**CISCO PACKET TRACER**

This project covers foundational networking concepts like IP addressing, device configuration, and basic connectivity testing. A screenshot of a computer

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**Network Devices**

* 2 PCs
* 1 Switch
* 1 Router
* 1 DHCP Server
* 1 Web Server

**Stage 1: Setup Network Topology**

* Drag and drop devices
* Connect Devices (using Copper Straight-Through Cable)
  + PC0 connect to Switch
  + PC1 connect to Switch
  + DHCP Server connect to switch
  + Web Server connect to switch
  + Switch connect to Router (GigabitEthernet0/0 on Router)

**Stage 2: Assign IP Addresses**

* PC0: 192.168.10.10, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.10.1A screenshot of a computer

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* PC1: 192.168.10.11, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.10.1A screenshot of a computer program

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  + Router Configuration
    - Router CLI
      * Configure Interface

A screenshot of a computer program

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**Stage 3: Add a DHCP Server**

* Add a DHCP server to automate IP Assignment

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* + Connect it to the switch
    - ((Server0)FastEthernet0) 🡪 ((Switch)FastEthernet0/4)
    - Configure DHCP Pool:
      * IP: 192.168.10.2
      * Subnet: 255.255.255.0
      * Default Gateway: 192.168.10.1
* Set the PCs to automatically obtain IP and verify they receive the correct address

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* + PC0 received correct address from the pool 192.168.10.100
  + PC1 received correct address from the pool 192.168.10.101

**Stage 4: Add a Web Server**

* Test Application Layer 7
  + Web Server ConfigurationA screenshot of a computer

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  + Set it to a static IP 192.168.10.50

**Stage 5 Validate Connectivity**

* On each PC
  + Launch the Command Prompt
    - Run ping connectivity tests
* Ping the router from PC0

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* Ping the router from PC1A screenshot of a computer program

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* Ping PC2 from PC0 A screenshot of a computer program

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* Ping PC0 from PC1 A screenshot of a computer screen

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* Ping Webserver from PC0 A screenshot of a computer program

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  + Layer 3 Connectivity is working A screenshot of a computer

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  + Web page loads validating full layer 3 and layer 7 connectivity