Assignment - 05

→ **Problem Statement** : Write a program in Java using UDP Sockets to enable file transfer between two machines Demonstrate the packets captured traces using wireshark Packet Analyzer tool for peer to peer mode.

→ **Learning Objectives**
  (i) To understand the concept of Socket Programming
  (ii) Create & use UDP Socket.
  (iii) Transfer File

→ **Software & Hardware Requirements** →
      PC with latest 64 bit Open Source OS, Wireshark Tool.

Theory

① Socket Programming :-
        Sockets provide the communication between two computers.

② UDP :-
      UDP stands for User Datagram Protocol. a connectionless protocol that allows for packets of data to be transmitted between applications.

(ii) In Socket Programming lot of low-level stuff that needs to happen for two computers to communicate in a network, but the Java Network API (java.net) takes care of all that, making network programming very easy. Datagram Sockets are java's mechanism for network communication via UDP instead of TCP. Java Provides Datagram Sockets to communicate over UDP instead of TCP. Datagram Sockets can be used to both send & receive packets over the internet.

1) Creation of Datagram Server:
   Syntax : public DatagramSocket()
   public DatagramSocket(int port)
   public DatagramSocket(int port, Inet Address)

2) Creation of Datagram Packet.
   (i) To send Data.
       Datagram dp = DatagramPacket(byte[] buf,
           int offset, int length, Socket Address ad).

   (ii) To receive Data:

       Datagram Packet dp = Datagram Packet(byte[] buff, int length)

3) Sending & Receiving Packets.
   send() & Receive() functions are used to send & receive Packets.

Syntax:

```
ds.send (dp);
ds.send (dp);
```

Conclusion

Successfully implented file transfer between
two computer using UDP sochet programming.