Practical -1

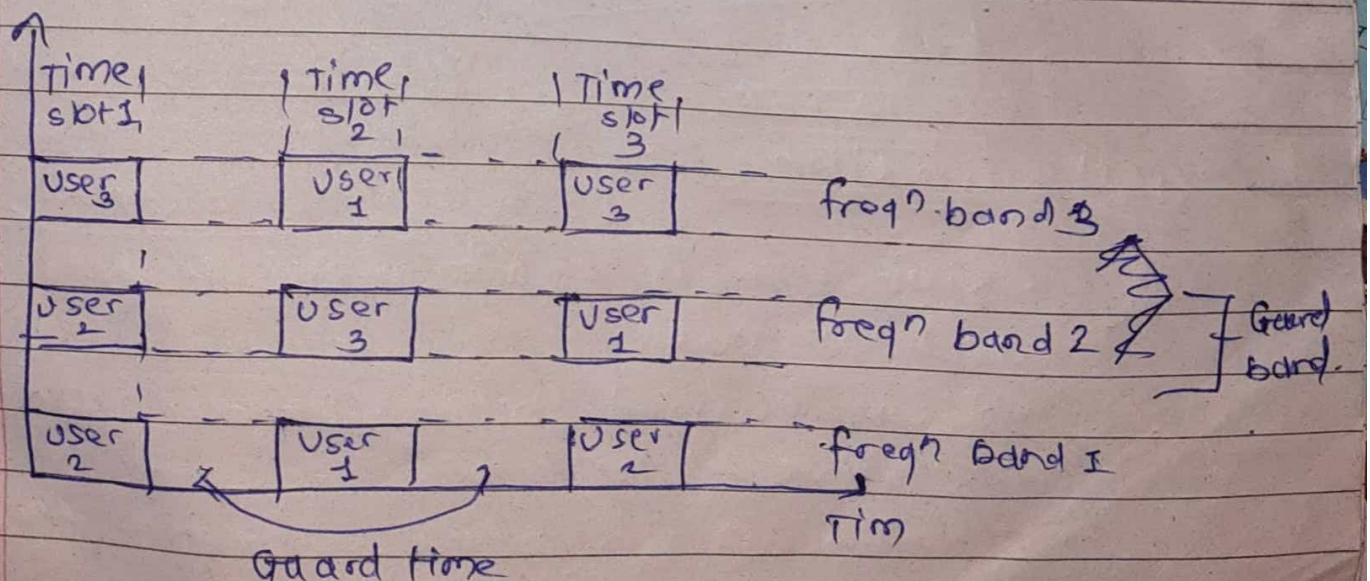
Aim = To implement CDMA

objective = To understand function of CDMA used to test code

software & hardware =
- OS = Unix or Window 7/8/10
- processor = i3/i5/i7
- software = Python (vscode)
  Java (Jupyter)

Theory :

- CDMA stands for code division multiple access.
- Here code is divided into no of spectrum
- Here continous transmission of the Data
- CDMA having unlimited cell capacity
- Here all terminal are activated for same place
- Will see the structure



- The Space betn 2 freq band is Guard band
- The Space betn 2 time slot is Guard time

code

Note = Write if requires

conclusion = From this experiment we understand the implementation of CDMA and Test it through code.

