NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCE

Computer Networks Lab (CL307)

Lab Session 02

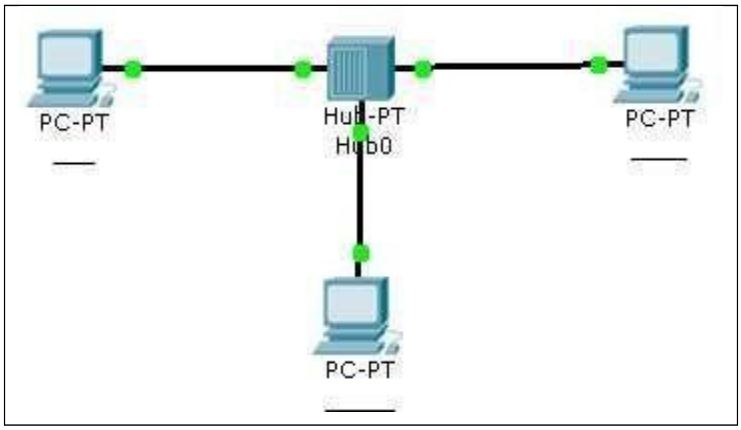
INTRODUCTION TO CISCO PACKET TRACER

Network Infrastructure

Aim: Study of following Network (Layer 1, Layer 2 and Layer 3) Devices in Detail.

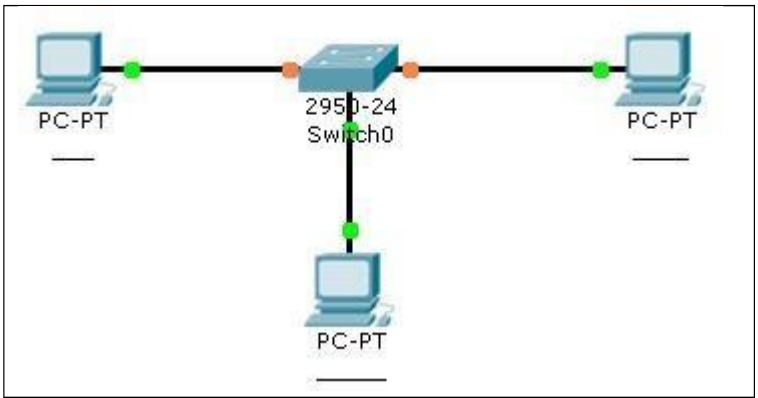
- **Hub**
- **Switch**
- **Router**

Task#1: Understand Network Topology and network hardware (L1) devices.



