

Curriculum - Python

Section 1: Python - Introduction

Python – Course Plan
Course – Tasks, Quiz and Scripts
What is Network Automation?
Do We Really Need Network Automation?
What is Python?
Python Usage Area
Pycharm IDE

Section 2: Python - Installation

Python3 and Pycharm installation for Windows
Python3 and Pycharm installation for Linux
Python 2 vs Python 3 (Difference, usage, modules, print(), print)

Section 3: Python - Print and Input Functions

Print Function
Print Function Usage
Input Function

Section 4: Python - Data Types

Python Data Types
Quiz Data Types
String & Integer
String Methods
Quiz String
List
List Methods
List and List Methods Examples
Quiz List
Dictionary
Quiz Dictionary
Assignment 1: Arithmetic operators
Assignment 2: Convert Fahrenheit to Celsius

Section 5: Python - Statements and Conditions

If Statement

For Loop Statement

While Statement

Break Statement

Continue Statement

Range Function

For Else Statement

Nested Loops

Try Except Statement

Quiz

Assignment 3: Exam Score Check

Assignment 4: String Filtering

Section 6: Python - File Handling

Module Installation

File Handling

Word Files

Excel Files

JSON Files

Section 7: Python - RE Module

RE Module - Findall and Search Methods

RE Module - Split and Sub Methods

RE Module - Special Sequences

RE Module - Sets

Quiz Re Module

Assignment 5: Find All Small Letters

Assignment 6: Read JSON file and return a value in Python list?

Assignment 7: Find digits and return sum of all digits

Assignment 8: Find Phone Numbers

Section 8: Python - Functions and Classes

FUNCTIONS AND CLASSES

Functions - Call Variables

Function in Another Function

Create a Module

OOP (Object Oriented Programming)

Section 9: Python - Networking Introduction

Python Networking Introduction

Lab Environment

Section 10: Python - SSH Connection

Networking Modules

Paramiko Module Introduction

Paramiko Module

Paramiko Connect 1 Device

Paramiko Connect to Multiple Devices

Netmiko Module Introduction

Netmiko Module Connect 1 Device

Netmiko Connect to Multiple Devices

Section 11: Python - Telnet Connection

Telnetlib Module

Telnetlib Multiple Device Connection

Netmiko Telnet Connection

Section 12: Python - File Transfer

SCP File Transfer

Paramiko FTP Connection

Ftplib Module

Paramiko SFTP

Section 13: Python - Projects (16 Projects)

Paramiko SSH

Netmiko SSH

Find Vendor Type

Ping Test

Interface Config

Config Change

Collect CPU Levels

Collect Version Information

Interface Info

Duplicated IP

Show Tech Command

Backup With SSH

SCP File Transfer

Upload File

Download File

Plot CPU

Curriculum - Ansible

Section 1: Ansible - Introduction

Short Story of Network Automation Journey

Ansible Course Plan

What is Ansible?

Why Ansible?

Where can we use Ansible?

What can we do with Ansible?

Section 2: Ansible - YAML Language Introduction

What is YAML?

YAML - Data Types

Section 3: Ansible - Architecture and Features

Ansible Concepts

Ansible Architecture

Ansible Features

Variables

Latest Release Notes

Section 4: Ansible - Installation

Install Ansible on Linux (Ubuntu)

Install Ansible on MacOS

LAB Environment - 1

LAB Environment - 2

Ansible Inventory - 1

Ansible Inventory - 2

Ansible Inventory - 3

Section 5: Ansible - Ad-hoc Commands

Ad-Hoc Introduction

Ad-Hoc Usage - 1

Ad-Hoc Usage - 2

Ad-Hoc Usage - 3

Ad-Hoc Usage - 4

Ad-Hoc Usage - 5

Section 6: Ansible - Playbooks

Playbook Introduction

Playbook Structure

Playbook Example

Create and Run a Playbook

Verifying Playbooks - 1

Verifying Playbooks - 2

Validate YML File

Ansible Modules

Section 7: Ansible - Projects

Playbook Example

Configuring Inventory File

Project-1: Collect logs with Raw Module

Ios Command Module

Project-2: Run Show Commands

Project-3: Save Logs to Files

Ios Config Module

Project-4: Send Config Commands

Project-5: Configuration with Loop

Project-6: Backup Configuration

Project-7: Run Commands from File

Project-8: Save Configuration

More Cisco Modules

Juniper Playbooks (8 Projects)

Huawei Playbooks (5 Projects)