File Transfer-TCP

Input :
ftserver1.c

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<string.h>
#include<stdlib.h>
#include <arpa/inet.h>
#include<unistd.h>
#include <string.h>

//To check if the file exist
int exists(const char *fname)
{
   FILE *file;
   if(file = fopen(fname, "r"))
   {
      fclose(file);
      return 1;
   }
   return 0;
}

int main(int argc, char* argv[])
{
        /*Variables*/
        int sock,csock;
        struct sockaddr_in server;
        struct sockaddr_in client;
        int sin_size;
        char filename[1024],filedata[1024],buffer[1024];
        FILE *fp;

        /*Socket*/
        if((sock= socket(AF_INET, SOCK_STREAM, 0))<0)
        {
                perror("Failed to Create Socket");
                exit(1);
        }
        server.sin_family = AF_INET;
        server.sin_addr.s_addr = INADDR_ANY;
```

```
	server.sin_port = htons(5000);

	/*bind*/
	if(bind(sock, (struct sockaddr *)&server, sizeof(server)))
	{
		perror("Bind Failed");
		exit(1);
	}

	/*listen*/
	if(listen(sock, 5) == -1)
	{
			perror("Listen failed");
			exit(1);
	}

	/*Accept*/
	while(1)
	{
		sin_size = sizeof(client);
		csock = accept(sock,(struct sockaddr *)&client, &sin_size);
		if(csock == -1)
		{
				perror("Accept Failed");
		}
		printf("Connetion Received from:
%s:%d\n",inet_ntoa(client.sin_addr),ntohs(client.sin_port));

		memset(filename,0, sizeof(filename));
		memset(filedata,0, sizeof(filedata));
		memset(buffer,0, sizeof(buffer));

		/*Receive the file name from the client*/
		if(recv(csock, filename, sizeof(filename), 0)<0)
		{
				perror("Reveive Failed");
				exit(1);
		}
		printf("Filename Check:%s\n",filename);

		/*Call exists function to check if file exists*/
		if(exists(filename))
		{
			//Sending true for file exists as an acknowledgement
			strcpy(buffer,"True");
			if(send(csock,buffer,sizeof(buffer),0)<0)
```

```
{

        perror("Send Failed");
        exit(1);
}

//Opening the file in read mode
fp=fopen(filename, "r");
usleep(100000);
/*Reading the file in chunks*/
while (fread(filedata, strlen(filedata)+1, 1, fp) == 1)
{
        /*Sending the read file data to the client*/
        if(send(csock,filedata,sizeof(filedata),0)<0)
        {

                perror("Send Failed");
                exit(1);
        }
}
usleep(100000);
if (feof(fp))
{
        /*Sending the last chunk of file*/
   if(send(csock,filedata,sizeof(filedata),0)<0)
        {

                perror("Send Failed");
                exit(1);
                usleep(100000);
        }
        /*Sending end as data after the file ends*/
        strcpy(filedata,"end");
        if(send(csock,filedata,sizeof(filedata),0)<0)
        {

                perror("Send Failed");
                exit(1);
                usleep(100000);
        }
   printf("File written successfully\n");
}
else
{
        printf("File not read/written successfully\n");
}
```

```
                        fclose(fp);

                }
                else
                {
                        /*Sending False if file doesn't exist*/
                        strcpy(buffer,"False");
                        if(send(csock,buffer,sizeof(buffer),0)<0)
                        {
                                perror("Send Failed");
                                exit(1);
                        }
                }

