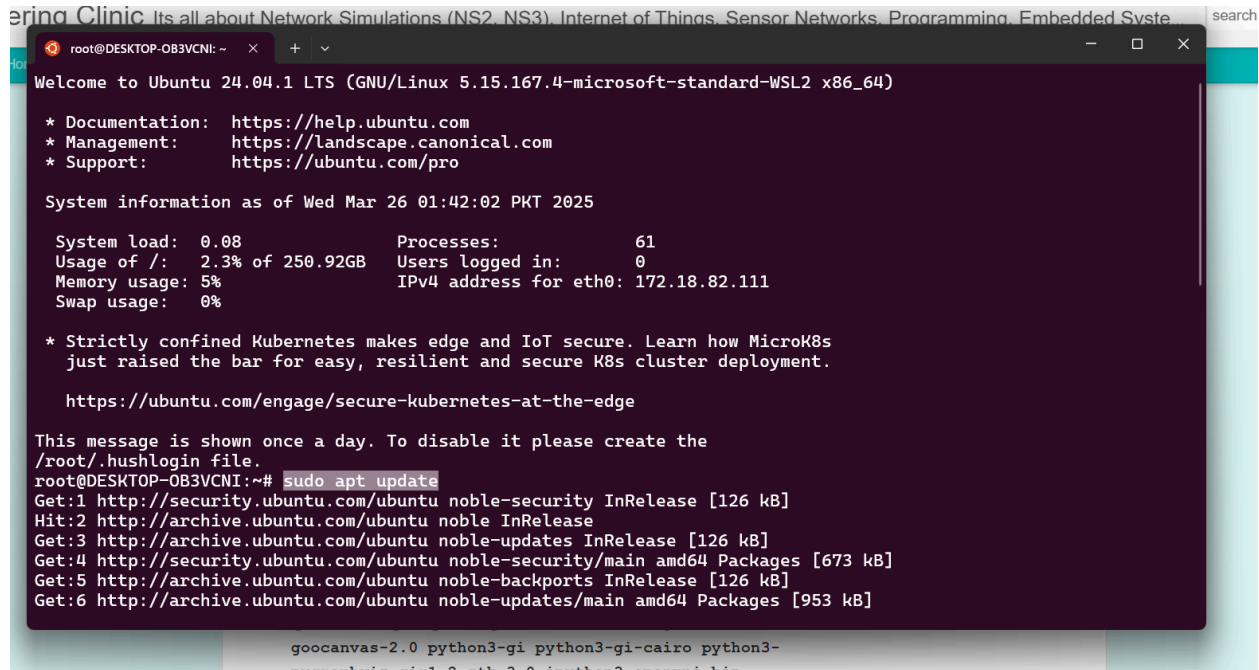


# Hasan Yahya - [BSE-6C] - [22L-7971]

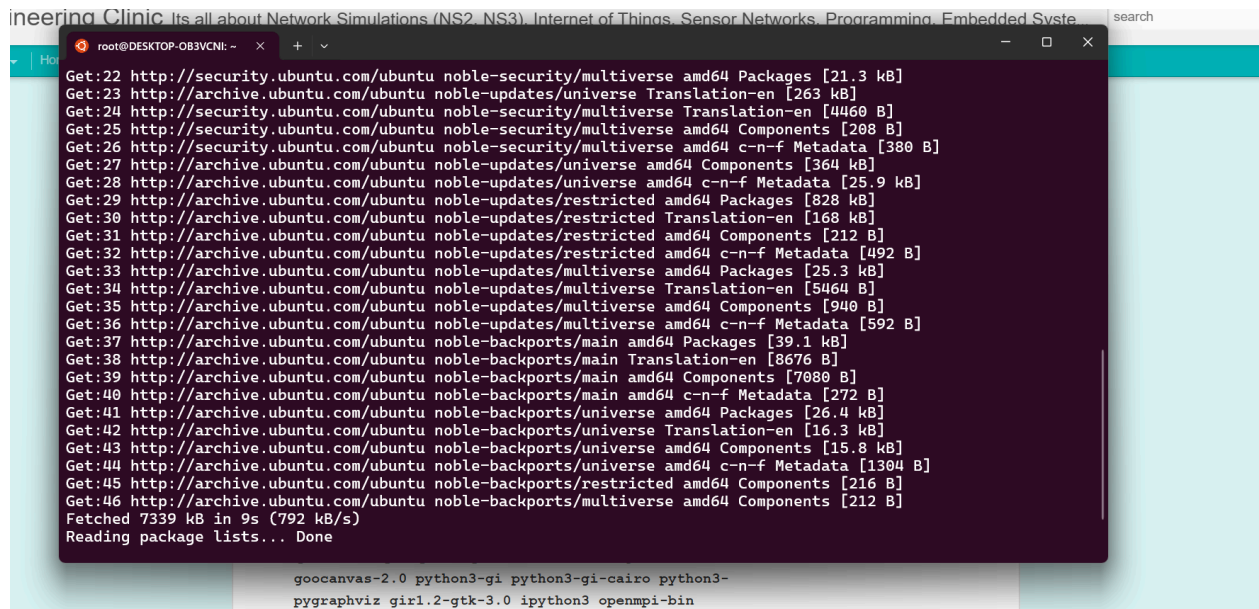
This PDF file has the step by step screenshots of NS3 being installed on my machine using Ubuntu distro in WSL.

