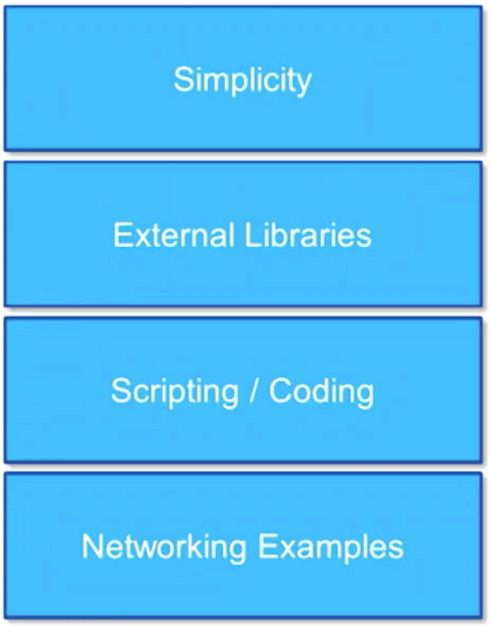
Introduction – Python Overview

Why Python?

- **Simplicity:** Easy to read and easy to write, easy to understand by those who come along later.
- **External Libraries:** For assistance with all kinds of tasks
- **Scripting vs Coding:** Similar to scripting for getting started, but suitable for coding to create complete applications
- **Networking Examples:** Many tutorials and examples for performing networking tasks



Python Installation *

Linux	Mac	Windows
Installed by default Manually: sudo apt-get install python sudo apt-get install python-pip	Installed by default Manually: Install GCC & Xcode Install Homebrew brew install python	Manually: Download Python MSI package Run Python MSI package

* Consult your OS-specific installation instruction details

Running Python

Line-by-line

```
cisco@cisco-python:$ python
>>> import pexpect
>>> file=open('devices','r')
>>> for line in file:
...     print 'input line: ',line
...
input line:  10.30.30.1

input line:  10.30.30.2

input line:  10.30.30.3
```

Run Python file

```
cisco@cisco-python:$ python S02-1-version.py
devices list: [ 10.30.30.1 ,  10.30.30.2 ,  10.30.30.3']
establishing telnet session: 10.30.30.1 cisco cisco
--- connected to:  10.30.30.1
--- getting version information
--- got version:  Version 15.4(2)T1
establishing telnet session: 10.30.30.1 cisco cisco
--- connected to:  10.30.30.1
--- getting version information
--- got version:  Version 15.4(2)T1
establishing telnet session: 10.30.30.1 cisco cisco
--- connected to:  10.30.30.1
--- getting version information
--- got version:  Version 15.4(2)T1
cisco@cisco-python:$
```

Integrated Development Environment

```
import json
from pprint import pprint

from devclass import NetworkDevice
from devclass import NetworkDeviceIOS
from devclass import NetworkDeviceXR

#-----------------------------------------------------------------------
def read_devices_info(devices_file):

    devices_list = []

    # Open the device file with JSON data and read into string
    json_file = open(devices_file,'r')    # open the JSON file
    json_device_data = json_file.read()  # read in the JSON data from file

    # Convert JSAON string into Python data structure
    devices_info_list = json.loads(json_device_data)

    for device_info in devices_info_list:

        # Create a device object with this data
        if device_info['os'] == 'ios':

            device = NetworkDeviceIOS(device_info['name'],device_info['ip'],
                                      device_info['user'],device_info['passwo

        elif device_info['os'] == 'ios-xr':

            device = NetworkDeviceXR(device_info['name'],device_info['ip'],
                                     device_info['user'],device_info['passwo

        else:
            device = NetworkDevice(device_info['name'],device_info['ip'],
                                   device_info['user'],device_info['password'

        devices_list.append(device) # Append this device object to list

    return devices_list
```