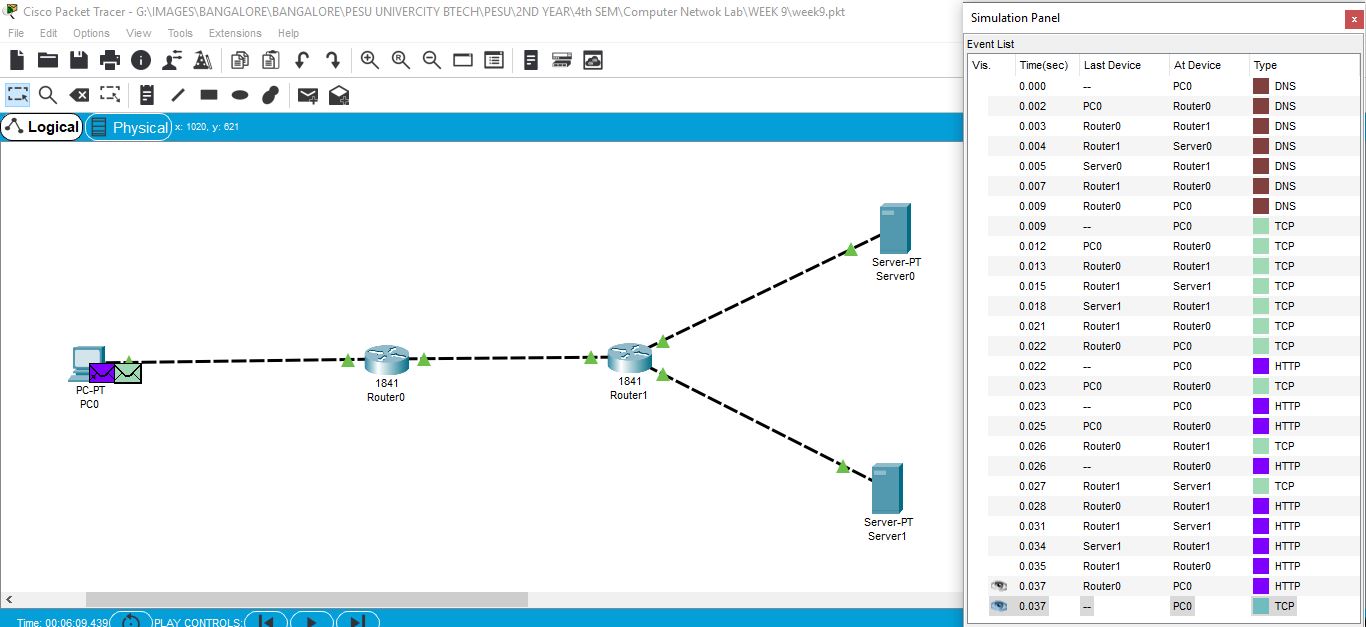
NAME: DIVYANSHU SHARMA

PES1UG20CS806

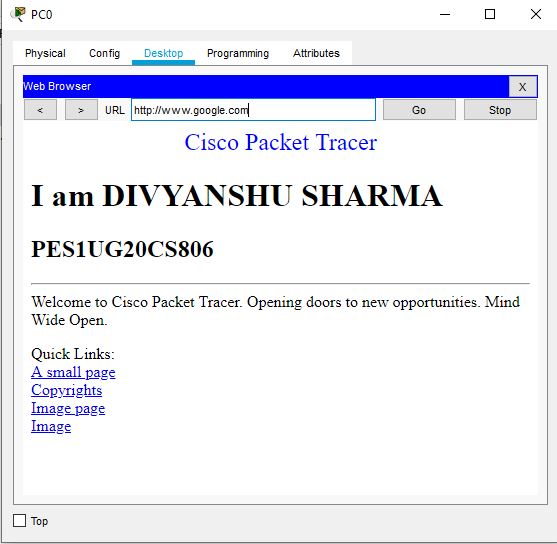
CN LAB (WEEK 9)

**Task 1**

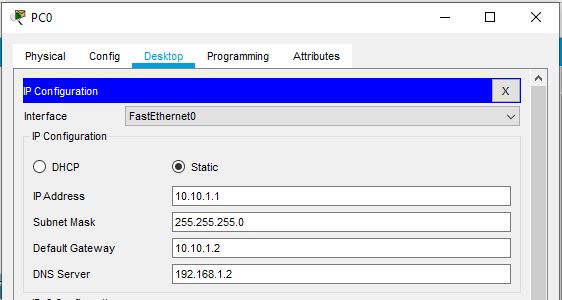
* 1. **Configuring Topology**
* The network devices are organized in the required topology shown.
* IP Addresses have been assigned to each interface being used on the routers and end systems.
* The routing tables are then configured manually by adding the required routing information.
* The two servers in the topology correspond to a DNS Server that serves DNS queries from the PC and a web server that serves webpages stored on it. The server is appropriately configured as well.
* An HTTP request is made from the PC for the page index.html in the domain google.com.



