How to create Shared Library

Innova Lee(이상훈)
gcccompil3r@gmail.com

```
wrg@wrg-900X5N:~/proj$ ls
Data-Structure  education  ExamCpp  go_study  Project  tmp  VehicleIntegration
wrg@wrg-900X5N:~/proj$ mkdir so_proj
wrg@wrg-900X5N:~/proj$ cd so_proj/
wrg@wrg-900X5N:~/proj/so_proj$ ls
wrg@wrg-900X5N:~/proj/so_proj$ vi hello_lib.h
wrg@wrg-900X5N:~/proj/so_proj$ vi hello_lib.c
wrg@wrg-900X5N:~/proj/so_proj$ vi main.c
wrg@wrg-900X5N:~/proj/so_proj$ gcc -c -Wall -Werror -fpic hello_lib.c
wrg@wrg-900X5N:~/proj/so_proj$ ls
hello_lib.c  hello_lib.h  hello_lib.o  main.c
wrg@wrg-900X5N:~/proj/so_proj$ gcc -shared -o libhello_lib.so hello_lib.o
wrg@wrg-900X5N:~/proj/so_proj$ ls
hello_lib.c  hello_lib.h  hello_lib.o  libhello_lib.so  main.c
wrg@wrg-900X5N:~/proj/so_proj$ gcc -Wall -o test main.c -lhello_lib
/usr/bin/ld: cannot find -lhello_lib
wrg@wrg-900X5N:~/proj/so_proj$ gcc -L/home/sdr/proj/so_proj -Wall -o test main.c -lhello_lib
/usr/bin/ld: cannot find -lhello_lib
collect2: error: ld returned 1 exit status
wrg@wrg-900X5N:~/proj/so_proj$ gcc -L/home/wrg/proj/so_proj -Wall -o test main.c -lhello_lib
wrg@wrg-900X5N:~/proj/so_proj$ ls
hello_lib.c  hello_lib.h  hello_lib.o  libhello_lib.so  main.c  test
wrg@wrg-900X5N:~/proj/so_proj$ ./test
./test: error while loading shared libraries: libhello_lib.so: cannot open shared object file:
 No such file or directory
wrg@wrg-900X5N:~/proj/so_proj$ echo $LD_LIBRARY_PATH

wrg@wrg-900X5N:~/proj/so_proj$ export LD_LIBRARY_PATH=/home/wrg/proj/so_proj:$LD_LIBRARY_PATH
wrg@wrg-900X5N:~/proj/so_proj$ ./test
I can call Shared Library
Hello, I'm a Shared Library
wrg@wrg-900X5N:~/proj/so_proj$
```

```
wrg@wrg-900X5N:~/proj/so_proj$ ls
hello_lib.c  hello_lib.h  hello_lib.o  libhello_lib.so  main.c  test
wrg@wrg-900X5N:~/proj/so_proj$ echo $LD_LIBRARY_PATH
/home/wrg/proj/so_proj:
wrg@wrg-900X5N:~/proj/so_proj$ unset LD_LIBRARY_PATH
wrg@wrg-900X5N:~/proj/so_proj$ echo $LD_LIBRARY_PATH

wrg@wrg-900X5N:~/proj/so_proj$ gcc -L/home/wrg/proj/so_proj -Wl, -rpath=/home/wrg/proj/so_proj
 -Wall -o test main.c -lhello_lib
gcc: error: unrecognized command line option '-rpath=/home/wrg/proj/so_proj'
wrg@wrg-900X5N:~/proj/so_proj$ gcc -L/home/wrg/proj/so_proj -Wl,-rpath=/home/wrg/proj/so_proj
-Wall -o test main.c -lhello_lib
wrg@wrg-900X5N:~/proj/so_proj$ ./test
I can call Shared Library
Hello, I'm a Shared Library
wrg@wrg-900X5N:~/proj/so_proj$
```