WORKSHEET 1.2

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1. **Aim:**

SOME BASIC NETWORK COMMAND AND NETWORK CONFIGURATION COMMANDS.

2.Software Requirements: COMMAND PROMPT

3.Procedure:
Open command prompt and type the following commands.

1.PING: The ping command is used to test connectivity between two hosts.

COMMAND: ping google.com

```
C:\Users\SANJIV>ping google.com

Pinging google.com [2404:6800:4009:823::200e] with 32 bytes of data:
Reply from 2404:6800:4009:823::200e: time=190ms
Request timed out.
Reply from 2404:6800:4009:823::200e: time=76ms
Request timed out.

Ping statistics for 2404:6800:4009:823::200e:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 76ms, Maximum = 190ms, Average = 133ms
```

2.IPCONFIG:

This command displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and domain Name system(DNS) settings

COMMAND: ipconfig

```
Windows IP Configuration


Ethernet adapter Ethernet 2:

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

Unknown adapter Local Area Connection:

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

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 Wi-Fi:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::4ad0:fe2f:63f5:9b69%19
   IPv4 Address. . . . . . . . . . . : 192.168.31.40
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.31.1
```

3.TRACERT:

This command is used to diagnose pathrelated problems.
COMMAND: tracert google.com

```
Tracing route to google.com [142.250.194.78]
over a maximum of 30 hops:

  1     1 ms    <1 ms    <1 ms  XiaoQiang [192.168.31.1]
  2     4 ms     6 ms     7 ms  172.20.48.1
  3     2 ms     2 ms     2 ms  192.168.40.1
  4     2 ms     2 ms     3 ms  172-15-15-1.lightspeed.sntcca.sbcglobal.net [172.15.15.1]
  5     6 ms    45 ms    10 ms  static-145.148.249.49-tataidc.co.in [49.249.148.145]
  6    40 ms     *         *    10.118.4.162
  7     *        9 ms      *    10.117.137.137
  8    10 ms     *         *    10.43.147.53
  9     *        9 ms    12 ms  10.43.147.33
 10    20 ms    26 ms      *    10.43.147.42
 11    55 ms    58 ms    55 ms  72.14.196.97
 12    60 ms    63 ms    56 ms  108.170.251.113
 13    57 ms    54 ms    56 ms  142.251.49.121
 14    55 ms    55 ms    56 ms  del12s03-in-f14.1e100.net [142.250.194.78]

Trace complete.
```

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4. NSLOOKUP:

NSLookup is a great utility for diagnosing DNS name resolution problems. Just type the NSLookup command, and Windows will display the name and IP address of the device's default DNS server.

COMMAND: nslookup

```
C:\Users\SANJIV>nslookup
Default Server:  warp-svc
Address:  fd01:db8:1111::2
```

5. NETSTAT:

This command displays active connections, ports on which the computer is listening, Ethernet statistics, the IP routing table, and IP statistics.

COMMAND: netstat

```
TCP    192.168.31.40:55034    91.108.23.100:https      ESTABLISHED
TCP    192.168.31.40:55035    91.108.23.100:https      ESTABLISHED
TCP    192.168.31.40:55036    91.108.23.100:https      ESTABLISHED
TCP    192.168.31.40:55037    91.108.23.100:https      ESTABLISHED
TCP    192.168.31.40:55045    91.108.56.133:https      ESTABLISHED
TCP    192.168.31.40:55091    91.108.23.100:https      ESTABLISHED
TCP    192.168.31.40:55175    52.114.32.217:https      ESTABLISHED
TCP    192.168.31.40:55250    sm-in-f188:5228          ESTABLISHED
TCP    192.168.31.40:55409    whatsapp-chatd-edge-shv-01-bom1:5222  ESTABLISHED
TCP    192.168.31.40:55853    52.168.117.170:https     ESTABLISHED
TCP    192.168.31.40:56506    40.99.31.162:https       ESTABLISHED
TCP    192.168.31.40:56568    13.107.136.254:https     ESTABLISHED
TCP    192.168.31.40:56569    40.99.31.162:https       ESTABLISHED
TCP    192.168.31.40:56570    13.107.42.254:https      ESTABLISHED
TCP    192.168.31.40:56702    a23-223-244-136:https    ESTABLISHED
TCP    192.168.31.40:56824    131.253.33.254:https     ESTABLISHED
TCP    192.168.31.40:56830    bingforbusiness:https    FIN_WAIT_1
TCP    192.168.31.40:57528    13.89.179.9:https        TIME_WAIT
TCP    192.168.31.40:57529    40.79.150.120:https      TIME_WAIT
TCP    192.168.31.40:57533    XiaoQiang:domain         TIME_WAIT
TCP    192.168.31.40:57534    XiaoQiang:domain         TIME_WAIT
TCP    192.168.31.40:57535    149.154.165.111:https    ESTABLISHED
```

6.HOSTNAME:
Typing Hostname at the command prompt returns the local computer name.

COMMAND: *hostname*

```
C:\Users\SANJIV>hostname
SANJIV
```

7.ARP:
The ARP command corresponds to the Address Resolution Protocol. Althoughit is easy to think of network communications in terms of IP addressing, packet delivery is ultimately dependent on the Media Access Control (MAC) address of the device's network adapter.

COMMAND: *arp-a*

```
Interface: 192.168.31.40 --- 0x13
  Internet Address      Physical Address      Type
  192.168.31.1          5c-02-14-c6-cc-4c     dynamic
  192.168.31.214        38-d5-7a-35-e3-21     dynamic
  192.168.31.255        ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     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
  239.192.152.143       01-00-5e-40-98-8f     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

8.GETMAC:

To get information about adapters MAC address.
COMMAND:getmac

```
Physical Address      Transport Name
================= =========================================================
90-E8-68-B8-A7-6D    \Device\Tcpip_{FDCDCA64-E531-46B5-8261-D47ED45DA0DB}
92-E8-68-B8-A7-3D    Media disconnected
00-FF-3A-33-AC-45    Media disconnected
N/A                  Media disconnected
```