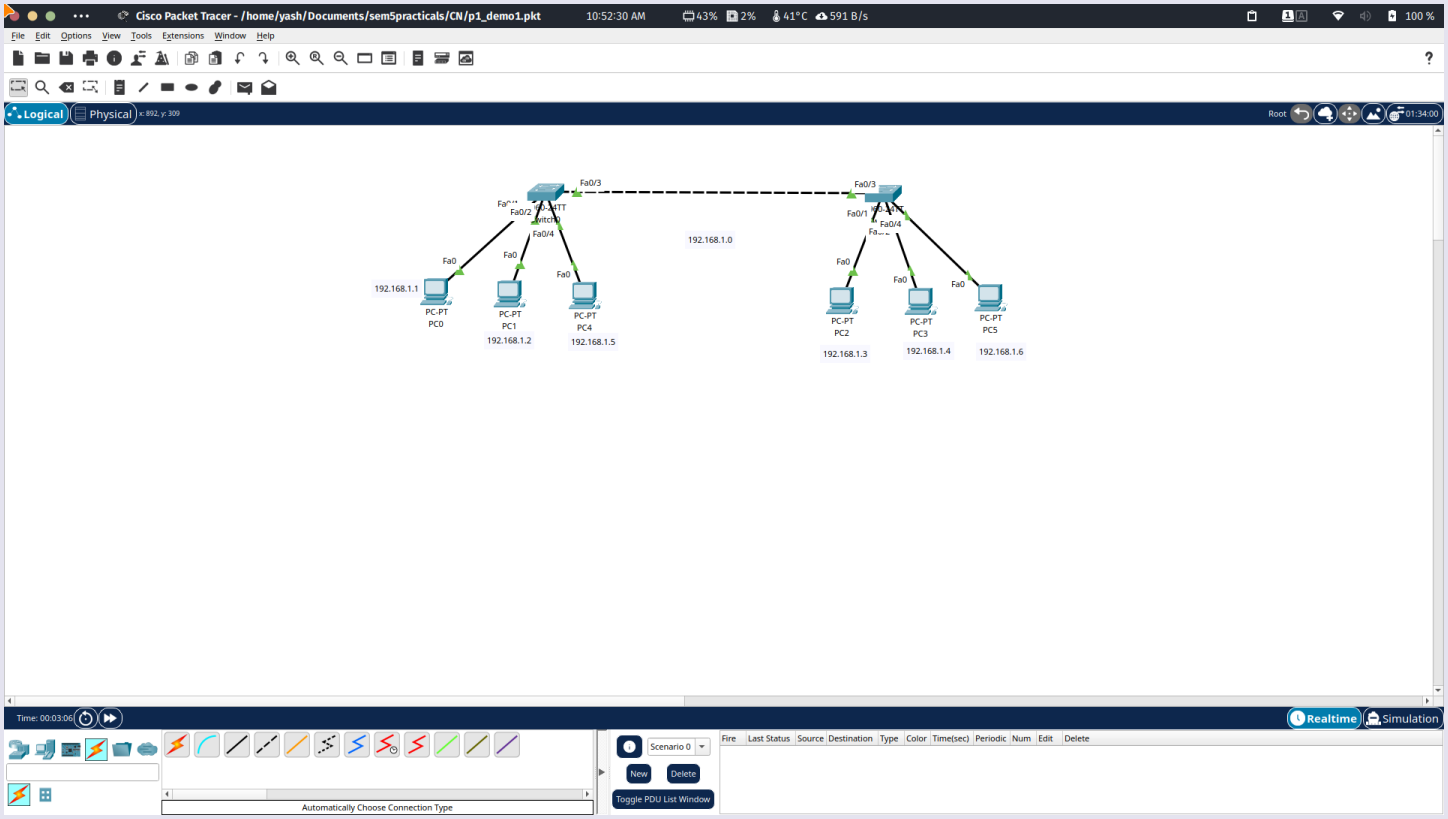
Practical 1

Title : To verify the role of Address Resolution Protocol (ARP) in a network of an organization.