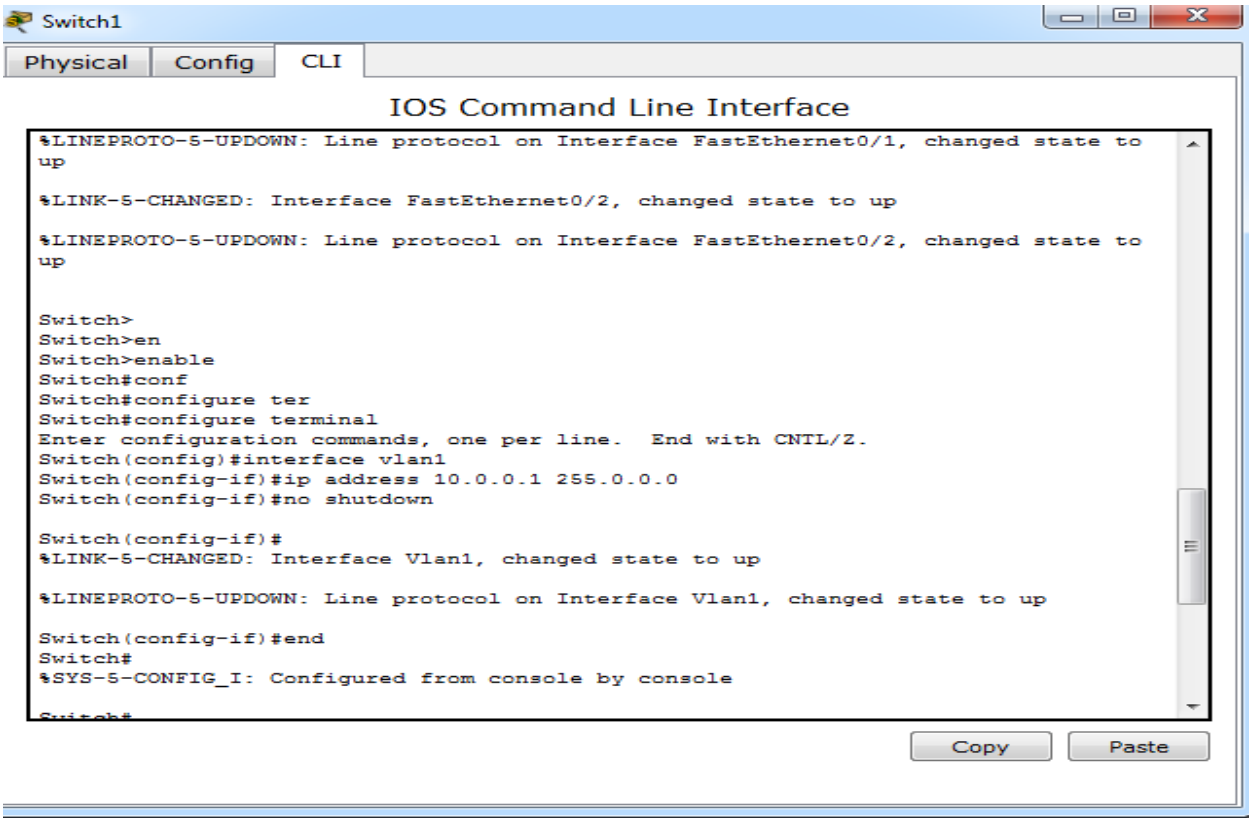
At which layer the HUB operates? _____

Task#2: Understand Network Topology and network hardware (L2) devices.

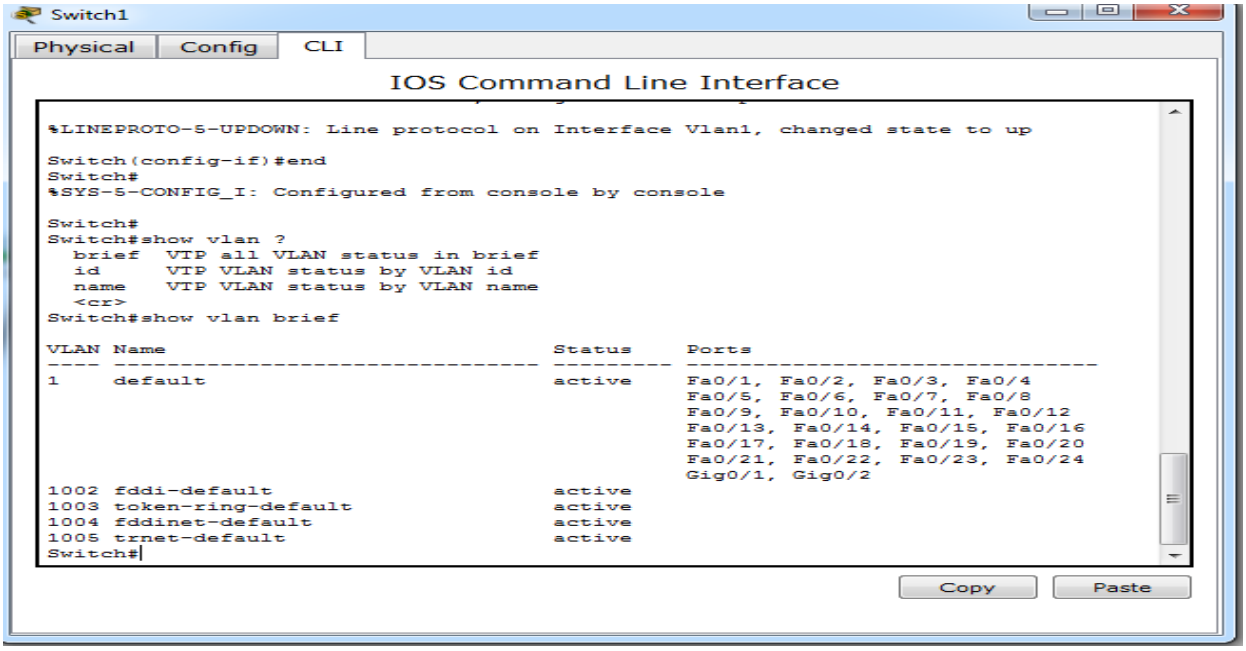


CONFIGURATION:

Click Switch → CLI →then run following commands.

