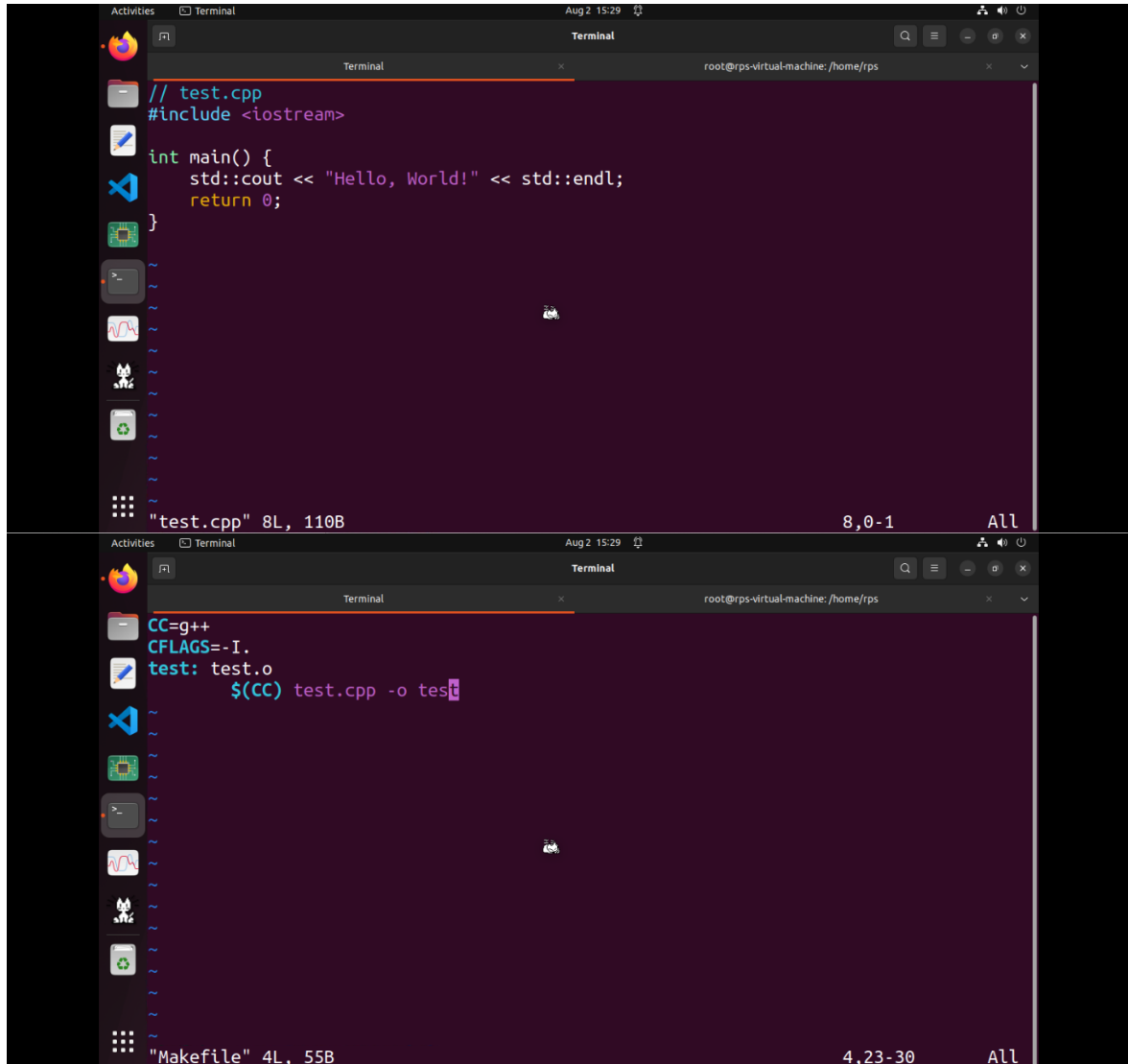


Day -13 LSP Assignment (Task -1)

1. Implement a text file and also add a make file .



The image consists of two screenshots of a terminal window. The top screenshot shows the creation of a C++ file named `test.cpp`. The code inside is as follows:

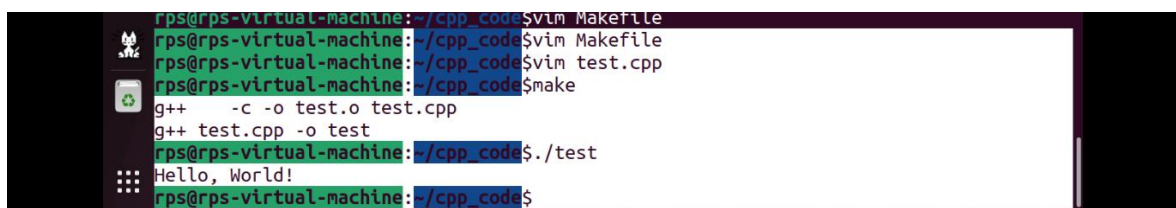
```
// test.cpp
#include <iostream>

int main() {
    std::cout << "Hello, World!" << std::endl;
    return 0;
}
```

