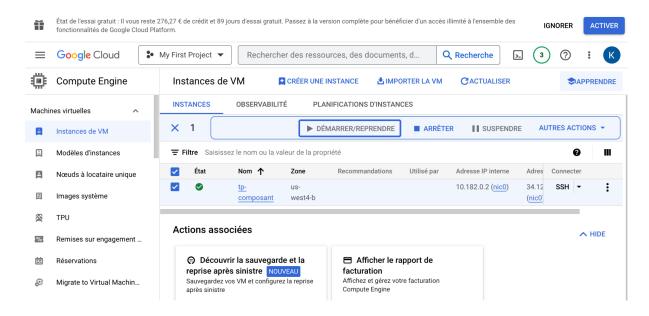
## Rapport programmation par composant

Dans le cadre du cours programmation par composant, nous avons instancié une machine virtuelle sur google cloud pour pouvoir exécuter les différents programmes.



Nous avons cloné le répertoire git et installé les commandes nécessaires pour la compilation.

```
Processing triggers for man-db (2.9.4-2) ...

Processing triggers for libc-bin (2.31-13+deb11u5) ...

koundambengue@tp-composant:~$ git clone https://github.com/Kounda/lib_partageable_2023.git

Cloning into 'lib_partageable_2023'...

remote: Enumerating objects: 37, done.

remote: Counting objects: 100% (37/37), done.

remote: Compressing objects: 100% (25/25), done.

Receiving objects: 100% (37/37), 7.00 KiB | 3.50 MiB/s, done.

remote: Total 37 (delta 9), reused 37 (delta 9), pack-reused 0

Resolving deltas: 100% (9/9), done.
```

La commande make, pour la compilation des fichiers sources :

```
koundambengue@tp-composant:~/lib partageable 2023$ make
cd main && make install
make[1]: Entering directory '/home/koundambengue/lib_partageable 2023/main'
mkdir ../bin
for component in Composant1 Composant2; do \
         cd ../$component; \
         make install;
done
make[2]: Entering directory '/home/koundambengue/lib partageable_2023/Composant1'
mkdir -p ../lib
g++ -fPIC -I../interfaces -c Composant1.cpp -o Composant1.o
gcc -o libComposant1.so -shared Composant1.o
cp libComposant1.so ../lib/libComposant1.so
make[2]: Leaving directory '/home/koundambengue/lib partageable 2023/Composant1'
make[2]: Entering directory '/home/koundambengue/lib_partageable_2023/Composant2'
g++ -fPIC -I../interfaces -c Composant2.cpp -o Composant2.o
gcc -o libComposant2.so -shared Composant2.o
cp libComposant2.so ../lib/libComposant2.so
make[2]: Leaving directory '/home/koundambengue/lib_partageable_2023/Composant2'
g++ -fPIC -I../interfaces -c main.cpp -o main.o
g++ main.o -L ../lib -lComposant1 -lComposant2 -o main
cp main ../bin; \
cp ../lib/libComposant1.so ../lib/libComposant2.so ../bin
make[1]: Leaving directory '/home/koundambengue/lib_partageable_2023/main'
cd bin; \
LD_LIBRARY_PATH=. ./main
Composant 1 version 1.2.2.0
valeur 1:8 valeur 2:15
koundambengue@tp-composant:~/lib_partageable_2023$ '
```

## Test de objdump -T main

```
koundambengue@tp-composant:~/lib_partageable_2023/main$ objdump -T main
        file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
                 DF *UND* 0000000000000000 GLIBCXX 3.4 ZSt4endlIcSt11char traitsIcEERSt13basic ostreamI
T_T0_ES6_
000000000000000000000
                          DF *UND*
DF *UND*
                 DF *UND*
0000000000000000
                  DF *UND*
                          000000000000000 GLIBCZX.3.4 _ZStlsIStl1char_traitsIcEERStl3basic_ostreamIcT_E
00000000000000000
                 DF *UND*
S5_PKc
0000000000000000000
                          DF *UND*
00000000000000000
                 DO *UND*
                                                  _ITM_deregisterTMCloneTable
                 D *UND*
0000000000000000 w
                          00000000000000000
00000000000000000
                  DF *UND*
                                         GLIBC_2.2.5 __libc_start_main
                  D *UND*
                                                    _gmon_start
                          D *UND*
                  DF *UND*
0000000000000000
                  DF *UND*
koundambengue@tp-composant:~/lib_partageable_2023/main$ '''
```

## Test objdump -T libComposant1.so

## Test objdump -C -T libComposant2.so

```
        koundambengue@tp-composant:~/lib_partageable_2023/Composant1$ cd /home/koundambengue/lib_partageable_2023/Composant2

        sant2
        koundambengue@tp-composant:~/lib_partageable_2023/Composant2$ objdump -T libComposant2.so

        libComposant2.so:
        file format elf64-x86-64

        DYNAMIC SYMBOL TABLE:
        00000000000000 w D *UND* 00000000000000 __cxa_finalize

        00000000000000 w D *UND* 000000000000000 __ITM_registerTMCloneTable

        00000000000000 w D *UND* 00000000000000 __ITM_deregisterTMCloneTable

        000000000000000 w D *UND* 000000000000000 __gmon_start__

        0000000000000000 b DF .text 00000000000000013 __Z10composant2ii
```

A présent, nous allons décommenter les lignes extern "C"

Voici ce que nous avons en sorti :

```
koundambengue@tp-composant:~/lib_partageable_2023$ make
cd main && make install
make[1]: Entering directory '/home/koundambengue/lib_partageable_2023/main'
cp main ../bin; \
cp ../lib/libComposant1.so ../lib/libComposant2.so ../bin
make[1]: Leaving directory '/home/koundambengue/lib_partageable_2023/main'
cd bin; \
LD_LIBRARY_PATH=. ./main
Composant 1 version 1.2.2.0
valeur 1 :8 valeur 2 :15
```