

OPERATING SYSTEM - CS23431
EXP 7
SHARED MEMORY ACCESS

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PROGRAM:

Sender.c:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/shm.h>
#include <string.h>
int main() {
    int shmid;
    shmid = shmget((key_t)2345, 1024, 0666 | IPC_CREAT); if (shmid == -1) {
        perror("shmget failed"); exit(1);
    }
    printf("Key of the shared memory segment: %d\n", shmid);

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

    printf("Process is attached at address %p\n", shmaddr);

    sprintf(shmaddr, "Hello world!!");
    printf("Content written to shared memory: %s\n", shmaddr);

    if (shmdt(shmaddr) == -1) {
        perror("shmdt failed");
        exit(1);
    }

    return 0;
}
```

Receiver.c:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <string.h>
#include <sys/shm.h>
int main() {
    int shmid; char *shmaddr;
    shmid = shmget((key_t)2345, 1024, 0666);
    if (shmid == -1) {
        perror("shmget failed");
        exit(1);
    }

    printf("Key of the shared memory segment: %d\n", shmid);

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

    printf("Process is attached at address %p\n", shmaddr);
    printf("Data read from shared memory: %s\n", shmaddr);

    if (shmdt(shmaddr) == -1) {
        perror("shmdt failed");
        exit(1);
    }

    return 0;
}
```

OUTPUT:

```
[student@localhost ~]$ vi sender.c
[student@localhost ~]$ gcc sender.c
[student@localhost ~]$ ./a.out
key of the shared memory is 622605
Process is attached at 0xb76ee000
Content written is Hello world!!
[student@localhost ~]$ vi receiver.c
[student@localhost ~]$ gcc receiver.c
[student@localhost ~]$ ./a.out
key of shared memory segment is 622605
process is attached at 0xb7782000
Data read from shared memory is Hello world!!
[student@localhost ~]$ █
```