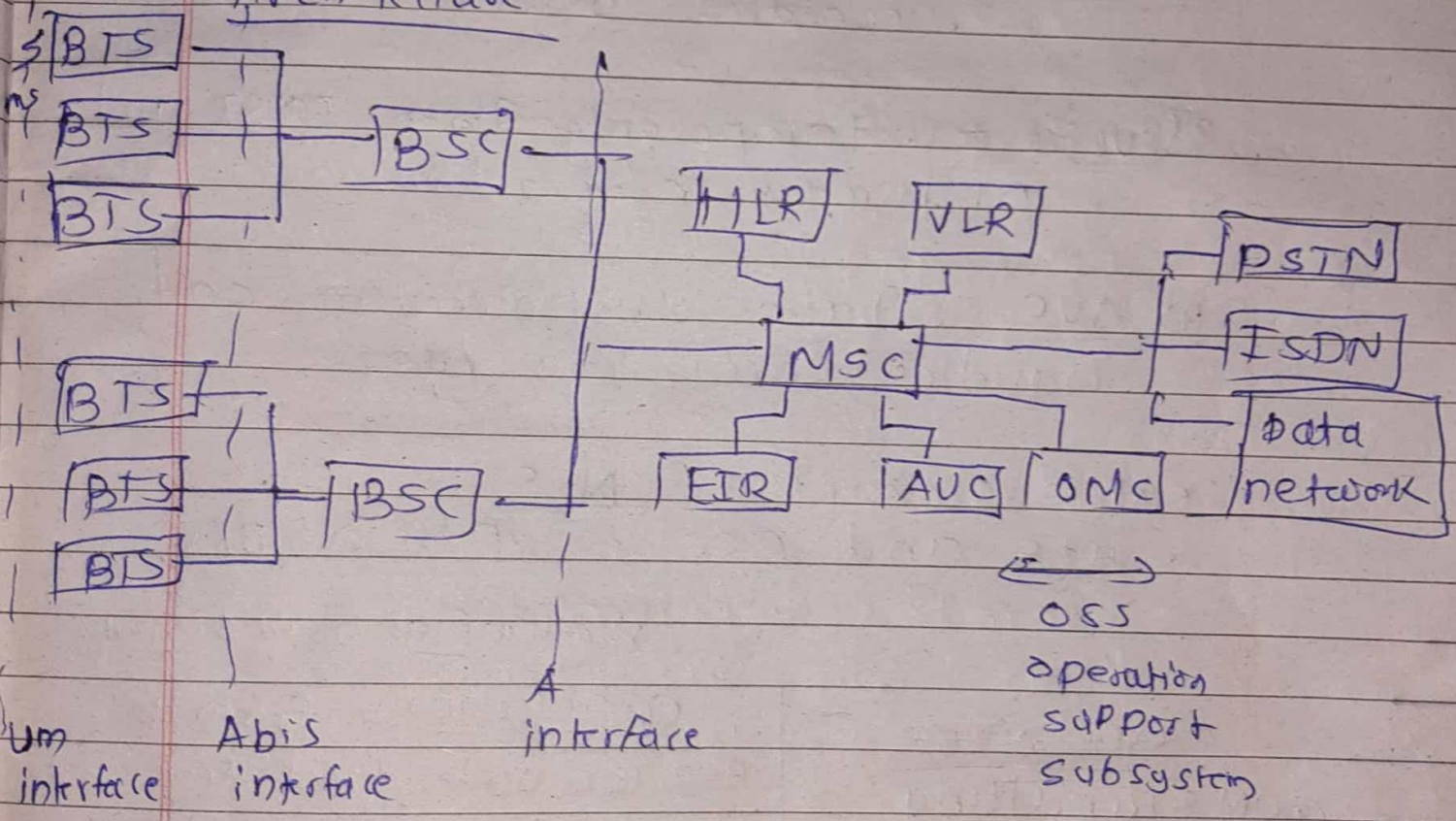
Practical -2

Aim: To study GSM architecture

Theory:

- GSM stands for global system for mobile communication
- It is most successfull Digital mobile telecommunication service
- It is integration of different voice data and services.

Architecture



- Msc are connected with 2 BSC.
- Each BSC having 3 BTS are connected

Note = If we having extra time write all full form

- The interface betn mobile station and BTS is Um interface
- The interface betn BTS and BSC is Abis interface
- The interface betn BSC and MSC is A interface

The Different Data bases are connected

1] HLR = . contains subscriber information
. contains location information

2] VLR = . temporarily store IMSI and customers information.

3) AUC = takes authentication and handles encryption types

- MSC is part of NSS
- BTS and BSC is part of BSS

GSM signalling = conclusion = from this exp we understand Arch and signalling used in GSM

write after GSM signal

- signalling is communication betn mobile and network
- It is carried through network and across interfaces of mobile
- It based on open system interconnect with computer subsystem