/*Close*/
                close(csock);
        }
return 0;
}
```

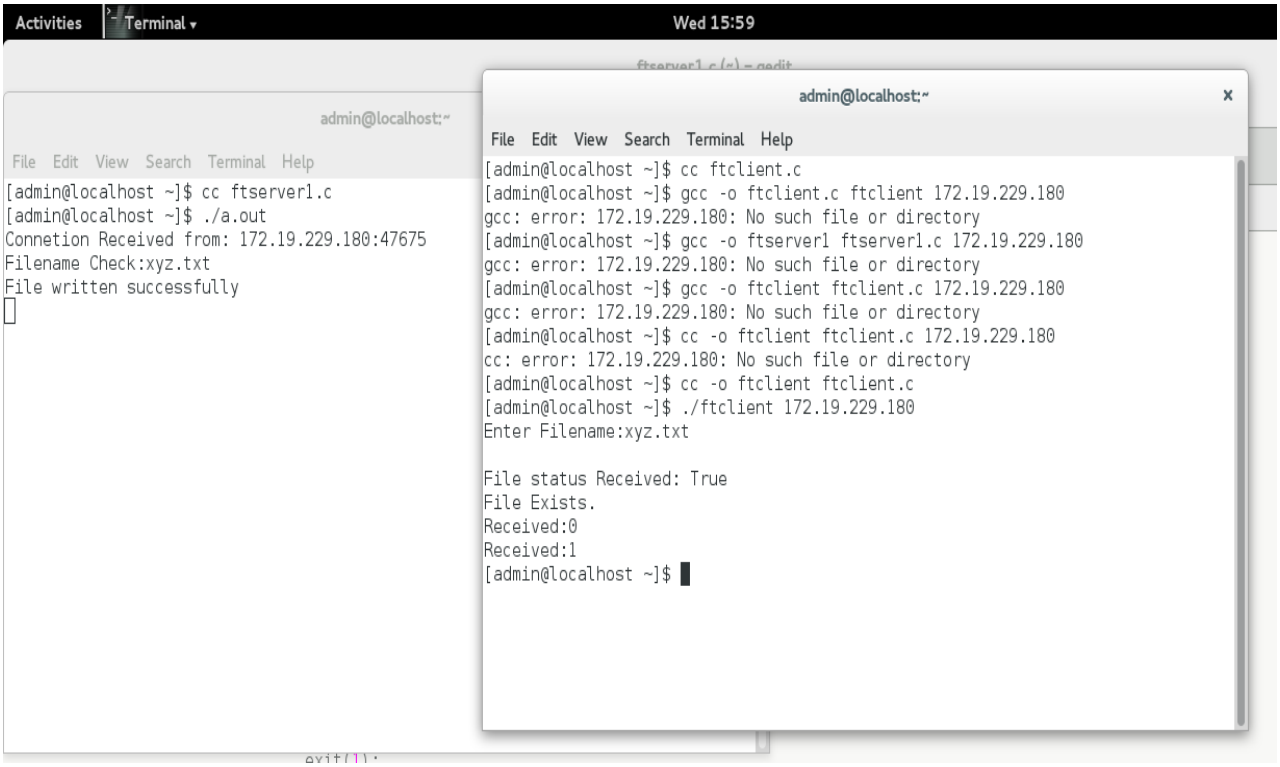
ftclient.c

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<unistd.h>
#include<string.h>
#include<stdlib.h>
#include<netdb.h>
#include <string.h>

int main(int argc, char* argv[])
{
/*Variables*/
        int sock,cnt=0;
        char buffer[1024],filedata[1024],filename[1024];
        struct hostent *host;
        struct sockaddr_in server;
        FILE *fp;

        host = gethostbyname(argv[1]);
/*Socket*/
        /**********Define Socket Here**********/
        sock= socket(AF_INET, SOCK_STREAM, 0);
```

```
	if(sock == -1)
	{
		perror("Socket Failed");
		exit(1);
	}

	server.sin_family = AF_INET;
	server.sin_port = htons(5000);
	memcpy(&server.sin_addr,host->h_addr,host->h_length);

/*Connect*/

	if(connect(sock, (struct sockaddr *) &server, sizeof(server))<0)
	{
			perror("Connect Failed");
			exit(1);
	}

	printf("Enter Filename:");
	scanf("%s",filename);

	//Send the filename of the file to receive
	if(send(sock,filename,sizeof(filename), 0)<0)
	{
			perror("Send Failed");
			exit(1);
	}
	//Receive the file status. True if file exists else False
	if(recv(sock, buffer, sizeof(buffer), 0)<0)
	{
			perror("Receive Failed");
			exit(1);
	}
	printf("\nFile status Received: %s\n",buffer);

	//Checking if received value is True i.e. File exists
	if (strcmp(buffer,"True") == 0)
	{
			printf("File Exists.\n");
			//strcat(filename,"1");

			//Creating the file
			fp=fopen(filename, "w");

			//Initialize filedata with some random value
			strcpy(filedata,"random");
```

```
                        //Receiving file data in packets till end of file
                        while(strcmp(filedata,"end") != 0)
                        {
                                //Receiving File Data
                                if(recv(sock, filedata, sizeof(filedata), 0)<0)
                                {
                                        perror("Receive Failed");
                                        exit(1);
                                }
                                //Writing received data into a file
                                /***********Define fwrite to write to file Here**********/
                                 //fwrite(filedata , 1 , sizeof(filedata) , fp );
                                        if(strcmp(filedata,"end") != 0)
                                        {
                                        fprintf(fp,filedata);
                                        }
                                printf("Received:%d\n",cnt);
                                cnt++;
                        }
                        fclose(fp);
   }
        else
    printf("File Doesn't Exist.\n");
        return 0;
}
```

Output :


Activities
Terminal
Wed 15:59
admin@localhost:~
File Edit View Search Terminal Help
[admin@localhost ~]$ cc ftserver1.c
[admin@localhost ~]$ ./a.out
Connetion Received from: 172.19.229.180:47675
Filename Check:xyz.txt
File written successfully
admin@localhost:~
File Edit View Search Terminal Help
[admin@localhost ~]$ cc ftclient.c
[admin@localhost ~]$ gcc -o ftclient.c ftclient 172.19.229.180
gcc: error: 172.19.229.180: No such file or directory
[admin@localhost ~]$ gcc -o ftserver1 ftserver1.c 172.19.229.180
gcc: error: 172.19.229.180: No such file or directory
[admin@localhost ~]$ gcc -o ftclient ftclient.c 172.19.229.180
gcc: error: 172.19.229.180: No such file or directory
[admin@localhost ~]$ cc -o ftclient ftclient.c 172.19.229.180
cc: error: 172.19.229.180: No such file or directory
[admin@localhost ~]$ cc -o ftclient ftclient.c
[admin@localhost ~]$ ./ftclient 172.19.229.180
Enter Filename:xyz.txt
File status Received: True
File Exists.
Received:0
Received:1
[admin@localhost ~]$