

## PROGRAM CODE:

```
/* fserver.c */
#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<netdb.h>
int main()
{
    FILE *fp;
    char buff[40],msg[150],buf1[40];
    struct sockaddr_in server,client;
    int sock,rt1,rt2,rt3,rt4,len,rt5;
    sock=socket(AF_INET,SOCK_STREAM,0);
    if(sock<0)
    {
        perror("Error in creating the socket");
        exit(0);
    }
    printf("\nSocket created successfully");
    bzero(&server,sizeof(server));
    server.sin_family=AF_INET;
    server.sin_port=htons(43454);
    server.sin_addr.s_addr=htonl(INADDR_ANY);
    rt1=bind(sock,(struct sockaddr *)&server,sizeof(server));
    if(rt1<0)
    {
        perror("Error in binding the socket");
        exit(0);
    }
    printf("\nSocket binded successfully");
    if((rt3=listen(sock,4))<0)
    {
        perror("\nError in listening");
        exit(0);
    }
    printf("\nSocket listening successfully");
    len=sizeof(client);
    rt4=accept(sock,(struct sockaddr *)&client,&len);
    if(rt4<0)
    {
        perror("\nError in listening");
        exit(0);
    }
    rt5=recv(sock,buff,sizeof(buff),0);
    fp=fopen(buff,"r");
```

