

Advanced Python Training

- Duration:
 - 3 days (6 hours per day, online training via Microsoft Teams)
- Prerequisites:
 - Attendees **MUST HAVE** knowledge of Python language
 - Attendees **MUST HAVE** basic knowledge of HTML
- Software setup:
 - Python 3.8
 - PyCharm Community Edition
 - SQLite3

Detailed course outline

- Day 1:
 - Session 1:
 - Object oriented programming in Python
 - Creating classes and objects
 - The “self” argument
 - The `__init__` method
 - The `__str__` method
 - Attributes (member variables and methods)
 - Session 2:
 - Properties of an object
 - Creating a getter
 - Creating a setter
 - Inheritance
 - Single inheritance
 - Multilevel inheritance
 - Constructor calls
 - Multiple inheritance
 - Session 3:
 - Persistence in Python
 - Basic file handling
 - csv
 - json
 - pickle
 - marshal
 - shelve
- Day 2:
 - Session 1:
 - Decorators in Python
 - Overview of decorators
 - Nested functions and closures

- Controlling function behaviour
 - Using the @annotation style
 - Using class as for a decorator
- Session 2:
 - Multithreading in Python
 - Threads overview and the threading module
 - Starting a new thread
 - Thread synchronization
 - Multiprocessing in Python
 - Process based parallelism
 - The Process class
 - Contexts and start methods
 - Exchanging objects between processes
 - Synchronization between processes
- Session 3:
 - Working with Databases
 - Connecting to database
 - Creating tables
 - Inserting records
 - Updating a record
 - Deleting a record
 - Retrieving records
 - Handling transactions
- Day 3:
 - Session 1:
 - Creating a web application using Flask
 - Introduction to web apps
 - Introduction to Flask
 - Installing Flask
 - Creating a basic web application using Flask
 - Working with HTML templates
 - Handling GET and POST requests
 - Session 2:
 - RESTful web services
 - Overview of web services
 - SOAP v/s REST
 - REST constraints
 - Creating a new project for the REST API
 - Session 3:
 - Continuation of session 1
 - Handling GET/POST/PUT/DELETE requests
 - Testing the request/response
 - Connecting our RESTful services to access DB data