

Python Programming with Red Hat (AD141)

Duration: 4 Days

Course Description:

Python is a popular programming language used by system administrators, data scientists, and developers to create web applications, custom Red Hat Ansible Automation modules, perform statistical analysis, and train AI/ML models. This course introduces the Python language and teaches fundamental concepts like control flow, loops, data structures, functions, file I/O, regular expressions, parsing JSON, and debugging. This course is based on Python 3 and RHEL 9.0.

Intended Audience:

- System administrators and DevOps personnel who want to use Python to automate operating system tasks
- Developers from other programming languages who want to learn Python for writing applications
- AI/ML, data scientists, and engineers who want to use Python for data analysis and machine learning

Course Outlines:

An Overview of Python 3

- Introduction to Python and setting up the developer environment

Basic Python Syntax

- Explore the basic syntax and semantics of Python

Language Components

- Understand the basic control flow features and operators

Collections

- Write programs that manipulate compound data using lists, sets, tuples and dictionaries

Functions

- Decompose your programs into composable functions

Modules

- Organize your code using Modules for flexibility and reuse

Classes in Python

- Explore Object Oriented Programming (OOP) with classes and objects

Exceptions

- Handle runtime errors using Exceptions

Input and Output

- Implement programs that read and write files

Data Structures

- Use advanced data structures like generators and comprehensions to reduce boilerplate code

Regular Expressions

- Use powerful regular expressions to manipulate textual data

Parsing JSON

- Read and write JSON data

Debugging

- Debug Python programs using the Python debugger (pdb)

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