

0. Connecting to Virtual machine:

Configure OpenVPN:

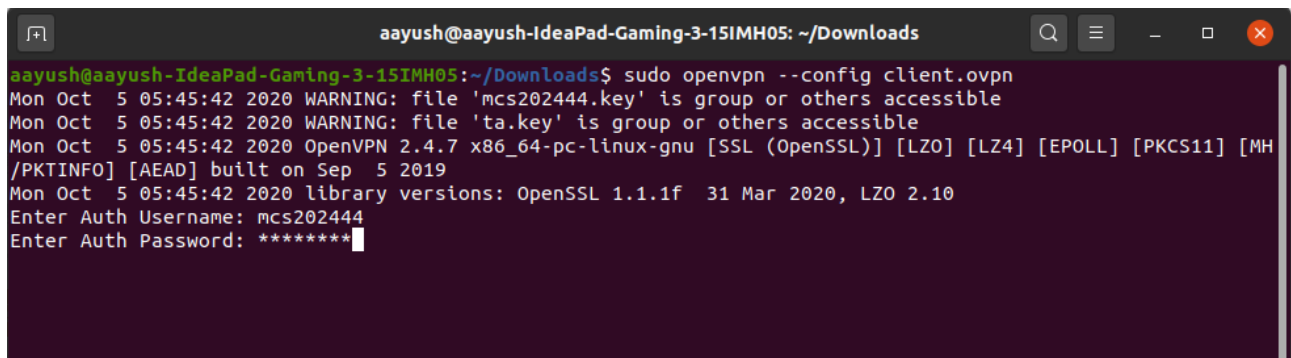
i. Navigate to the folder where the “client.ovpn” file is present and open terminal.

ii. execute the command: `sudo openvpn --config client.ovpn`



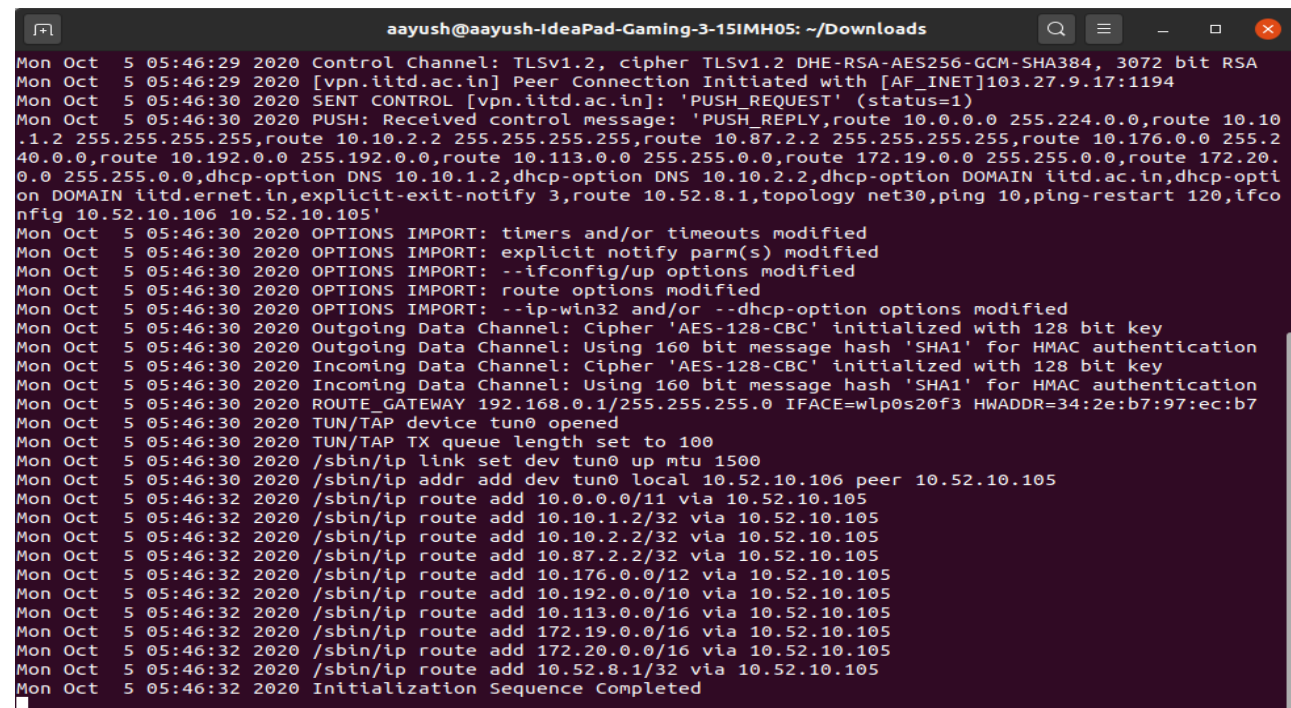
```
aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~/Downloads
aayush@aayush-IdeaPad-Gaming-3-15IMH05:~/Downloads$ ls
client.ovpn                                mcs202444.crt      NEWCCIITD-CA.crt    ta.key
'eclipse-cpp-2020-09-R-linux-gtk-x86_64(1).tar.gz' mcs202444.key      README.txt
aayush@aayush-IdeaPad-Gaming-3-15IMH05:~/Downloads$ sudo openvpn --config client.ovpn
```

iii. Enter your credentials for OpenVPN



```
aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~/Downloads
aayush@aayush-IdeaPad-Gaming-3-15IMH05:~/Downloads$ sudo openvpn --config client.ovpn
Mon Oct 5 05:45:42 2020 WARNING: file 'mcs202444.key' is group or others accessible
Mon Oct 5 05:45:42 2020 WARNING: file 'ta.key' is group or others accessible
Mon Oct 5 05:45:42 2020 OpenVPN 2.4.7 x86_64-pc-linux-gnu [SSL (OpenSSL)] [LZO] [LZ4] [EPOLL] [PKCS11] [MH
/PKTINFO] [AEAD] built on Sep 5 2019
Mon Oct 5 05:45:42 2020 library versions: OpenSSL 1.1.1f 31 Mar 2020, LZO 2.10
Enter Auth Username: mcs202444
Enter Auth Password: *****
```

