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Computer Networks Minor1

C1

```cpp
#include<stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <stdlib.h>
#include <iostream>
#include <sys/wait.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <fcntl.h>
#include <pthread.h>
#include <semaphore.h>
#include <string.h>
using namespace std;

const char* sem1= "s1";
const char* sem2 = "s2";

int main(){
    sem_t *s1=sem_open(sem1,O_CREAT,0666,0);
        sem_t *s2=sem_open(sem1,O_CREAT,0666,0);

    key_t k_shmptr=ftok("spid",65);
        int shm_spid=shmget(k_shmptr,sizeof(int),IPC_CREAT|0666);
        int* shmptr=(int*)shmat(shm_spid,NULL,0);
    cout << "write to sharedmemory: " << "\n";
    int n;
    cin >> n;
    *shmptr = n;
    cout << "\nData written from process 1->" << *shmptr;
    cout << "\nSemaphore 1->" << s1;
    cout << "\nSemaphore 2->" << s2;
    //workOnESS();
    sem_wait(s1);
```

```
     sem_post(s2);
   cout << "\nReleased and back to process 1";
        shmdt(shmptr);
}
```

C2

```cpp
#include<stdio.h>
#include <unistd.h>
#include <sys/types.h>
#include <stdlib.h>
#include <iostream>
#include <sys/wait.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <fcntl.h>
#include <pthread.h>
#include <semaphore.h>
#include <string.h>
using namespace std;


const char* sem1= "s1";
const char* sem2 = "s2";

int main(){
   cout << "in p2";
  sem_t *s1=sem_open(sem1,O_CREAT,0666,0);
        sem_t *s2=sem_open(sem1,O_CREAT,0666,0);
   sem_wait(s2);
   key_t k_shmptr=ftok("spid",65);
```

```cpp
        int shm_spid=shmget(k_shmptr,sizeof(int),IPC_CREAT|0666);
        int* shmptr=(int*)shmat(shm_spid,NULL,0);
    cout << "write to sharedmemory: " << "\n";
    int n;
    cin >> n;
    *shmptr = n;
    cout << "\nData written from process 2->" << *shmptr;
    cout << *shmptr << "\n";
    sem_post(s1);
        shmdt(shmptr);
}
```

```
somal@Rudra:~/Documents/StudyMaterialCollege/3-2/ComputerNet    somal@Rudra:~/Documents/StudyMaterialCollege/3-2/ComputerNet
works/Minor1_CN$ ./q2_C1                                        works/Minor1_CN$ g++ q2_C2.cpp -o q2_C2 -lpthread
write to sharedmemory:                                          somal@Rudra:~/Documents/StudyMaterialCollege/3-2/ComputerNet
123                                                             works/Minor1_CN$ ./q2_C2
                                                                in p2write to sharedmemory:
                                                                456
Data written from process 1->123
Semaphore 1->0x7efc48960000
Semaphore 2->0x7efc48960000                                     Data written from process 2->456456
Released and back to process 1somal@Rudra:~/Documents/StudyM    somal@Rudra:~/Documents/StudyMaterialCollege/3-2/ComputerNet
```