Red Hat Training and Certification

AD141
Red Hat Training Presents: Introduction to Python Programming

Python programming for beginners

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.

Course content summary

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- Basics of Python syntax, functions and data types
- How to debug Python scripts using the Python debugger (pdb)
- Use Python data structures like dictionaries, sets, tuples and lists to handle compound data
- Learn Object-oriented programming in Python and Exception Handling
- How to read and write files in Python and parse JSON data
- Use powerful regular expressions in Python to manipulate text
- How to effectively structure large Python programs using modules and namespaces
- How to use third-party libraries using the pip CLI tool.

Audience for this course

- 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

Prerequisites for this course

- There are no prerequisites for this course.

Outline for this course

- **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)

Impact of this training

As a result of attending this course, you will be able to program in Python. You will be able to achieve this through learning and demonstrating the following skills:

- Quickly prototype and experiment with using Pythons easy to read syntax, dynamic typing and powerful data types
- Read and write files and JSON data
- Structure large programs using modules and Object Oriented Programming
- Handle errors using Exceptions and troubleshoot applications using the Python debugger
- Manipulate text data using powerful regular expressions and the standard library String functions

Course reference https://www.redhat.com/en/services/training/ad141-red-hat-training-presents-introduction-to-python-programming?section=overview