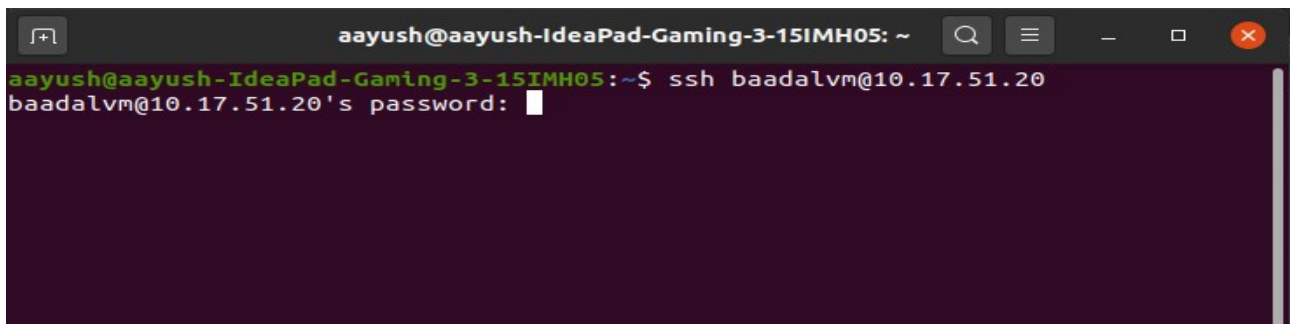
iv. Connection to VPN is established



```
aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~/Downloads
Mon Oct 5 05:46:29 2020 Control Channel: TLSv1.2, cipher TLSv1.2 DHE-RSA-AES256-GCM-SHA384, 3072 bit RSA
Mon Oct 5 05:46:29 2020 [vpn.iitd.ac.in] Peer Connection Initiated with [AF_INET]103.27.9.17:1194
Mon Oct 5 05:46:30 2020 SENT CONTROL [vpn.iitd.ac.in]: 'PUSH_REQUEST' (status=1)
Mon Oct 5 05:46:30 2020 PUSH: Received control message: 'PUSH_REPLY,route 10.0.0.0 255.224.0.0,route 10.10
.1.2 255.255.255.255,route 10.10.2.2 255.255.255.255,route 10.87.2.2 255.255.255.255,route 10.176.0.0 255.2
40.0.0,route 10.192.0.0 255.192.0.0,route 10.113.0.0 255.255.0.0,route 172.19.0.0 255.255.0.0,route 172.20
.0.0 255.255.0.0,dhcp-option DNS 10.10.1.2,dhcp-option DNS 10.10.2.2,dhcp-option DOMAIN iitd.ac.in,dhcp-opti
on DOMAIN iitd.ernet.in,explicit-exit-notify 3,route 10.52.8.1,topology net30,ping 10,ping-restart 120,ifco
nfig 10.52.10.106 10.52.10.105'
Mon Oct 5 05:46:30 2020 OPTIONS IMPORT: timers and/or timeouts modified
Mon Oct 5 05:46:30 2020 OPTIONS IMPORT: explicit notify parm(s) modified
Mon Oct 5 05:46:30 2020 OPTIONS IMPORT: --ifconfig/up options modified
Mon Oct 5 05:46:30 2020 OPTIONS IMPORT: route options modified
Mon Oct 5 05:46:30 2020 OPTIONS IMPORT: --ip-win32 and/or --dhcp-option options modified
Mon Oct 5 05:46:30 2020 Outgoing Data Channel: Cipher 'AES-128-CBC' initialized with 128 bit key
Mon Oct 5 05:46:30 2020 Outgoing Data Channel: Using 160 bit message hash 'SHA1' for HMAC authentication
Mon Oct 5 05:46:30 2020 Incoming Data Channel: Cipher 'AES-128-CBC' initialized with 128 bit key
Mon Oct 5 05:46:30 2020 Incoming Data Channel: Using 160 bit message hash 'SHA1' for HMAC authentication
Mon Oct 5 05:46:30 2020 ROUTE_GWATWAY 192.168.0.1/255.255.255.0 IFACE=wlp0s20f3 HWADDR=34:2e:b7:97:ec:b7
Mon Oct 5 05:46:30 2020 TUN/TAP device tun0 opened
Mon Oct 5 05:46:30 2020 TUN/TAP TX queue length set to 100
Mon Oct 5 05:46:30 2020 /sbin/ip link set dev tun0 up mtu 1500
Mon Oct 5 05:46:30 2020 /sbin/ip addr add dev tun0 local 10.52.10.106 peer 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.0.0.0/11 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.10.1.2/32 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.10.2.2/32 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.87.2.2/32 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.176.0.0/12 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.192.0.0/10 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.113.0.0/16 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 172.19.0.0/16 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 172.20.0.0/16 via 10.52.10.105
Mon Oct 5 05:46:32 2020 /sbin/ip route add 10.52.8.1/32 via 10.52.10.105
Mon Oct 5 05:46:32 2020 Initialization Sequence Completed
```

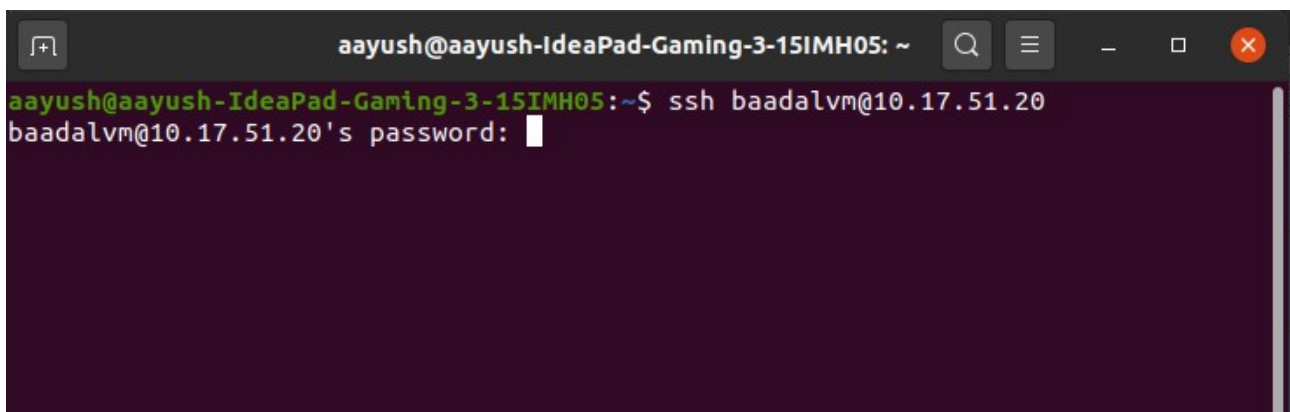
Connect to VM:

- i. execute ssh command to connect. It will prompt to enter credentials for VM.