The bottom screenshot shows the creation of a Makefile. The content of the Makefile is:

```
CC=g++
CFLAGS=-I.
test: test.o
    $(CC) test.cpp -o test
```

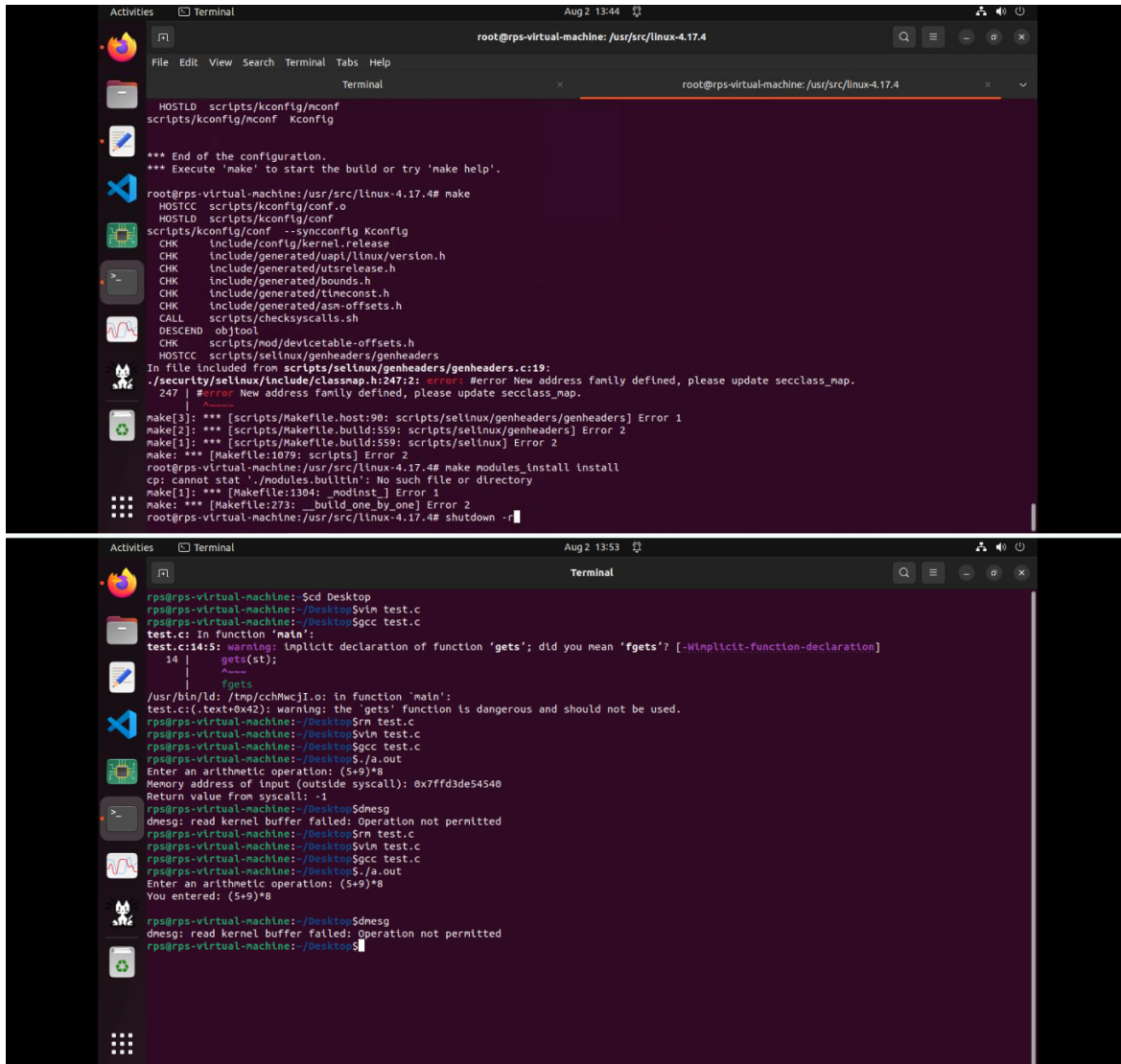
Execution :



The image shows a terminal window with the following commands and output:

```
rps@rps-virtual-machine: ~/cpp_code $ vim Makefile
rps@rps-virtual-machine: ~/cpp_code $ vim Makefile
rps@rps-virtual-machine: ~/cpp_code $ vim test.cpp
rps@rps-virtual-machine: ~/cpp_code $ make
g++ -c -o test.o test.cpp
g++ test.cpp -o test
rps@rps-virtual-machine: ~/cpp_code $ ./test
Hello, World!
rps@rps-virtual-machine: ~/cpp_code $
```