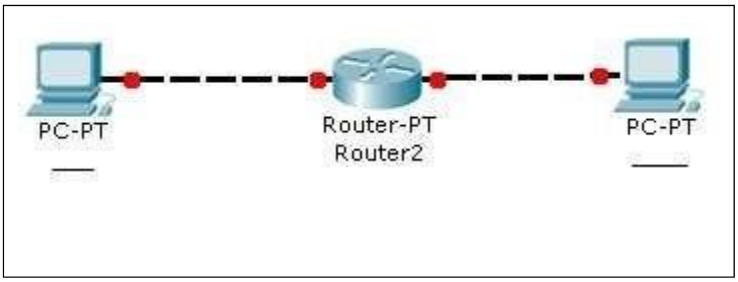


We have to assign IP address on Interface Vlan1 which is default interface in Switch as shown below.

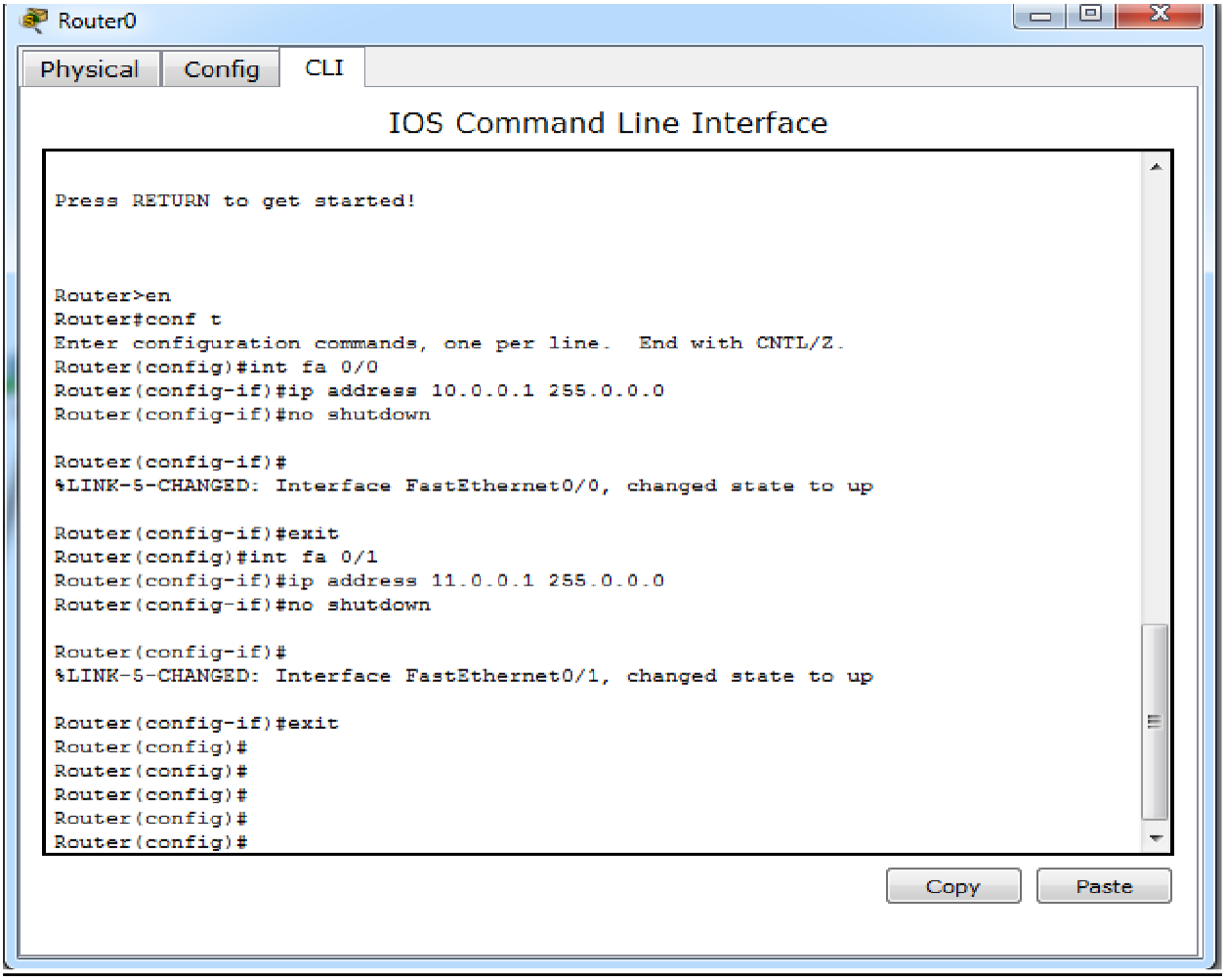


At which layer the SWITCH operates? _____

Task#3: Understand Network Topology and network hardware (L3) devices.

