Introduction to Python for Security

CB108

05
Days

Introduction to Python for Security

Outline

Python is one of the most powerful programming languages for ethical hacking.

This course introduces Python's basic syntax, with a focus on applying the correct logic when writing code, & Python's development environment, advanced data structure, file system, OS modules, & functions.

In addition, the course covers Python usage for network communication, web fetching, parsing, and data extraction.

Target Audience

▮ Students with low-level knowledge of Python programming.

▮ Students who work with offensive and defensive Cyber Security.

▮ Students who need to create and work with automation scripts and tools.

Prerequisites

Before attending this course, students must have the following technical knowledge:

▮ Working knowledge of the Windows OS.

▮ Working knowledge of the Linux OS.

▮ Knowledge of 3rd party application installations (such as IDEs).

▮ Good knowledge of at least one programming language.

Objectives

Upon course completion, participants will be able to:

▮ Work with Python as a programming language.

▮ Use Python's basic syntax in both IDEs and the CLI.

▮ Create automation scripts using Python.

▮ Write scripts with proper logic and code management.

▮ Fetch, parse, and extract data from websites.

▮ Write scripts that communicate, receive, and send data over the web.

Content

Module 01
Day 1
Introduction to Python

- Introduction to code programming.
- Python installation.
- PyCharm IDE installation.
- Creating Project & Python Env configuration.
- Basic Syntax, String Formation & code Execution.

Module 02
Day 1
Data Types & Conditions

- Variables with Different Data Types.
- User's Input.
- Operators, Comparative & Arithmetic.
- Type Casting.
- Condition's, logic and syntax.
- Dictionary, Tuple & lists.
- Nested Lists.

Module 03
Day 2
Loops

- For Loops, over Lists.
- While Loops.
- Break & Continue Uses.
- Strings Manipulation.
- Combining Loops & Conditions.

Module 04
Day 2
File System & Error handling

- Try & Except.
- Exceptions Types.
- Error Handling, full Methodology.
- File Permissions - Create, Append, read & Write.
- OS System Module Functions.
- Platform Module Functions.
- Log File Parsing.

Day 3 — Module 05
Function & code handling

- Functions Structure & uses.
- Return Different Data Types.
- Parameters in Functions.
- Recursion Function and its uses.
- Scope & Global Keyword.
- OOP & Proper Code Management.

Day 5 — Module 07
Web Fetching & Parsing

- Web Communication library.
- Requests GET functions.
- Requests Sessions.
- Requests with Parameters.
- Requests Via Post.
- Beautiful Soup library.
- Filter & search with bs4.
- Extracting Data from Web.

Day 4 — Module 06
Network Communication

- Introduction to SOCKET library.
- Creating Client Socket.
- Creating Server Socket.
- Sanding & Receiving Data.
- Set Echo Communication, Client Vs Server.
- Retrieving Data using OS Module.

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