

22BDS0095

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2) a. Networking Commands

b. Create a table with networking commands in Windows and Linux OS

1) Ipconfig / ipconfig all (windows)

```
PS C:\Users\srija> ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter SRIJAN:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::faf0:6c0c:9016:2ef6%13
    IPv4 Address. . . . . : 172.16.151.226
    Subnet Mask . . . . . : 255.255.248.0
    Default Gateway . . . . . : 172.16.144.1
PS C:\Users\srija>
```

```
PS C:\Users\srija> ipconfig /all
```

Windows IP Configuration

```
Host Name . . . . . : SRIJAN
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
```

Wireless LAN adapter Local Area Connection* 1:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 84-7B-57-F9-A5-89
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter Local Area Connection* 2:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : 86-7B-57-F9-A5-88
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter SRIJAN:

```
Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) Wi-Fi 6E AX211 160MHz
Physical Address. . . . . : 84-7B-57-F9-A5-88
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::faf0:6c0c:9016:2ef6%13(Preferred)
IPv4 Address. . . . . : 172.16.151.226(Preferred)
Subnet Mask . . . . . : 255.255.248.0
Lease Obtained. . . . . : Tuesday, July 30, 2024 6:46:56 PM
Lease Expires . . . . . : Wednesday, July 31, 2024 2:46:56 AM
Default Gateway . . . . . : 172.16.144.1
DHCP Server . . . . . : 172.16.144.1
DHCPv6 IAID . . . . . : 142900055
```

Ifconfig / ifconfig -a (linux)

```
(base) matlab@sjt419scope005:~$ ifconfig
enp1s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.30.159.15 netmask 255.255.255.0 broadcast 10.30.159.255
    inet6 fe80::9247:e3f9:4e2b:f36d prefixlen 64 scopeid 0x20<link>
    ether 7c:57:58:cb:df:0a txqueuelen 1000 (Ethernet)
    RX packets 209595 bytes 292686829 (292.6 MB)
    RX errors 0 dropped 101 overruns 0 frame 0
    TX packets 25361 bytes 23541747 (23.5 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 2209 bytes 9073580 (9.0 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2209 bytes 9073580 (9.0 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

(base) matlab@sjt419scope005:~$ ifconfig-a
ifconfig-a: command not found
(base) matlab@sjt419scope005:~$ ifconfig -a
enp1s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.30.159.15 netmask 255.255.255.0 broadcast 10.30.159.255
    inet6 fe80::9247:e3f9:4e2b:f36d prefixlen 64 scopeid 0x20<link>
    ether 7c:57:58:cb:df:0a txqueuelen 1000 (Ethernet)
    RX packets 209674 bytes 292699803 (292.6 MB)
    RX errors 0 dropped 102 overruns 0 frame 0
    TX packets 25373 bytes 23543311 (23.5 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 2209 bytes 9073580 (9.0 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2209 bytes 9073580 (9.0 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

ipconfig is the go-to command for managing network interfaces on Windows, while ifconfig serves a similar role on Linux. Both commands provide ways to display network configuration details and perform network management tasks, although the specific syntax and features differ between the two operating systems.

2) Ping (window and linux)

```
PS C:\Users\srija> ping
```

```
Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
          [-r count] [-s count] [[-j host-list] | [-k host-list]]
          [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p]
          [-4] [-6] target_name
```

Options:

-t	Ping the specified host until stopped. To see statistics and continue - type Control-Break; To stop - type Control-C.
-a	Resolve addresses to hostnames.
-n count	Number of echo requests to send.
-l size	Send buffer size.
-f	Set Don't Fragment flag in packet (IPv4-only).
-i TTL	Time To Live.
-v TOS	Type Of Service (IPv4-only. This setting has been deprecated and has no effect on the type of service field in the IP Header).
-r count	Record route for count hops (IPv4-only).
-s count	Timestamp for count hops (IPv4-only).
-j host-list	Loose source route along host-list (IPv4-only).
-k host-list	Strict source route along host-list (IPv4-only).
-w timeout	Timeout in milliseconds to wait for each reply.
-R	Use routing header to test reverse route also (IPv6-only). Per RFC 5095 the use of this routing header has been deprecated. Some systems may drop echo requests if this header is used.
-S srcaddr	Source address to use.
-c compartment	Routing compartment identifier.
-p	Ping a Hyper-V Network Virtualization provider address.
-4	Force using IPv4.
-6	Force using IPv6.

