[2CEIT503: COMPUTER NETWORK]

Practical: 6

AIM: **Study and installation of Network Simulator.**

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Steps for install ns2 in ubuntu 22.04.1

Step 1: Update your system using this command (Run command in terminal)
sudo apt update

Step2: Install Build Essential using this command (Run command in terminal)
sudo apt install build-essential autoconf automake libxmu-dev

Step3: For ns2 you require to install gcc-4.8 and g++-4.8 it's available only up to ubuntu 18.04 version which the codename is bionic for that we need to modify sources.list file for that follow steps.

- Open sources.list file by using this command (Run command in terminal)
  sudo gedit /etc/apt/sources.list
- After that we add one line in this file at the end of the file.
  deb http://in.archive.ubuntu.com/ubuntu/ bionic main universe
- Make entry of above line in sources.list file and save it.

Step4: After that update your system by using this command (Run command in terminal)
sudo apt update

- During update if we face this type of error don't worry about it
- ❖ The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 3B4FE6ACC0B21F32

Solution:

- Run this command but remember we need to put your own public key in this command that provided in the error just copy and past it in command. (Run command in terminal)
- In my case public key is 3B4FE6ACC0B21F32 in your case public is different.

sudo apt-key adv –keyserver keyserver.ubuntu.com –recv-keys 3B4FE6ACC0B21F32

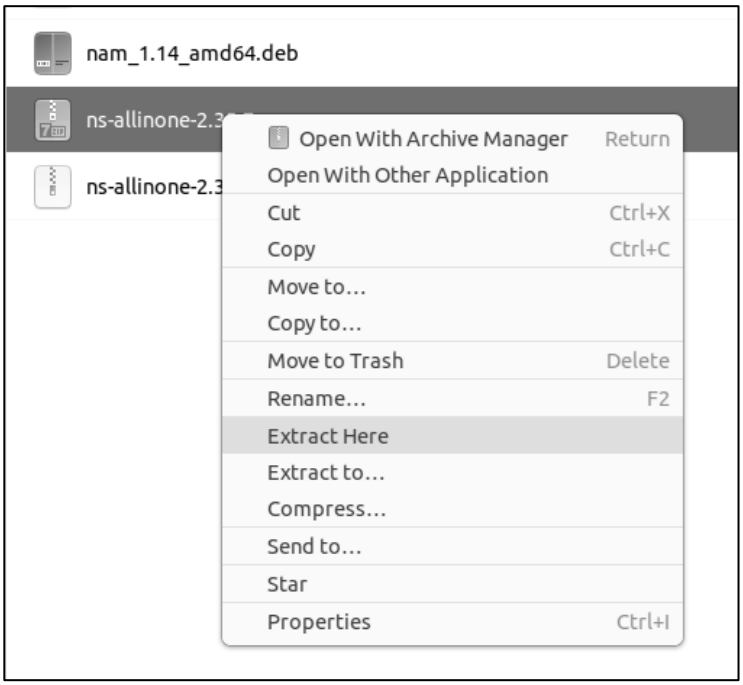
Step5: After that update your system again (Run command in terminal)
sudo apt update

Step6: After that install gcc-4.8 and g++-4.8 by using this command. (Run command in terminal)
sudo apt install gcc-4.8 g++-4.8

Step7: After Installation of gcc-4.8 and g++-4.8 web need ns-allinone 2.35 file that available on this link simply download it.

Download NS2 source file from this link.
https://sourceforge.net/projects/nsnam/files/allinone/ns-allinone-2.34/ns-allinone-2.34.tar.gz

Step8: After that extract it.

