Publication date : 02/22/2024

Course : Python, system administration

Getting started with Python and its libraries for interacting with the machine

Practical course - 3d - 21h - Ref. PYX

Price : 2060 CHF E.T.

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BEST

You're a devops, an administrator, you manage computer systems, networks, databases... You want to be more efficient, improve your searches, automate your tasks, send e-mails based on the results obtained... Choose Python. By familiarizing yourself with the basics of this language and the necessary libraries, you'll be able to write Python scripts to interact with the machine and users. This first approach to Python's capabilities will get you up and running in no time.

Teaching objectives

At the end of the training, the participant will be able to:

- Master the basics of the Python language
- Get an overview of the Python libraries available for system administration tasks
- Install a Python library
- Perform system administration tasks using Python scripts
- Understanding Python's object syntax

Intended audience

System administrators, devops, developers wishing to learn Python for system administration.

Prerequisites

Completion of the course "Introduction to Programming with Python" (THO) or basic knowledge of algorithms (variables, arrays, functions).

PARTICIPANTS

System administrators, devops, developers wishing to learn Python for system administration.

PREREQUISITES

Completion of the course "Introduction to Programming with Python" (THO) or basic knowledge of algorithms (variables, arrays, functions).

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant’s academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they’ve developed.

Practical details

Exercise

Numerous exercises are used to illustrate the topics.

Teaching methods

Active pedagogy, feedback and demonstrations are used by the trainer to help participants put their new skills into practice more quickly.

Course schedule

1 The basics of the Python language

- The main data types: strings, Booleans, numbers.
- Indexed arrays (lists and tuples), associative arrays (dictionaries), byte arrays.
- The 3 control structures: for and while loops, if/elif/else tests.
- Create and use functions.
- Handle errors with try/except/finally exception handling.
- Read and write text/binary files.
- Understand Python's main pitfall: mutable and immutable types.

Hands-on work

Basic algorithmic exercises to familiarize you with the language and get you comfortable with data manipulation: generating IP address masks, extracting strings, formatting data...

2 A little further with Python

- Generators: understand their use and know how to create them.
- The basics of object programming to create new data types: classes/attributes/methods.
- Create and use a library.

Hands-on work

Create a library and reuse it in different scripts. Create an IP generator.

3 System administration basics

- Analyze logs with regular expressions.
- Handle and analyze CSV/Excel files with Pandas.
- Pass parameters to a script with argparse.
- Use a relational database.
- Execute system commands.

Hands-on work

Search for intrusions/errors in a log file. Insert CSV files into a relational database. Geolocate IP addresses. Create a tar/zip archive.

4 System administration add-ons

- Connect to a web API with requests and download HTML page content with scrapy.
- Send emails.
- Administer multiple machines with fabric and ansible.

Dates and locations

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

REMOTE CLASS
2026 : 11 Mar., 24 June, 7 Oct., 18 Nov.