University of Colombo School of Computing
IS2111 - Computer Networks
Tutorial - Cisco Packet Tracer

01) Using Cisco Packet Tracer, create a network topology based on the diagram provided below.

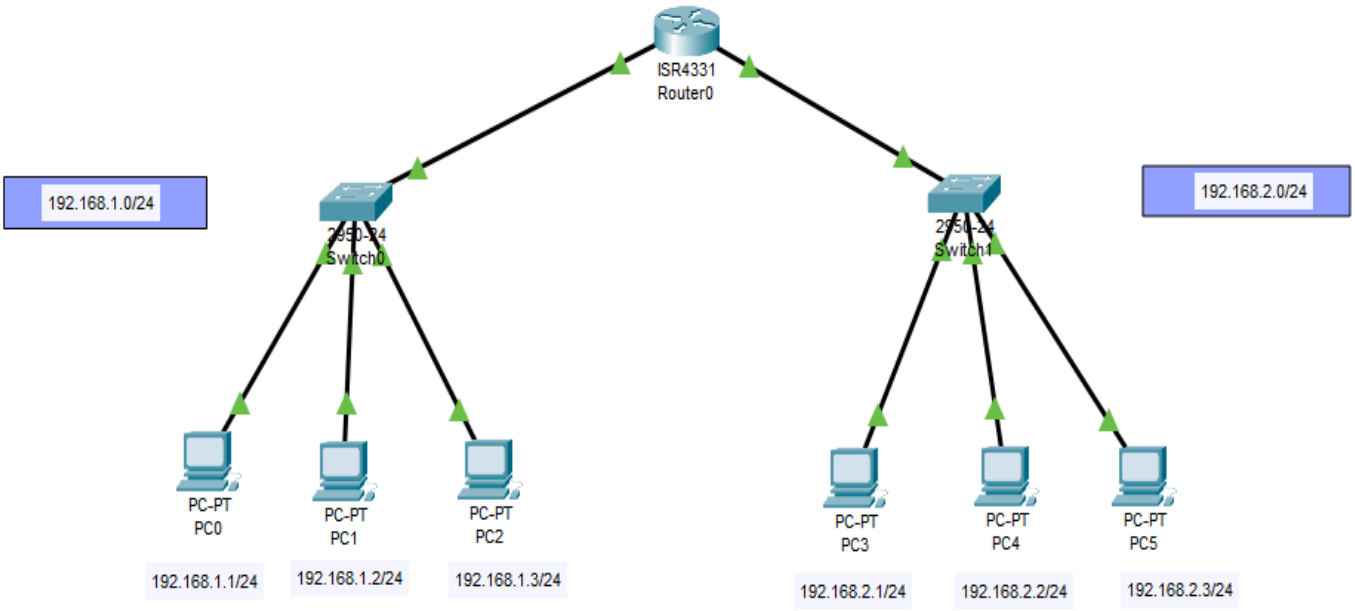


Diagram I

Note:
In this Network diagram,
192.168.1.0/24 , 192.168.2.0 /24 are 2 different networks.
Router 0 is the router in this network.
PC 0, PC 1, PC 2, PC 3 , PC 4, PC5 are computers(end devices).
Black lines are Copper Straight-Through cables which are used to connect different types of devices.

static and dynamic routing

02) *Static routes provide fixed routing paths through the network. They are manually configured on the router. If the network topology changes, the static route must be updated with a new route. Static routes are private routes unless they are redistributed by a routing protocol.*

a) Create a network topology that is based on the provided diagram to understand concepts of Static Routing.

