduction to Python

- What is Python and why it's popular
- Installing Python and setting up the environment
- Running Python programs (scripts vs. interactive mode)

1.2 Variables & Basic Syntax

- Naming rules and conventions
- Assigning values
- Multiple assignment
- Comments and indentation

1.3 Data Types

- Built-in data types overview
- int, float, str, bool, None

1.4 Working With Numbers

- Basic arithmetic
- Division types (/ and //)
- Modulo %
- Order of operations
- Type conversion (int(), float())

1.5 Strings

- Creating and printing strings
- Escape characters and raw strings
- String slicing and indexing

Who Should Attend

This course covers the key pre-requisites for a large range of further learning opportunities involving Python, Data, and AI and suitable for individuals looking at these opportunities.

Prerequisites

No prior experience with Python is necessary, though it is assumed that you will be familiar with core data concepts such as simple table structures and data types.

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[Format](#)

Classroom | Virtual

- String methods (upper(), split(), etc.)
- f-strings and string formatting

1.6 Collections

- Lists: indexing, slicing, modification, list methods, list comprehensions (intro)
- Tuples: immutability, use cases, unpacking
- Dictionaries: key
- value pairs, updating values, looping
- Creating sets, unique elements, operations (union, intersection, difference)

Section 2

- Python Control Flow, Functions & OOP

2.1 Conditionals

- if statements
- else and elif
- Nested conditionals
- Truthiness and falsiness

2.2 Loops

- for loops
- while loops
- Loop control: break, continue, pass
- Looping through lists, strings, dictionaries

2.3 Functions

- Defining functions
- Parameters and return values
- Default arguments
- Keyword vs positional arguments
- Variable-length arguments (*args, **kwargs)
- Scope (local vs global)

2.4 Working With Files

- Reading files (open, read, readlines)

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Classroom | Virtual

- Writing files (write, writelines)
- Using with for safe file handling

2.5 Error Handling

- Common error types
- try
- except blocks
- else and finally
- Raising exceptions
- Creating custom error messages

2.6 Introduction to Classes and OOP

- What is OOP?
- Classes and objects
- Defining a class
- Constructors (__init__)
- Attributes and methods
- Encapsulation
- Basic inheritance
- Method overriding