Module 11 CCNA -Automation and Programmability

* Beginner Question

1. **Explain How Automation Impacts Network Management**

* Error reduction: Manual network tasks are prone to human errors that can lead to network outages and security issues. Automation reduces these errors and increases network reliability and security. Scalability: Network automation enables businesses to easily and quickly expand or shrink their network as needed.

1. **Compare Traditional network with Controller based networking**

* Unlike SDN, traditional networks use routers, switches and other hardware and physical infrastructure to generate connections and run the networks. SDN controllers use a northbound interface that communicates with APIs, allowing application developers to program the network.

1. **Explain Virtualization**

* Virtualization is a technology that creates virtual representations of physical machines. It allows multiple virtual machines to run on a single physical machine.
* Intermediate Question

1. **Describe Characteristics of REST-based API**

* Virtualization is a technology that creates virtual representations of physical machines. It allows multiple virtual machines to run on a single physical machine.
* Advance Question

1. **Explain methods of Automation**

* Automation has been achieved by various means including mechanical, hydraulic, pneumatic, electrical, electronic devices, and computers, usually in combination. Complicated systems, such as modern factories, airplanes, and ships typically use combinations of all of these techniques.

1. **Explain SDN**

* Software-Defined Networking (SDN) is an approach to networking that uses software-based controllers or application programming interfaces (APIs) to communicate with underlying hardware infrastructure and direct traffic on a network.

1. **Explain DNA Center**

* DNA Center is a Cisco GUI for managing all things in a Campus Switch, Wireless, IOT, etc. network, now with tie-ins for SD-WAN.

**4.** **Explain SD-Access and SD-WAN**

* SD-WAN and SD-Access are ways to approach software-defined networking terminology. While SD-Access is used to change the architecture of LAN networks, SD-WAN creates next-generation wide area networks with significant automation capabilities instead of MPLS/VPLS.