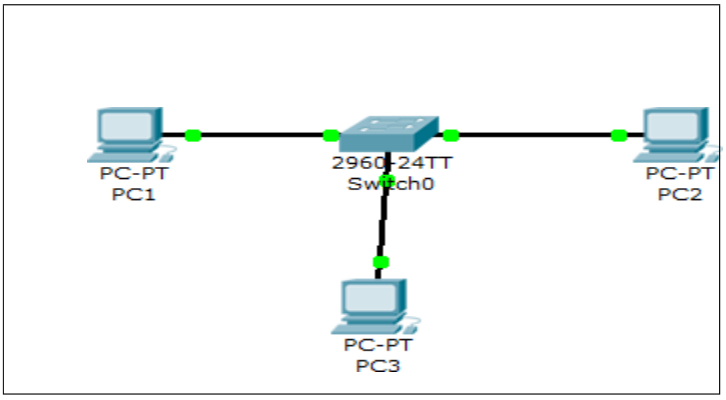


CONFIGURATION:



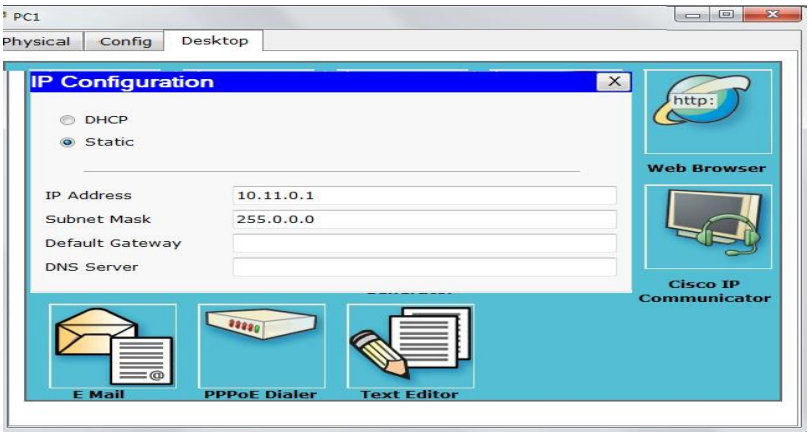
At which layer the ROUTER operates? _____

Task#4: Start the packet tracer and configure the following network and show the packet header format of ICMP protocol.

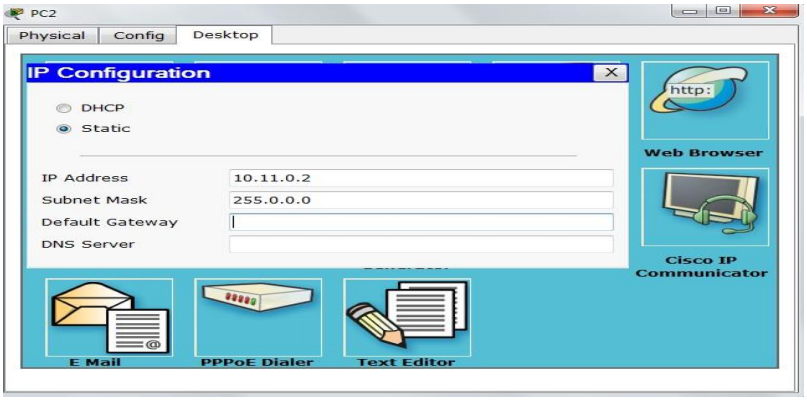


Step#1: configure PC1.