Practical -3

Aim: Study of GPRS Service

objective: To understand function of GPRS Service

Architecture =

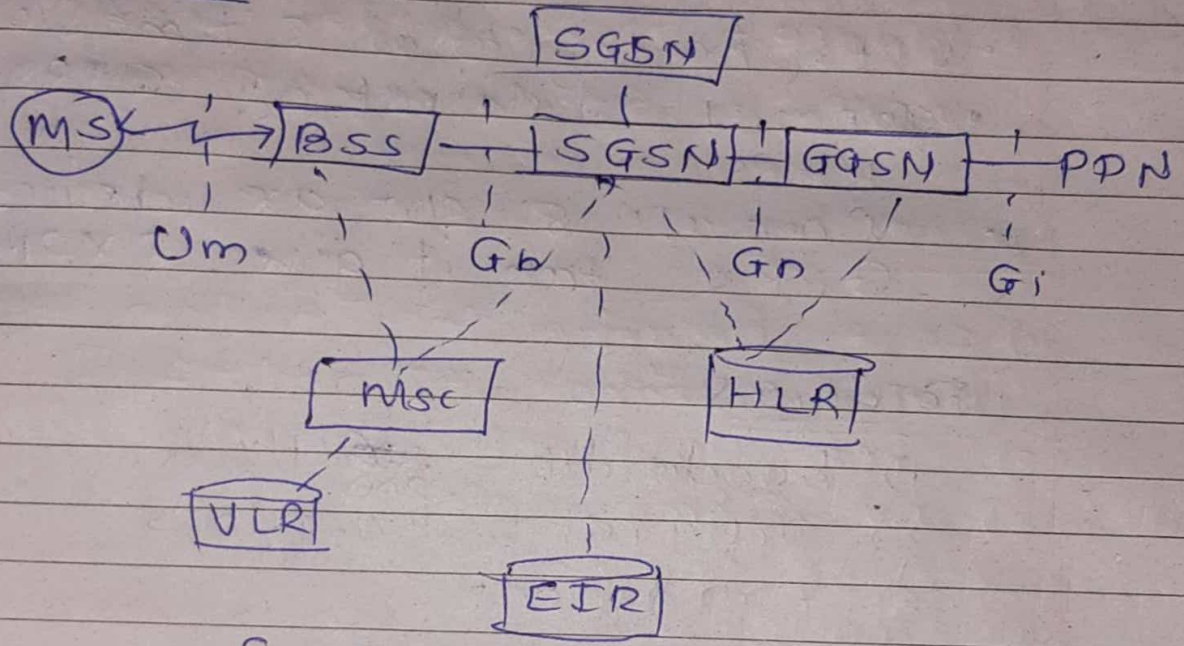


fig. GPRS Architecture

Theory : Stands for general packet radio service

- It is new version of GSM
- It is packet based service
- GPRS support multiple user
- GPRS having dedicated radiochannel
- It having time slots
- It is basically depends on 2G and 3G cellular networks
- It follows uplink and downlink frequency.

Uplink = It is link from ground station to satellite (890-915 MHz)

Downlink : It is link from satellite to ground station (935-960) MHz

- GPRS having total 8 timeslots
- General data rate of GPRS is 21.4 Kbps
- When all 8 slot are dedicated to GPRS then it give 8 × 21.4 = 171.2 Kbps

Features

1) bandwidth = 200 KHz
2) Data rate = 171.2 Kbps
3) FDD duplex :

conclusion.

- From this experiment we concluded how GPRS is important and how it is used.

practical-4

Aim = simulate BER performance

objective =
- understand what is Rayleigh fading
- Study BPSK modulation

software & hardware
- windows 7/10/11
- matlab.

