CN ASSIGNMENT 3

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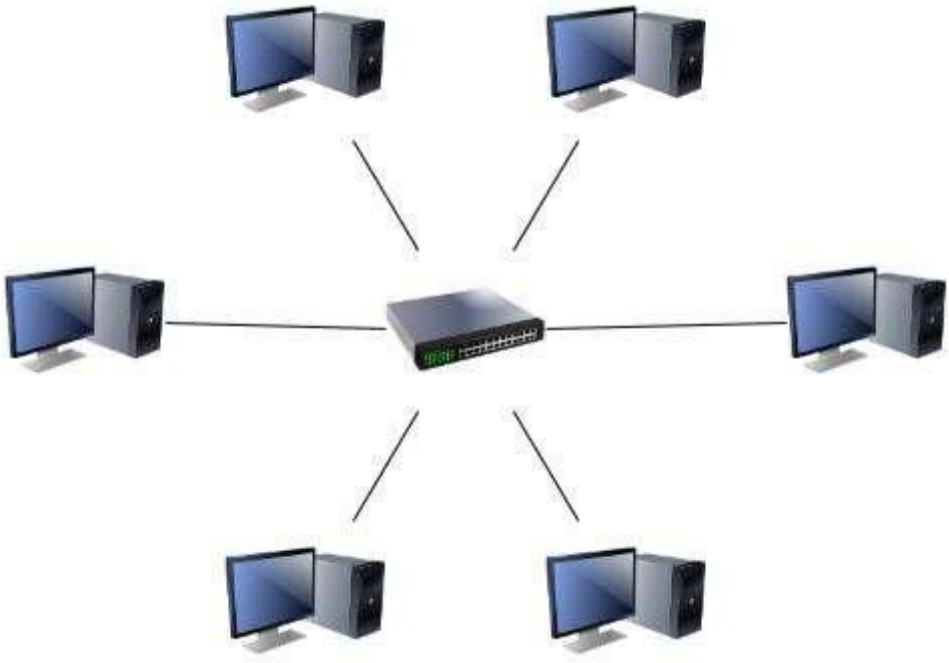
Batch: A1

Aim: Network design and implementation for small network using Packet Tracer

Objective: To understand the topologies and to understand the components of a small network

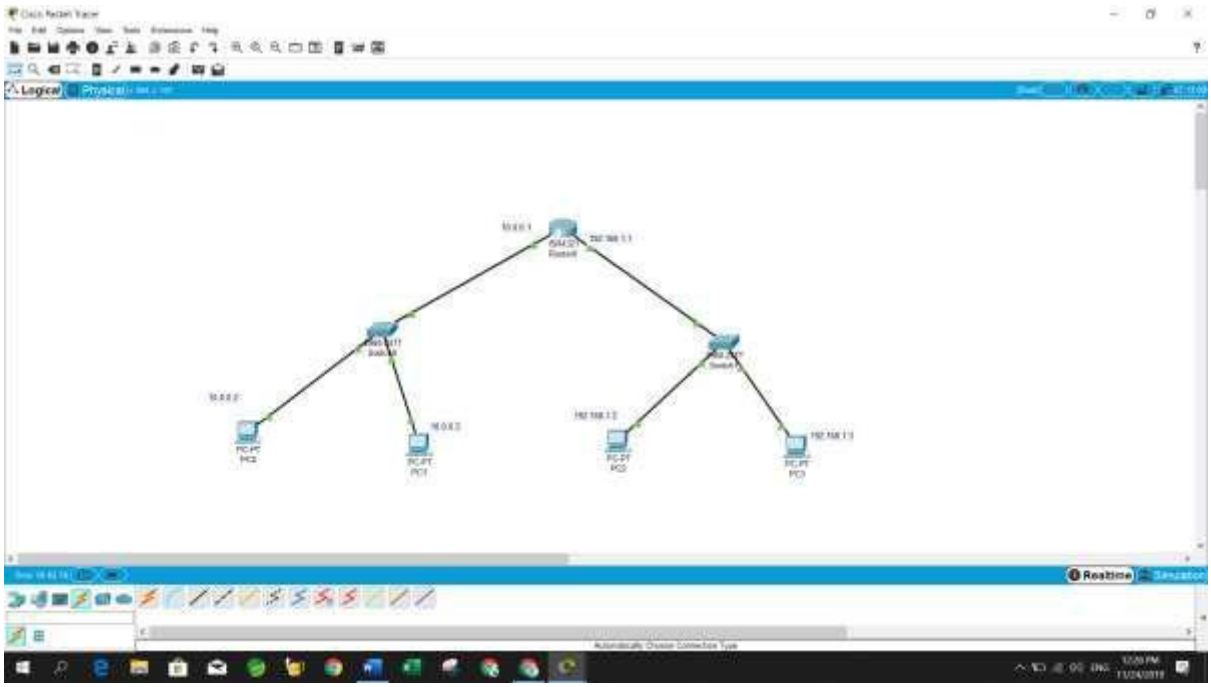
Theory:

Local Area Network (LAN) interconnects computers in a limited geographic area. It provides high-bandwidth communication over inexpensive transmission media. Today's network is a strategic instrument that must be accessible anytime from anywhere-simultaneously offering fast, secure, reliable services at scale regardless of location. The main purpose of a network is to reduce isolated users and workgroups. All systems should be capable of communicating with others and should provide desired information. Additionally, physical systems and devices should be able to maintain and provide satisfactory performance, reliability and security.