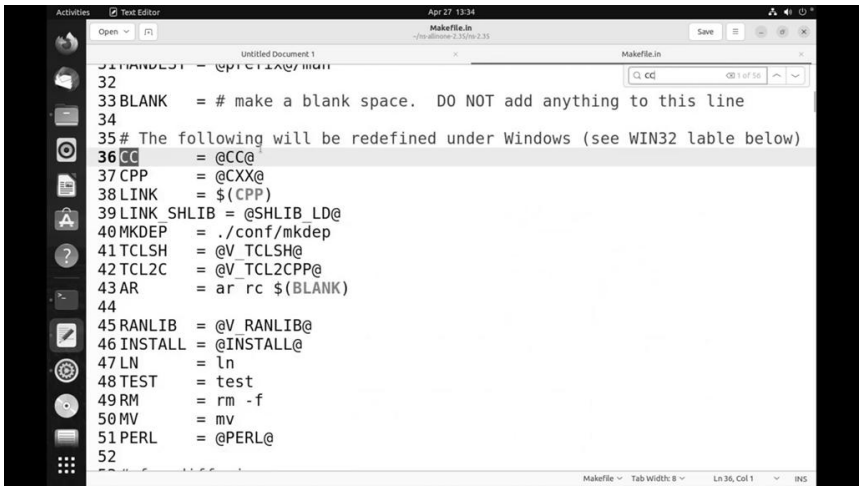


Step9: After extract process is finished we need to modify some files as folllow.

