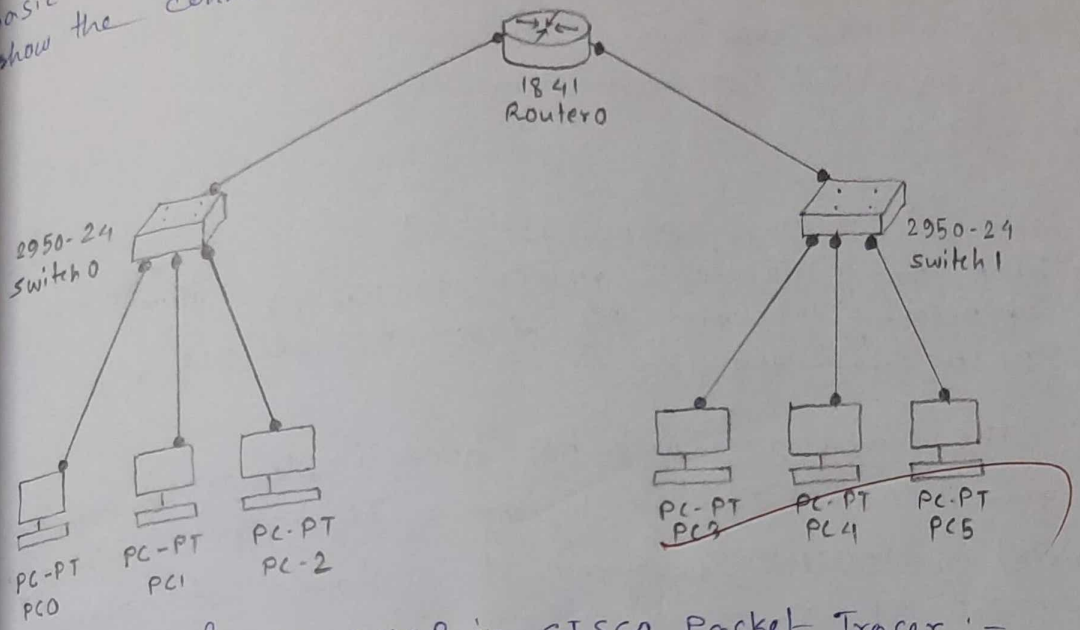
Problem statement:- Using CISCO Packet Tracer, create a basic network to implement dynamic IP address allocation and show the connectivity.



Steps to configure DHCP in CISCO Packet Tracer :-

i) To simulate DHCP in CISCO Packet Tracer a virtual LAN setup is created as shown below. This LAN will contain Routers switch and PCs as endpoints.

ii) connection of all devices are made with copper straight through cable or using auto select option. The router is connected to the interface Fast Ethernet 0/0 to the Fast Ethernet 0/1 interface of a switch of the LAN system.

iii) The router is selected to configure as DHCP server. The router's command line interface is opened by the right click on the router and selection of CLI (Command Line interface)

iv) The router is enabled to enter priviledged mode and the following commands were entered respectively:

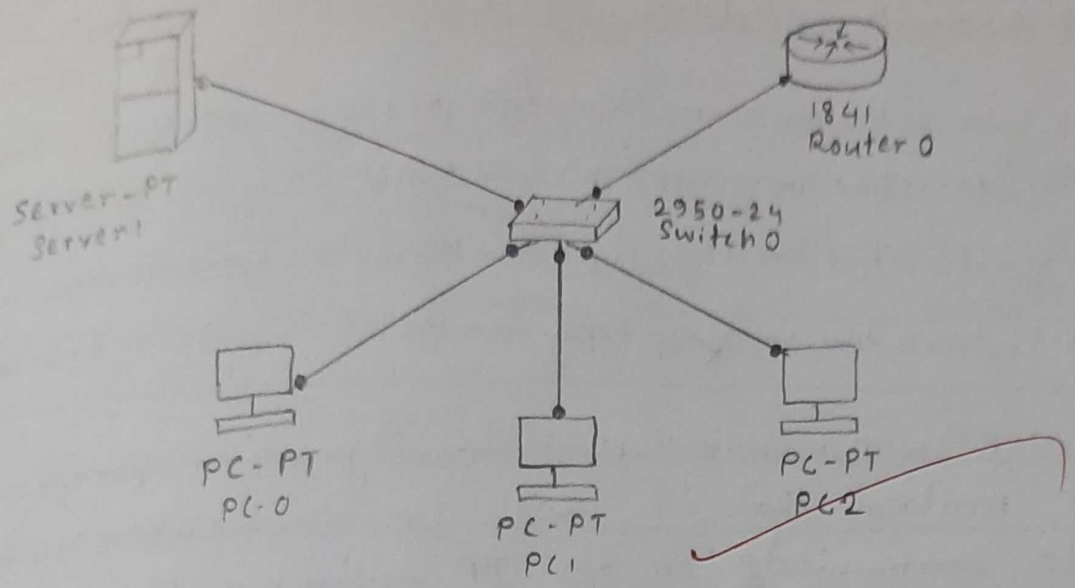
```
Router> en
Router# config t
Router(config) # int fa 0/0
Router(config-if) # ip address 192.168.1.1 255.255.255.0
Router(config-if) # no shut down
Router(config-if) # do write memory
Building configuration...
[OK]
Router(config-if) # ip dhcp pool net1
Router(dhcp-config) # default-router 192.168.1.1
Router(dhcp-config) # network 192.168.1.1 255.255.255.0
Router(dhcp-config) # exit.
```

```
Router > en
Router # config t
Router (config) # int fa 0/1
Router (config-if) # ip address 192.168.1.2 255.255.255.0
Router (config-if) #no shut2own
Router (config-if) # 2o write memory
Buil2ing configuration....
[OK]
Router (config-if) # ip 2hcp pool net2
Router (2hcp-config) #2efault-router 192.168.1.2
Router (2hcp-config) # network 192.168.1.2 255.255.255.0
Router (2hcp-config) #exit.
```

Output:- The computer network has been implemented as per the 2iagram in workspace. The 2ynamic IP address ~~allocate~~ is allocated and DHCP is configured. It is shown that server pinged for the IP address.

```
PC> Ping 192.168.1.4
Pinging 192.168.1.4 with 32 bytes of 2ata:
Reply from 192.168.1.4 : bytes = 32 time = oms TIL = 128
Reply from 192.168.1.4 : bytes = 32 time = oms TIL = 128
Reply from 192.168.1.4 : bytes = 32 time = oms TIL = 128
Reply from 192.168.1.4 : bytes = 32 time = oms TIL = 128
```

Experiment No



steps to configure DHCP on generic server in CISCO Packet Tracer:

i) The network topology is built with Router, switch, server and PCs as endpoints. All devices are connected properly.
ii) Static IP address is provided to the router and port service is turned on.
iii) static IP address is provided to the server.
iv) Now DHCP service is configured on generic server. clicking on the services tab, DHCP will be picked on the menu. Then we proceed to define the DHCP network parameters as default gateway.
v) The we click on add and save. The DHCP entry is included in the list providing start IP address
vi) Finally the DHCP service is turned on.

Output:- The computer network has been implemented as per the diagram in the workspace. The Dynamic IP address allocation is implemented and DHCP is configured using the generic server.

~~Server~~

SERVER> ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=0ms TIL=128

Reply from 192.168.2.3: bytes=32 time=0ms TIL=128

Reply from 192.168.2.3: bytes=32 time=0ms TIL=128

Reply from 192.168.2.3 bytes=32 time=0ms TIL=128

PC > Ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=4ms

Reply from 192.168.2.3: bytes=32 time=4ms TI

Reply from 192.168.2.3: bytes=32 time=4ms TIL

Reply from 192.168.2.3: bytes=32 time=4ms TIL

Remarks:- DHCP or Dynamic Host configuration protocol is a network protocol that is used to configure network devices to communicate on an IP network. A DHCP client uses the DHCP Protocol to acquire configuration information such as IP address, default route etc. from a DHCP server.