

CL205 – Operating Systems Lab

Lab#10 [IPC – Shared Memory]

Shared Memory

- Region of Memory that is shared by cooperating processes
- Processes exchange Data by reading/writing to the shared region

Example

server.c

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

#define SHMSZ 27

void main()
{
    char c;
    int shmid;
    key_t key;
    char *shm, *s;
    key = 5678;

    if ((shmid = shmget(key, SHMSZ, IPC_CREAT | 0666)) < 0)
    {
        perror("shmget");
        exit(1);
    }

    if ((shm = shmat(shmid, NULL, 0)) == (char *) -1)
    {
        perror("shmat");
        exit(1);
    }

    s = shm;

    for (c = 'a'; c <= 'z'; c++)
```

```

        *s++ = c;

*s = NULL;

while (*shm != '*')
    sleep(1);

exit(0);
}

```

client.c

```

#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <stdio.h>
#define SHMSZ 27

void main()
{
    int shmid;
    key_t key;
    char *shm, *s;
    key = 5678;
    if ((shmid = shmget(key, SHMSZ, 0666)) < 0)
    {
        perror("shmget");
        exit(1);
    }

    if ((shm = shmat(shmid, NULL, 0)) == (char *) -1) {
        perror("shmat");
        exit(1);
    }

    for (s = shm; *s != NULL; s++)
        putchar(*s);

    putchar('\n');
    *shm = '*';
    shmdt(shm);
    shmctl(shmid, IPC_RMID, NULL);

    exit(0);
}

```