9.1: open ns-allinone-2.35/ns-2.35/Makefile.in file find this

CC = @CC@

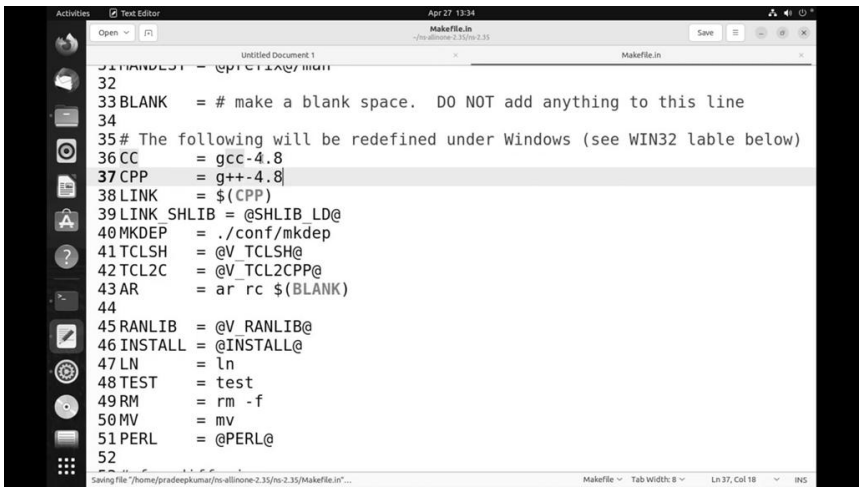
CPP = @CXX@



and replace with

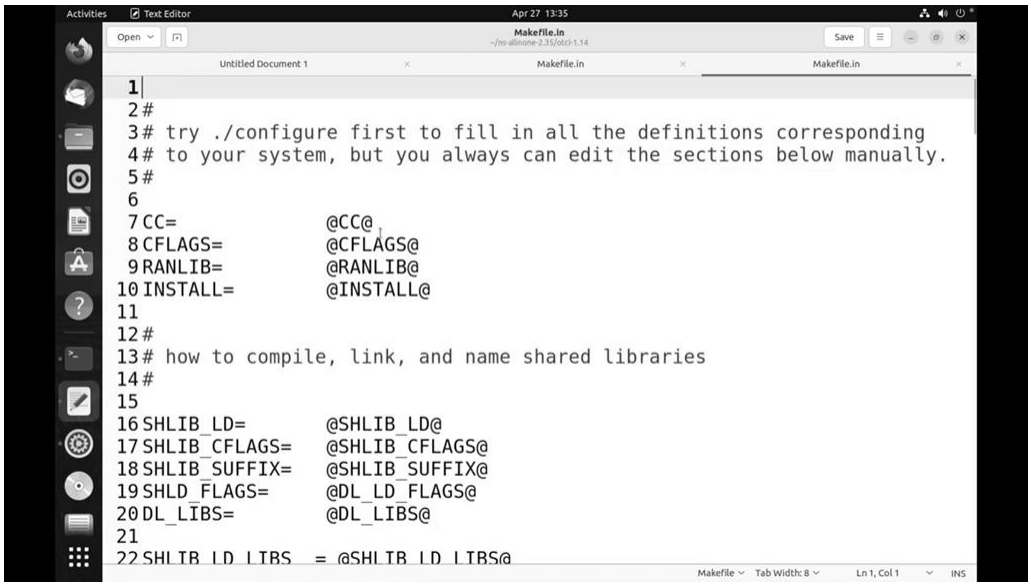
CC = gcc-4.8

CPP = g++-4.8

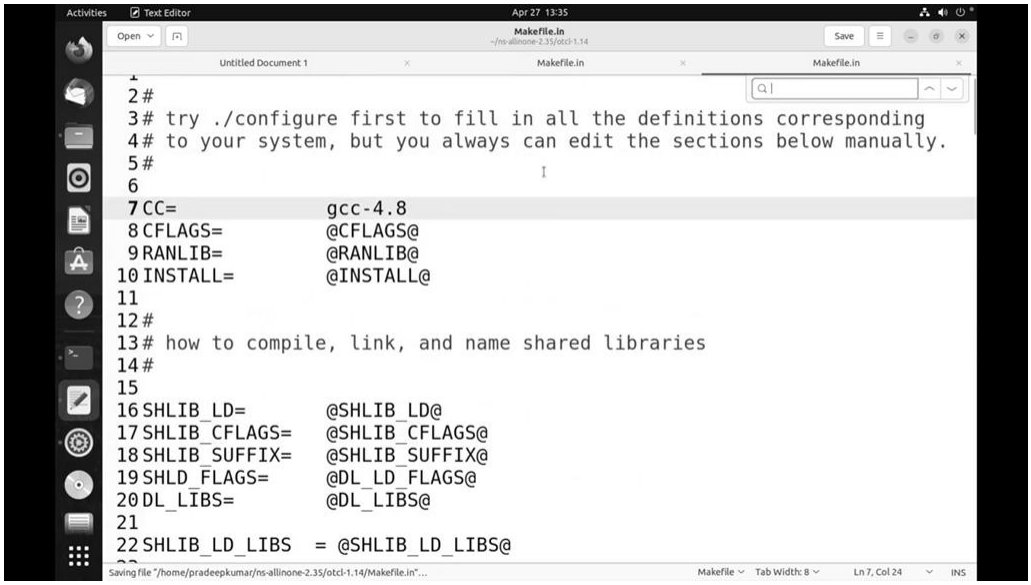


Save file and close