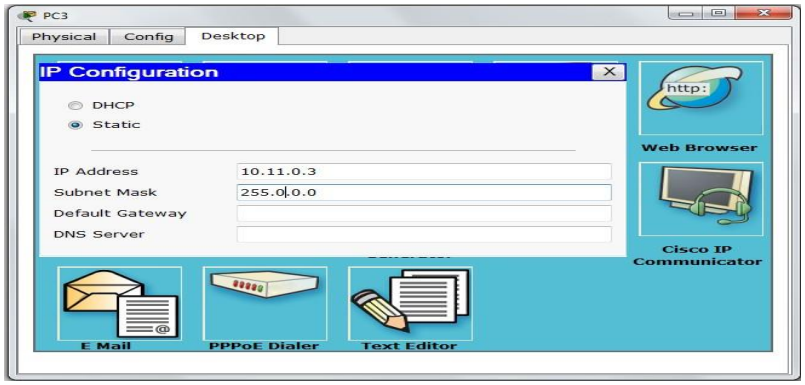
a) **Click on the PC1 and go to Desktop →IP Configuration**



b) **Click on the PC2 and go to Desktop →IP Configuration**



c) **Click on the PC3 and go to Desktop →IP Configuration**



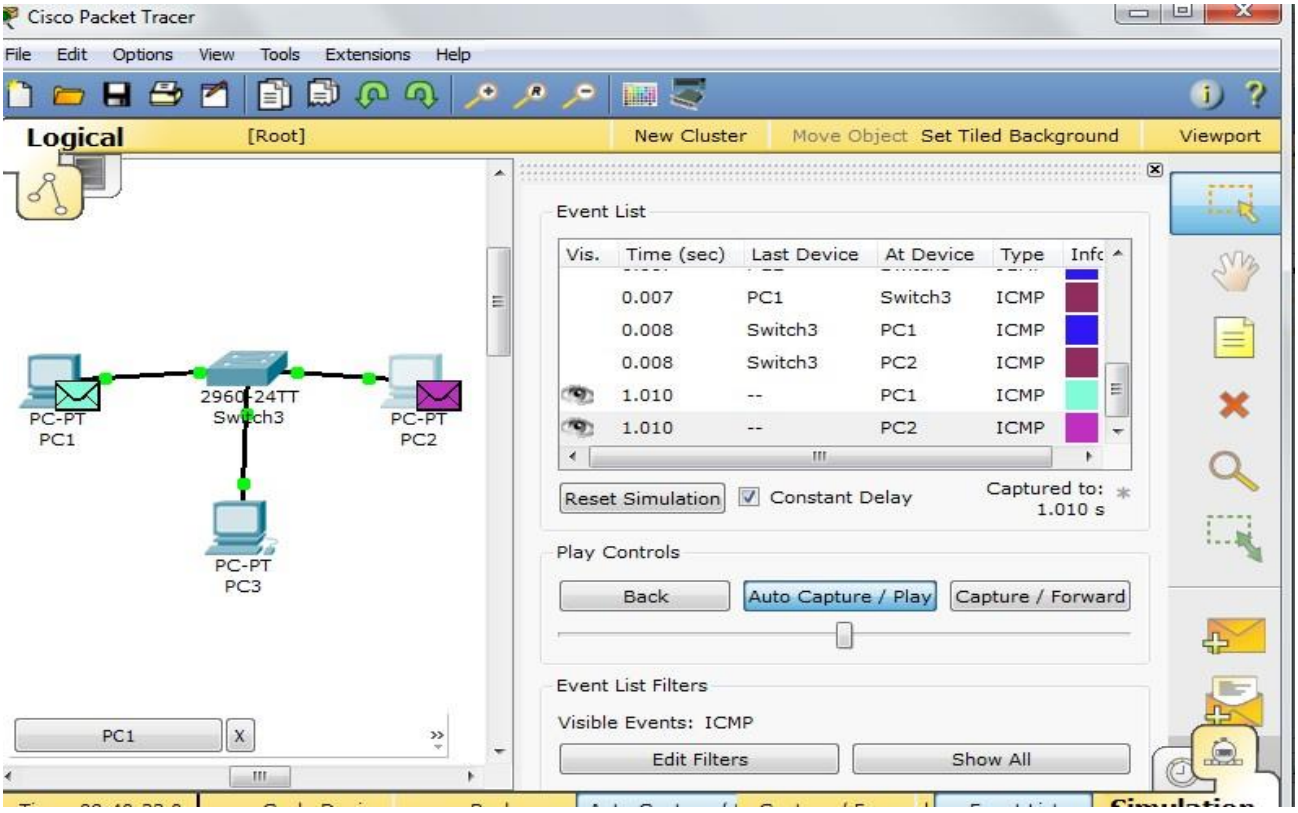
Step#2:

a) Now click on simulation icon in the right bottom of packet Tracer.

b) Now click on edit filter and to capture ICMP protocol packets, Click on ICMP check box.

c) Now click on auto capture /play icon for packet capturing.

