

7. Cross-Compile a simple C program on the Host machine and try to execute it on the host machine. Note the observations.

- Create a simple C program or a directory

**\$ vim <filename>.c (for file)**

**\$ mkdir <name> (for creating directory)**

- Run the program on gcc compiler on host machine (intel x86)

**\$ gcc <filename>.c -o <filename>.out**

- Execute the file

**\$ ./<filename>.out**

**( Print the output message successfully)**

- Now run the program on arm linux compiler on host machine

**\$ arm-linux-gnueabi-gcc <filename>.c -o <filename>.out**

- Execute the file

**\$ ./<filename>.out**

**( Print the error message : Exec format error)**

```
desd@desd-OptiPlex-5050:~/beaglebone/staticLib$ make
make -C ARM
make[1]: Entering directory '/home/desd/beaglebone/staticLib/ARM'
arm-linux-gnueabi-gcc -g -ggdb3 -Wall -c main.c -o main.o
arm-linux-gnueabi-gcc -g -ggdb3 -Wall -c find_tan.c -o find_tan.o
ar rc find_tan.a find_tan.o
ranlib find_tan.a
arm-linux-gnueabi-gcc main.o find_tan.a -g -ggdb3 -Wall -lm -static -o a.out
make[1]: Leaving directory '/home/desd/beaglebone/staticLib/ARM'
make -C GCC
make[1]: Entering directory '/home/desd/beaglebone/staticLib/GCC'
gcc -g -ggdb3 -Wall -c main.c -o main.o
gcc -g -ggdb3 -Wall -c find_tan.c -o find_tan.o
ar rc find_tan.a find_tan.o
ranlib find_tan.a
gcc main.o find_tan.a -g -ggdb3 -Wall -lm -static -o a.out
make[1]: Leaving directory '/home/desd/beaglebone/staticLib/GCC'
desd@desd-OptiPlex-5050:~/beaglebone/staticLib$ cd ARM/
desd@desd-OptiPlex-5050:~/beaglebone/staticLib/ARM$ ./a.out
bash: ./a.out: cannot execute binary file: Exec format error
desd@desd-OptiPlex-5050:~/beaglebone/staticLib/ARM$ cd ..
desd@desd-OptiPlex-5050:~/beaglebone/staticLib$ cd GCC/
desd@desd-OptiPlex-5050:~/beaglebone/staticLib/GCC$ ./a.out
my_sin = 0.21, my_cos = -0.98
tan(90.89) = -0.22
my_tan(90.89) = -0.22
```