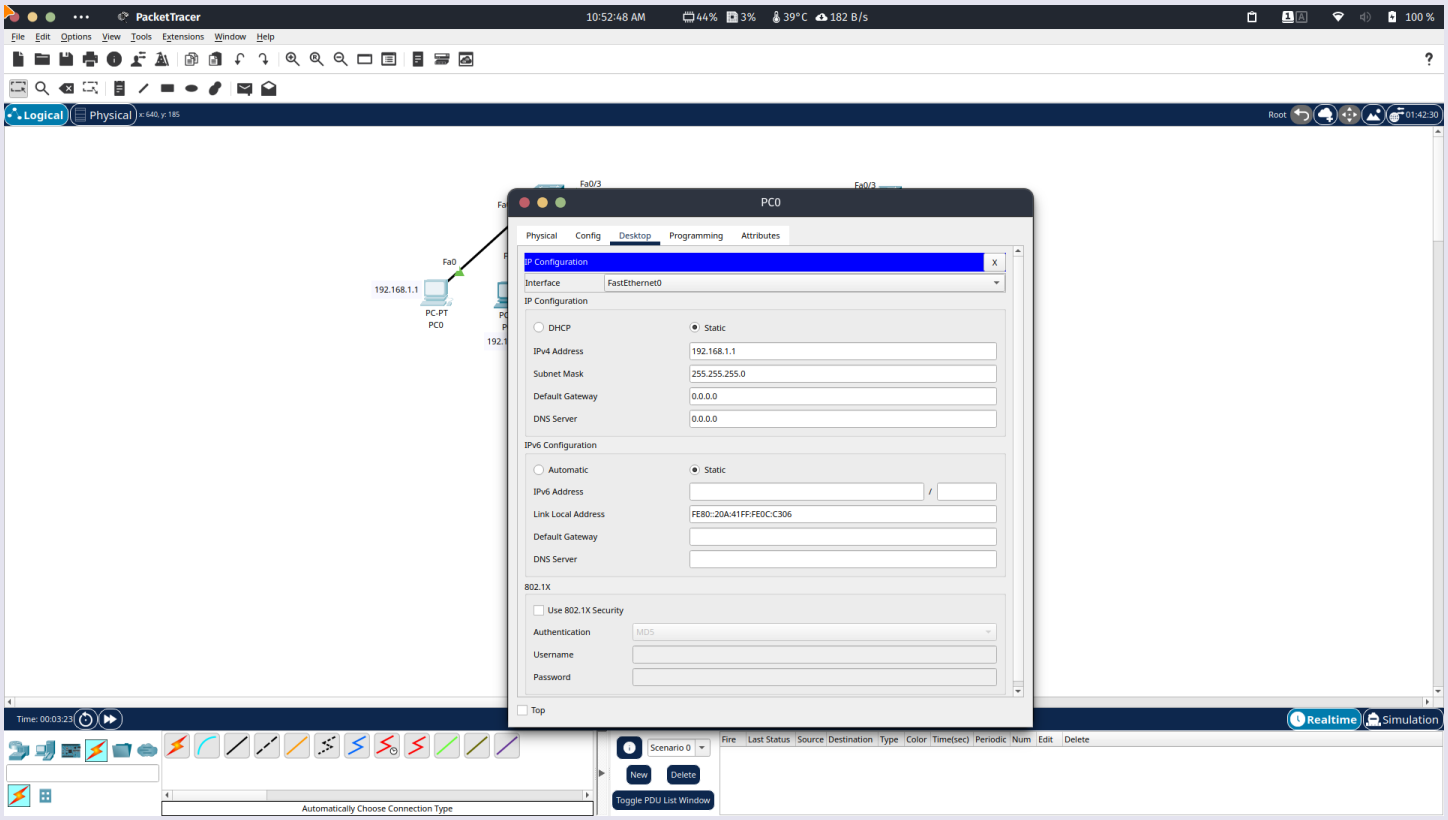
Scenario : An organization named Green Tech Solution contains 2 departments : Production and Sales in the same premises. Each department has 3 users. Departments are connected with each other using switches. Report the changes in ARP table when any user from production department communicates with any user of sales department.