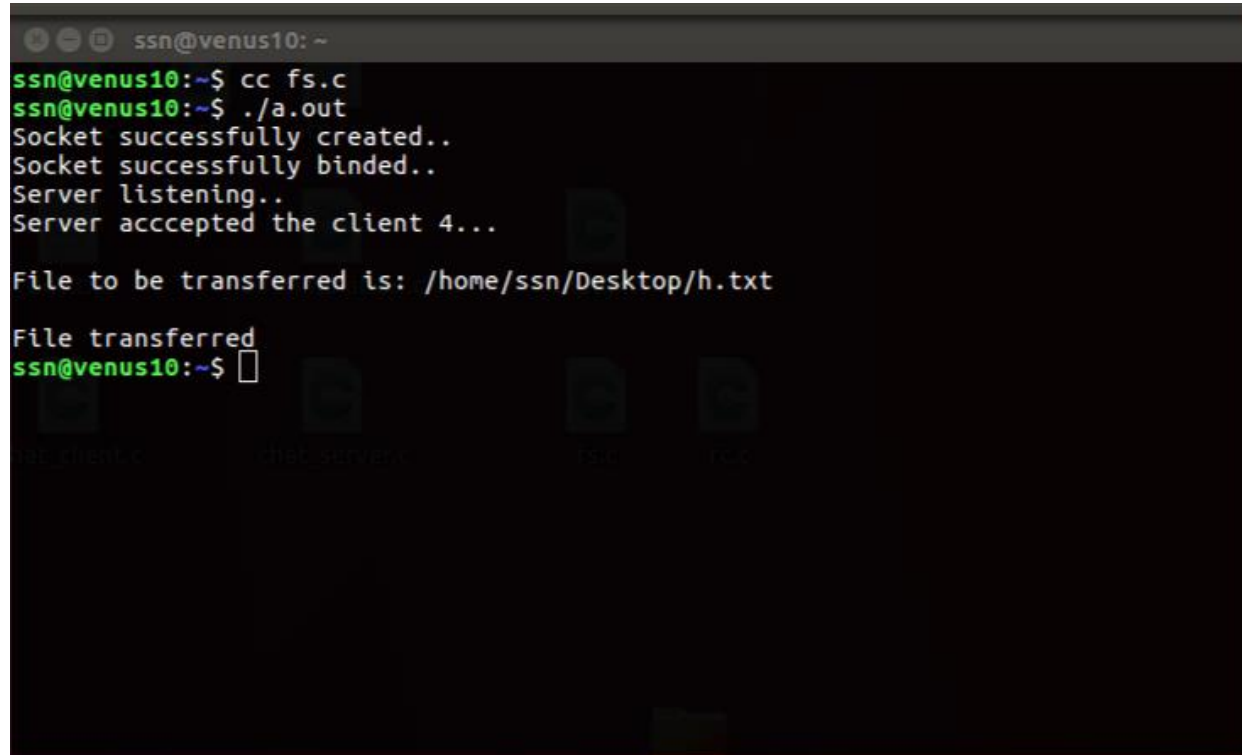
```

    if(fp==NULL)
    {
        printf("\nError in opening the file");
        exit(0);
    }
    while(!feof(fp))
    {
        fscanf(fp,"%s",msg);
        send(sock,msg,sizeof(msg),0);
    }
    fclose(fp);
    close(sock);
    return 0;
}
/* fclient.c */
#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<netdb.h>
int main()
{
    FILE *fp;
    char buff[40],msg[150],buf1[40];
    struct sockaddr_in server,client;
    int sock,rt1,rt2,rt3,rt4,len,rt5;
    sock=socket(AF_INET,SOCK_STREAM,0);
    if(sock<0)
    {
        perror("Error in creating the socket");
        exit(0);
    }
    printf("\nSocket created successfully");
    bzero(&server,sizeof(server));
    server.sin_family=AF_INET;
    server.sin_port=htons(43454);
    server.sin_addr.s_addr=htonl(INADDR_ANY);
    rt1=connect(sock,(struct sockaddr *)&server,sizeof(server));
    if(rt1<0)
    {
        perror("Error in connecting to the socket");
        exit(0);
    }
    printf("\nSocket connected to server successfully");
    printf("\nEnter the file name:");
    scanf("%s",buff);
    send(sock,buff,sizeof(buff),0);

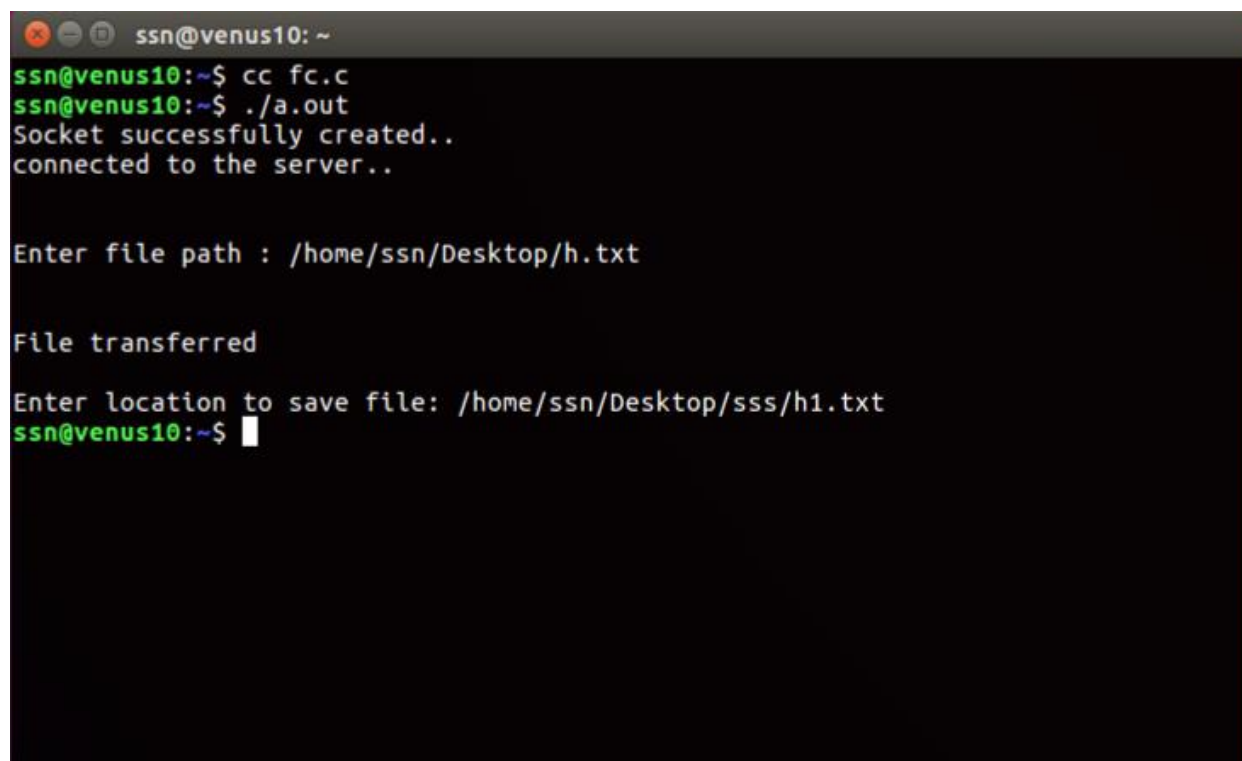
```

```
    close(sock);  
    return 0;  
}
```

