**2. Examine packet flow across a network segment and see the operation of various Internet protocols across the different layers in TCP/IP stack. (Use of Utilities: arp, ipconfig/ifconfig, tracert/traceroute, nslookup, netstat, snoop, tcpdump)**

The Address Resolution Protocol (ARP) is a communication protocol used for discovering the link layer address, such as a MAC address, associated with a given internet layer address, typically an IPv4 address.

nslookup is a network administration command-line tool for querying the Domain Name System to obtain the mapping between domain name and IP address, or other DNS records.

The “ifconfig” command is used for displaying current network configuration information, setting up an ip address, netmask, or broadcast address to a network interface, creating an alias for the network interface, setting up hardware address, and enable or disable network interfaces.

In computing, traceroute and tracert are computer network diagnostic commands for displaying possible routes and measuring transit delays of packets across an Internet Protocol network.

In computing, netstat is a command-line network utility that displays network connections for Transmission Control Protocol, routing tables, and a number of network interface and network protocol statistics.

tcpdump is a data-network packet analyzer computer program that runs under a command line interface. It allows the user to display TCP/IP and other packets being transmitted or received over a network to which the computer is attached.