Procedure :

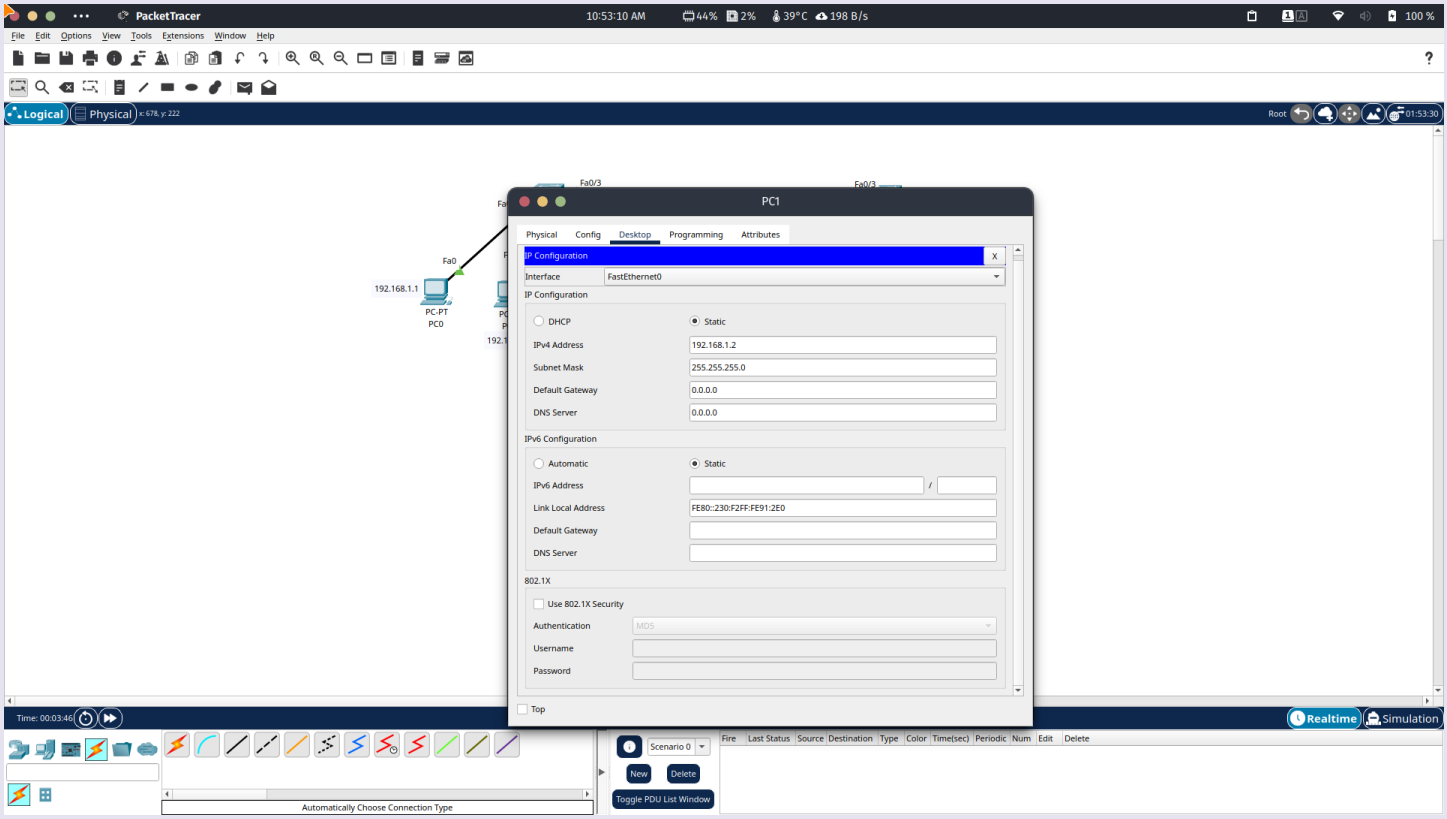
Step-1 : Design a connection between Production and Sales department using switches each containing say three end devices (computers here) (the network in the organization is 192.168.1.0)



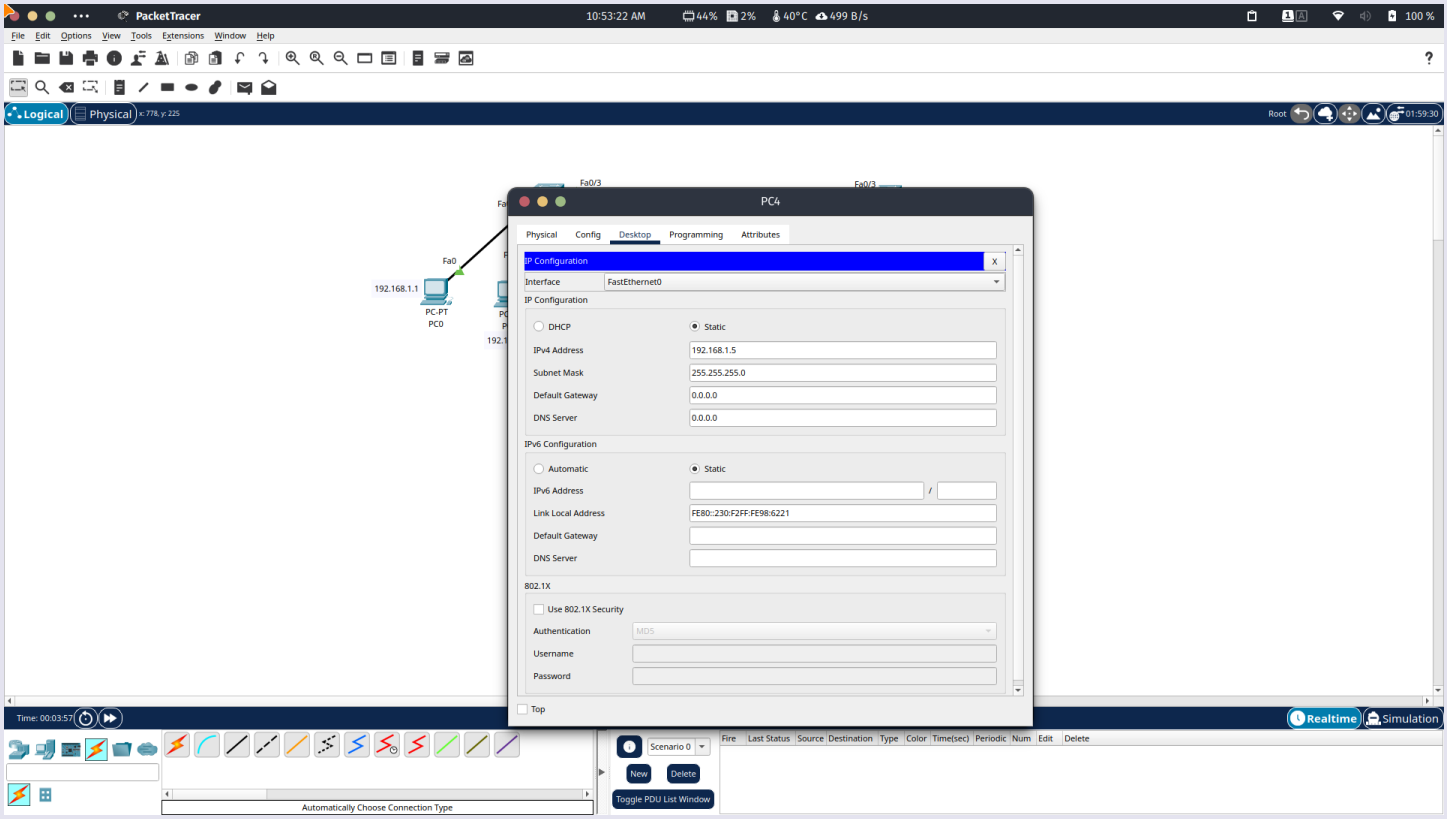
