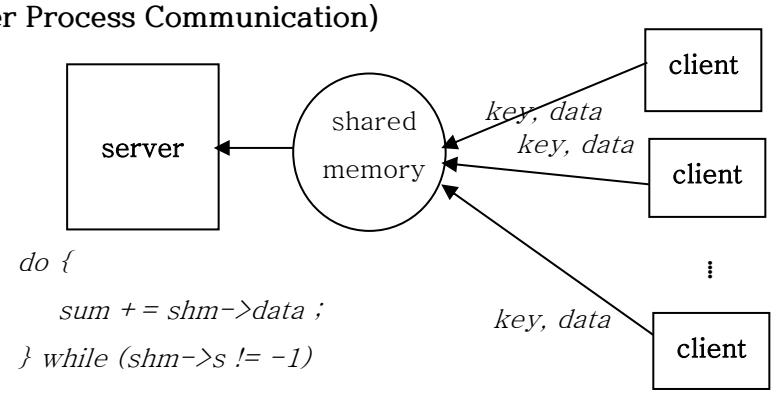
Lap 3 - IPC and OpenMP

1. IPC(Inter Process Communication)



(1) Complete the following C program(client.c) to write a data onto the shared memory created by the server.

- Create an ID using the same key of the server.
- Use a semaphore to unlock the shared memory before writing a data.
- If data is equals to 9999, assign -1 to the semaphore to stop the server (shm->s = -1).
-

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>

typedef struct {
    char s; // semaphore
    int data;
} SHM;

main(int argc, char*argv[])
{
    int shm_id;
    void *shm_addr;
    SHM *shm;
    int key;
    int data;

    if (argc != 3) {
        fprintf(srderr, "usage: %s key data₩n", argv[0]);
        exit(1);
    }

    key = atoi(argv[1]);
    data = atoi(argv[2]);

/*
    FILL IN THIS BLANK
*/

    exit(0);
}
```

(2) After compile client.c successfully, test it using the next command. Then you can see your number is accumulated(added) onto the shared memory.

client *key any_number* (supposed executable program is client.)

(3) Submit your program when you are done - ***submit client.c*** .

2. OpenMP program test

Test examples (1, 2, 3) explained in the lecture.