A terminal window with a dark background and light-colored text. The title bar at the top reads "aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~". The terminal shows the command "ssh baadalvm@10.17.51.20" being entered. Below the command, the prompt "baadalvm@10.17.51.20's password:" is displayed, followed by a single white character, likely a space or a partial password entry.

```
aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~  
aayush@aayush-IdeaPad-Gaming-3-15IMH05:~$ ssh baadalvm@10.17.51.20  
baadalvm@10.17.51.20's password: 
```

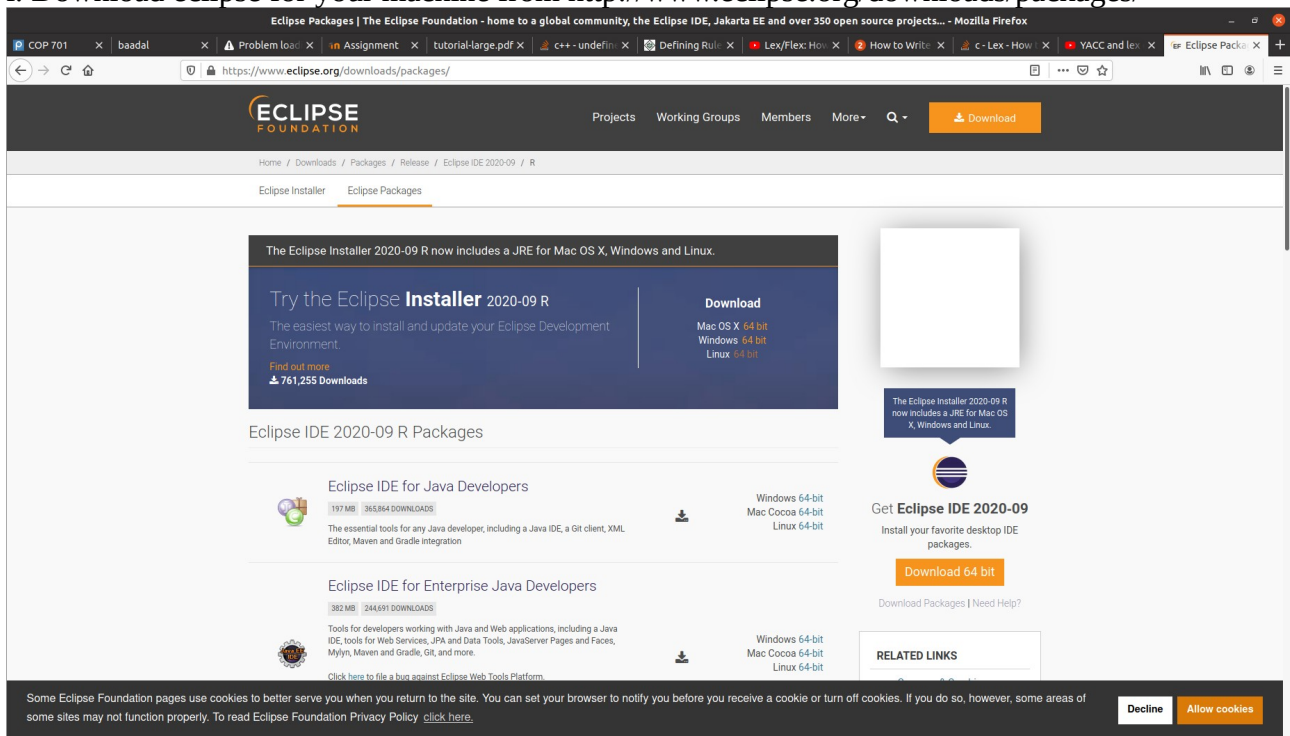
- ii. Connection to VM is established.

A terminal window with a dark background and light-colored text. The title bar at the top reads "aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~". The terminal shows the command "ssh baadalvm@10.17.51.20" being entered. Below the command, the prompt "baadalvm@10.17.51.20's password:" is displayed, followed by a single white character, likely a space or a partial password entry.

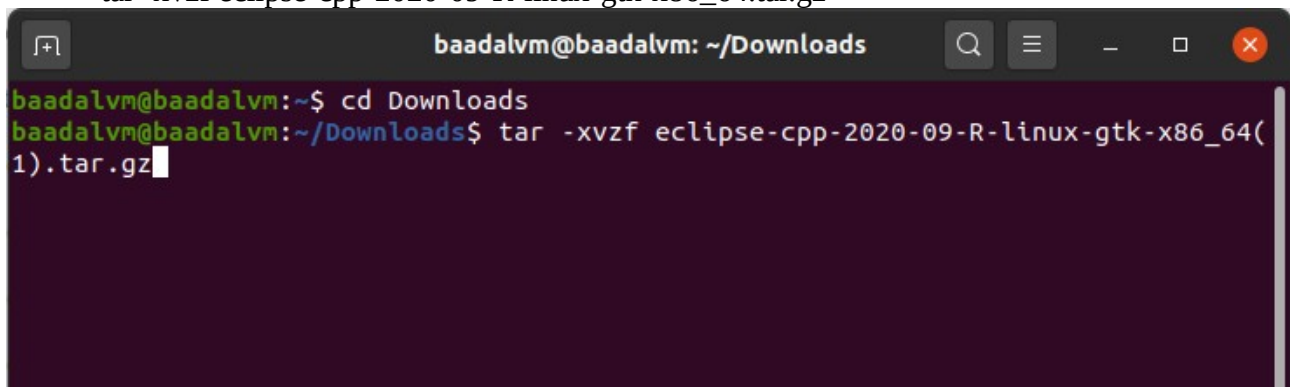
```
aayush@aayush-IdeaPad-Gaming-3-15IMH05: ~  
aayush@aayush-IdeaPad-Gaming-3-15IMH05:~$ ssh baadalvm@10.17.51.20  
baadalvm@10.17.51.20's password: 
```

