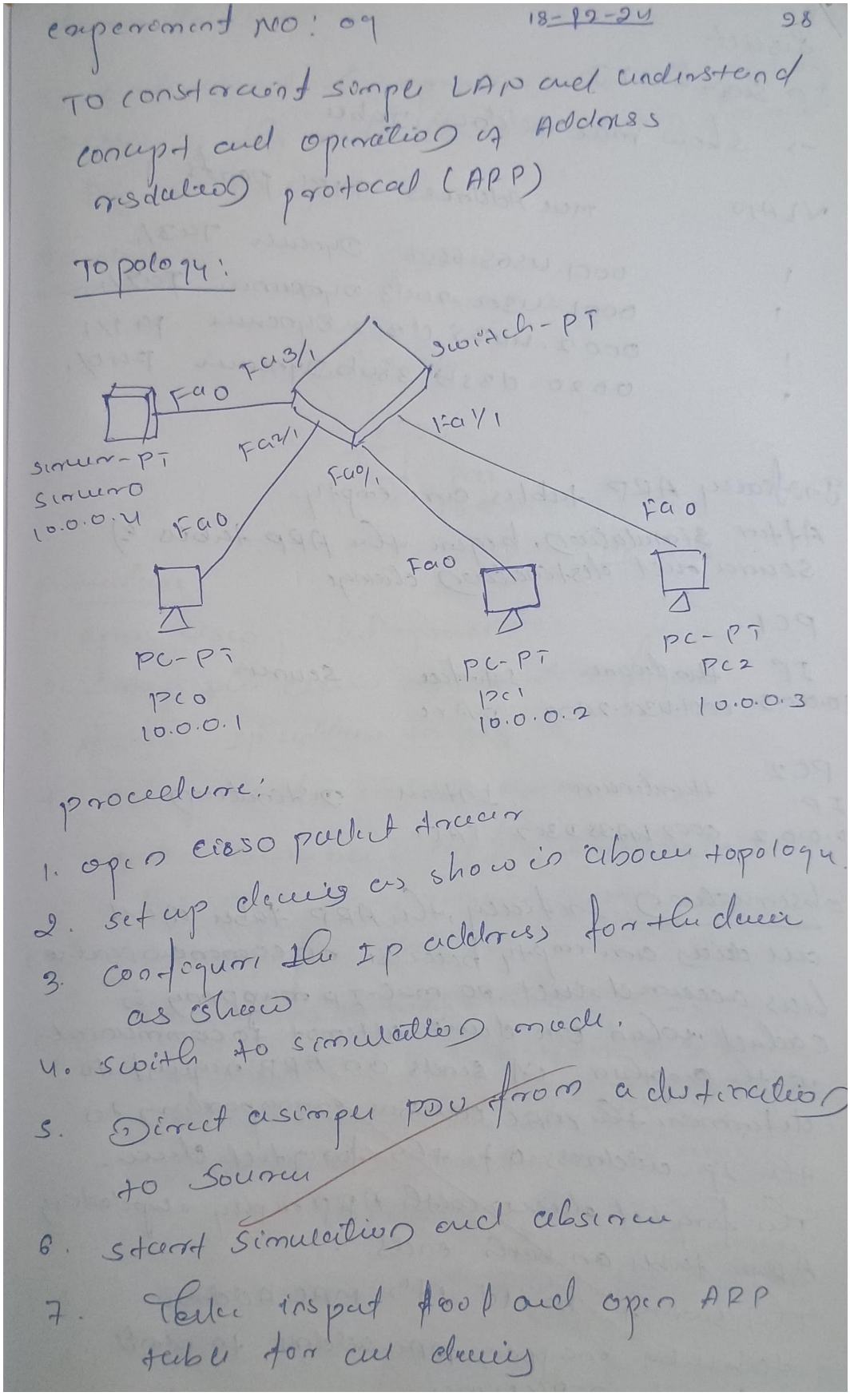
18|12|2024 Experiment 9- To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)

Observation Book:



Issued

In switch CLI

-> show mac address table

VLAN	Mac Address	TYPE	ports
1	0001.4565.6008	Dynamic	Fa3/1
1	0001.43ec.2ad3	Dynamic	Fa3/1
1	0002.4a35.d3c2	Dynamic	Fa1/1
1	0020.d35b.38ab	Dynamic	Fa0/1

Initially ARP tables are empty.