~~Theory~~

Architecture

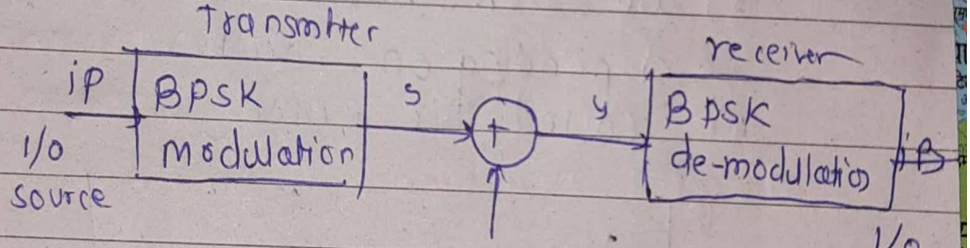


fig. system symbol

Theory

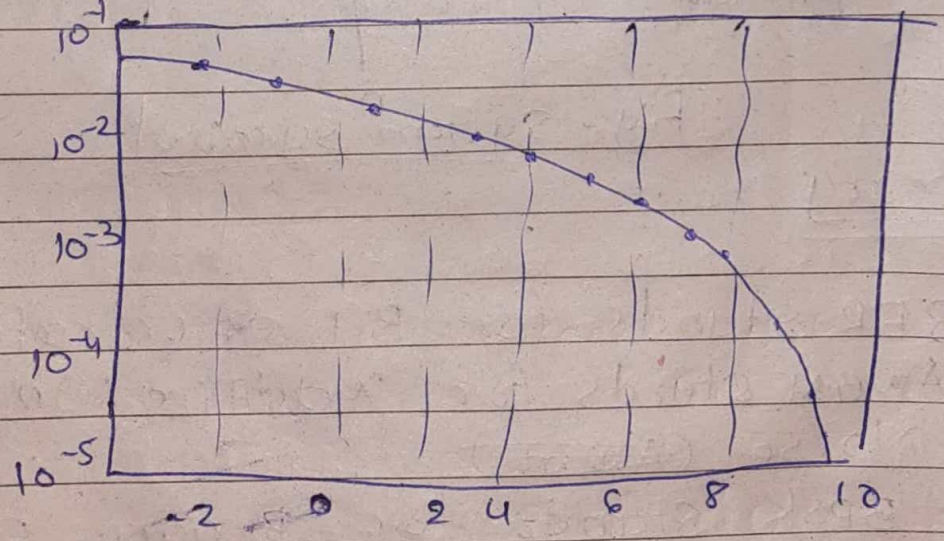
- BER stands for Bit error rate
- AWGN stands for Additive White gaussian Norse ~~(AWGN)~~
- Bpsk stands for Binary phase Shift keying
- We can find out the BER result in matlab
- matlab is user friendly simulation tool

- By using BPSK the binary digit one and zero is represent.
- Here transmitted wave get disrupt by distortion, noise is refered as AWGN

Additive = Noise added to receive signal
White = Spectrum of noise is flat

Procedure

1) First we generate random BPSK modulated symbol +1 and -1
2) Then pass it through AWGN
3) we Demodulate the receive symbol depending on location
4) count the error



Conclusion

From this exp we understand how to simulate BER performance over Rayleigh fading by using BPSK

Practical-5

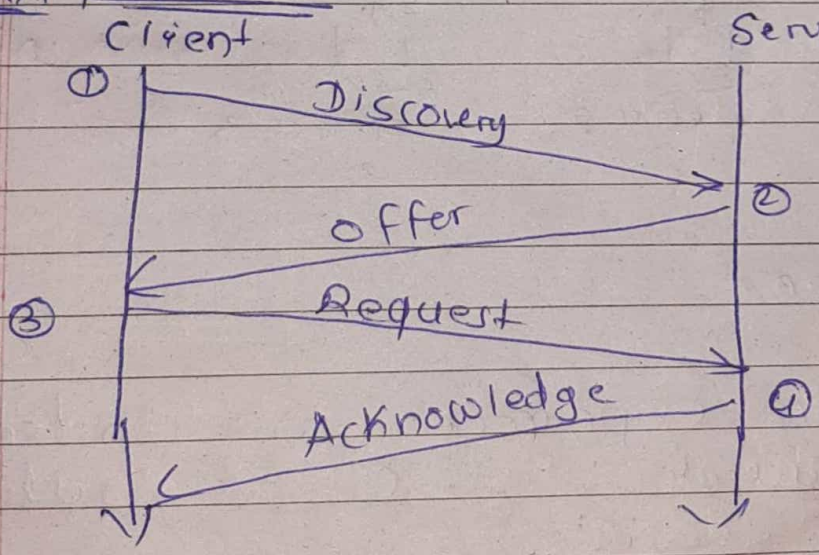
Aim: configure cisco router as Dhcp

Software:
- open source Linux OS
- cisco packet tracer

Theory

- DHCP is Dynamic host configuration protocol
- It is standard client/server network
- It dynamically assign IP address and other information to network
- Here each network must having Unique ip address