1. Configured Ubuntu for the libraries and frameworks that we require(e.g sublime/eclipse etc)

i. Download eclipse for your machine from <http://www.eclipse.org/downloads/packages/>

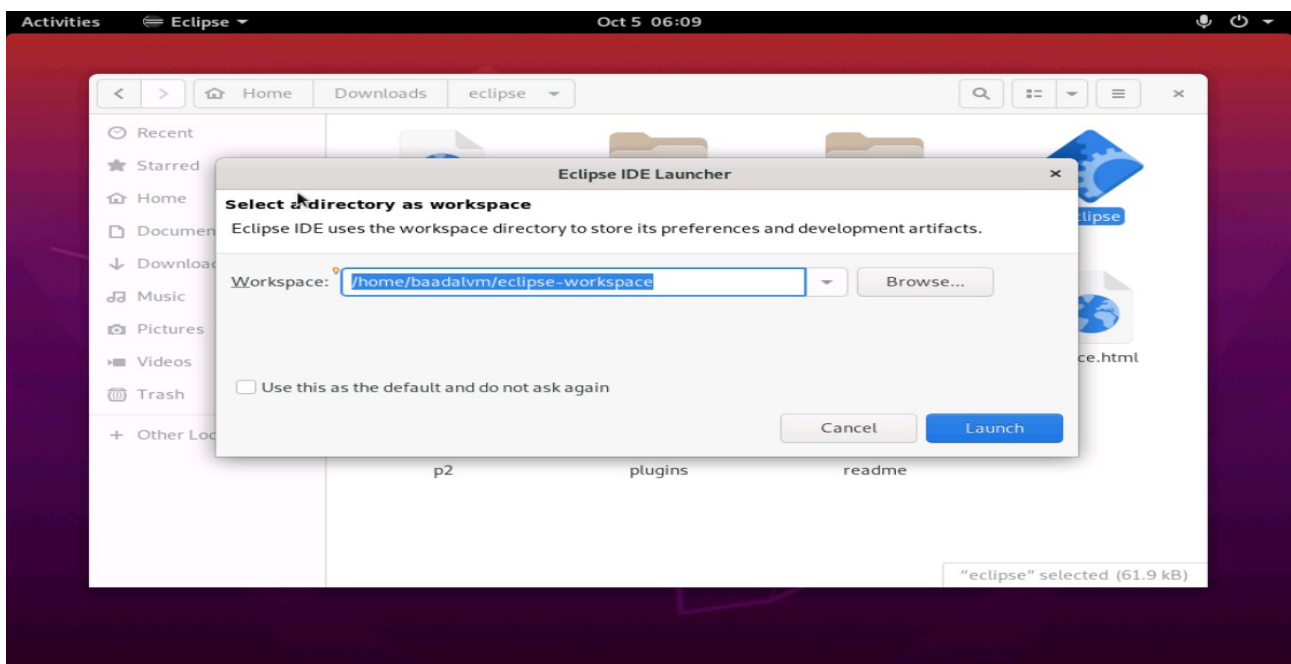


ii. Extract the downloaded file by navigating to the folder and executing the following command:
`tar -xvzf eclipse-cpp-2020-09-R-linux-gtk-x86_64.tar.gz`



iii. Run Eclipse from extracted folder.

```
baadalvm@baadalvm: ~/Downloads
MF
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/META-INF/ECLIPSE_
SF
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/META-INF/ECLIPSE_
RSA
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/feature.xml
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/epl-2.0.html
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/license.html
eclipse/features/org.eclipse.userstorage_1.2.0.v20191120-1614/feature.properties
eclipse/notice.html
eclipse/icon.xpm
eclipse/eclipse
eclipse/.eclipseproduct
eclipse/readme/
eclipse/readme/readme_eclipse.html
eclipse/dropins/
eclipse/eclipse.ini
eclipse/configuration/
eclipse/configuration/org.eclipse.equinox.simpleconfigurator/
eclipse/configuration/org.eclipse.equinox.simpleconfigurator/bundles.info
eclipse/configuration/config.ini
eclipse/configuration/org.eclipse.update/
eclipse/configuration/org.eclipse.update/platform.xml
baadalvm@baadalvm:~/Downloads$
```



2. Installed SVN and familiarized yourself --- submit a history

Step i: Install Apache by executing the following commands:

sudo apt update

```
baadalvm@baadalvm: ~/Downloads
baadalvm@baadalvm:~/Downloads$ sudo apt update
Hit:1 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://repo.iitd.ac.in/ubuntu focal InRelease
Get:3 http://repo.iitd.ac.in/ubuntu focal-updates InRelease [111 kB]
Get:4 http://repo.iitd.ac.in/ubuntu focal-backports InRelease [98.3 kB]
Get:5 http://repo.iitd.ac.in/ubuntu focal-security InRelease [107 kB]
Get:6 http://repo.iitd.ac.in/ubuntu focal-updates/main amd64 Packages [555 kB]
Get:7 http://repo.iitd.ac.in/ubuntu focal-updates/main amd64 DEP-11 Metadata [208 kB]
Get:8 http://repo.iitd.ac.in/ubuntu focal-updates/universe amd64 DEP-11 Metadata [196 kB]
Get:9 http://repo.iitd.ac.in/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [2,468 B]
Get:10 http://repo.iitd.ac.in/ubuntu focal-backports/universe amd64 DEP-11 Metadata [1,768 B]
Get:11 http://repo.iitd.ac.in/ubuntu focal-security/main amd64 DEP-11 Metadata [24.3 kB]
Get:12 http://repo.iitd.ac.in/ubuntu focal-security/universe amd64 DEP-11 Metadata [55.7 kB]
Fetched 1,360 kB in 31s (44.2 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
baadalvm@baadalvm:~/Downloads$
```

sudo apt install apache2 apache2-utils

```
baadalvm@baadalvm: ~/Downloads
baadalvm@baadalvm:~/Downloads$ sudo apt install apache2 apache2-utils
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.1).
apache2-utils is already the newest version (2.4.41-4ubuntu3.1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
baadalvm@baadalvm:~/Downloads$
```