- Using sudo apt update:



```
root@DESKTOP-0B3VCNI: ~  
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/pro  
  
System information as of Wed Mar 26 01:42:02 PKT 2025  
  
System load:  0.08      Processes:            61  
Usage of /:   2.3% of 250.92GB   Users logged in:     0  
Memory usage: 5%          IPv4 address for eth0: 172.18.82.111  
Swap usage:   0%  
  
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s  
  just raised the bar for easy, resilient and secure K8s cluster deployment.  
  
https://ubuntu.com/engage/secure-kubernetes-at-the-edge  
  
This message is shown once a day. To disable it please create the  
/root/.hushlogin file.  
root@DESKTOP-0B3VCNI:~# sudo apt update  
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]  
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease  
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]  
Get:4 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [673 kB]  
Get:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]  
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [953 kB]  
  
goocanvas-2.0 python3-gi python3-gi-cairo python3-
```

- All packages updated

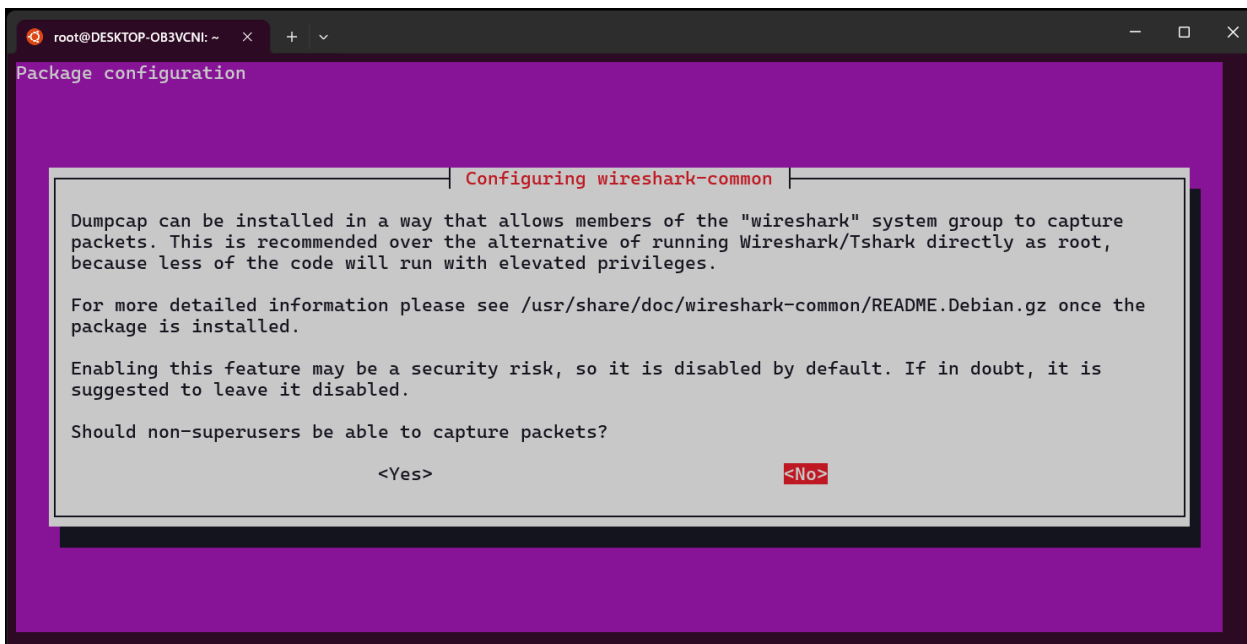


```
root@DESKTOP-0B3VCNI: ~  
Get:22 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [21.3 kB]  
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [263 kB]  
Get:24 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [4460 B]  
Get:25 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]  
Get:26 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [380 B]  
Get:27 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [364 kB]  
Get:28 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [25.9 kB]  
Get:29 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [828 kB]  
Get:30 http://archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [168 kB]  
Get:31 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]  
Get:32 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 c-n-f Metadata [492 B]  
Get:33 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [25.3 kB]  
Get:34 http://archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [5464 B]  
Get:35 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]  
Get:36 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [592 B]  
Get:37 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Packages [39.1 kB]  
Get:38 http://archive.ubuntu.com/ubuntu noble-backports/main Translation-en [8676 B]  
Get:39 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7080 B]  
Get:40 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [272 B]  
Get:41 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [26.4 kB]  
Get:42 http://archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [16.3 kB]  
Get:43 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [15.8 kB]  
Get:44 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1304 B]  
Get:45 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]  
Get:46 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]  
Fetched 7339 kB in 9s (792 kB/s)  
Reading package lists... Done  
  
goocanvas-2.0 python3-gi python3-gi-cairo python3-  
pygraphviz gir1.2-gtk-3.0 ipython3 openmpi-bin
```

