

### Assignment 3

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Section A

```
1) int add(int a,int b){  
    int c=a+b;  
    return c;  
}
```

```
2) int sub(int a,int b){  
    int d=a-b;  
    return d;  
}
```

```
3) int mul(int a,int b){  
    int e=a*b;  
    return e;  
}
```

```
4) int div(int a,int b){  
    int f=a/b;  
    return f;  
}
```

```
5) #include "mymath.h"  
#include <stdio.h>  
#include <stdlib.h>
```

```
int main(){  
    int a,b;  
    printf("enter a and b");  
    scanf("%d %d",&a,&b);  
    printf("add : %d",add(a,b));  
    printf("sub : %d",sub(a,b));  
    printf("mul : %d",mul(a,b));  
    printf("div : %d",div(a,b));  
  
    return 0;  
}
```

6) #ifdef MYLIB\_H

#define MULIB\_H

int add(int a,int b);

int sub(int a,int b);

int mul(int a,int b);

int div(int a,int b);

```
sub 2\n student@nit-OptiPlex-7070:~$ nano main.c
student@nit-OptiPlex-7070:~$ export LD_LIBRARY_PATH=.
student@nit-OptiPlex-7070:~$ ./program
add 8
sub 2\n student@nit-OptiPlex-7070:~$ nano mymath.c
student@nit-OptiPlex-7070:~$ nano add.c
student@nit-OptiPlex-7070:~$ nano mymath.h
student@nit-OptiPlex-7070:~$ nano sub.c
student@nit-OptiPlex-7070:~$ nano main.c
student@nit-OptiPlex-7070:~$ gcc -c add.c -o add.o
student@nit-OptiPlex-7070:~$ gcc -c sub.c -o sub.o
student@nit-OptiPlex-7070:~$ gcc -c main.c -o main.o
student@nit-OptiPlex-7070:~$ nano mymath.h
student@nit-OptiPlex-7070:~$ gcc -c main.c -o main.o
student@nit-OptiPlex-7070:~$ gcc -c -fpic add.c -o add.o
student@nit-OptiPlex-7070:~$ gcc -c -fpic sub.c -o sub.o
student@nit-OptiPlex-7070:~$ gcc -shared -o libadd.so add.o
student@nit-OptiPlex-7070:~$ gcc -shared -o libsub.so sub.o
student@nit-OptiPlex-7070:~$ export LD_LIBRARY_PATH=.
student@nit-OptiPlex-7070:~$ ./program
add 8
sub 2\n student@nit-OptiPlex-7070:~$ gcc -o mathfile mathdemo.o -lmymath
/usr/bin/ld: cannot find -lmymath
```

```
student@nit-OptiPlex-7070:~$ gcc -o finalmath mathDemo.c static.a
student@nit-OptiPlex-7070:~$ ./finalmath
student@nit-OptiPlex-7070:~$ gcc -c mathDemo.c
student@nit-OptiPlex-7070:~$ gcc -c mathDemo.c -o mathDemo.o
student@nit-OptiPlex-7070:~$ gcc -o mathDemo mathDemo.o mathDemo.c
/tmp/ccPfrtUw.o: In function `add':
mathDemo.c:(.text+0x0): multiple definition of `add'
mathDemo.o:mathDemo.c:(.text+0x0): first defined here
/tmp/ccPfrtUw.o: In function `main':
mathDemo.c:(.text+0x14): multiple definition of `main'
mathDemo.o:mathDemo.c:(.text+0x14): first defined here
collect2: error: ld returned 1 exit status
student@nit-OptiPlex-7070:~$ ar rcs static.a mathDemo.o
student@nit-OptiPlex-7070:~$ gcc -o finalmath static.a mathDemo.c
/tmp/ccKA5b1R.o: In function `add':
mathDemo.c:(.text+0x0): multiple definition of `add'
static.a(mathDemo.o):mathDemo.c:(.text+0x0): first defined here
/tmp/ccKA5b1R.o: In function `main':
mathDemo.c:(.text+0x14): multiple definition of `main'
static.a(mathDemo.o):mathDemo.c:(.text+0x14): first defined here
collect2: error: ld returned 1 exit status
student@nit-OptiPlex-7070:~$ ./finalmath
bash: ./finalmath: No such file or directory
student@nit-OptiPlex-7070:~$ gcc -o finalmath mathDemo.c static.a
student@nit-OptiPlex-7070:~$ ./finalmath
8hellostudent@nit-OptiPlex-7070:~$ ldd ./finalmath
        linux-vdso.so.1 (0x00007ffdfbbde000)
        libc.so.6 => /lib/x86_64-linux-gnu/libc.so.6 (0x00007fbd65757000)
        /lib64/ld-linux-x86-64.so.2 (0x00007fbd65d4a000)
student@nit-OptiPlex-7070:~$ du -h ./finalmath
12K      ./finalmath
```