Step ii: After installing Apache2 start and enable it by executing following commands:

sudo systemctl start apache2.service
sudo systemctl enable apache2.service

```
baadalvm@baadalvm: ~/Downloads
baadalvm@baadalvm:~/Downloads$ sudo systemctl start apache2.service
baadalvm@baadalvm:~/Downloads$ sudo systemctl enable apache2.service
Synchronizing state of apache2.service with SysV service script with /lib/systemd/sd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
baadalvm@baadalvm:~/Downloads$
```

Step iii. Install SVN by executing the following command:

sudo apt-get install subversion libapache2-mod-svn subversion-tools libsvn-dev


```
baadalvm@baadalvm: ~/Downloads
baadalvm@baadalvm:~/Downloads$ sudo apt-get install subversion libapache2-mod-sv
n subversion-tools libsvn-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
libapache2-mod-svn is already the newest version (1.13.0-3).
libsvn-dev is already the newest version (1.13.0-3).
subversion is already the newest version (1.13.0-3).
subversion-tools is already the newest version (1.13.0-3).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
baadalvm@baadalvm:~/Downloads$
```

Step iv. Enable Apache2 modules to run SVN by executing following commands:
sudo a2enmod dav
sudo a2enmod dav_svn
sudo service apache2 restart

```
baadalvm@baadalvm: ~/Downloads
baadalvm@baadalvm:~/Downloads$ sudo a2enmod dav
Module dav already enabled
baadalvm@baadalvm:~/Downloads$ sudo a2enmod dav_svn
Considering dependency dav for dav_svn:
Module dav already enabled
Module dav_svn already enabled
baadalvm@baadalvm:~/Downloads$ sudo service apache2 restart
baadalvm@baadalvm:~/Downloads$
```

Step v. Configure Apache2 with SVN:
make changes to dav_svn.conf files as follows:

```
GNU nano 4.8
<Location /svn>
# Uncomment this to enable the repository
DAV svn

# Set this to the path to your repository
#SVNPath /var/lib/svn
# Alternatively, vn/repo1, /var/lib/svn/repo2, ...).
# You need either SVNPath or SVNParentPath, but not both.
SVNParentPath /var/www/svn

# Access control is done at 3 levels: (1) Apache authentication, via
# any of several methods. A "Basic Auth" section is commented out
# below. (2) Apache <Limit> and <LimitExcept>, also commented out
# below. (3) mod_authz_svn is a svn-specific authorization module
# which offers fine-grained read/write access control for paths
# within a repository. (The first two layers are coarse-grained; you
# can only enable/disable access to an entire repository.) Note that
# mod_authz_svn is noticeably slower than the other two layers, so if
# you don't need the fine-grained control, don't configure it.

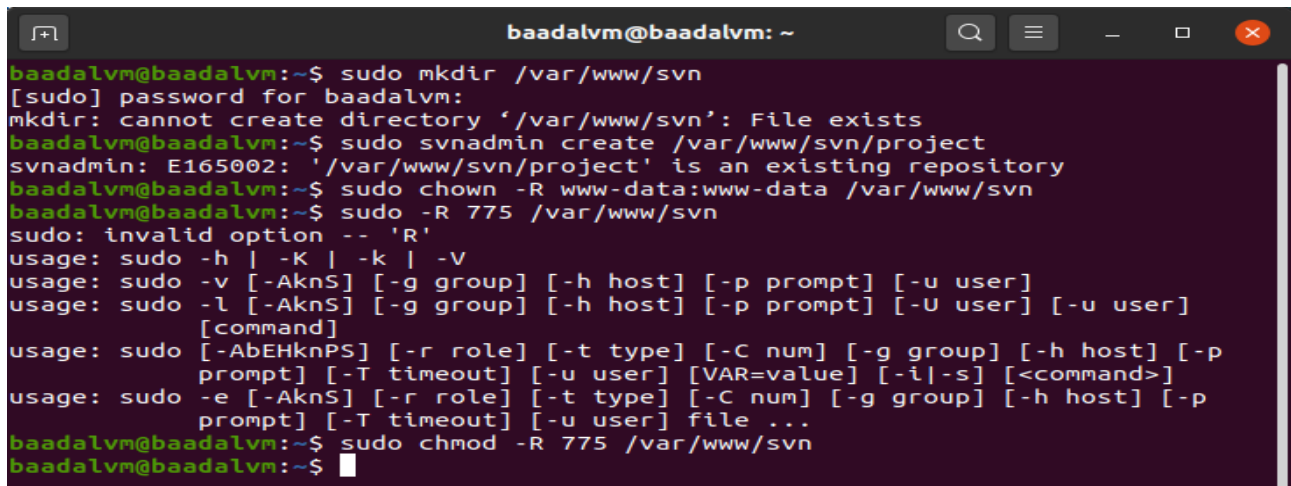
# Basic Authentication is repository-wide. It is not secure unless
# you are using https. See the 'htpasswd' command to create and
# manage the password file - and the documentation for the
# 'auth_basic' and 'authn_file' modules, which you will need for this
# (enable them with 'a2enmod').
AuthType Basic
AuthName "Subversion Repository"
AuthUserFile /etc/apache2/dav_svn.passwd

# To enable authorization via mod_authz_svn (enable that module separately):
#IfModule mod_authz_svn.c
#AuthSVNAccessFile /etc/apache2/dav_svn.authz
#IfModule

# The following three lines allow anonymous read, but make
# committers authenticate themselves. It requires the 'authz_user'
# module (enable it with 'a2enmod').
<LimitExcept GET PROPFIND OPTIONS REPORT>
Require valid-user
</LimitExcept>
</Location>
```

Step vi. Make a repository by executing the following commands:

```
sudo mkdir /var/www/svn
sudo svnadmin create /var/www/svn/project
sudo chown -R www-data:www-data /var/www/svn
sudo chmod -R 775 /var/www/svn
```