Step-2 : Open IP configuration of PC0 of department 1 and give it the IP address - 192.168.1.1



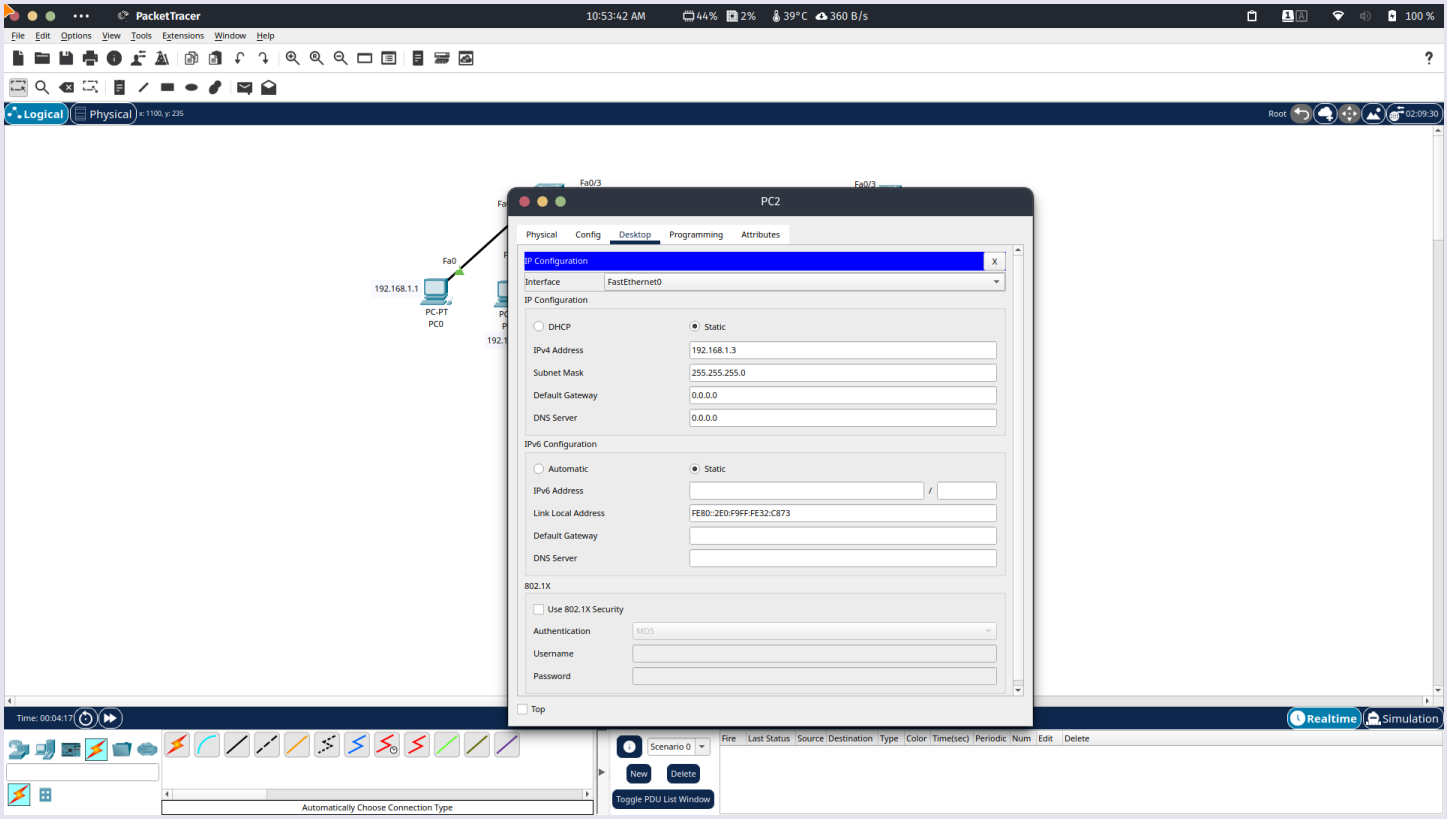
Step-3 : Similarly for PC1 of department 1, the IP is 192.168.1.2



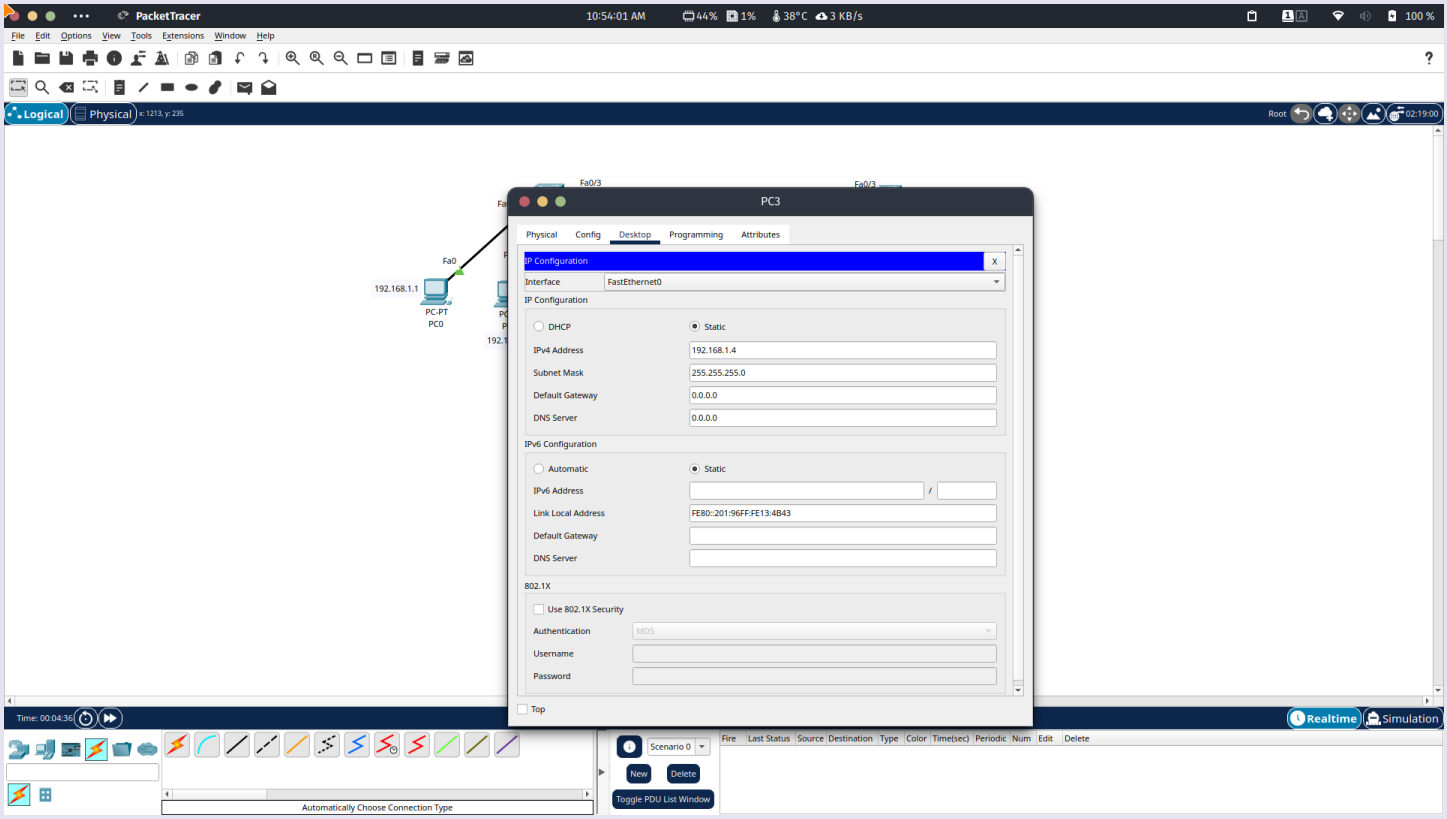
Step-4 : For PC4 of department 1, IP is 192.168.1.5



