**SSN College of Engineering**

**Department of CSE**

**UCS1411 Operating Systems Lab**

**II-year CSE – C Section (IV Semester)**

**Academic Year 2019-2020**

**Lab Test ( 11-03-2020)**

(Q2). Implement using IPC such that the client request a file and server returns the first 5 lines of the file.

**Client Program:**

//Client part

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<sys/ipc.h>

#include<sys/types.h>

#include<sys/shm.h>

#include<sys/wait.h>

#include<fcntl.h>

#include<unistd.h>

int main(){

//Buffer for working on shared memory

char \*file\_read = (char\*)calloc(1000,sizeof(char));

//ID of shared memory

int shmemid = shmget(146,1000,IPC\_CREAT|00666);

//Attaching buffer to shared memory

file\_read = shmat(shmemid,NULL,0);

printf("\n Enter name of file to be read: ");scanf(" %[^\n]",file\_read);

//Sleep while server processes the request

sleep(5);

printf("\n First 5 lines of the file contents: \n");printf("%s",file\_read);

//Detach buffer from shared memory

shmdt(file\_read);

//Destroying acquired memory

shmctl(shmemid,IPC\_RMID,NULL);

}

**Server Program:**

//2. Implement using IPC such that the client request a file and server returns the first 5 lines of the file.

//Server part

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<sys/ipc.h>

#include<sys/types.h>

#include<sys/shm.h>

#include<sys/wait.h>

#include<fcntl.h>

#include<unistd.h>

int main(){

//Buffer for working on shared memory

char \*file\_read = (char\*)calloc(1000,sizeof(char));

//ID of shared memory

int shmemid = shmget(146,1000,IPC\_CREAT|00666);

//Attaching buffer to shared memory

file\_read = shmat(shmemid,NULL,0);

//Sleep while client requests for file

sleep(2);

printf("\n Entered file name: %s \n",file\_read);

//Attempt to open file

int sourcefd=open(file\_read,O\_RDWR);

if(sourcefd<0){

printf(" File not found ");

}

else{

//Buffer for reading from file

char \*tmpline=(char\*)calloc(1000,sizeof(char));

int readfd=read(sourcefd,tmpline,100);

tmpline[readfd]='\0';

char \*token=(char\*)calloc(100,sizeof(char));

//Tokenise the file contents into lines

token=strtok(tmpline,"\n");

int lctr=0;

while(lctr<5 && token!=NULL){

if(lctr==0)

strcpy(file\_read,token);

else

strcat(file\_read,token);

strcat(file\_read,"\n");

token=strtok(NULL,"\n");

lctr++;

}

printf("\n File contents read successfully\n");

}

//Detach buffer from shared memory

shmdt(file\_read);

//Destroying acquired memory

shmctl(shmemid,IPC\_RMID,NULL);

//Close opened file

close(sourcefd);

}

**Contents of file :**

source.txt

100

101

102

103

104

105

106

107

108

109

110

**Output:**

**Client:**

Enter name of file to be read: source.txt

First 5 lines of the file contents:

100

101

102

103

104

**Server:**

Entered file name: source.txt

File contents read successfully