A terminal window titled 'baadalvm@baadalvm: ~' showing the execution of the commands from the previous block. The output shows that the directory '/var/www/svn' already exists, the repository 'project' is created successfully, and the permissions are set correctly. The terminal text is as follows:

```
baadalvm@baadalvm:~$ sudo mkdir /var/www/svn
[sudo] password for baadalvm:
mkdir: cannot create directory '/var/www/svn': File exists
baadalvm@baadalvm:~$ sudo svnadmin create /var/www/svn/project
svnadmin: E165002: '/var/www/svn/project' is an existing repository
baadalvm@baadalvm:~$ sudo chown -R www-data:www-data /var/www/svn
baadalvm@baadalvm:~$ sudo chmod -R 775 /var/www/svn
sudo: invalid option -- 'R'
usage: sudo -h | -K | -k | -V
usage: sudo -v [-AknS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-AknS] [-g group] [-h host] [-p prompt] [-U user] [-u user]
[command]
usage: sudo [-AbEHknPS] [-r role] [-t type] [-C num] [-g group] [-h host] [-p
prompt] [-T timeout] [-u user] [VAR=value] [-i|-s] [<command>]
usage: sudo -e [-AknS] [-r role] [-t type] [-C num] [-g group] [-h host] [-p
prompt] [-T timeout] [-u user] file ...
baadalvm@baadalvm:~$ sudo chmod -R 775 /var/www/svn
baadalvm@baadalvm:~$
```

Step vii. Create SVN User Accounts using below command and restart Apache:
sudo htpasswd -cm etc/apache2/dav_svn.passwd admin



3. Made a template for projects which has the directory structure which you replicate for all assignments

Step i. Create the directories for src, include, lib, obj files.

```
baadalvm@baadalvm: ~  
baadalvm@baadalvm:~$ mkdir /tmp/svn-template  
mkdir: cannot create directory '/tmp/svn-template': File exists  
baadalvm@baadalvm:~$ mkdir /tmp/svn-template/src  
mkdir: cannot create directory '/tmp/svn-template/src': File exists  
baadalvm@baadalvm:~$ mkdir /tmp/svn-template/include  
mkdir: cannot create directory '/tmp/svn-template/include': File exists  
baadalvm@baadalvm:~$ mkdir /tmp/svn-template/lib  
mkdir: cannot create directory '/tmp/svn-template/lib': File exists  
baadalvm@baadalvm:~$
```

Step ii. Import the directories to project by executing the following command:

sudo svn import -m 'initial test' /tmp/svn-template/ <http://10.17.51.20/svn/project/>

```
baadalvm@baadalvm:~$ sudo svn import -m 'Initial Test' /tmp/svn-template/ http://  
/10.17.51.20/svn/project/  
Authentication realm: <http://10.17.51.20:80> Subversion Repository  
Password for 'admin': *****  
  
svn: E160020: Path already exists, path '/include'  
baadalvm@baadalvm:~$
```

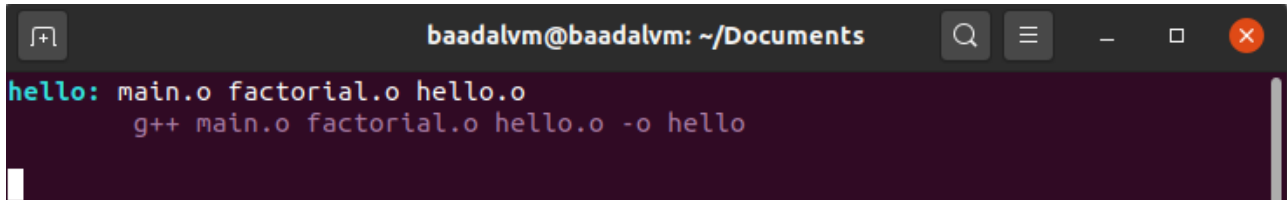
Created Directory structure:



4. Got MAKE to work.

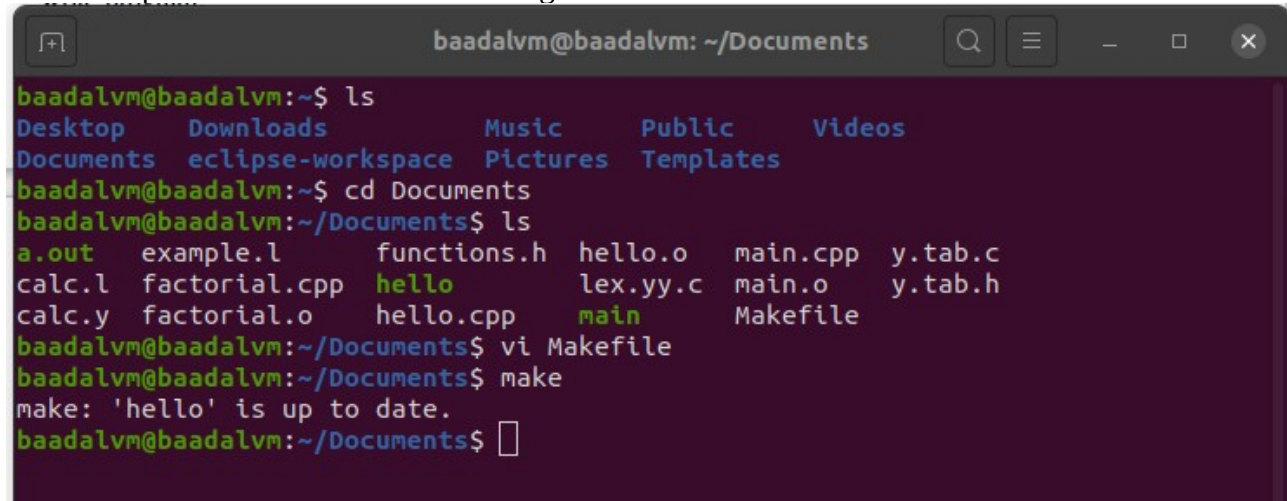
Step i. Create Makefile

vi Makefile and save



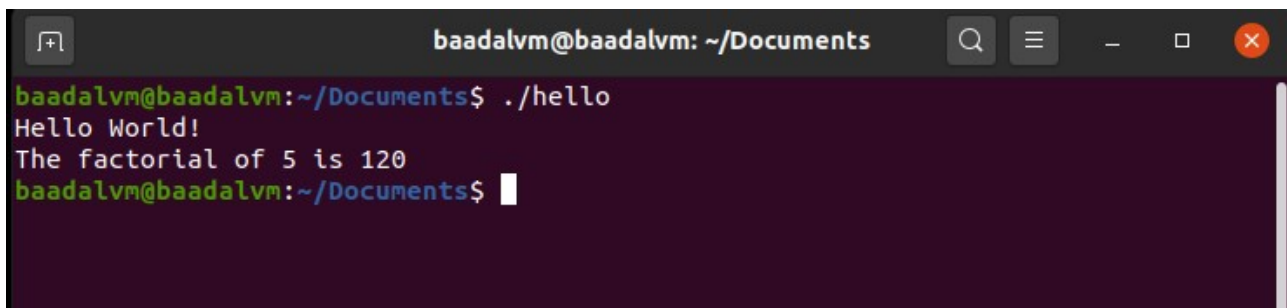
```
baadalvm@baadalvm: ~/Documents
hello: main.o factorial.o hello.o
    g++ main.o factorial.o hello.o -o hello
```