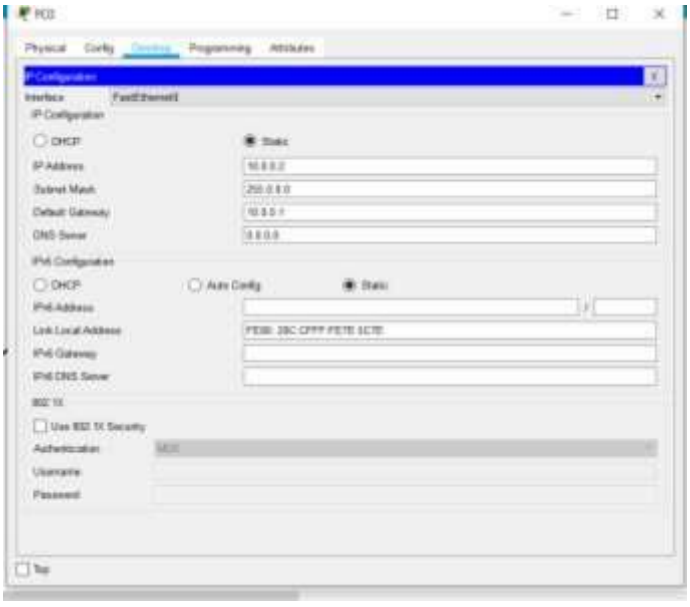
In order to start communication between end user devices and to design a network, we need to select appropriate networking devices like routers, switches, hubs and make physical connection by connecting cables to serial and fast Ethernet ports from the component list of packet tracer . Networking devices are costly so it is better to perform first on packet tracer to understand the concept and behavior of the network .

for interconnectivity of components, network topology describe the physical and logical appearance and interconnection between arrangement of computers, cables and other components in a data communication network and how it can be used for taking a packet from one device and sending it through the network to another device on a different network. A network topology is the physical layout of computers, cables, and other components on a network. There are a number of different network topologies, and a network may be built using multiple topologies. The different types of network topologies are: Bus topology, Star topology, Mesh topology, Ring topology, Hybrid topology and Wireless topology

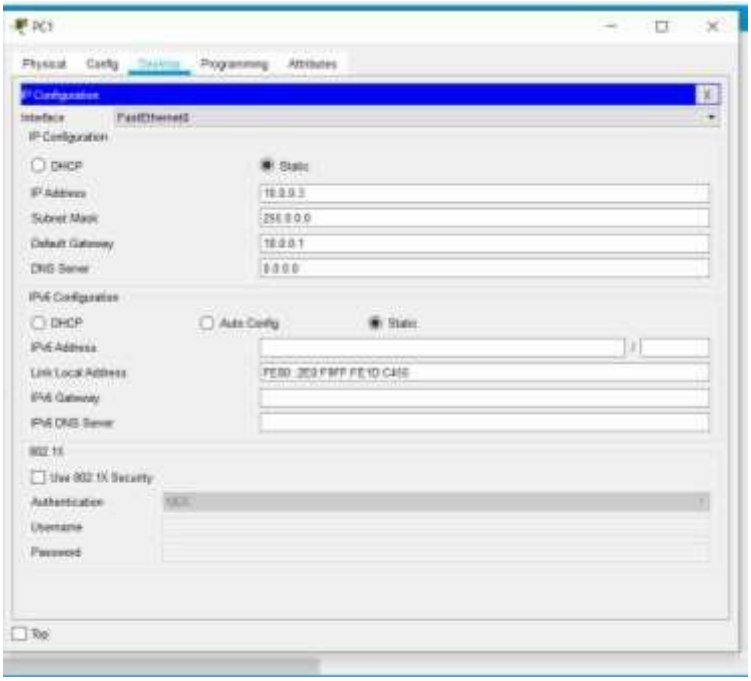


Configurations:

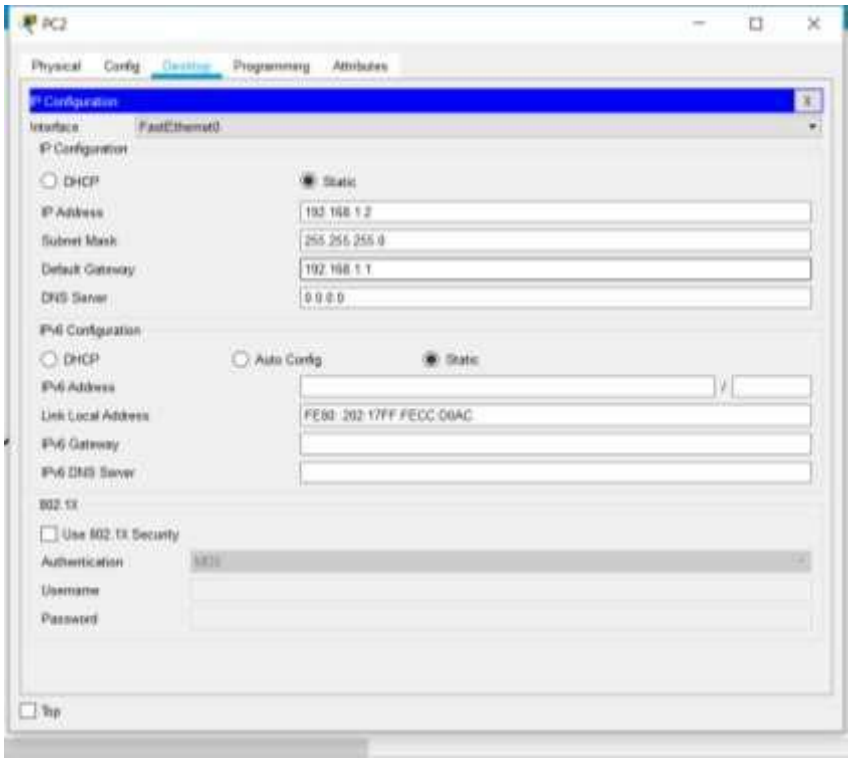
- PCO:



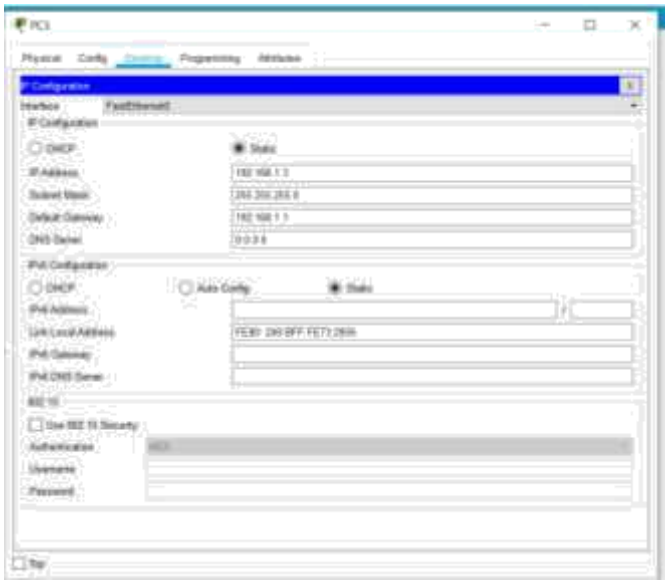
- PC1:


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IP Address
10.0.0.2
Subnet Mask
255.0.0.0
Default Gateway
10.0.0.1
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::2E0:F9FF:FE1D:C4E6
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

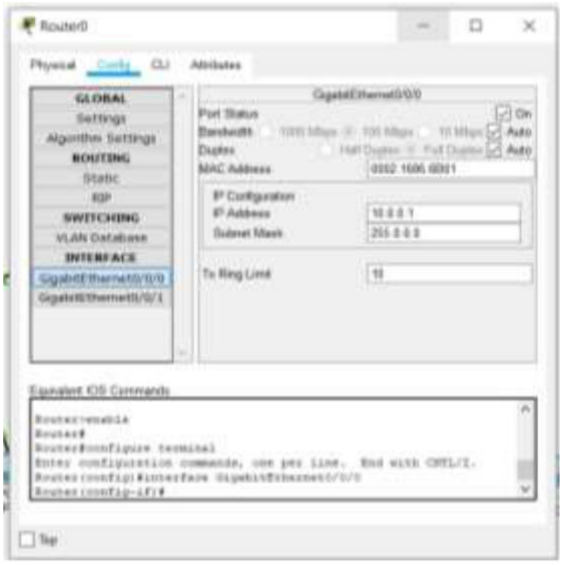
- PC2:

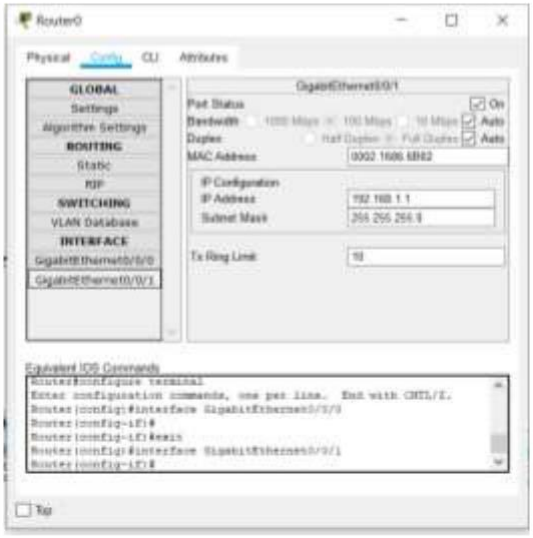

PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::202:17FF:FECC:00AC
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

- PC3:



- Router:





Conclusion:

Hence, we have successfully implemented a small network using Cisco Packet tracer.