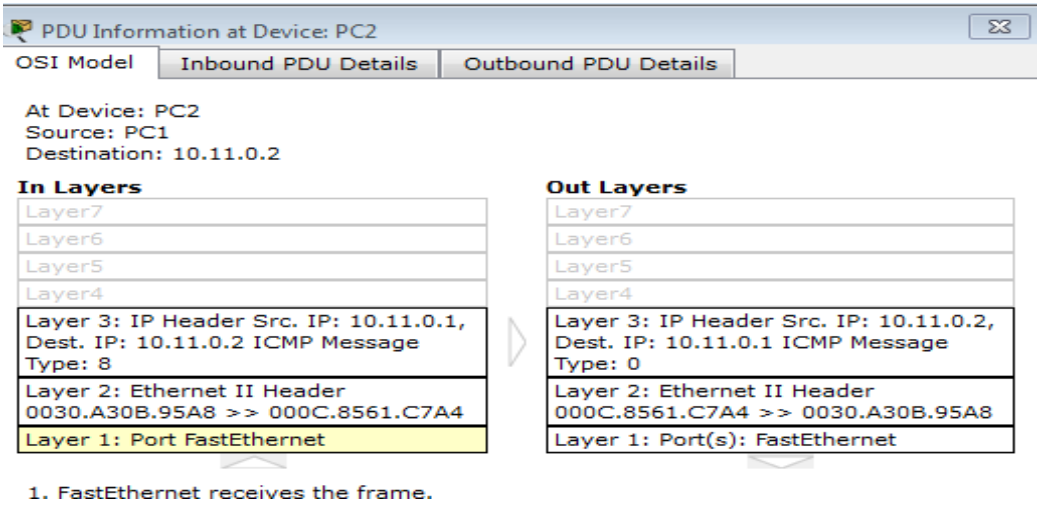
d) Click on the PC1 and go to Desktop →Command Prompt then Ping PC1 from PC2.



Step#3: Now click on the ICMP packet show its header.

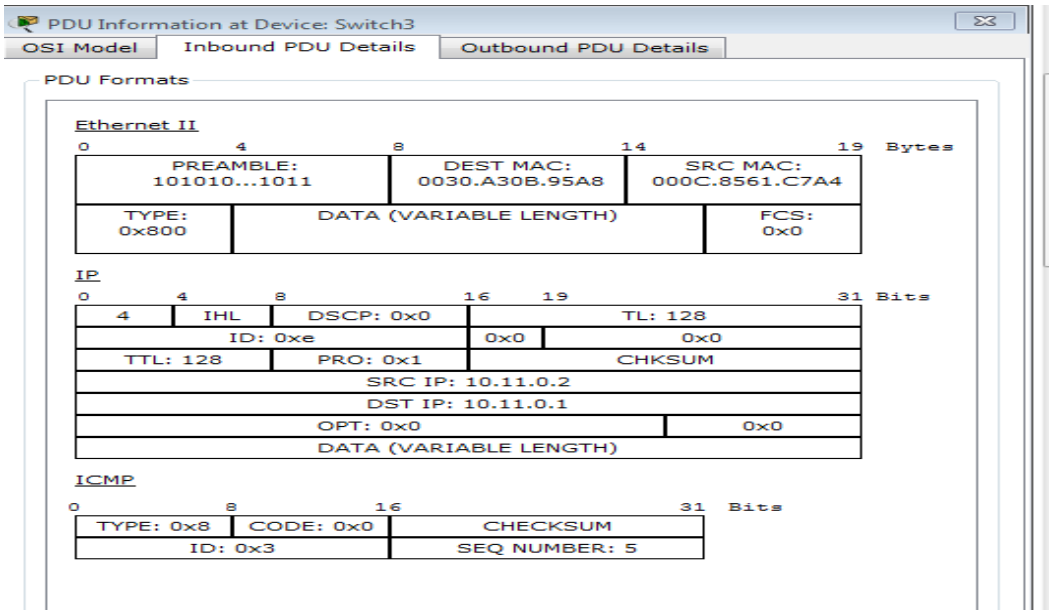
a) Shows OSI layers involved in transmission.

The popped up window (below) will enable you to trace the content of the message through the OSI layer and what changes will occur at each layer (use next and previous buttons to trace each layer content).



b) Shows Inbound PDU Details.

The inbound tab shows the content of the message (header format) during the receiving process.



c) Shows Outbound PDU Details.

The outbound tab shows the content of the message (header format) during the Sending process