Step ii. Execute the make file using 'make' command:



```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~$ ls
Desktop  Downloads  Music      Public     Videos
Documents eclipse-workspace Pictures    Templates
baadalvm@baadalvm:~$ cd Documents
baadalvm@baadalvm:~/Documents$ ls
a.out  example.l  functions.h  hello.o  main.cpp  y.tab.c
calc.l  factorial.cpp  hello      lex.yy.c  main.o    y.tab.h
calc.y  factorial.o  hello.cpp   main      Makefile
baadalvm@baadalvm:~/Documents$ vi Makefile
baadalvm@baadalvm:~/Documents$ make
make: 'hello' is up to date.
baadalvm@baadalvm:~/Documents$
```

Step iii. Execute the 'hello' file generated by ./hello



```
baadalvm@baadalvm:~/Documents$ ./hello
Hello World!
The factorial of 5 is 120
baadalvm@baadalvm:~/Documents$
```

5. Ran some lex and yacc examples:

Step i: Install lex and yacc by executing the following commands:

```
sudo apt install flex
```

```
sudo apt install bison
```

```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~/Documents$ sudo apt install flex
Reading package lists... Done
Building dependency tree
Reading state information... Done
flex is already the newest version (2.6.4-6.2).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
baadalvm@baadalvm:~/Documents$ sudo apt install bison
Reading package lists... Done
Building dependency tree
Reading state information... Done
bison is already the newest version (2:3.5.1+dfsg-1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
baadalvm@baadalvm:~/Documents$
```

Step ii. FOR LEX: Create a Lex file using vi example.l

[illegible]

Step iii. Compile and execute it using following commands:

```
lex example.l //Creates lex.yy.c file
```

```
gcc -lfl lex.yy.c //Creates a.out
```

```
./a.out
```

```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~/Documents$ vi example.l
baadalvm@baadalvm:~/Documents$ lex example.l
baadalvm@baadalvm:~/Documents$ gcc -lfl lex.yy.c
baadalvm@baadalvm:~/Documents$ ./a.out
2.4
number
```

OUTPUT: prints 'number' when a floating point number is typed as input

Step iv. FOR YACC: Create a YACC file using vi calc.y and correspong lex file using vi calc.l

```
baadalvm@baadalvm: ~/Documents
%{
#include <stdio.h>
#include <stdlib.h>
#include "y.tab.h"
}%
%%

[0-9]+ {yylval.a_number = atoi(yytext); return number;}
[-+*/();] {return yytext[0];}
[ \t\n] {};

%%
int yywrap(void){return 0;}
```

```
baadalvm@baadalvm: ~/Documents
%{
#include<stdio.h>
#include<stdlib.h>

extern int yylex();
void yyerror (char *s);
}%

%union {int a_number;}
%start line
%token <a_number> number
%type <a_number> exp term factor
%%

line : exp {printf("result is %d\n", $1);}
exp :
  | term {$$ = $1;}
  | exp '+' term {$$ = $1 + $3;}
  | exp '-' term {$$ = $1 - $3;}
term :
  | factor {$$ = $1;}
  | term '*' factor {$$ = $1 * $3;}
  | term '/' factor {$$ = $1 / $3;}
factor :
  | number {$$ = $1;}
  | '(' exp ')' {$$ = $2;}
  | '-' factor {$$ = -$2;}
%%

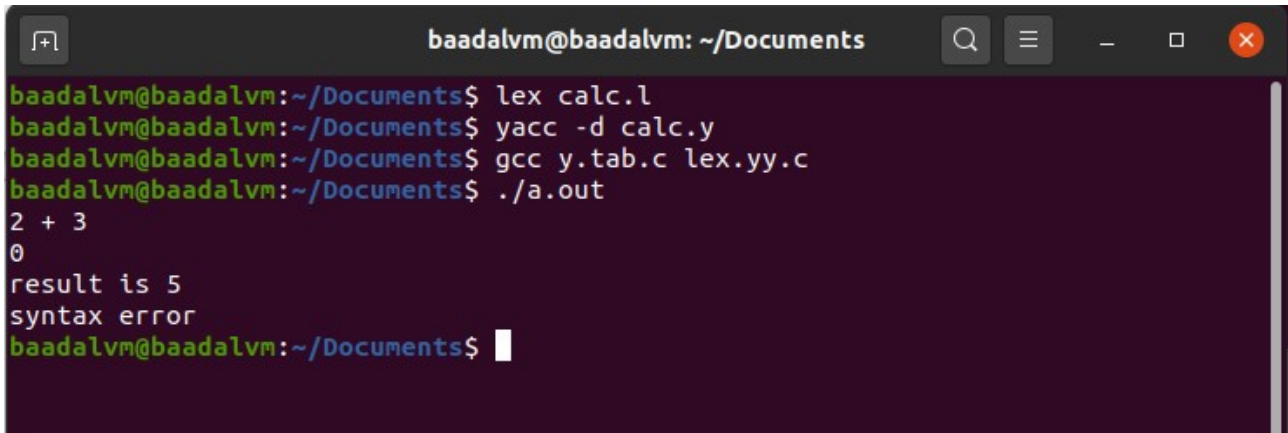
int main(void){return yyparse();}
void yyerror(char *s) {fprintf(stderr, "%s\n", s);}
"calc.y" [readonly] 33L, 611C 1,1 All
```

Step v. Comile and execute using the following commands:

```
yacc -d calc.y
```

```
gcc y.tab.c lex.yy.c
```

```
./a.out
```