```
PS C:\Users\srija> |
```

Ping (Linux)

```
(base) matlab@sjt419scope005:~$ ping www.vit.ac.in
PING vit.ac.in (10.10.7.35) 56(84) bytes of data.
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=1 ttl=252 time=0.585 ms
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=2 ttl=252 time=3.21 ms
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=3 ttl=252 time=0.731 ms
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=4 ttl=252 time=0.399 ms
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=5 ttl=252 time=0.468 ms
64 bytes from vit.ac.in (10.10.7.35): icmp_seq=6 ttl=252 time=0.916 ms
^C
--- vit.ac.in ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5036ms
rtt min/avg/max/mdev = 0.399/1.051/3.212/0.980 ms
(base) matlab@sjt419scope005:~$ ping 10.10.7.35
PING 10.10.7.35 (10.10.7.35) 56(84) bytes of data.
64 bytes from 10.10.7.35: icmp_seq=1 ttl=252 time=2.03 ms
64 bytes from 10.10.7.35: icmp_seq=2 ttl=252 time=0.899 ms
64 bytes from 10.10.7.35: icmp_seq=3 ttl=252 time=2.12 ms
64 bytes from 10.10.7.35: icmp_seq=4 ttl=252 time=0.725 ms
^C
--- 10.10.7.35 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 0.725/1.443/2.118/0.634 ms
(base) matlab@sjt419scope005:~$ ping localhost
PING localhost (127.0.0.1) 56(84) bytes of data.
64 bytes from localhost (127.0.0.1): icmp_seq=1 ttl=64 time=0.014 ms
64 bytes from localhost (127.0.0.1): icmp_seq=2 ttl=64 time=0.047 ms
64 bytes from localhost (127.0.0.1): icmp_seq=3 ttl=64 time=0.027 ms
64 bytes from localhost (127.0.0.1): icmp_seq=4 ttl=64 time=0.043 ms
64 bytes from localhost (127.0.0.1): icmp_seq=5 ttl=64 time=0.047 ms
^C
--- localhost ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4092ms
rtt min/avg/max/mdev = 0.014/0.035/0.047/0.013 ms
```

Tests the reachability of a host on an IP network and measures the round-trip time for messages sent from the originating host to a destination computer.

Used to check network connectivity and diagnose network issues

3) Nslookup (windows)

```
PS C:\Users\srija> nslookup www.google.com
Server:    UnKnown
Address:   172.16.144.1

Non-authoritative answer:
Name:      www.google.com
Addresses: 2404:6800:4009:828::2004
           142.250.192.36

PS C:\Users\srija> nslookup www.vit.ac.in
Server:    UnKnown
Address:   172.16.144.1

Non-authoritative answer:
Name:      vit.ac.in
Address:   122.184.65.22
Aliases:   www.vit.ac.in

PS C:\Users\srija>
```

Nslookup (linux)

```
(base) matlab@sjt419scope005:~$ nslookup www.vit.ac.in
Server:    127.0.0.53
Address:   127.0.0.53#53

Non-authoritative answer:
www.vit.ac.in canonical name = vit.ac.in.
Name:      vit.ac.in
Address:   10.10.7.35
```

Queries the Domain Name System (DNS) to obtain domain name or IP address mapping information.

Used for DNS troubleshooting, such as finding the IP address associated with a domain name.

4) Netstat (windows)