## OUTPUT:



```
ssn@venus10: ~  
ssn@venus10:~$ cc fs.c  
ssn@venus10:~$ ./a.out  
Socket successfully created..  
Socket successfully binded..  
Server listening..  
Server accepted the client 4...  
  
File to be transferred is: /home/ssn/Desktop/h.txt  
  
File transferred  
ssn@venus10:~$
```



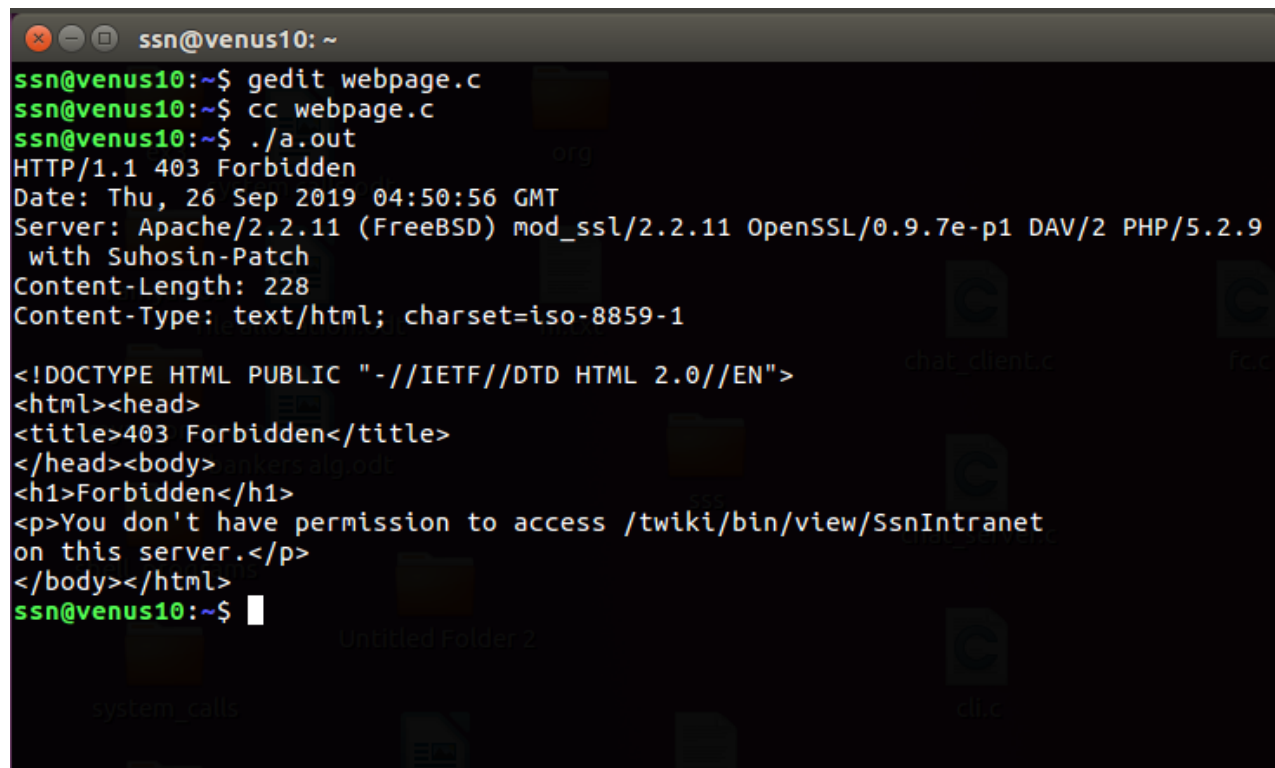
```
ssn@venus10: ~  
ssn@venus10:~$ cc fc.c  
ssn@venus10:~$ ./a.out  
Socket successfully created..  
connected to the server..  
  
Enter file path : /home/ssn/Desktop/h.txt  
  
File transferred  
  
Enter location to save file: /home/ssn/Desktop/sss/h1.txt  
ssn@venus10:~$
```