A terminal window with a dark purple background and light green text. The window title is 'baadalvm@baadalvm: ~/Documents'. The terminal shows the following commands and output:

```
baadalvm@baadalvm:~/Documents$ lex calc.l
baadalvm@baadalvm:~/Documents$ yacc -d calc.y
baadalvm@baadalvm:~/Documents$ gcc y.tab.c lex.yy.c
baadalvm@baadalvm:~/Documents$ ./a.out
2 + 3
0
result is 5
syntax error
baadalvm@baadalvm:~/Documents$
```

OUTPUT: example of calculator

6. Used GNUplot

Step i: Install GNUPlot using `sudo apt-get install gnuplot`

Step ii. Launch GNUPlot using command 'gnuplot'.

```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~/Documents$ gnuplot

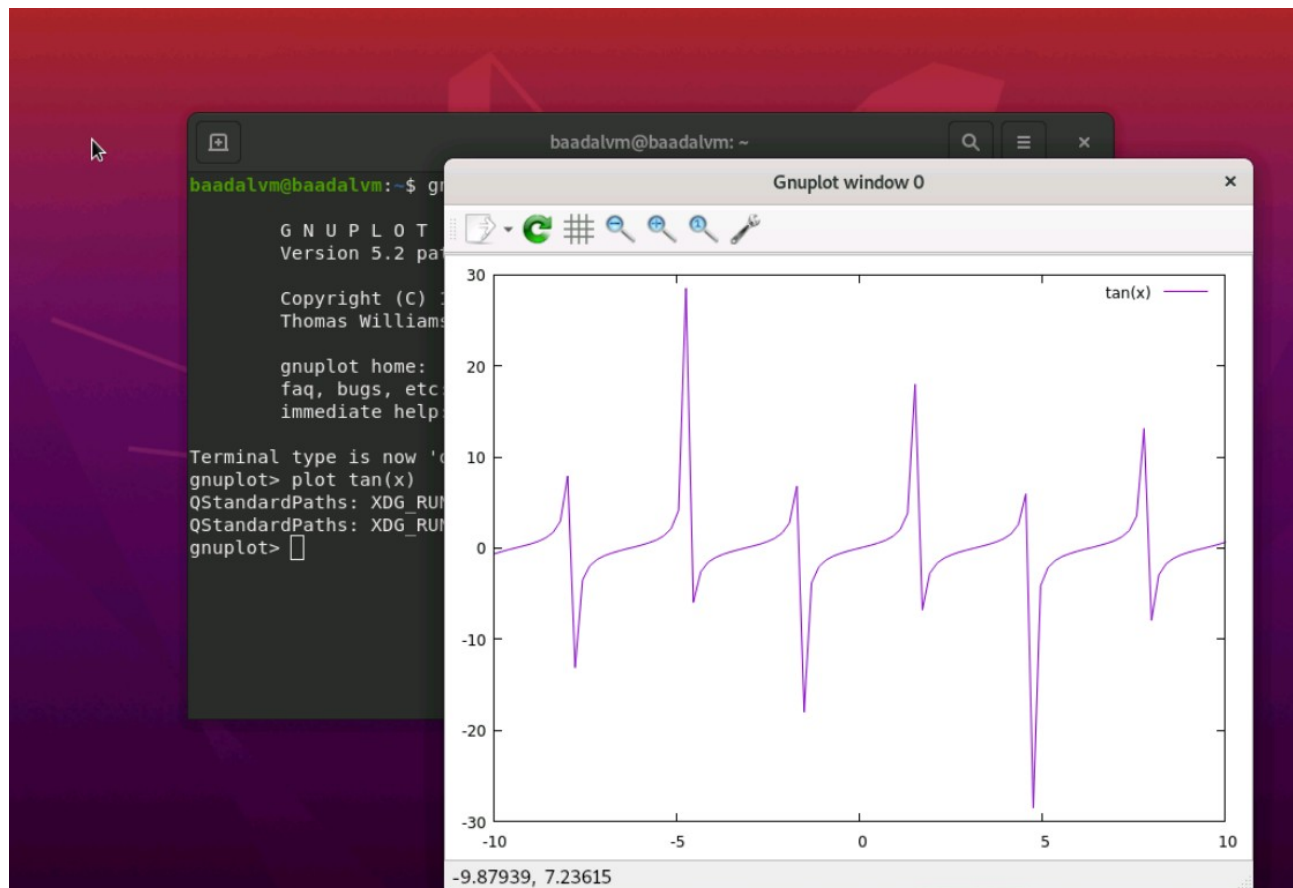
G N U P L O T
Version 5.2 patchlevel 8    last modified 2019-12-01

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Thomas Williams, Colin Kelley and many others

gnuplot home:      http://www.gnuplot.info
faq, bugs, etc:    type "help FAQ"
immediate help:    type "help" (plot window: hit 'h')

Terminal type is now 'qt'
gnuplot> 
```

Step iii. To plot a graph for $\tan(x)$ execute 'plot tan(x)'



7. Got make to call lex, yacc and gnuplot

(i) LEX:

Step 1: create a makefile as:

```
baadalvm@baadalvm: ~/Documents
build: example

example: lex.yy.c
    gcc -o example lex.yy.c -lfl

lex.yy.c: example.l
    lex example.l

~
~
~
```

Step 2: run make

```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~/Documents$ make
make: Nothing to be done for 'build'.
baadalvm@baadalvm:~/Documents$ vi Makefile
baadalvm@baadalvm:~/Documents$ make
gcc -o ex lex.yy.c -lfl
baadalvm@baadalvm:~/Documents$
```

(ii) YACC:

Step 1: create a makefile as:

```
baadalvm@baadalvm: ~/Documents
calc.o: y.tab.c lex.yy.c
    gcc -o calc y.tab.c lex.yy.c

lex.yy.c: calc.l
    lex calc.l

y.tab.c: calc.y
    yacc -d calc.y

~
~
~
```

Step2: run make file

```
baadalvm@baadalvm: ~/Documents
baadalvm@baadalvm:~/Documents$ lex calc.l
baadalvm@baadalvm:~/Documents$ make
gcc -o calc y.tab.c lex.yy.c
baadalvm@baadalvm:~/Documents$
```