```
PS C:\Users\srija> netstat -a
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:135	SRIJAN:0	LISTENING
TCP	0.0.0.0:445	SRIJAN:0	LISTENING
TCP	0.0.0.0:5040	SRIJAN:0	LISTENING
TCP	0.0.0.0:49664	SRIJAN:0	LISTENING
TCP	0.0.0.0:49665	SRIJAN:0	LISTENING
TCP	0.0.0.0:49668	SRIJAN:0	LISTENING
TCP	0.0.0.0:49669	SRIJAN:0	LISTENING
TCP	0.0.0.0:49672	SRIJAN:0	LISTENING
TCP	0.0.0.0:49674	SRIJAN:0	LISTENING
TCP	0.0.0.0:49684	SRIJAN:0	LISTENING
TCP	0.0.0.0:49685	SRIJAN:0	LISTENING
TCP	0.0.0.0:49687	SRIJAN:0	LISTENING
TCP	0.0.0.0:49688	SRIJAN:0	LISTENING
TCP	0.0.0.0:49691	SRIJAN:0	LISTENING
TCP	0.0.0.0:49692	SRIJAN:0	LISTENING
TCP	127.0.0.1:49707	SRIJAN:49708	ESTABLISHED
TCP	127.0.0.1:49708	SRIJAN:49707	ESTABLISHED
TCP	127.0.0.1:49709	SRIJAN:49710	ESTABLISHED
TCP	127.0.0.1:49710	SRIJAN:49709	ESTABLISHED
TCP	127.0.0.1:49711	SRIJAN:49712	ESTABLISHED
TCP	127.0.0.1:49712	SRIJAN:49711	ESTABLISHED
TCP	172.16.151.226:139	SRIJAN:0	LISTENING

Netstat (linux)

```
(base) matlab@sjt419scope005:~$ netstat -s
Ip:
    Forwarding: 2
    28906 total packets received
    0 forwarded
    0 incoming packets discarded
    28664 incoming packets delivered
    13181 requests sent out
    20 outgoing packets dropped
    6 dropped because of missing route
    342 reassemblies required
    102 packets reassembled ok
Icmp:
    134 ICMP messages received
    0 input ICMP message failed
    ICMP input histogram:
        destination unreachable: 58
        echo requests: 5
        echo replies: 71
    397 ICMP messages sent
    0 ICMP messages failed
    ICMP output histogram:
        destination unreachable: 60
        echo requests: 332
        echo replies: 5
IcmpMsg:
    InType0: 71
    InType3: 58
    InType8: 5
    OutType0: 5
    OutType3: 60
    OutType8: 332
Tcp:
    314 active connection openings
    45 passive connection openings
    40 failed connection attempts
    156 connection resets received
    5 connections established
    21991 segments received
    24659 segments sent out
    233 segments retransmitted
```

Displays network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.

Useful for network troubleshooting and monitoring network performance.

5) Tracert (windows)

```
PS C:\Users\srija> tracert -h 5 www.google.com

Tracing route to www.google.com [142.250.192.36]
over a maximum of 5 hops:

  1      1 ms      1 ms      1 ms  172.16.144.1
  2      5 ms      5 ms      4 ms  136.233.9.2
  3      *        4 ms      2 ms  136.232.3.189
  4     31 ms     46 ms     31 ms  172.24.159.57
  5     33 ms     33 ms     33 ms  172.27.225.45

Trace complete.
PS C:\Users\srija> |
```

traceroute -q 3 google.com (linux)

```
sjt419scope005 (10.30.159.15) -> www.vit.ac.in (10.10.7.35)
Keys:  Help  Display mode  Restart statistics  Order of fields  quit

Host                                     Packets      Pings
Loss%  Snt  Last  Avg  Best  Wrst StDev
0.0%   10   0.4   0.6   0.3   0.9   0.2
0.0%   10   0.3   5.8   0.2  54.7  17.2
0.0%   10   0.5   0.6   0.4   1.0   0.2
0.0%   10   0.8   0.8   0.3   1.5   0.4
0.0%    9   0.7   0.9   0.6   1.4   0.3
```

Traces the path that packets take from the source to the destination host in an IP network.

Helps in diagnosing routing issues and understanding the path taken by packets.

6) Getmac (windows)

```
PS C:\Users\srija> getmac

Physical Address      Transport Name
=====
84-7B-57-F9-A5-88     \Device\NPF{98FDE75F-0375-484F-8707-F15CD8A100F2}
PS C:\Users\srija> |
```

Ip link (for linux)

```
(base) matlab@sjt419scope005:~$ ip link
lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 7c:57:58:cb:df:0a brd ff:ff:ff:ff:ff:ff
```

Displays the MAC addresses for network interfaces on a system.

Used to find the MAC address of network interfaces for troubleshooting or configuration purposes.

7) Hostname(windows/linux)

```
PS C:\Users\srija> hostname
SRIJAN
PS C:\Users\srija> |
```

```
(base) matlab@sjt419scope005:~$ hostname
sjt419scope005
```

Displays or sets the hostname of the system. Used to view the current hostname or change it.