## PROGRAM CODE:

```
/* server */
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <sys/socket.h>
#include <netdb.h>
int main()
{
    int sock;
    char host[] = "www.google.com";
    char port[] = "80";
    struct addrinfo hints, *res;
    char message[] = "GET / HTTP/1.1\nHost: www.google.com\n\n";
    unsigned int i;
    char buf[1024];
    int bytes_read;
    int status;
    memset(&hints, 0, sizeof hints);
    hints.ai_family = AF_INET;
    hints.ai_socktype = SOCK_STREAM;
    status = getaddrinfo(host, port, &hints, &res);
    if (status != 0) {
        perror("getaddrinfo");
        return 1;
    }
    sock = socket(res->ai_family, res->ai_socktype, res->ai_protocol);
    if (sock == -1) {
        perror("socket");
        return 1;
    }
    status = connect(sock, res->ai_addr, res->ai_addrlen);
    if (status == -1) {
        perror("connect");
        return 1;
    }
    freeaddrinfo(res);
    send(sock, message, strlen(message), 0);
    do {
```

```
    bytes_read = recv(sock, buf, 1024, 0);
    if (bytes_read == -1) {
        perror("recv");
    }
    else {
        printf("%.s", bytes_read, buf);
    }
} while (bytes_read > 0);
close(sock);
return 0;
}
```

## OUTPUT:



```
ssn@venus10: ~
ssn@venus10:~$ gedit webpage.c
ssn@venus10:~$ cc webpage.c
ssn@venus10:~$ ./a.out
HTTP/1.1 403 Forbidden
Date: Thu, 26 Sep 2019 04:50:56 GMT
Server: Apache/2.2.11 (FreeBSD) mod_ssl/2.2.11 OpenSSL/0.9.7e-p1 DAV/2 PHP/5.2.9
with Suhosin-Patch
Content-Length: 228
Content-Type: text/html; charset=iso-8859-1

<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>403 Forbidden</title>
</head><body>
<h1>Forbidden</h1>
<p>You don't have permission to access /twiki/bin/view/SsnIntranet
on this server.</p>
</body></html>
ssn@venus10:~$
```

## PROGRAM CODE:

```
/* client */
#include<stdio.h>
#include<sys/socket.h>
#include<sys/types.h>
#include<stdlib.h>
#include<netinet/in.h>
#include<string.h>
#include<netdb.h>
void func(int sockfd)
{
    int n=0;
    char buff[100];
    bzero(buff,sizeof(buff));
    printf("\n Enter some text:");
    while((buff[n++]=getchar())!='\n');
    write(sockfd,buff,sizeof(buff));
}
int main()
{
    char msg[100];
    struct sockaddr_in ser,cli;
    int stat1,stat2,stat3,sockfd,len;
    sockfd=socket(AF_INET,SOCK_STREAM,0);
    if(sockfd<0)
    {
        perror("\n Error in creating a socket");
        exit(0);
    }
    else

        printf("\nSocket created successfully");
    bzero(&ser,sizeof(ser));
    ser.sin_family=AF_INET;
    ser.sin_port=htons(43454);
    ser.sin_addr.s_addr=inet_addr("127.0.0.1");
    len=sizeof(ser);
    stat2=connect(sockfd,(struct sockaddr *)&ser,len);
    if(stat2<0)
    {
        perror("\n Error in connecting to server");
    }
    else
        printf("\n Connected to the socket successfully");
    func(sockfd);
    close(sockfd);
}
```

```
/* server */
```

```
#include<stdio.h>
#include<sys/socket.h>
#include<sys/types.h>
#include<stdlib.h>
#include<netinet/in.h>
#include<string.h>
#include<netdb.h>
void func(int sockfd)
{
    int n=0;
    char buff[100];
    read(sockfd,buff,sizeof(buff));
    printf("\nFrom client:%s",buff);
}
int main()
{
    char buff[100];
    struct sockaddr_in ser,cli;
    int stat1,stat2,stat3,sockfd,len,sr;
    if((sockfd=socket(AF_INET,SOCK_STREAM,0))<0)
    {
        perror("\n Error in creating a socket");
        exit(0);
    }
    else

        printf("\nSocket created successfully");
    bzero(&ser,sizeof(ser));
    ser.sin_family=AF_INET;
    ser.sin_port=htons(43454);
    ser.sin_addr.s_addr=htonl(INADDR_ANY);
    stat1=bind(sockfd,(struct sockaddr *)&ser,sizeof(ser));
    if(stat1<0)
    {
        perror("\n Error in binding the socket");
        exit(0);
    }
    else
        printf("\n Successfully binded");
    sr=listen(sockfd,3);
    if(sr<0)
    {
        perror("\n Socket cannot listen error");
        exit(0);
    }
    else{
        printf("\n Listening mode on");
    }
    len=sizeof(cli);
    stat2=accept(sockfd,(struct sockaddr *)&cli,&len);
    if(stat2<0){
```

```

        perror("Error");
    }
    else
    {
        printf("\n Connection accepted");
    }
    func(stat2);
    close(sockfd);
}

