#### De TABBAKH Mohamed Amine MIAGE-IF Rendu 1

#### Make:

```
aminetabbakh20@instance-1:~/lib_partageable_2023$ make
cd main && make install
make[1]: Entering directory '/home/aminetabbakh20/lib_partageable_2023/main'
mkdir ../bin
for component in Composant1 Composant2; do \
          cd ../$component; \
make install; \
done
make[2]: Entering directory '/home/aminetabbakh20/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 libComposantl.so ../lib/libComposantl.so
make[2]: Leaving directory '/home/aminetabbakh20/lib_partageable_2023/Composant1' make[2]: Entering directory '/home/aminetabbakh20/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/aminetabbakh20/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/libComposantl.so ../lib/libComposant2.so ../bin
make[1]: Leaving directory '/home/aminetabbakh20/lib_partageable_2023/main'
cd bin; \
LD_LIBRARY_PATH=. ./main
Composant 1 version 1.2.2.0
valeur 1 :8 valeur 2 :15
```

## objdump -T main:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/main$ objdump -T main
           file format elf64-x86-64
main:
DYNAMIC SYMBOL TABLE:
0000000000000000
                        DF *UND*
                                   000000000000000 GLIBCXX 3.4 ZSt4endlIcSt11char traitsIcEERSt13basic ostre
T TO ES6
                                                                     _Z10composant2ii
0000000000000000
                        DF *UND*
                                   0000000000000000
0000000000000000
                        DF *UND*
                                                                      _Z10composantlii
                                   00000000000000000
                                                                     _Z20getComposant1Versionv
                        DF *UND*
00000000000000000
                                   00000000000000000
                        DF *UND*
                                                       GLIBC 2.2.5
00000000000000000
                                   00000000000000000
                                                                       cxa atexit
                                                       GLIBCXX_3.4 _ZStlsIStllchar_traitsIcEERStl3basic_ostreamIc
                        DF *UND*
00000000000000000
                                   00000000000000000
S5_PKc
                                                       GLIBCXX_3.4 _ZNSolsEPFRSOS_E
GLIBCXX_3.4 _ZSt4cout
GLIBCXX_3.4 _ZNSt8ios_base4InitClEv
GLIBCXX_3.4 _ZNSolsEi
000000000000000
                        DF *UND*
                                   00000000000000000
                        DO *UND*
0000000000000000
                                   00000000000000000
                        DF *UND*
0000000000000000
                                   00000000000000000
                        DF *UND*
0000000000000000
                                   0000000000000000
                        D *UND*
                                                        __ITM_deregisterTMCloneTable
GLIBC_2.2.5 __libc_start_main
000000000000000 w
                                   0000000000000000
                        DF *UND*
0000000000000000
                                   00000000000000000
                        D *UND*
D *UND*
000000000000000 w
000000000000000 w
                                   00000000000000000
                                                                       gmon_start
                                   00000000000000000
                                                                      ITM registerTMCloneTable
                                                        GLIBCXX_3.4 _ZNSt8ios_base4InitDlEv
GLIBC_2.2.5 __cxa_finalize
0000000000000000
                         DF *UND*
                                   0000000000000000
000000000000000 w
                        DF *UND*
                                    0000000000000000
```

### objdump -T libComposant1.so:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/Composant1$ objdump -T libComposant1.so
libComposant1.so:
                          file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
w 00000000000000000000000 w
                                      0000000000000000000
                                                            _cxa_finalize
                          D *UND*
                                      000000000000000 _ITM_registerTMCloneTable
00000000000000000 _ITM_deregisterTMCloneTable
                          D *UND*
D *UND*
                          D *UND*
                                      0000000000000000
                                                            _gmon_start
                                      000000000000000 __gmon_start__
0000000000000000 _Z20getComposant1Versionv
0000000000001138 g
                          DF .text
                                      0000000000000014 _Z16addition_interneii
000000000000001f _Z10composant1ii
0000000000001124 g
                          DF .text
0000000000001105 g
                          DF .text
```