8) Arp (windows)

```
PS C:\Users\srija> arp -a

Interface: 172.16.151.226 --- 0xd
Internet Address      Physical Address      Type
172.16.144.1          68-b5-99-ce-15-56     dynamic
172.16.145.98         74-d8-3e-50-da-43     dynamic
172.16.147.111        98-59-7a-9d-68-68     dynamic
172.16.147.157        e8-4b-a1-c8-9e-08     dynamic
172.16.148.224        9c-2f-9d-98-2a-85     dynamic
172.16.150.137        f8-89-d2-8e-1b-43     dynamic
172.16.151.77         40-ec-99-0b-84-52     dynamic
172.16.151.255        ff-ff-ff-ff-ff-ff     static
224.0.0.7            01-00-5e-00-00-07     static
224.0.0.22           01-00-5e-00-00-16     static
224.0.0.251          01-00-5e-00-00-fb     static
224.0.0.252          01-00-5e-00-00-fc     static
224.0.0.253          01-00-5e-00-00-fd     static
239.255.255.250      01-00-5e-7f-ff-fa     static
255.255.255.255      ff-ff-ff-ff-ff-ff     static
PS C:\Users\srija> |
```

Arp (linux)

```
(base) matlab@sjt419scope005:~$ arp -a
? (10.30.159.60) at 7c:57:58:cb:df:6c [ether] on enp1s0
? (10.30.159.13) at 7c:57:58:cb:ec:9a [ether] on enp1s0
? (10.30.159.70) at 7c:57:58:cb:ec:77 [ether] on enp1s0
? (10.30.159.33) at 7c:57:58:cb:df:8f [ether] on enp1s0
? (10.30.159.30) at 7c:57:58:cb:ec:30 [ether] on enp1s0
? (10.30.159.75) at 7c:57:58:cb:df:66 [ether] on enp1s0
? (10.30.159.50) at 7c:57:58:cb:ec:35 [ether] on enp1s0
? (10.30.159.68) at 7c:57:58:cb:ec:42 [ether] on enp1s0
? (10.30.159.39) at 7c:57:58:cb:eb:56 [ether] on enp1s0
? (10.30.159.28) at 7c:57:58:cb:df:b9 [ether] on enp1s0
? (10.30.159.73) at 7c:57:58:cb:df:7e [ether] on enp1s0
? (10.30.159.48) at 7c:57:58:cb:ea:e2 [ether] on enp1s0
gateway (10.30.159.1) at f8:es:7e:bb:52:4d [ether] on enp1s0
? (10.30.159.37) at 7c:57:58:cb:df:53 [ether] on enp1s0
? (10.30.159.18) at 7c:57:58:cb:ec:2a [ether] on enp1s0
? (10.30.159.54) at 7c:57:58:cb:df:9f [ether] on enp1s0
? (10.30.159.59) at 7c:57:58:cb:df:cd [ether] on enp1s0
? (10.30.159.16) at 7c:57:58:cb:ec:36 [ether] on enp1s0
? (10.30.159.77) at 7c:57:58:cb:df:9e [ether] on enp1s0
? (10.30.159.52) at 7c:57:58:cb:df:2f [ether] on enp1s0
? (10.30.159.40) at 7c:57:58:cb:eb:b8 [ether] on enp1s0
? (10.30.159.57) at 7c:57:58:cb:df:87 [ether] on enp1s0
? (10.30.159.22) at 7c:57:58:cb:df:60 [ether] on enp1s0
? (10.30.159.67) at 7c:57:58:cb:df:2d [ether] on enp1s0
? (10.30.159.46) at 7c:57:58:cb:e0:3d [ether] on enp1s0
? (10.30.159.27) at 7c:57:58:cb:ec:7e [ether] on enp1s0
? (10.30.159.63) at 7c:57:58:cb:ec:28 [ether] on enp1s0
? (10.30.159.20) at 7c:57:58:cb:ec:2d [ether] on enp1s0
? (10.30.159.65) at 7c:57:58:cb:eb:91 [ether] on enp1s0
? (10.30.159.44) at 7c:57:58:cb:ec:87 [ether] on enp1s0
? (10.30.159.82) at 7c:57:58:cb:df:6a [ether] on enp1s0
? (10.30.159.25) at 7c:57:58:cb:df:8b [ether] on enp1s0
? (10.30.159.61) at 7c:57:58:cb:eb:47 [ether] on enp1s0
? (10.30.159.71) at 7c:57:58:cb:eb:c7 [ether] on enp1s0
? (10.30.159.14) at 7c:57:58:cb:df:a3 [ether] on enp1s0
? (10.30.159.34) at 7c:57:58:cb:eb:df [ether] on enp1s0
? (10.30.159.80) at 7c:57:58:cb:df:ae [ether] on enp1s0
? (10.30.159.31) at 7c:57:58:cb:ec:74 [ether] on enp1s0
? (10.30.159.51) at 7c:57:58:cb:ec:62 [ether] on enp1s0
? (10.30.159.69) at 7c:57:58:cb:df:22 [ether] on enp1s0
? (10.30.159.12) at 7c:57:58:cb:eb:77 [ether] on enp1s0
? (10.30.159.32) at 7c:57:58:cb:ec:45 [ether] on enp1s0
```