```

## OUTPUT:

```

ssn@venus10: ~
ssn@venus10:~$ cc tcpechoserver.c
tcpechoserver.c: In function 'main':
tcpechoserver.c:25:4: warning: implicit declaration of function 'read' [-Wimplicit-function-declaration]
    n=read(connfd,buff,sizeof(buff));
    ^
tcpechoserver.c:27:2: warning: implicit declaration of function 'write' [-Wimplicit-function-declaration]
    write(connfd,buff,sizeof(buff));
    ^
tcpechoserver.c:28:2: warning: implicit declaration of function 'close' [-Wimplicit-function-declaration]
    close(connfd);
    ^
ssn@venus10:~$ ./a.out
Message Received :hello bro
ssn@venus10:~$

```

```

ssn@venus10: ~
    gets(str);
    ^
tcpechoclient.c:22:2: warning: implicit declaration of function 'write' [-Wimplicit-function-declaration]
    write(sockfd,str,sizeof(str));
    ^
tcpechoclient.c:23:2: warning: implicit declaration of function 'read' [-Wimplicit-function-declaration]
    read(sockfd,buff,sizeof(buff));
    ^
tcpechoclient.c:26:2: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
    exit(0);
    ^
tcpechoclient.c:26:2: warning: incompatible implicit declaration of built-in function 'exit'
tcpechoclient.c:26:2: note: include '<stdlib.h>' or provide a declaration of 'exit'
/tmp/ccjfdtZt.o: In function 'main':
tcpechoclient.c:(.text+0xde): warning: the 'gets' function is dangerous and should not be used.
ssn@venus10:~$ ./a.out 127.0.0.1
Enter a Message:hello bro
Message Echoed: hello bro
ssn@venus10:~$

```



## PROGRAM CODE:

```
/* server */
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include<netinet/in.h>
#include<sys/socket.h>
#include<sys/types.h>
int main()
{
    FILE *fp;
    char buf[100],msg[100],buf1[100];
    struct sockaddr_in ser,cli;
    int sock,n,r,b;
    if((sock=socket(PF_INET,SOCK_DGRAM,0))<0)
    {
        perror("Error in socket creation");
        return 0;
    }
    printf("\nSocket created successfully");
    bzero(&ser,sizeof(ser));
    ser.sin_family=PF_INET;
    ser.sin_port=42523;
    ser.sin_addr.s_addr=inet_addr("127.0.0.1");
    b=bind(sock,(struct sockaddr *)&ser,sizeof(ser));
    if(b<0)
    {
        perror("\nSocket failed to bind");
        return 0;
    }
    printf("\nSocket binded successfully");
    n=sizeof(cli);
    while(1)
    {
        strcpy(buf1,"");
        fp=fopen("dns.txt","r");
        r=recvfrom(sock,buf,sizeof(buf),0,(struct sockaddr *)&cli,&n);
        while(!feof(fp))
        {
            fscanf(fp,"%s",msg);
            if(strcmp(msg,buf)==0)
            {
                fscanf(fp,"%s",buf1);
                break;
            }
        }
        if(strcmp(buf1,"")==0)
            strcpy(buf1,"Invalid address");
        fclose(fp);
        printf("%s",buf1);
    }
}
```

```

        sendto(sock,buf1,sizeof(buf1),0,(struct sockaddr *)&cli,n);
        if((strcmp(buf,"exit")==0)
        {
            printf("sever Exit...\n");
            break;
        }
    }
    close(sock);
    return 0;
}

/* client */
#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<netinet/in.h>
#include<sys/socket.h>
void main()
{
    struct sockaddr_in ser,cli;
    int sock,n;
    char buf[100],buf1[100];
    if((sock=socket(PF_INET,SOCK_DGRAM,0))<0)
    {
        perror("Error in creating sockets");
        exit(0);
    }
    printf("\nSocket created successfully");
    ser.sin_family=PF_INET;
    ser.sin_port=42523;
    ser.sin_addr.s_addr=inet_addr("127.0.0.1");
    n=sizeof(ser);
    printf("\nEnter the canonical address");
    scanf("%s",buf);
    sendto(sock,buf,sizeof(buf),0,(struct sockaddr *)&ser,n);
    recvfrom(sock,buf1,sizeof(buf1),0,(struct sockaddr *)&ser,&n);
    printf("\n%s",buf1);
    if((strcmp(buf,"exit")==0))
    {
        printf("Client exit");
    }
    close(sock);
}