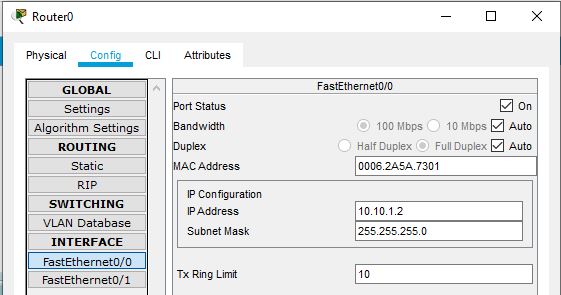
HTTP Request with DNS Service



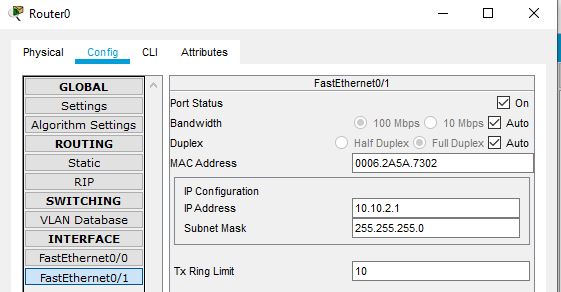
Response Received after HTTP Request



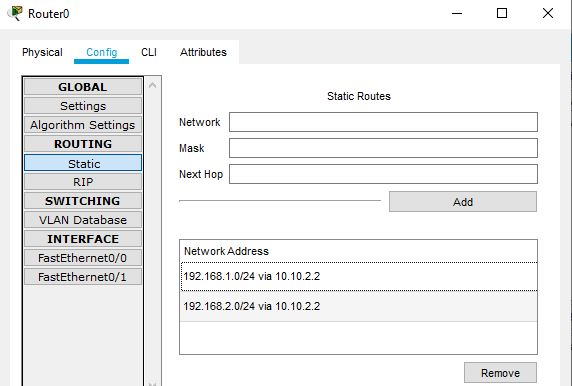
PC0



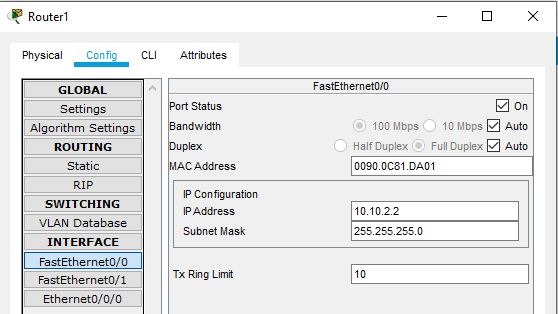
Router0 Config



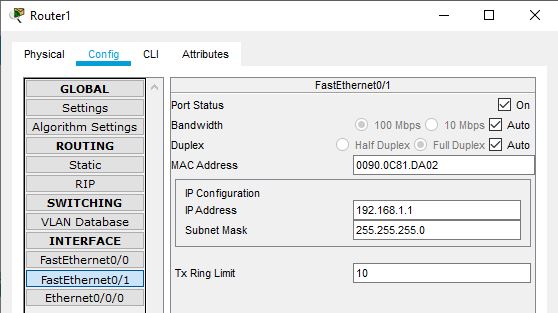
Router0 Config



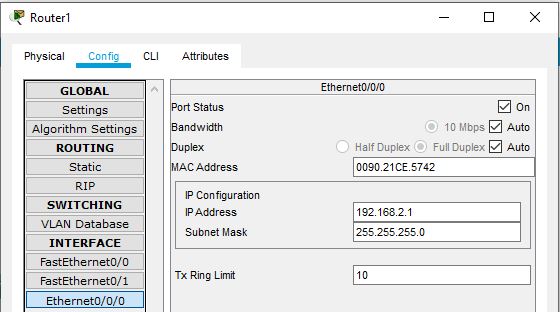
Router0 Router Table



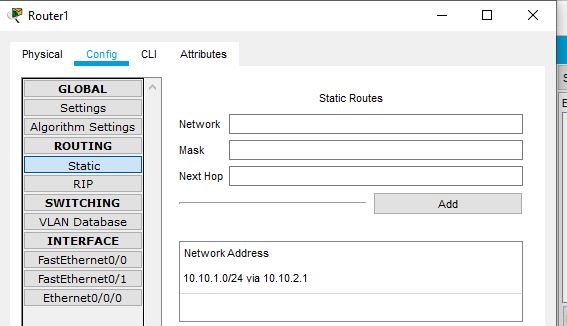
Router1 config



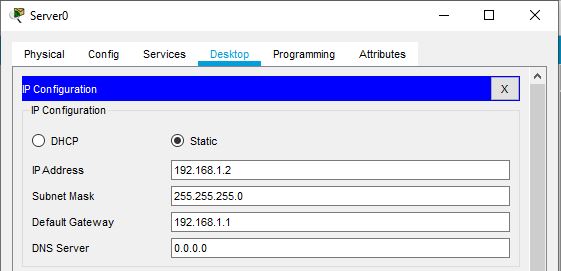
Router1 config



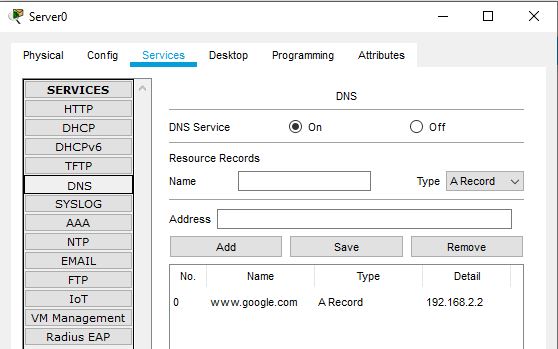
Router1 config



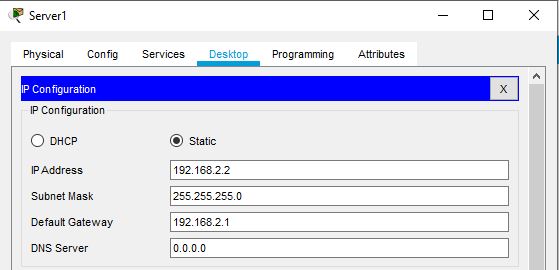
Router1 Router Table



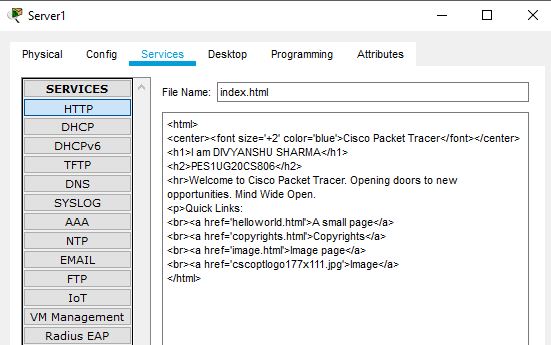
DNS Server IP confug



DNS Service



Web Server IP config



Web Server service

**1.2 Configuring Network and Routing Tables**

**1.2.1 End Systems**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **End System** | **Interface Name** | **IP Address** | **Subnet Mask** | **Gateway** | **DNS Server** |
| PC0 | FastEthernet0 | 10.10.1.1 | 255.255.255.0 | 10.10.1.2 | 192.168.1.2 |
