OS LAB MANUAL

(CS23431)

Lab:3

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EX.NO:7

IPC USING SHARED MEMORY

Aim: To write a C program to do Inter Process Communication (IPC) using shared memory between sender process and receiver process

Program:

Sender.c:

```
#include <stdio.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <string.h>
#include <unistd.h>
#define SHM_SIZE 1024
int main() {
    key_t key = ftok("shmfile", 65);
    int shmid = shmget(key, SHM_SIZE, 0666 | IPC_CREAT);
    if (shmid == -1) {
        }
        char *str = (char *)shmat(shmid, NULL, 0);
        if (str == (char *)-1) {
            perror("shmat failed");
        }
}
```

```
return 1;
    printf("Writing to shared memory...\n");
    sprintf(str, "hello,whatis your name");
    sleep(5);
    shmdt(str);
    printf("Message sent successfully!\n");
    return 0;
Receiver.c:
#include <stdio.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <unistd.h>
#define SHM_SIZE 1024
int main() {
    key_t key = ftok("shmfile", 65);
    int shmid = shmget(key, SHM_SIZE, 0666);
    if (shmid == -1) {
        perror("shmget failed");
        return 1;
    char *str = (char *)shmat(shmid, NULL, 0);
    if (str == (char *)-1) {
        perror("shmat failed");
        return 1;
    printf("Message Received: %s\n", str);
    shmdt(str);
```

```
shmctl(shmid, IPC_RMID, NULL);
return 0;
}
```

Input:

```
praveen@LAPTOP-Q0D806DB:~$ gcc sender.c
praveen@LAPTOP-Q0D806DB:~$ ./a.out
Writing to shared memory...
Message sent successfully!
```

Output:

```
praveen@LAPTOP-Q0D806DB:~$ gcc sender.c
praveen@LAPTOP-Q0D806DB:~$ ./a.out
Writing to shared memory...
Message sent successfully!
praveen@LAPTOP-Q0D806DB:~$ gcc receiver.c
praveen@LAPTOP-Q0D806DB:~$ ./a.out
Message Received: hello.whatis vour name
```