**LAB MANUAL**

**Subject :** Distributed Computing

**Subject Code :**  CS401

**Submission Date:** 8**.**11.2016 , 5:00 pm

**Instructions:** Submit your code along with screenshots of the outputs in a consolidated document. Points for each assignment is mentioned beside the question. Points for a question will be awarded only if you have correctly worked out the previous questions. No points will be awarded if you indulge in any form of plagiarism.

**ASSIGNMENT : 1**

**Objective:** Implementing shared memory using client and server processes.

Shared Memory is an efficient means of passing data between programs. One program creates a memory portion which other processes (if permitted) can access.

shmget() is used to obtain access to a shared memory segment. It is prottyped by:

int shmget(key\_t key, size\_t size, int shmflg);

shmctl() is used to alter the permissions and other characteristics of a shared memory segment. It is prototyped as follows:

int shmctl(int shmid, int cmd, struct shmid\_ds \*buf);

shmat() and shmdt() are used to attach and detach shared memory segments. They are prototypes as follows:

void \*shmat(int shmid, const void \*shmaddr, int shmflg);

int shmdt(const void \*shmaddr);

**Problem**: Develop a server and client that communicate via a shared memory to share a piece of string. The server needs to create a shared memory and store a string in the memory. The server waits till the other process has indicated that it has read the message. The client will attach itself to the shared memory and use the string stored in it. In order to indicate that it has read the segment the client will change the first character of the segment to '\*'. [10]