# objdump -C -T main:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/main$ objdump -C -T main
          file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
0000000000000000
                     DF *UND* 00000000000000 GLIBCXX_3.4 std::basic_ostream<char, std::char_traits<char> >
0000000000000000
                                                             composant2(int,
                                                             composant1(int, int)
00000000000000000
                     DF *UND*
00000000000000000
                               00000000000000000
                                                             getComposant1Version()
                     DF *UND* 00000000000000 GLIBC_2.2.5 _cxa_atexit
DF *UND* 00000000000000 GLIBCXX_3.4 std::basic_ostream<char, std::char_traits<char> >
00000000000000000
0000000000000000
stream&))
                               0000000000000000 GLIBCXX_3.4 std::cout
00000000000000000 GLIBCXX_3.4 std::ios_base::Init::Init()
000000000000000000 GLIBCXX_3.4 std::ostream::operator<<(int)
0000000000000000
                     DO *UND*
00000000000000000
                     DF *UND*
                     DF *UND*
0000000000000000
                                                            _ITM_deregisterTMCloneTable
00000000000000000
                     D *UND*
                               0000000000000000
0000000000000000
                     DF
                        *UND*
                               0000000000000000
                                                 GLIBC_2.2.5 __libc_start_main
                        *UND*
0000000000000000
                               00000000000000000
                                                               gmon_start
                                                             _ITM_registerTMCloneTable
                        *UND*
0000000000000000
                     D
                               00000000000000000
                               000000000000000 GLIBCXX_3.4 std::ios_base::Init::~Init()
00000000000000000 GLIBC_2.2.5 __cxa_finalize
                        *UND*
00000000000000000
                     DF
                     DF *UND*
0000000000000000
```

### objdump -C -T libComposant1.so:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/Composant1$ objdump -C -T libComposant1.so
libComposant1.so:
                      file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
0000000000000000 w
                         *UND*
                                00000000000000000
                                                   cxa_finalize
                                0000000000000000 _ITM_registerTMCloneTable
000000000000000 w
                        *UND*
                      D
000000000000000 w
                        *UND*
                                0000000000000000 _ITM_deregisterTMCloneTable
000000000000000 w
                      D *UND*
                                0000000000000000
                                                  _gmon_start
0000000000001138 g
                      DF .text
                                0000000000000000 getComposantlVersion()
                                0000000000000014 addition interne(int, int)
0000000000001124 g
                      DF .text
0000000000001105 q
                               0000000000000001f composant1(int, int)
                      DF .text
```

# Après avoir décommenter les lignes extern "C" et Git pull :

```
#ifndef COMPOSANT1_H

#define COMPOSANT1_H

extern "C"

int composant1(int p1, int p2);

const char * getComposant1Version(void);

##ifndef COMPOSANT1_H

extern "C"

int composant1(int p1, int p2);

##ifndef COMPOSANT1_H

extern "C"

int composant1(int p1, int p2);

##ifndef COMPOSANT1_H

extern "C"

int composant1(int p1, int p2);

##ifndef COMPOSANT1_H

##if
```

## objdump -T main:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/main$ objdump -T main
main:
           file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
00000000000000000
                                   000000000000000 GLIBCXX 3.4 ZSt4endlIcStllchar traitsIcEERStl3basic ostreamI
                        DF *UND*
T TO ES6
0000000000000000
                        DF *UND*
                                   0000000000000000
                                                                     _Z10composant2ii
00000000000000000
                           *UND*
                        DF
                                   00000000000000000
                                                                      Z10composantlii
                                                                    _Z20getComposant1Versionv
0000000000000000
                        DF *UND*
                                   0000000000000000
0000000000000000
                           *UND*
                                   0000000000000000
                                                       GLIBC 2.2.5
                                                                       cxa_atexit
                                                       GLIBCXX_3.4 _ZStlsIStl1char_traitsIcEERStl3basic_ostreamIcT_E
00000000000000000
                        DF *UND*
                                   00000000000000000
S5_PKc
                                                       GLIBCXX_3.4 _ZNSolsEPFRSoS_E
GLIBCXX_3.4 _ZSt4cout
GLIBCXX_3.4 _ZNSt8ios_base4InitClEv
GLIBCXX_3.4 _ZNSolsEi
000000000000000
                        DF *UND*
                                   00000000000000000
0000000000000000
                        DO *UND*
                                   0000000000000000
                           *UND*
0000000000000000
                        DF
                                   0000000000000000
                           *UND*
0000000000000000
                        DF
                                   0000000000000000
                                                                    _ITM_deregisterTMCloneTable
                           *UND*
0000000000000000
                                   00000000000000000
                           *UND*
                                                       GLIBC_2.2.5
0000000000000000
                        DF
                                   0000000000000000
                                                                    __libc_start_main
                           *UND*
00000000000000000
                                   00000000000000000
                                                                       gmon_start
                           *UND*
                                                                      _ITM_registerTMCloneTable
00000000000000000
                                   00000000000000000
                           *UND*
                                                       GLIBCXX 3.4 ZNSt8ios base4InitD1Ev GLIBC 2.2.5 _cxa_finalize
00000000000000000
                                   00000000000000000
                        DF
                        DF *UND*
00000000000000000
                                   00000000000000000
                                                                      _cxa_finalize
```

# objdump -T libComposant1.so:

```
aminetabbakh20@instance-1:~/lib partageable 2023/Composant1$ objdump -T libComposant1.so
libComposant1.so:
                 file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
                         *UND*
w 0000000000000000 w w
                   *UND*
                 D
                   *UND*
000000000000000000 w
000000000000000 w
                                        gmon start
                         0000000000001138 g
                 DF .text
0000000000001124 g
                 DF .text
0000000000001105 q
                 DF .text
```

# objdump -C -T main:

```
aminetabbakh20@instance-1:~/lib_partageable_2023/main$ objdump -C -T main
           file format elf64-x86-64
main:
DYNAMIC SYMBOL TABLE:
                         DF *UND* 00000000000000 GLIBCXX_3.4 std::basic_ostream<char, std::char_traits<char> >
00000000000000000
& std::endl<char, std::char_traits<char> >(std::basic_ostream<char, std::char_traits<char> >&)
                         DF *UND* 0000000000000000
                                                                      composant2(int, int)
00000000000000000
                         DF *UND*
00000000000000000
                                    0000000000000000
                                                                      composantl(int, int)
                                                                      getComposant1Version()
0000000000000000
                         DF *UND*
                                    0000000000000000
000000000000000 DF *UND* 000000000000000 GLIBC_2.2.5 _cxa_atexit
000000000000000 DF *UND* 000000000000000 GLIBCXX_3.4 std::basic_ostream<char, std::char_traits<char> :
& std::operator<< <std::char_traits<char> >&, char const*)
00000000000000000
                         DF *UND*
                                    000000000000000 GLIBCXX_3.4 std::ostream::operator<<(std::ostream& (*)(std::o
stream&))
00000000000000000
                         DO *UND*
                                    0000000000000000
                                                        GLIBCXX_3.4 std::cout
                                                        GLIBCXX_3.4 std::ios_base::Init::Init()
GLIBCXX_3.4 std::ostream::operator<<(int)
00000000000000000
                         DF *UND*
                                    0000000000000000
                                                        00000000000000000
                         DF *UND*
                                    0000000000000000
000000000000000 w
                            *UND*
                                    00000000000000000
0000000000000000
                         DF
                            *UND*
                                    0000000000000000
000000000000000 w
                         D
                            *UND*
                                    0000000000000000
                                                                        gmon start
                         D *UND*
                                                                       ITM_registerTMCloneTable
0000000000000000
                                    0000000000000000
                                                        __ITM_registerTMCloneTable
GLIBCXX_3.4 std::ios_base::Init::~Init()
GLIBC_2.2.5 __cxa_finalize
                         DF *UND*
0000000000000000
                                    00000000000000000
                            *UND*
00000000000000000
                         DF
                                    00000000000000000
```

### objdump -C -T libComposant1.so:

```
aminetabbakh20@instance-1:~/lib partageable 2023/Composant1$ objdump -C -T libComposant1.so
libComposant1.so:
                      file format elf64-x86-64
DYNAMIC SYMBOL TABLE:
                                0000000000000000 w
00000000000000 w
                        *UND*
                     D
                         *UND*
                      D
0000000000000000 w
000000000000000 w
                      D *UND*
D *UND*
                                0000000000000000 _ITM_deregisterTMCloneTable
                                00000000000000000
                                                  _gmon_start_
                                0000000000000000 getComposantlVersion()
0000000000001138 g
                      DF .text
0000000000001124 g
                      DF
                         .text
                                000000000000014 addition interne(int, int)
0000000000001105 g
                      DF .text 000000000000001f composant1(int, int)
```