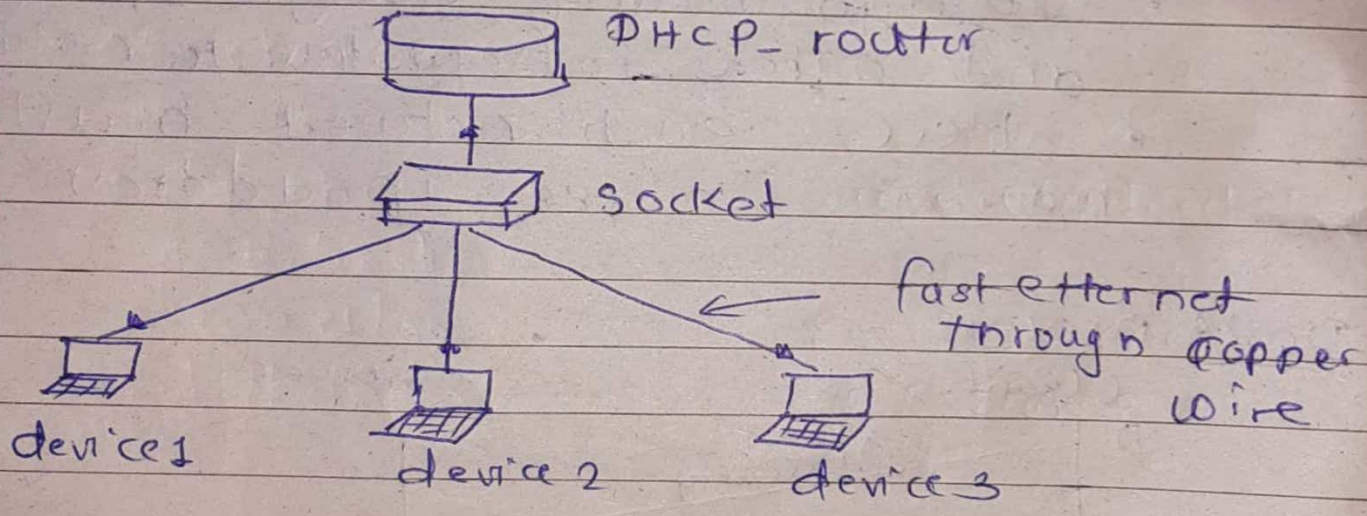
DORA process



- Here we navigate to the cisco packet tracer with our details
- after that we select one Dhcp router
- connect that router to multiple Soket and ~~devices~~ end devices through copper wire.

Dora = technique used by DHCP to dynamically assign IP addresses to devices or client machine of internet

- then we define network for that devices
- connected network with fast ethernet
- after connect wait until it becomes green for connect switch to router.
- for that we will do program
- then we finally assign IP address to the router.



conclusion

- In this experiment we understood configuration of Cisco router as DHCP server.
- we also studied dora process

Practical - 6

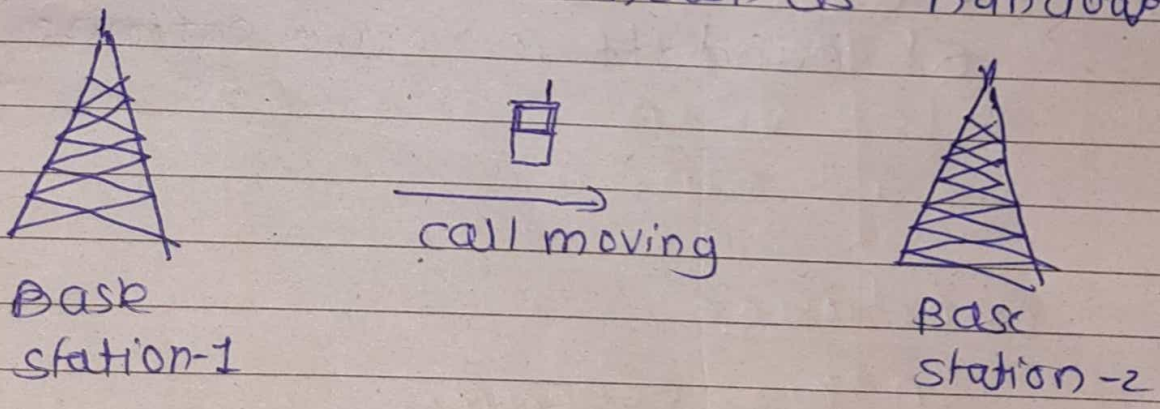
Aim: To understand handover

software & hardware

- OS = windows 7
  Java version = 6
  Mozilla firefox version : 47.0.1

Theory

- handoff is process of mobile communication to transfer the call from one base station to another one without any interption or quality loss
- It is also known as handover



- If handoff is not performed the call is lost or dropped
- It is generally used in long distance communication
- Handoff maintain connectivity bet? 2 devices.