9.2: open **ns-allinone-2.35/otcl-1.1.4/Makefile.in** file find this
CC= @CC@

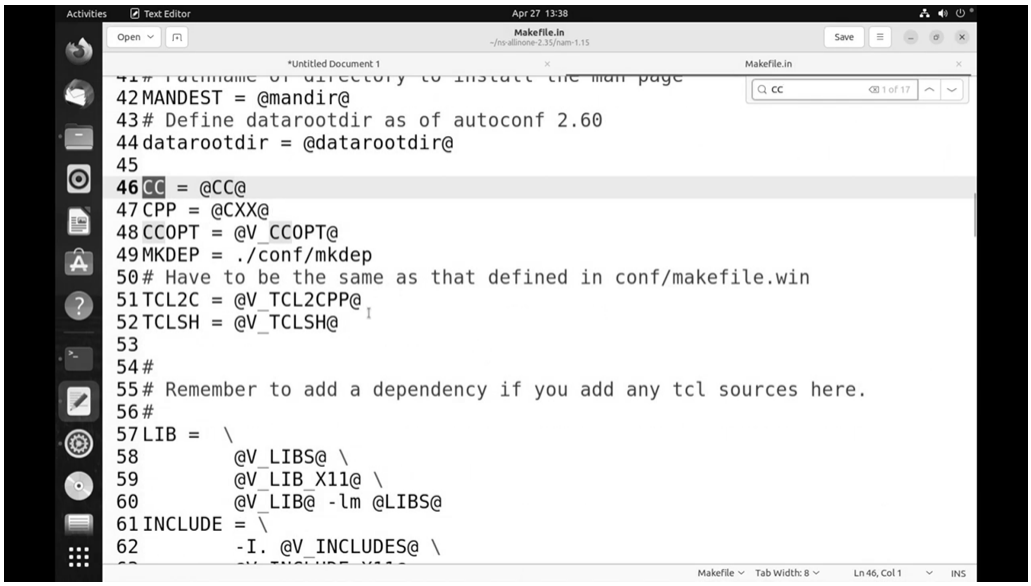


and replace with
CC= gcc-4.8

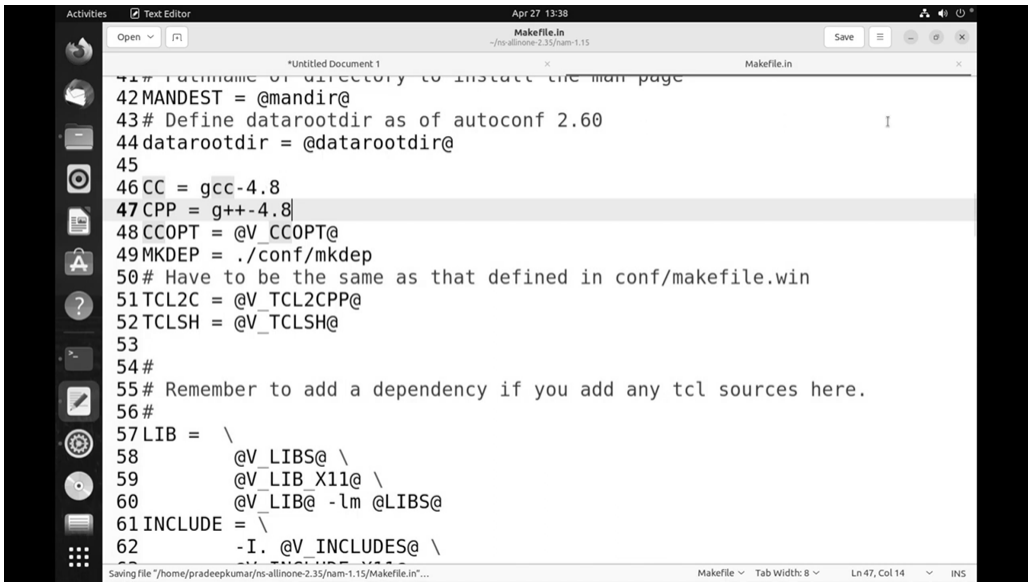


Save file and close

9.3: open **ns-allinone-2.35/nam-1.15/Makefile.in** file find this
CC = @CC@
CPP = @CXX@



