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II-CSE-B

7) IPC USING SHARED MEMORY

Program Code:

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

int main() {
    // ftok to generate unique key
    key_t key = ftok("shmfile", 65);

    // shmget returns an identifier in shmid
    int shmid = shmget(key, 1024, 0666 | IPC_CREAT);

    // shmat to attach to shared memory
    char *str = (char*) shmat(shmid, (void*)0, 0);

    printf("Enter a message to send: ");
    fgets(str, 1024, stdin); // Read message

    printf("Data written in memory: %s\n", str);

    // detach from shared memory
    shmdt(str);

    return 0;
}
```

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

int main() {
    // ftok to generate unique key
    key_t key = ftok("shmfile", 65);

    // shmget returns an identifier in shmid
    int shmid = shmget(key, 1024, 0666 | IPC_CREAT);

    // shmat to attach to shared memory
    char *str = (char*) shmat(shmid, (void*)0, 0);

    printf("Data read from memory: %s\n", str);

    // detach and destroy the shared memory
    shmdt(str);
    shmctl(shmid, IPC_RMID, NULL);

    return 0;
}
```

Output:

```
haresh@haresh:~$ ./sender
Enter a message to send: Hello from Sender!
Data written in memory: Hello from Sender!

haresh@haresh:~$ ./reciever
Data read from memory: Hello from Sender!
```