6.0 Automation and Programmability

Automation and Network Management

- 6.1 Explain how automation impacts network management
- 6.2 Compare traditional networks with controller-based networking

```
Objective: 6.1 and 6.2
Learner Objective:
Title: Recognize Impact of Network Management Automation
Description: Traditional network management can be an iterative process.
In a network with many devices this can be problematic. You will learn
how automation helps with network management.
```

Controller-based and Software-Defined Architectures

- 6.3 Describe controller-based and software defined architectures (overlay, underlay, and fabric)

    - 6.3.a Separation of control plane and data plane
    - 6.3.b North-bound and south-bound APIs

```
Objective: 6.3.a,b.
Learner Objective:
Title: Identify SDN Architecture Concepts
Description: Managing networks using controllers is not uncommon. You will
learn how APIs interact with applications and devices.
```

Device Management

- 6.4 Compare traditional campus device management with Cisco DNA Center enabled device management
- resources: Attend networking webinars and demos - Cisco (https://www.cisco.com/c/en/us/solutions/enterprise-networks/webinars-demos.html)

```
Objective: 6.4
Learner Objective:
Title: Identify Campus Device Management Methods
Description: Managing network devices is challenging when it comes to changes that span multiple devices.
You will learn about the use of Cisco DNA Center to enable device management across networks.
```

REST-based APIs

- 6.5 Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)

```
Objective: 6.5
Learner Objective:
Title: Identify the characteristcs of REST-based APIs
Description:
```

Configuration Management

- 6.6 Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible

```
Objective: 6.6
Learner Objective:
Title: Identify Configuration Management Mechanisms
Description:
```

JSON encoded data

- 6.7 Interpret JSON encoded data

```
Objective: 6.7
Learner Objective:
Title: Interpret JSON Encoded Data
Description:
```