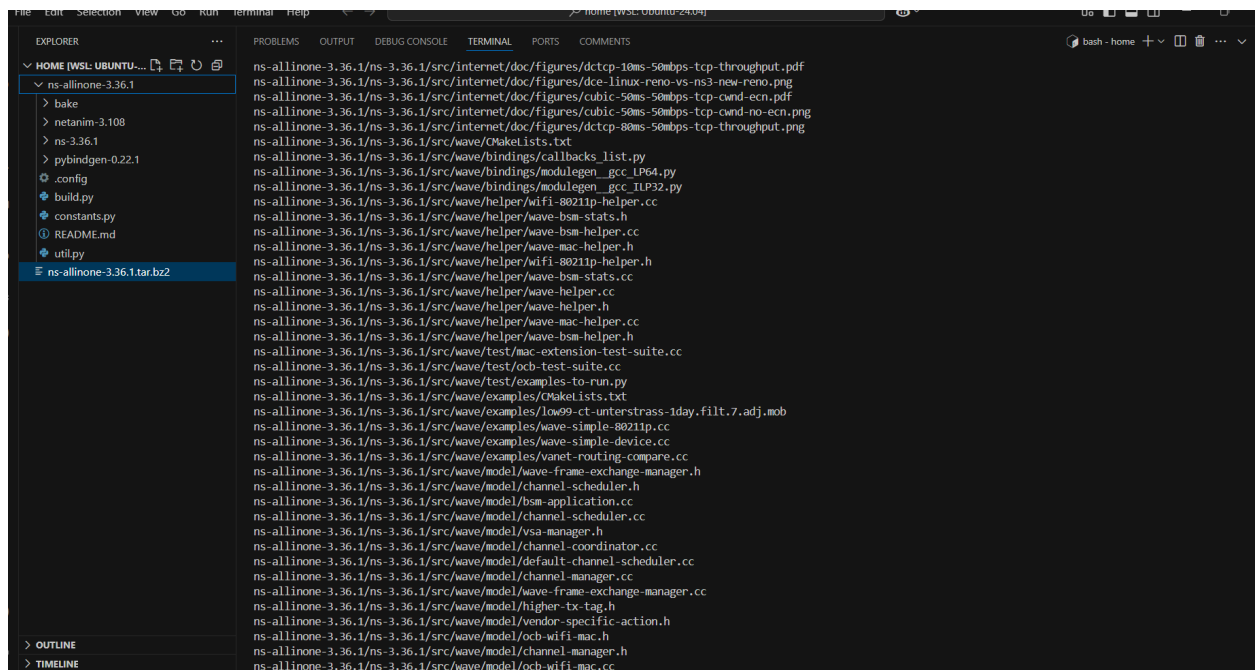
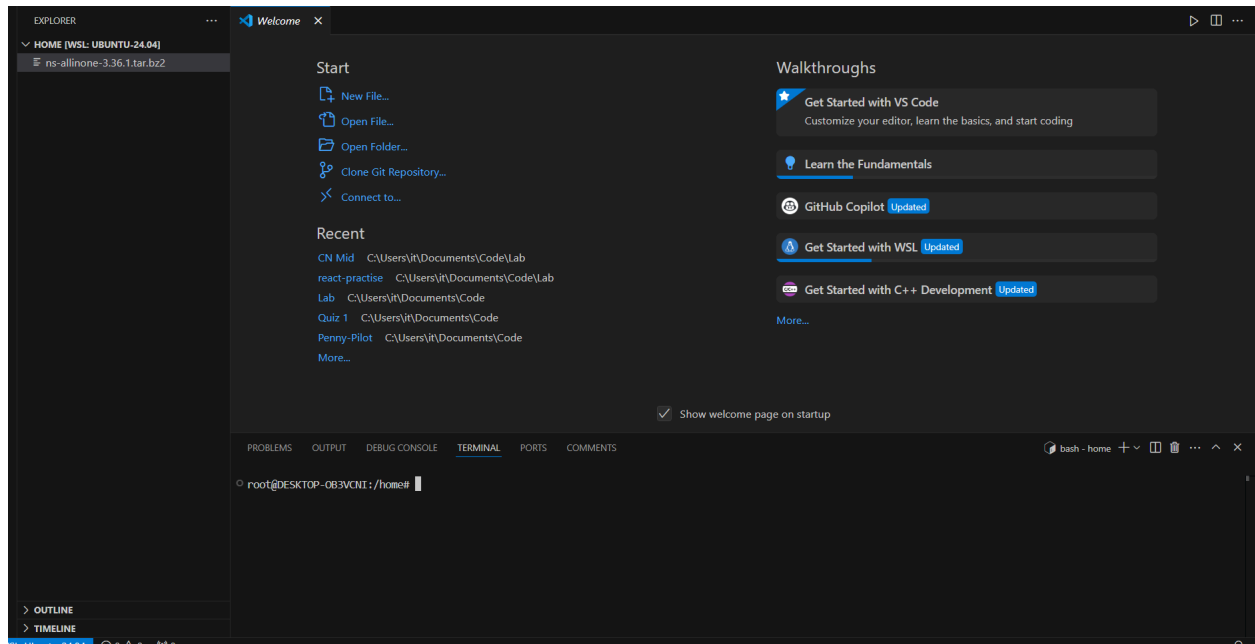
- Installing prerequisites:

```
root@DESKTOP-OB3VCNI: ~  
root@DESKTOP-OB3VCNI:~# sudo apt update  
sudo apt install g++ python3 python3-dev pkg-config sqlite3 cmake python3-setuptools git qtbase5-dev qtchooser  
qt5-qmake qtbase5-dev-tools gir1.2-gooocanvas-2.0 python3-gi python3-gi-cairo python3-pygraphviz gir1.2-gtk-3.  
0 ipython3 openmpi-bin openmpi-common openmpi-doc libopenmpi-dev autoconf cvs bzip2 unrar gsl-bin libgsl-dev lib  
gslcblas0 wireshark tcpdump libsqlite3-dev libxml2 libxml2-dev libc6-dev libc6-dev-i386 libclang-dev llvm-dev  
automake python3-pip libboost-all-dev  
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease  
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease  
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease  
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
179 packages can be upgraded. Run 'apt list --upgradable' to see them.  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
g++ is already the newest version (4:13.2.0-7ubuntu1).  
g++ set to manually installed.  
python3 is already the newest version (3.12.3-0ubuntu2).  
python3 set to manually installed.  
python3-setuptools is already the newest version (68.1.2-2ubuntu1.1).  
python3-setuptools set to manually installed.  
python3-gi is already the newest version (3.48.2-1).  
python3-gi set to manually installed.  
The following additional packages will be installed:  
autotools-dev blt brz cmake-data cpp-13 cpp-13-x86-64-linux-gnu fonts-liberation
```