2. SYSTEM CALLS



The image consists of two screenshots of a Linux terminal window. The top screenshot shows the process of compiling the Linux kernel. The user is in the directory `/usr/src/linux-4.17.4` and runs `make`. The terminal output shows the build process, including the compilation of `scripts/kconfig/conf` and the generation of `scripts/kconfig/conf.o`. It also shows the compilation of `scripts/kconfig/conf` and the generation of `scripts/kconfig/conf.o`. The build process is interrupted by an error: `./security/selinux/include/classmap.h:247:2: error: #error New address family defined, please update secclass_map.`. The user then runs `make modules_install`, which fails with the error: `cp: cannot stat './modules.builtin': No such file or directory`. The bottom screenshot shows the user running a C program `test.c` in the directory `/Desktop`. The program uses the `gets` function, which is deprecated. The terminal output shows the program's execution, including the prompt `Enter an arithmetic operation: (5+9)*8` and the output `Memory address of input (outside syscall): 0x7ffd3de54540`. The user then runs `rm test.c` and `gcc test.c`, which fails with the error: `dmesg: read kernel buffer failed: Operation not permitted`.

```
root@rps-virtual-machine: /usr/src/linux-4.17.4
HOSTLD scripts/kconfig/mconf
scripts/kconfig/mconf Kconfig

*** End of the configuration.
*** Execute 'make' to start the build or try 'make help'.

root@rps-virtual-machine: /usr/src/linux-4.17.4# make
HOSTCC scripts/kconfig/conf.o
HOSTLD scripts/kconfig/conf
scripts/kconfig/conf --syncconfig Kconfig
CHK include/config/kernel.release
CHK include/generated/uapi/linux/version.h
CHK include/generated/utsrelease.h
CHK include/generated/bounds.h
CHK include/generated/timeconst.h
CHK include/generated/asm-offsets.h
CALL scripts/checksyscalls.sh
DESCEND objtool
CHK scripts/mod/devicetable-offsets.h
HOSTCC scripts/selinux/genheaders/genheaders
In file included from scripts/selinux/genheaders/genheaders.c:19:
./security/selinux/include/classmap.h:247:2: error: #error New address family defined, please update secclass_map.
247 | #error New address family defined, please update secclass_map.
    | ^~~~~~
make[3]: *** [scripts/Makefile.host:90: scripts/selinux/genheaders/genheaders] Error 1
make[2]: *** [scripts/Makefile.build:559: scripts/selinux/genheaders] Error 2
make[1]: *** [scripts/Makefile.build:559: scripts/selinux] Error 2
make: *** [Makefile:1079: scripts] Error 2
root@rps-virtual-machine: /usr/src/linux-4.17.4# make modules_install install
cp: cannot stat './modules.builtin': No such file or directory
make[1]: *** [Makefile:1304: _modinst_] Error 1
make: *** [Makefile:273: _build_one_by_one] Error 2
root@rps-virtual-machine: /usr/src/linux-4.17.4# shutdown -r

rps@rps-virtual-machine: $cd Desktop
rps@rps-virtual-machine: ~/Desktop$vim test.c
rps@rps-virtual-machine: ~/Desktop$gcc test.c
test.c: In function 'main':
test.c:14:5: warning: implicit declaration of function 'gets'; did you mean 'fgets'? [-Wimplicit-function-declaration]
14 |     gets(st);
    |     ^~~~~
    |     fgets
/usr/bin/ld: /tmp/cchMwcjI.o: in function 'main':
test.c:(.text+0x42): warning: the 'gets' function is dangerous and should not be used.
rps@rps-virtual-machine: ~/Desktop$rm test.c
rps@rps-virtual-machine: ~/Desktop$vim test.c
rps@rps-virtual-machine: ~/Desktop$gcc test.c
rps@rps-virtual-machine: ~/Desktop$.a.out
Enter an arithmetic operation: (5+9)*8
Memory address of input (outside syscall): 0x7ffd3de54540
Return value from syscall: -1
rps@rps-virtual-machine: ~/Desktop$dmesg
dmesg: read kernel buffer failed: Operation not permitted
rps@rps-virtual-machine: ~/Desktop$rm test.c
rps@rps-virtual-machine: ~/Desktop$vim test.c
rps@rps-virtual-machine: ~/Desktop$gcc test.c
rps@rps-virtual-machine: ~/Desktop$.a.out
Enter an arithmetic operation: (5+9)*8
You entered: (5+9)*8
rps@rps-virtual-machine: ~/Desktop$dmesg
dmesg: read kernel buffer failed: Operation not permitted
rps@rps-virtual-machine: ~/Desktop$
```