and replace with
CC = gcc-4.8
CPP = g++-4.8

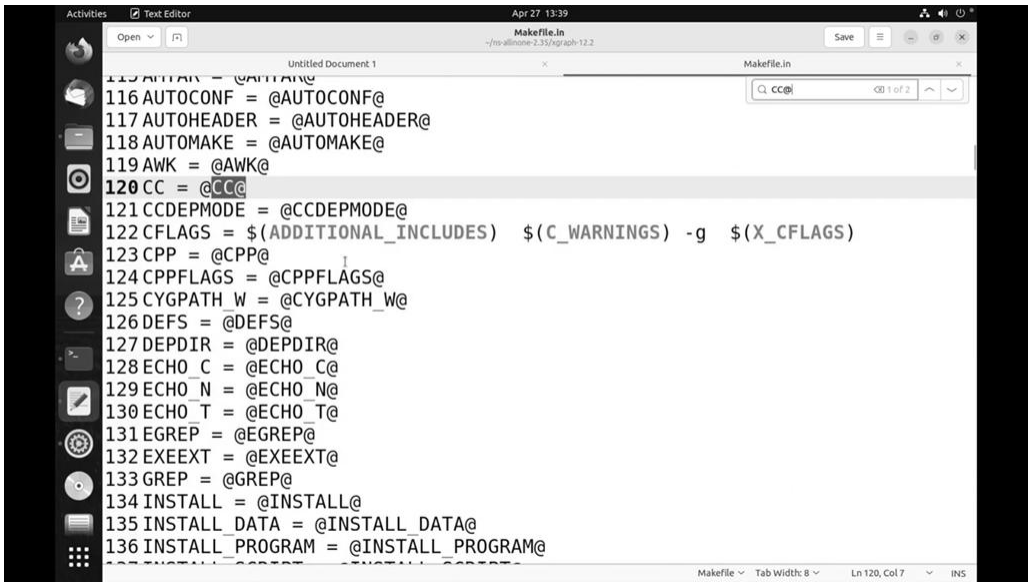


Save file and close

9.4: open **ns-allinone-2.35/xgraph-12.2/Makefile.in** file find this

CC = @CC@

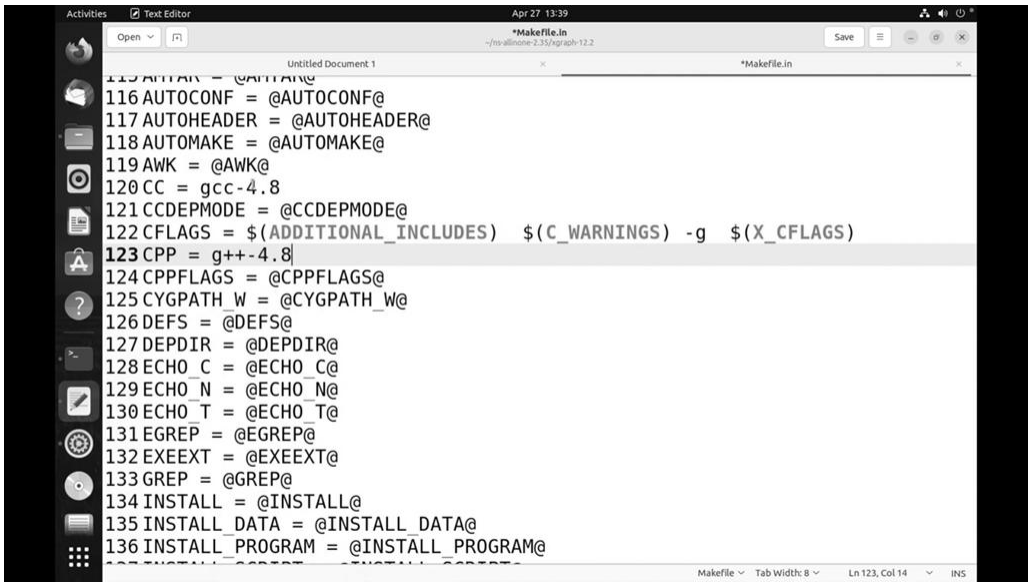
CPP = @CPP@



and replace with

CC = gcc-4.8

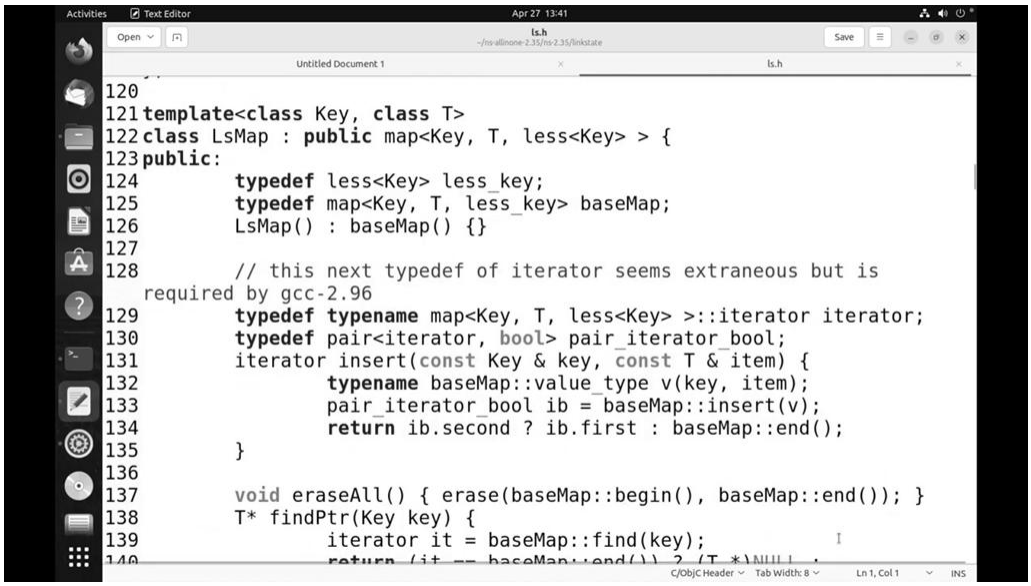
CPP = g++-4.8



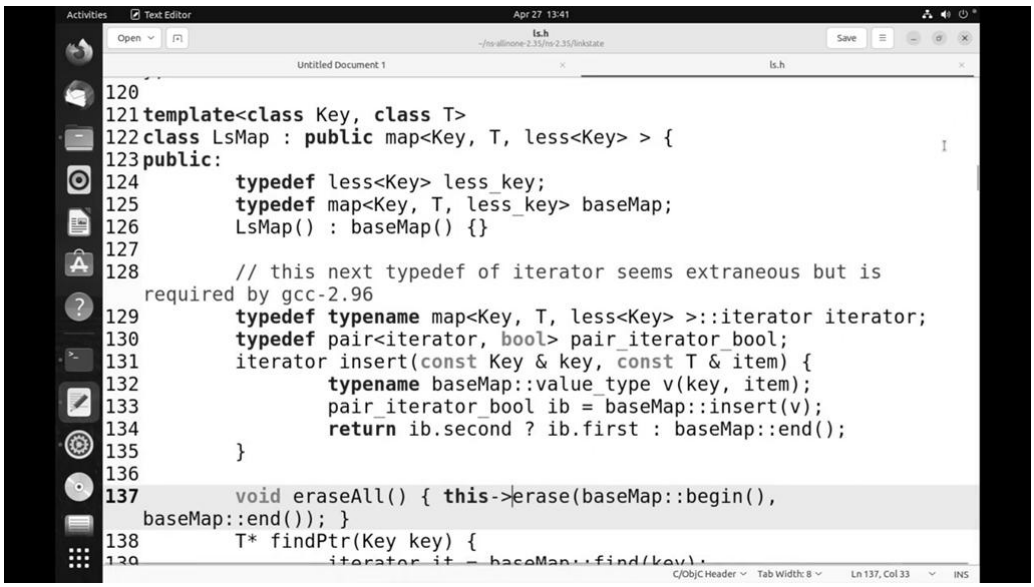
Save file and close

9.5: open file **ns-allinone-2.35/ns-3.35/linkstate/ls.h** and goto line no **137**.

- change the line **erase** to **this->erase**



Replace with

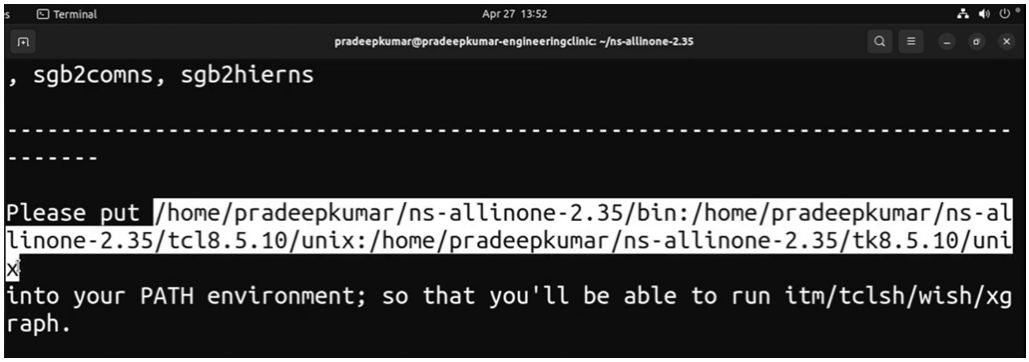


Save and close

Step10: After change is made open terminal and open ns-allinone-2.35 folder in terminal and jus type ./**install** for installation of ns2 source file.