- Options Pop-up:



- Unzipped the file using `tar jxvf ns-allinone-3.36.1.tar.bz2` command:



- Building the ns3 files using: `./build.py --enable-examples --enable-tests`

```

Get:357 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-roman all 3.3-3 [9632 B]
Get:358 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-docutils all 0.20.1+dfsg-3 [393 kB]
Get:359 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-imagesize all 1.4.1-1 [6844 B]
Get:360 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-snowballstemmer all 2.2.0-4build1 [59.8 kB]
Get:361 http://archive.ubuntu.com/ubuntu noble/main amd64 sphinx-common all 7.2.6-6 [739 kB]
Get:362 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-alabaster all 0.7.12-1 [17.8 kB]
Get:363 http://archive.ubuntu.com/ubuntu noble/main amd64 python3-sphinx all 7.2.6-6 [557 kB]
Get:364 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 qemu-utils amd64 1:8.2.2+ds-0ubuntu1.6 [2220 kB]
Get:365 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 qemu-block-extra amd64 1:8.2.2+ds-0ubuntu1.6 [111 kB]
Get:366 http://archive.ubuntu.com/ubuntu noble/main amd64 tcl8.6 amd64 8.6.14+dfsg-1build1 [14.7 kB]
Get:367 http://archive.ubuntu.com/ubuntu noble/main amd64 tcl amd64 8.6.14build1 [4124 B]
Get:368 http://archive.ubuntu.com/ubuntu noble/universe amd64 tex-gyre all 20180621-6 [6396 kB]
Get:369 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-fonts-recommended all 2023.20240207-1 [4973 kB]
Get:370 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-latex-recommended all 2023.20240207-1 [8826 kB]
Get:371 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive all 2023.20240207-1 [14.0 kB]
Get:372 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-luatex all 2023.20240207-1 [25.8 MB]
Get:373 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-plain-generic all 2023.20240207-1 [29.0 MB]
Get:374 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-extra-utils all 2023.20240207-1 [63.0 MB]
Get:375 http://archive.ubuntu.com/ubuntu noble/universe amd64 texlive-font-utils all 2023.20240207-1 [7035 kB]
Get:376 http://archive.ubuntu.com/ubuntu noble/universe amd64 libfontbox-java all 1:1.8.16-5 [208 kB]
91% [376 libfontbox-java 90.7 kB/208 kB 44%] 55.0 kB/s 14min 10s

```

- Final image of running examples for hello-simulator and first and second files

```

hasan-yahya@DESKTOP-OB3V... x + v
hasan-yahya@DESKTOP-OB3VCNI:~/ns-allinone-3.43/ns-3.43$ ./ns3 run hello-simulator
[0/2] Re-checking globbed directories...
ninja: no work to do.
Hello Simulator
hasan-yahya@DESKTOP-OB3VCNI:~/ns-allinone-3.43/ns-3.43$ ./ns3 run first
[0/2] Re-checking globbed directories...
ninja: no work to do.
At time +2s client sent 1024 bytes to 10.1.1.2 port 9
At time +2.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.00737s client received 1024 bytes from 10.1.1.2 port 9
hasan-yahya@DESKTOP-OB3VCNI:~/ns-allinone-3.43/ns-3.43$ ./ns3 run second
[0/2] Re-checking globbed directories...
ninja: no work to do.
At time +2s client sent 1024 bytes to 10.1.2.4 port 9
At time +2.0118s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.0118s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.02161s client received 1024 bytes from 10.1.2.4 port 9
hasan-yahya@DESKTOP-OB3VCNI:~/ns-allinone-3.43/ns-3.43$

```

Note: I had to change ns3 versions because the link given in the zip was outdated and new updated one was needed, which i got from the official website using this:

▶ ns3 installation on windows 11 | WSL