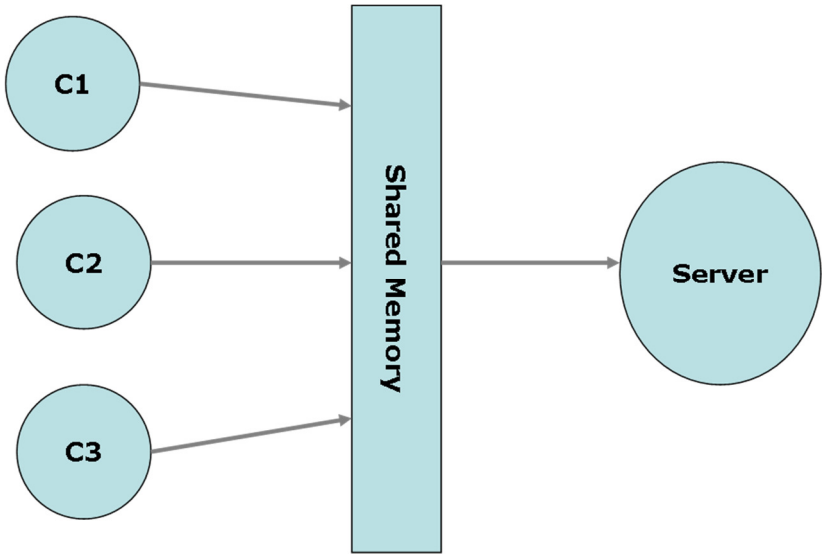
Birla Institute of Technology & Science, Pilani
Pilani Campus

II SEMESTER 2019-2020
LAB-4 EXERCISE

Course No.: IS F462 **Course Title:** Network Programming
Deadline: 10th Mar 2020 **Maximum Marks:** 20M

Write C programs client.c and server.c that do the following.



C1 and C2 and C3 are process instances of client program. Client writes the following data item to shared memory for N (taken as CLA) times. Server reads the data from shared memory in an infinite loop and sums up a, b and prints as stated below.

Since shared memory is limited, there is a need for synchronization. Create shared memory of size M (taken as CLA on server) bytes. Use semaphores to synchronize the use of shared memory among the clients and the server.

```
struct data_item{
           pid_t pid; //clients pid
           int slno; // incremented for very item
           int a; //any number
           int b; //any number
           };
```

Print client's pid, slno, a and b, shmid, semaphore value for every item the client puts in. Print server's pid (with label "server"), slno, a, b, sum of a and b, shmid, and semaphore value for every item it processes. When server is exited through ctrl-c, it prints pid wise count of data items it processed.

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Files Expected: A tar file **<idno>_lab4.tar** containing shm_client.c, shm_server.c and makefile to compile your program.

Upload in http://nalanda.bits-pilani.ac.in