Assignment 7B

Server Code:

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

#define SHM_SIZE 1024  // Size of shared memory segment

int main() {
    key_t key = ftok("server.c", 65); // Generate unique key
    int shmid = shmget(key, SHM_SIZE, 0666 | IPC_CREAT); // Create shared memory segment
    char *str = (char *)shmat(shmid, NULL, 0); // Attach to shared memory

    // Wait for the client to write the message
    printf("Server: Waiting for client message...\n");
    while (1) {
        if (strlen(str) > 0) { // Check if the message is written
            printf("Server: Received message: %s\n", str);
            break;
        }
        sleep(1); // Sleep to prevent busy waiting
    }

    // Detach from shared memory
    shmdt(str);

    // Cleanup: remove the shared memory segment
    shmctl(shmid, IPC_RMID, NULL);

    return 0;
}
```

Client Code:

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

#define SHM_SIZE 1024  // Size of shared memory segment

int main() {
    key_t key = ftok("server.c", 65); // Generate unique key
    int shmid = shmget(key, SHM_SIZE, 0666); // Get shared memory segment
    char *str = (char *)shmat(shmid, NULL, 0); // Attach to shared memory
```

```c
    // Get message input from user
    printf("Client: Enter a message: ");
    fgets(str, SHM_SIZE, stdin); // Read message into shared memory

    // Optionally, clear the newline character
    str[strcspn(str, "\n")] = '\0';

    // Detach from shared memory
    shmdt(str);

    return 0;
}
```

Terminal 1:

meit@meit-OptiPlex-3046:~/33265/7b$ gedit server.c
meit@meit-OptiPlex-3046:~/33265/7b$ gedit client.c
meit@meit-OptiPlex-3046:~/33265/7b$ gcc server.c -o server
meit@meit-OptiPlex-3046:~/33265/7b$ gcc client.c -o client
meit@meit-OptiPlex-3046:~/33265/7b$ ./server
Server: Waiting for client message...
Server: Received message: Samali Rajderkar

Terminal 2:

meit@meit-OptiPlex-3046:~/33265/7b$ ./client
Client: Enter a message: Samali Rajderkar