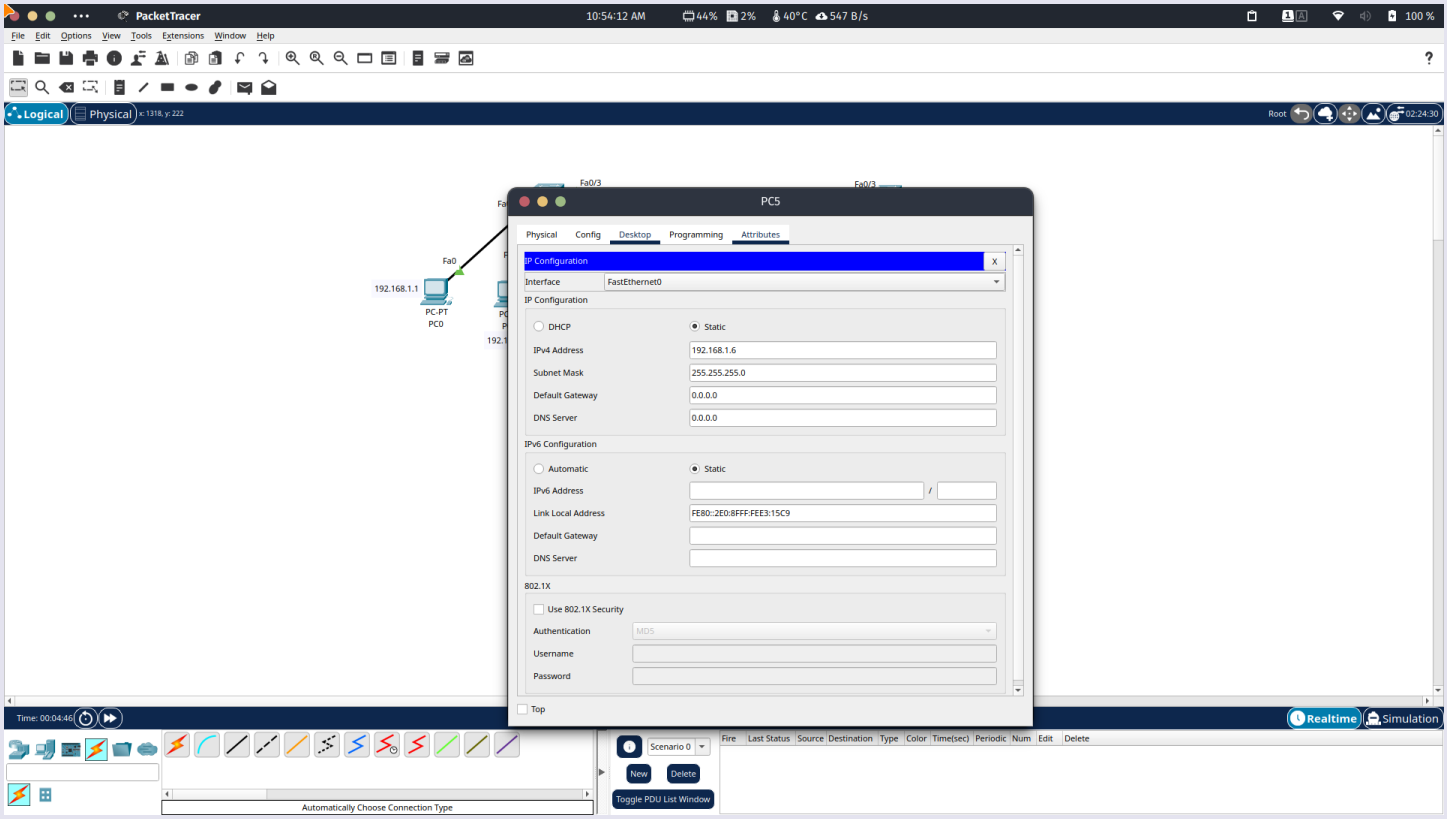
Step-5 : For PC2 of department 2, the IP is 192.168.1.3



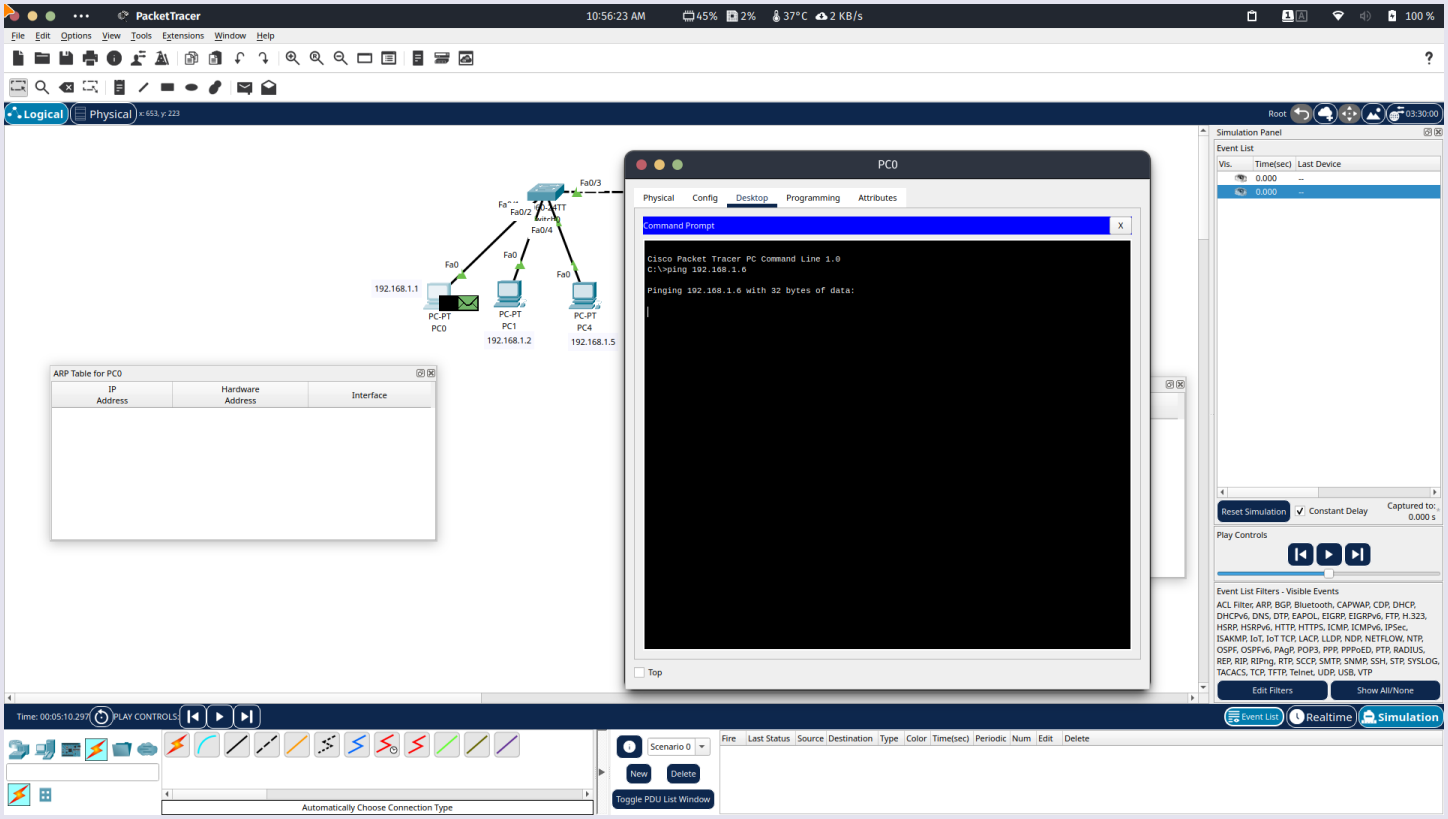
Step-6 : Similarly, 192.168.1.4 is the IP of PC3 of department 2



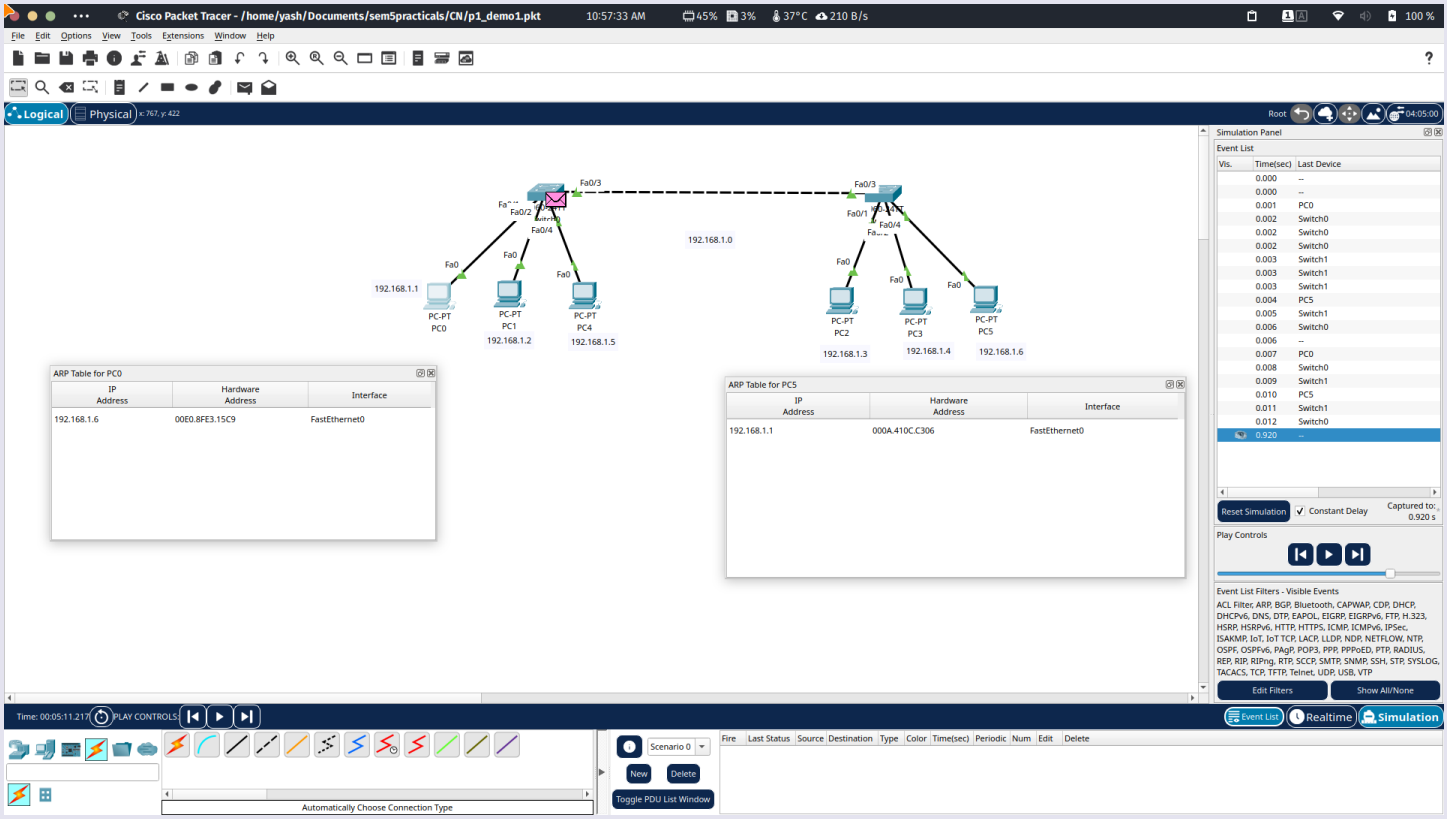
Step-7 : Finally, the IP for PC5 of department 2 is 192.168.1.6



Step-8 : Now, switching to the Simulation Mode, ping the PC5 of department 2 through command prompt of PC0 of department 1 and the two packets would be placed, one is the ARP packet and the other is the main packet



Step-9 : After starting the simulation, the ARP packet will be transferred for establishing connection between PC0 and PC5, and then the main packet will be transferred. Then, in the ARP table of both the source and destination end devices, the records will be printed containing the IP addresses of each others



Conclusion : From this experiment, the role of ARP is thus studied and observed. The ARP ensures the connectivity from source to destination before sending the main packets for faster transfer. An ARP packet is transferred from source to destination, which returns the physical addresses of both to each other, after which main packets are transferred.