**Ex. No.: 6**

**Date: 19.03.24**

**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 Code:**sender.c  
#include <stdio.h>

#include <stdlib.h>

#include <sys/shm.h>

#include <sys/stat.h>

#include <unistd.h>

#include <string.h>

#define SHM\_KEY 12345

#define SHM\_SIZE 1024

int main() {

size\_t shm\_size = SHM\_SIZE;

int shm\_id = shmget(SHM\_KEY, shm\_size, IPC\_CREAT | S\_IRUSR | S\_IWUSR);

if (shm\_id == -1) {

perror("shmget failed");

exit(1);

}

char \*shm\_ptr = (char \*)shmat(shm\_id, NULL, 0);

if (shm\_ptr == (void \*) -1) {

perror("shmat failed");

exit(1);

}

const char \*message = "Hello, this is a message from the sender!";

sprintf(shm\_ptr, "%s", message);

sleep(10);

if (shmdt(shm\_ptr) == -1) {

perror("shmdt failed");

exit(1);

}

return 0;

}

Receiver.c

#include <stdio.h>

#include <stdlib.h>

#include <sys/shm.h>

#include <sys/stat.h>

#include <unistd.h>

#include <string.h>

#define SHM\_KEY 12345

#define SHM\_SIZE 1024

int main() {

size\_t shm\_size = SHM\_SIZE;

int shm\_id = shmget(SHM\_KEY, shm\_size, S\_IRUSR | S\_IWUSR);

if (shm\_id == -1) {

perror("shmget failed");

exit(1);

}

char \*shm\_ptr = (char \*)shmat(shm\_id, NULL, 0);

if (shm\_ptr == (void \*) -1) {

perror("shmat failed");

exit(1);

}

printf("Message from sender: %s\n", shm\_ptr);

if (shmdt(shm\_ptr) == -1) {

perror("shmdt failed");

exit(1);

}

if (shmctl(shm\_id, IPC\_RMID, NULL) == -1) {

perror("shmctl failed");

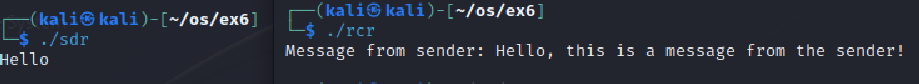
exit(1);

}

return 0;

}

**Output:**

****

**Result:**

The above program executed successfully and output got verified.