After simulation, begin the ARP tables of source and destination change.

PC1

IP	Hardware	Interface	Source
10.0.0.3	0001.43ec.2AD3	FAcc	

PC 2

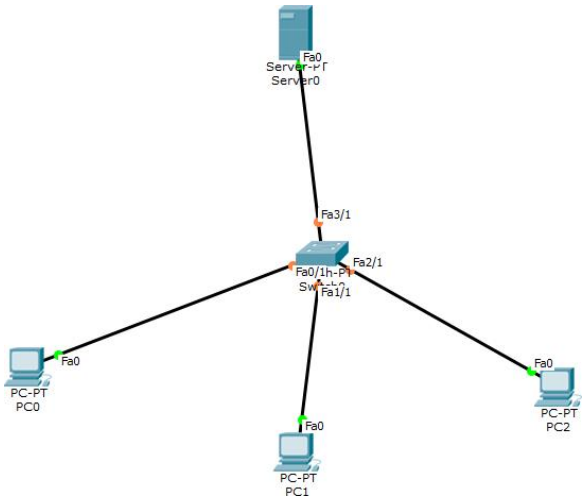
IP	Hardware	Interface	Distination
10.0.0.2	0002.4A35.D3C2	FAC1	

observation: Initially, the ARP table of all devices are empty because no communication has occurred, and no mac-Ip mapping is cached when one device attempt to communicate with another. it sends an ARP request to determine the MAC address corresponding to the Ip address of the targeted device. The targeted device with ARP reply, updating ARP table on both ends.

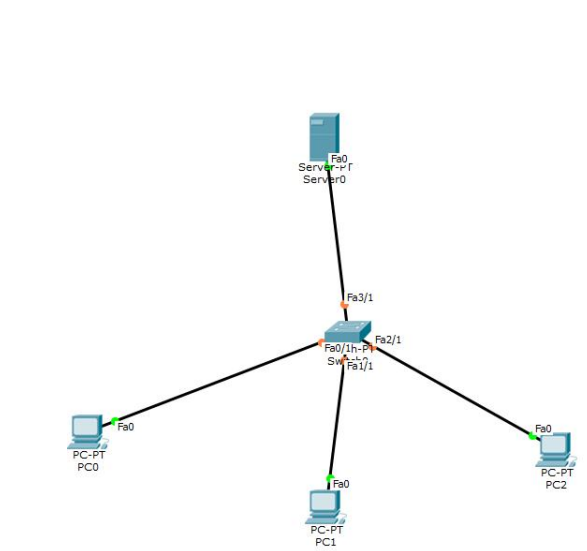
The switch build it's MAC Address table by mapping MAC address to ports based on receiving.

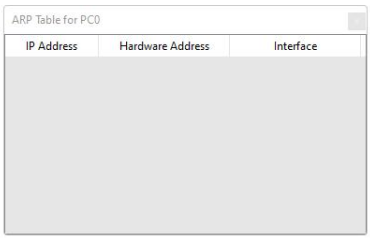
Thu 31/12/24

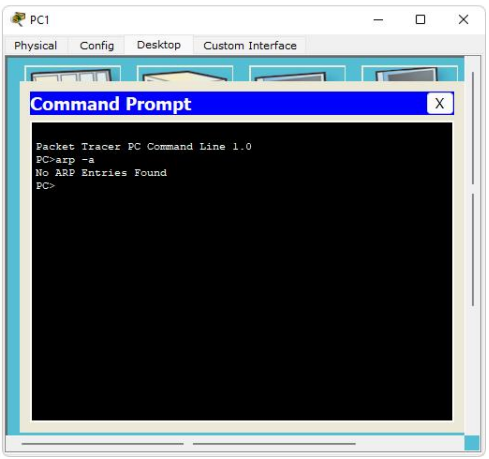
Topology:


Fa0
Server0
Fa3/1
Fa2/1
Fa1/1
Fa0
PC-PT
PC0
Fa0
PC-PT
PC1
Fa0
PC-PT
PC2

Output:


Fa0
Server0
Fa3/1
Fa2/1
Fa0/1
Fa1/1
Fa0
PC-PT
PC0
Fa0
PC-PT
PC1
Fa0
PC-PT
PC2


ARP Table for PC0
IP Address
Hardware Address
Interface


PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>arp -a
No ARP Entries Found
PC>