Displays and modifies the Address Resolution Protocol (ARP) cache, which maps IP addresses to MAC addresses.

Used to view or manipulate the ARP cache entries to troubleshoot network issues or configure static ARP entries.

3) Using any programming language, write a code to exhibit the inclusion of headers and trailer at the sender side and extracting the message back at the receiver side in the OSI layer

Note: The information to be transmitted is I am “ Student Name” ,Reg.no is 2XBCE0000 (Mention your register number)

CODE:

```
11 > g++ 1.cpp > receiver(string)
1 // 22BDS0095
2 #include <iostream>
3 #include <string>
4 using namespace std;
5
6 void transmitter(string& msg) {
7     string headers[] = {"AH ", "PH ", "SH ", "TH ", "NH ", "DH "};
8     string trailers[] = {" AT", " PT", " ST", " TT", " NT", " DT"};
9     string layers[] = {"Application Layer", "Presentation Layer", "Session Layer", "Transport Layer", "Network Layer", "Datalink Layer"};
10    for (int i = 0; i < 6; ++i) {
11        msg = headers[i] + msg + trailers[i];
12        cout << layers[i] << ": " << msg << endl;
13    }
14    cout << "msg Enter into Physical Layers and then Transmitted." << endl;
15}
16
17 void receiver(string msg) {
18     string headers[] = {"DH ", "NH ", "TH ", "SH ", "PH ", "AH "};
19     string trailers[] = {" DT", " NT", " TT", " ST", " PT", " AT"};
20     string layers[] = {"Datalink Layer", "Network Layer", "Transport Layer", "Session Layer", "Presentation Layer", "Application Layer"};
21     cout << "\nRECEIVER:" << endl;
22     cout << "Message Enter into Physical Layers\n" << endl;
23     for (int i = 0; i < 6; ++i) {
24         cout << layers[i] << ": " << msg << endl;
25         msg = msg.substr(headers[i].length(), msg.length() - headers[i].length() - trailers[i].length());
26     }
27     cout << "Application Layers: " << msg << endl;
28 }
29
30 int main() {
31     string input_string = "I am 'Srijan Athghara', Reg.no is 22BDS0095";
32     cout << "\nTRANSMITTER:\n" << endl;
33     string encoded_msg = input_string;
34     transmitter(encoded_msg);
35     receiver(encoded_msg);
36     return 0;
37 }
```

OUTPUT:

```
PS C:\Users\srija\Downloads\ML All Codes> cd "c:\Users\srija\Downloads\ML All Codes\html\" ; if ($?) { g++ 1.cpp -o 1 } ; if ($?) { .\1 }
```

TRANSMITTER:

```
Application Layer: AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT
Presentation Layer: PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT
Session Layer: SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST
Transport Layer: TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT
Network Layer: NH TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT NT
Datalink Layer: DH NH TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT NT DT
msg Enter into Physical Layers and then Transmitted.
```

RECEIVER:

Message Enter into Physical Layers

```
Datalink Layer: DH NH TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT NT DT
Network Layer: NH TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT NT
Transport Layer: TH SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST TT
Session Layer: SH PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT ST
Presentation Layer: PH AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT PT
Application Layer: AH I am 'Srijan Athghara', Reg.no is 22BDS0095 AT
Application Layers: I am 'Srijan Athghara', Reg.no is 22BDS0095
PS C:\Users\srija\Downloads\ML All Codes\html>
```