IPC FIFO

C program

Server.c
Header Files/ global declaration

```
#include<stdio.h>
#include<unistd.h> /*ssize_t */
#include<sys/stat.h> /*mkfifo*/
#include<fcntl.h>
#include<string.h>

#define FIFO1 "fifo1"
#define FIFO2 "fifo2"
#define PERMS 0666

char fname[256];
```

Main Function along with make connection

```
int main() {
                int readfd, writefd, fd;
                ssize_t n;
                char buff[512];

               if (mkfifo(FIFO1, PERMS)<0)
                        printf("Cant Create FIFO Files\n");
               if (mkfifo(FIFO2, PERMS)<0)
                        printf("Cant Create FIFO Files\n");

  printf("Waiting for connection Request..\n");
```

Connection to open and print the requested file name by client

```
readfd =open(FIFO1, O_RDONLY, 0);
 writefd=open(FIFO2, O_WRONLY, 0);

 printf("Connection Established..\n");
 read(readfd, fname, 255);
 printf("Client has requested file %s\
  n",fname);
```

What to do if file exist and if it does not exist?

```
if ((fd=open(fname,O_RDWR))<0) {
    strcpy(buff,"File does not exist..\n");
    write(writefd, buff, strlen(buff));
  } else {
while((n=read(fd, buff,512))>0)
      write(writefd, buff, n);
  }
```

Close connection

```
 close(readfd);  unlink(FIFO1);
  close(writefd);  unlink(FIFO2);
}
```

Client.c

```
#include<stdio.h>
#include<unistd.h>
#include<sys/stat.h>
#include<fcntl.h>

#define FIFO1 "fifo1"
#define FIFO2 "fifo2"
#define PERMS 0666

char fname[256];
```

Main program with connection to be setup

```
int main()
{
   ssize_t n;
   char buff[512];
   int readfd,writefd;
    printf("Trying to Connect to Server..\n");
   writefd = open(FIFO1, O_WRONLY, 0);
    readfd  = open(FIFO2, O_RDONLY, 0);
```

Writing filename to fifo

```
printf("Connected..\n");
  printf("Enter the filename to request from server: ");
  scanf("%s",fname);
  write(writefd, fname, strlen(fname));

  printf("Waiting for Server to reply..\n");
```

When content received from server?

```
  while((n=read(readfd,buff,512))>0)
            write(1,buff,n);
    close(readfd);
    close(writefd);
    return 0;
}
```

How to execute?

- Redirect to different out file and then run
- ./server.o
- ./client.o

End of FIFO program

Next Class,

Leaky bucket algorithm

Distance vector algorithm

Dijkstra’s algorithm