| Server0-DNS | FastEthernet0 | 192.168.1.2 | 255.255.255.0 | 192.168.1.1 |  |
| Server1-Web | FastEthernet0 | 192.168.2.2 | 255.255.255.0 | 192. 168.2.1 |  |

**1.2.2 Routers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Router** | **Interface Name** | **IP Address** | **Subnet Mask** |
| Router0 | FastEthernet0/0 | 10.10.1.2 | 255.255.255.0 |
| Router0 | FastEthernet0/1 | 10.10.2.1 | 255.255.255.0 |
| Router1 | FastEthernet0/0 | 10.10.2.2 | 255.255.255.0 |
| Router1 | FastEthernet0/1 | 192.168.1.1 | 255.255.255.0 |
| Router1 | Ethernet0/0/0 | 192.168.2.1 | 255.255.255.0 |

**1.2.3 Routing Table**

|  |  |  |
| --- | --- | --- |
| **Router** | **Destination Network** | **Next Hop** |
| Router0 | 192.168.1.0/24 | 10.10.2.2 |
| Router0 | 192.168.2.0/24 | 10.10.2.2 |
| Router1 | 10.10.1.0/24 | 10.10.2.1 |

* 1. **Observations**

The first run has taken about 0.037 seconds to complete, while the second run takes just 0.040 seconds. This difference has occur due to cache.

