New Horizons®

Introduction to Programming with Python(v1.0)

Summary

Length: 16 hours Level: Foundational

Though Python has been in use for nearly thirty years, it has become one of the most popular languages for software development, particularly within the fields of data science, machine learning, artificial intelligence, and web development - all areas in which Python is widely used. Whether you're relatively new to programming, or have experience in other programming languages, this course will provide you with a comprehensive first exposure to the Python programming language that can provide you with a quick start in Python, or as the foundation for further learning. You will learn elements of the Python 3 language and development strategies by creating a complete program that performs a wide range of operations on a variety of data types, structures, and objects, implements pro

Learning Objectives

Set up Python and develop a simple application.
Declare and perform operations on simple data types, including strings, numbers, and dates.
Declare and perform operations on data structures, including lists, ranges, tuples, dictionaries, and sets.
Write conditional statements and loops.
Define and use functions, classes, and modules.
Manage files and directories through code.
Deal with exceptions.

Course Outline

1. **Setting Up Python and Developing a Simple Application**

    Set Up the Development Environment
    Write Python StatementsCreate a Python Application
    Prevent Errors

2. **Processing Simple Data Types**

    Process Strings and Integers
    Process Decimals, Floats, and Mixed Number Types

3. **Processing Data Structures**

    Process Ordered Data Structures
    Process Unordered Data Structures

4. **Writing Conditional Statements and Loops in Python**

    Write a Conditional Statement
    Write a Loop

5. **Structuring Code for Reuse**

    Define and Call a Function
    Define and Instantiate a Class
    Import and Use a Module

6. **Writing Code to Process Files and Directories**

Write to a Text File
Read from a Text File
Get the Contents of a Directory
Manage Files and Directories

7.   Dealing with Exceptions

Handle Exceptions
Raise Exceptions

Audience

This course is designed for people who want to learn the Python programming language in preparation for using Python to develop software for a wide range of applications, such as data science, machine learning, artificial intelligence, and web development.

Prerequisites

Some experience programming in an object-oriented language is helpful, but even if you don't have such experience, this course can be useful to those that are new to programming.