Process

- open jard file and click start button. given any name
- ~~Screen~~ re put the value of frequency reuse as 3
- Make speed as 50 or 100
- Then start → ok → generate report

After that
- we get outage %
  - We can change speed
  - Save the generated report and show as output

- conclusion

- In this practical we studied handoff practical
- we also studied ~~how to~~ mechnism of handoff in java software

Practical - 7

Aim : to study outage probability of LCR & ADF

Software & hardware

- OS = Unix or Windows 7/8/10
- processor = i8/i5/i7
- software = python or java

Theory

- fading is fluctuation of signal over distance of wavelength.
- fading is generally divided into flat or selective fading, slow fad
- Flat fading occurs when wireless signal experiences frequency selectie attenuation.
- It caused fluctuation in received signal.
- Here component affect in same manner
- Selective fading occure when signal experiences different level of attenuation
- Here component affect is diff manner
- signal bandwidth is larger than signal channel
- Slow fading = It occurs when channel moves slowly over large object in environment

process :

don't work just for understanding → D drive - mobile computing - 7th prac → java file

- open the java file
- Start and give name & OK
- give input value
  1) No of multipath = 100
  2) No of samples = 1000
  3) velocity = 20
  4) Thresbold = 0.

- Then submit and report and save it.
- we get channel, prob vs Th LCR vs Th and ADF vs Th as output

conclusion

- In this experiment we studied outage probability LCR & ADF in SISO ~~for~~
- we perform different steps for

practical - 2

Aim: File sharing by TCP

Software & hardware

1) python
2) Linux os
3) vs code

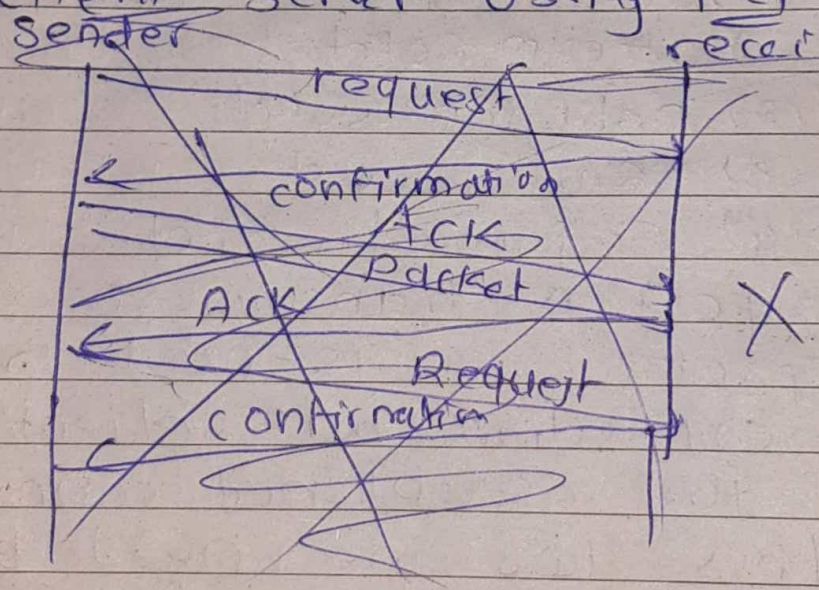
Theory :

- socket allow communication beth different processor on same machine.
- Socket divided into
  1) stream soket
  2) Datagram soket
  3) Raw socket
  4) Sequenced soket
- TCP is transmission control protocol it is used to established connection beth client & server
- for established connection beth this two we need to write code foo client & server both

process

- First we need to open vs code and create one python file
- In that we need to write Server code
- create another python file and

in that write of client code
- open one text file and write random sentence as text
- our object is recieved this file from server to client
- First we need to run Server program
- Then run client program.
- After that we get received file in that we get same conext as text file.
- So by using TCP we transfer client server using tcp



conclusion =

- From this experiment we understand file sharing using TCP
- We also study socket & its type