Assignment 3
Name:G kovida,D Amulya
Roll no: 422154 , 422136
Section A

```c
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 studenrt@nit-OptiPlex-7070:~$ nano main.c
studenrt@nit-OptiPlex-7070:~$ export LD_LIBRARY_PATH=.
studenrt@nit-OptiPlex-7070:~$ ./program
add 8
sub 2\n studenrt@nit-OptiPlex-7070:~$ nano mymath.c
studenrt@nit-OptiPlex-7070:~$ nano add.c
studenrt@nit-OptiPlex-7070:~$ nano mymath.h
studenrt@nit-OptiPlex-7070:~$ nano sub.c
studenrt@nit-OptiPlex-7070:~$ nano main.c
studenrt@nit-OptiPlex-7070:~$ gcc -c add.c -o add.o
studenrt@nit-OptiPlex-7070:~$ gcc -c sub.c -o sub.o
studenrt@nit-OptiPlex-7070:~$ gcc -c main.c -o main.o
studenrt@nit-OptiPlex-7070:~$ nano mymath.h
studenrt@nit-OptiPlex-7070:~$ gcc -c main.c -o main.o
studenrt@nit-OptiPlex-7070:~$ gcc -c -fpic add.c -o add.o
studenrt@nit-OptiPlex-7070:~$ gcc -c -fpic sub.c -o sub.o
studenrt@nit-OptiPlex-7070:~$ gcc -shared -o libadd.so add.o
studenrt@nit-OptiPlex-7070:~$ gcc -shared -o libsub.so sub.o
studenrt@nit-OptiPlex-7070:~$ export LD_LIBRARY_PATH=.
studenrt@nit-OptiPlex-7070:~$ ./program
add 8
sub 2\n studenrt@nit-OptiPlex-7070:~$ gcc -o mathfile mathdemo.o -lmymath
```

```
studenrt@nit-OptiPlex-7070:~$ gcc -o finalmath mathDemo.c static.a
studenrt@nit-OptiPlex-7070:~$ ./finalmath
studenrt@nit-OptiPlex-7070:~$ gcc -c mathDemo.c
studenrt@nit-OptiPlex-7070:~$ gcc -c mathDemo.c -o mathDemo.o
studenrt@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
studenrt@nit-OptiPlex-7070:~$ ar rcs static.a mathDemo.o
studenrt@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
studenrt@nit-OptiPlex-7070:~$ ./finalmath
bash: ./finalmath: No such file or directory
studenrt@nit-OptiPlex-7070:~$ gcc -o finalmath mathDemo.c static.a
studenrt@nit-OptiPlex-7070:~$ ./finalmath
8hellostudenrt@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)
studenrt@nit-OptiPlex-7070:~$ du -h ./finalmath
12K     ./finalmath
```