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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 <sys/ipc.h>
#include <sys/shm.h>
#include <string.h>
#include <unistd.h>

int main() {
      key_t key = ftok("shmfile", 65); // generate unique key
      int shmid = shmget(key, 1024, 0666|IPC_CREAT); // create

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

   attach to shared memory

      sprintf(str, "Welcome to Shared Memory"); // write to shared
   memory printf("Message Sent: %s\n", str);

      sleep(5); // delay to allow receiver to read

   shmdt(str); // detach from shared memory

      return 0;
}
```

Receiver.c

```
#include <stdio.h>

#include <sys/ipc.h>
#include <sys/shm.h>
#include <unistd.h>

int main() {
      key_t key = ftok("shmfile", 65); // same key as sender
      int shmid = shmget(key, 1024, 0666|IPC_CREAT); // get shared

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

```
    printf("Message Received: %s\n", str); // read from shared
  memory shmdt(str); // detach from shared memory
    shmctl(shmid, IPC_RMID, NULL); // optional: remove shared memory
    return 0;
}
```

OUTPUT:

```
[root@localhost student]# gcc receiver.c -o receiver
[root@localhost student]# ./receiver
Message Received: Welcome to Shared Memory
```