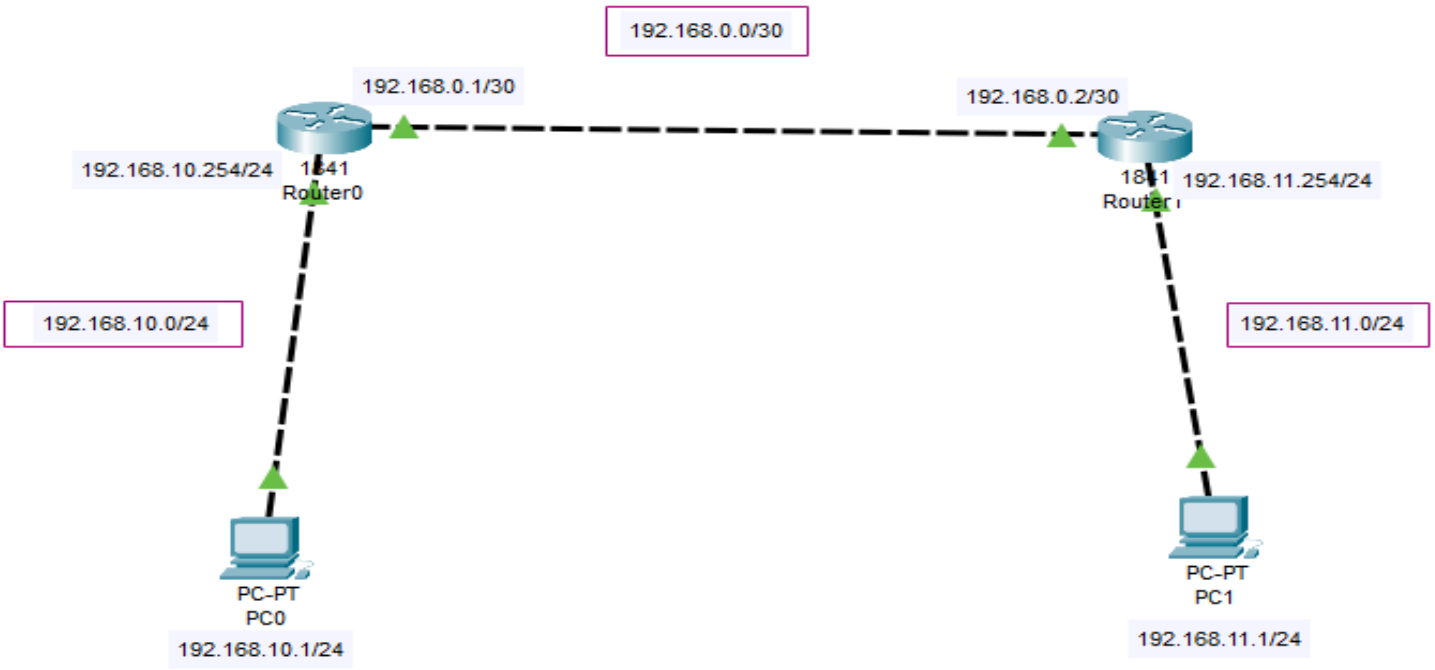


Diagram Ⅱ

03) *Dynamic routing allows for efficient data transmission by finding the best available path from the source to the destination device, based on network traffic or topology.*

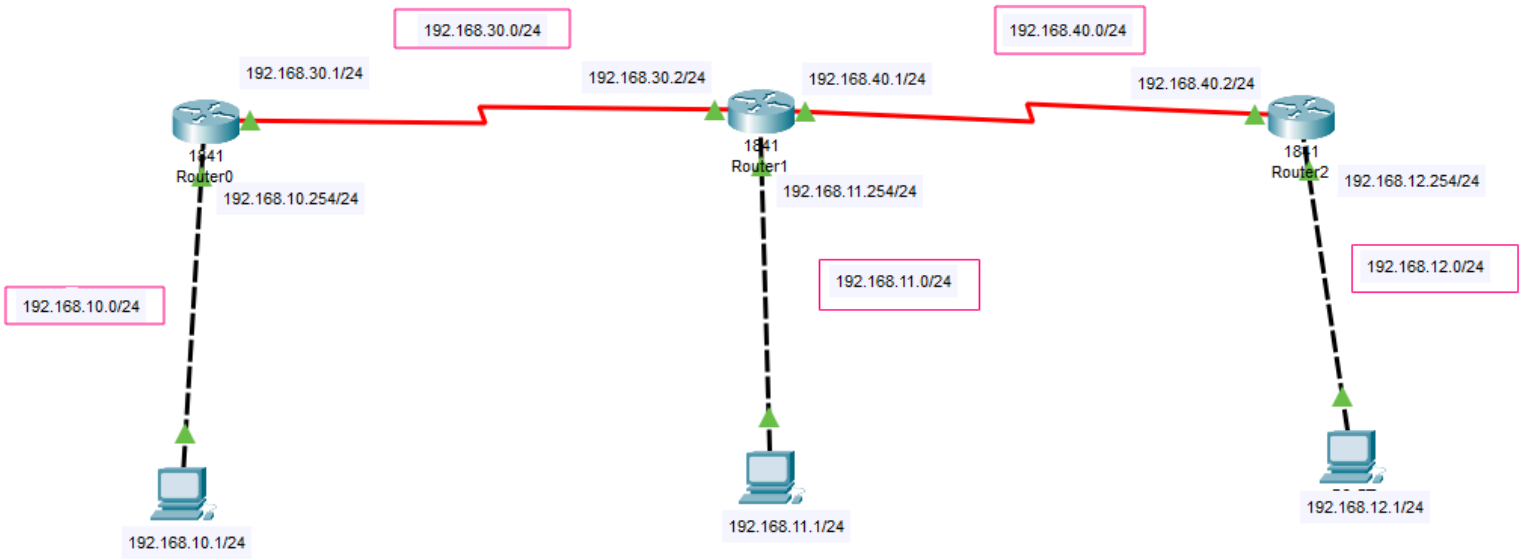
Changes in dynamic routes are shared with other routers in the network. The IP routing protocol can use the ***Routing Information Protocol (RIP),*** *Open Shortest Path First* ***(OSPF)*** *or the Enhanced Interior Gateway Routing Protocol (****EIGRP****) to learn routes dynamically. You can configure any of these routing protocols.*

a) Create a network topology by using the same network topology diagram as before to understand concepts of Dynamic Routing.

Take home activities

04) Use the diagrams below to design a network topology and understand the concepts.

a)



Note; Red color lines are Serial DCE cables which are building the connection between two routers.

b)