Step11: After installation is completed we need to set path of ns2 but don't close terminal it is needed for set path.
11.1: open **.bashrc** file for that first you goto root dir after that run this command.
sudo gedit .bashrc
11.2: After open file copy path from terminal that show below image but thing you have remember your path may be different not copy from this document it's for example perpose.

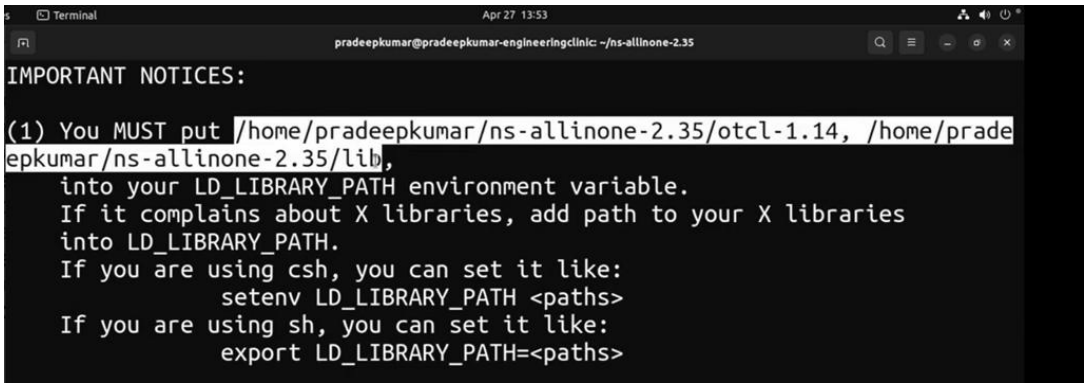
home/username/Downloads/ns-allinone-2.35/bin:/home/username/Downloads/ns-allinone-2.35/tcl8.5.10/unix:/home/username/Downloads/ns-allinone-2.35/tk8.5.10/unix



export PATH=$PATH:home/username/Downloads/ns-allinone-2.35/bin:/home/username/Downloads/ns-allinone-2.35/tcl8.5.10/unix:/home/username/Downloads/ns-allinone-2.35/tk8.5.10/unix

after copy path goto .bashrc file and write export PATH=$PATH:(past your copied path)

