SSN COLLEGE OF ENGINEERING, KALAVAKKAM
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CS8461 - OPERATING SYSTEM LAB

Lab Exercise 6 InterProcess Communications using Shared Memory

Study the following system calls.
Shared memory - shmget, shmat, shmdt, shmctl
Pipe - pipe, mkfifo, mknod, open, read, write, close
Message Queue – msgget, msgsnd, msgrcv, msgctl

Aim:
Develop the following applications that uses interprocess communication concepts using shared memory.

1.Develop an application for getting a name in parent and convert it into uppercase in child using shared memory.
2.Develop an client / server application for file transfer using shared memory.
3. Develop an client/server chat application using shared memory.

Some Examples :
Shared memory :

```
#include <sys/ipc.h>
# define NULL 0
#include <sys/shm.h>
#include <sys/types.h>
# include<unistd.h>
# include<stdio.h>
# include<stdlib.h>
# include<string.h>
#include <sys/wait.h>
#include <stdio_ext.h>
// parent writing a char in shared memory and child reads it and prints it.
int main()
{
        int pid;
        char *a,*b,c;
        int id,n,i;
        // you can create a shared memory between parent and child here or you can //create
        inside them separately.
        id=shmget(111,50,IPC_CREAT | 00666);
        pid=fork();
```

```
	if(pid>0) //parent
		{
			// id=shmget(111,50,IPC_CREAT | 00666);
			a=shmat(id,NULL,0);
			a[0]='d';
			wait(NULL);
			shmdt(a);
		}
	else //child
		{
			sleep(3);
			//id=shmget(111,50,0);
			b=shmat(id,NULL,0);
			printf("\n child %c\n",b[0]);
			shmdt(b);
		}
	shmctl(id, IPC_RMID,NULL);
}
```