11.3: copy LD_LIBRARY_PATH path from terminal that show below image
/home/username/Downloads/ns-allinone-2.35/otcl-1.14:/home/username/Downloads/ns-allinone-2.35/lib



export LD_LIBRARY_PATH=/home/username/Downloads/ns-allinone-2.35/otcl-1.14:/home/username/Downloads/ns-allinone-2.35/lib

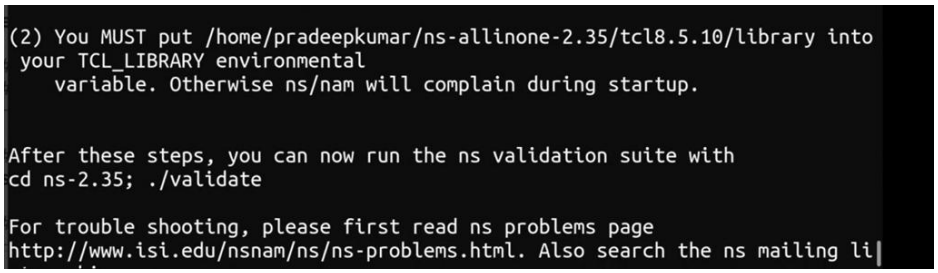
after copy path goto .bashrc file and write export LD_LIBRARY_PATH=(past your copied path)

after past it replace , (coma) with : (colon)
export LD_LIBRARY_PATH=/home/username/Downloads/ns-allinone-2.35/otcl-1.14, /home/username/Downloads/ns-allinone-2.35/lib

replace with : (colon)

export LD_LIBRARY_PATH=/home/username/Downloads/ns-allinone-2.35/otcl-1.14:/home/username/Downloads/ns-allinone-2.35/lib

11.4: copy TCL_LIBRARY path from terminal that show below image
/home/username/Downloads/ns-allinone-2.35/tcl8.5.10/library

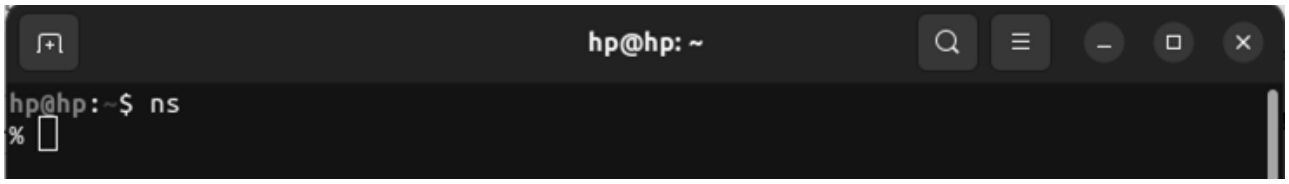


export TCL_LIBRARY=/home/username/Downloads/ns-allinone-2.35/tcl8.5.10/library

after copy path goto .bashrc file and write export TCL_LIBRARY=(past your copied path)

Step12: After path set complete install ns2 by using this command
sudo apt install ns2

after ns2 installed check it is working or not type **ns** in terminal if we get **%** that mean ns2 working fine.



Step13: Install **nam** by using this command.
sudo apt install nam

after nam installed check it is working or not type nam it terminal if network animator is open that mean nam is working fine

if nam install successful but not open just display **nam:** follow the solution below.

13.1: First remove/uninstall current **nam** by using this command**.**
sudo apt remove nam

13.2: Download **nam_1.14** file from this link give below. Download **nam_1.14** file as per your system configuration.
https://www.linuxquestions.org/questions/linux-newbie-8/ns-stop-couldn't-execute-nam-permission-denied-while-executing-exec-nam-4175524760/#2

in my case my system is **amd64** so i can download **nam_1.14_amd64.deb** file

- After download is completed just install it.
- Just open with Software Install and click install.
- After installation is complete just check it is working or not in most case it working fine.