```

## OUTPUT:

```
ssn@venus10: ~  
ssn@venus10:~$ cc dnssimulation.c  
dnssimulation.c: In function 'main':  
dnssimulation.c:63:4: warning: implicit declaration of function 'close' [-Wimplicit-function-declaration]  
    close(sock);  
    ^  
ssn@venus10:~$ ./a.out  
Socket created successfully  
before bind  
b=0hello1  
Socket binded successfullybye16  
  
ssn@venus10: ~  
ssn@venus10:~$ cc cliudp.c  
cliudp.c: In function 'main':  
cliudp.c:34:6: warning: implicit declaration of function 'strcmp' [-Wimplicit-function-declaration]  
    if((strcmp(buf,"exit")==0))  
    ^  
cliudp.c:38:3: warning: implicit declaration of function 'close' [-Wimplicit-function-declaration]  
    close(sock);  
    ^  
ssn@venus10:~$ ./a.out  
Socket created successfully  
Enter the canonical address www.myntra.com  
93.170.52.20ssn@venus10:~$
```

## PROGRAM CODE:

```
/* server */
#include<stdio.h>
#include<netinet/in.h>
#include<stdlib.h>
#include<string.h>
#include<sys/types.h>
#include<sys/socket.h>
void main()
{
    FILE *fp;
    char buf[100],msg[100],buf1[100],choice[5];
    struct sockaddr_in ser,cli;
    int sock,b,status,len,r,n,v;
    int pos,p;
    if((sock=socket(PF_INET,SOCK_DGRAM,0))<0)
    {
        perror("Error in socket creation");
        exit(0);
    }
    printf("\nSocket created successfully");
    bzero(&ser,sizeof(ser));
    ser.sin_family=PF_INET;
    ser.sin_port=42523;
    ser.sin_addr.s_addr=htonl(INADDR_ANY);
    b=bind(sock,(struct sockaddr *)&ser,sizeof(ser));
    if(b<0)
    {
        perror("\nSocket failed to bind");
        exit(0);
    }
    printf("\nSocket binded successfully");
    n=sizeof(cli);
    while(1)
    {
        strcpy(buf1,"");
        fp=fopen("arp.txt","r");
        v=recvfrom(sock,choice,sizeof(choice),0,(struct sockaddr*)&cli,&n);
        r=recvfrom(sock,buf,sizeof(buf),0,(struct sockaddr *)&cli,&n);
        if((strcmp(choice,"a")==0)
        {
            while(!feof(fp))
            {
                fscanf(fp,"%s",msg);
                if(strcmp(msg,buf)==0)
                {
                    fscanf(fp,"%s",buf1);
                    break;
                }
            }
        }
    }
}
```

```

        if (strcmp(buf1, "") == 0)
            strcpy(buf1, "Invalid address");
    }
    else
    {
        while (!feof(fp))
        {
            pos = ftell(fp);
            fscanf(fp, "%s", msg);
            if (strcmp(msg, buf) == 0)
            {
                p = pos - 13;
                fseek(fp, p, SEEK_SET);
                fscanf(fp, "%s", buf1);
                break;
            }
        }
        if (strcmp(buf1, "") == 0)
            strcpy(buf1, "Invalid address");
    }
    fclose(fp);
    printf("%s", buf1);
    sendto(sock, buf1, sizeof(buf1), 0, (struct sockaddr *)&cli, n);
    if ((strcmp(buf, "exit") == 0))
    {
        printf("sever Exit...\n");
        break;
    }
}
close(sock);
}

```

/\* client \*/

```

#include<stdio.h>
#include<stdlib.h>
#include<sys/types.h>
#include<netinet/in.h>
#include<sys/socket.h>
void main()
{
    struct sockaddr_in ser, cli;
    int sock, n, choice, r;
    char buf[100], buf1[100], c1[] = "a", c2[] = "b";
    if ((sock = socket(PF_INET, SOCK_DGRAM, 0)) < 0)
    {
        perror("Error in creating sockets");
        exit(0);
    }
    printf("\nSocket created successfully");
    ser.sin_family = PF_INET;

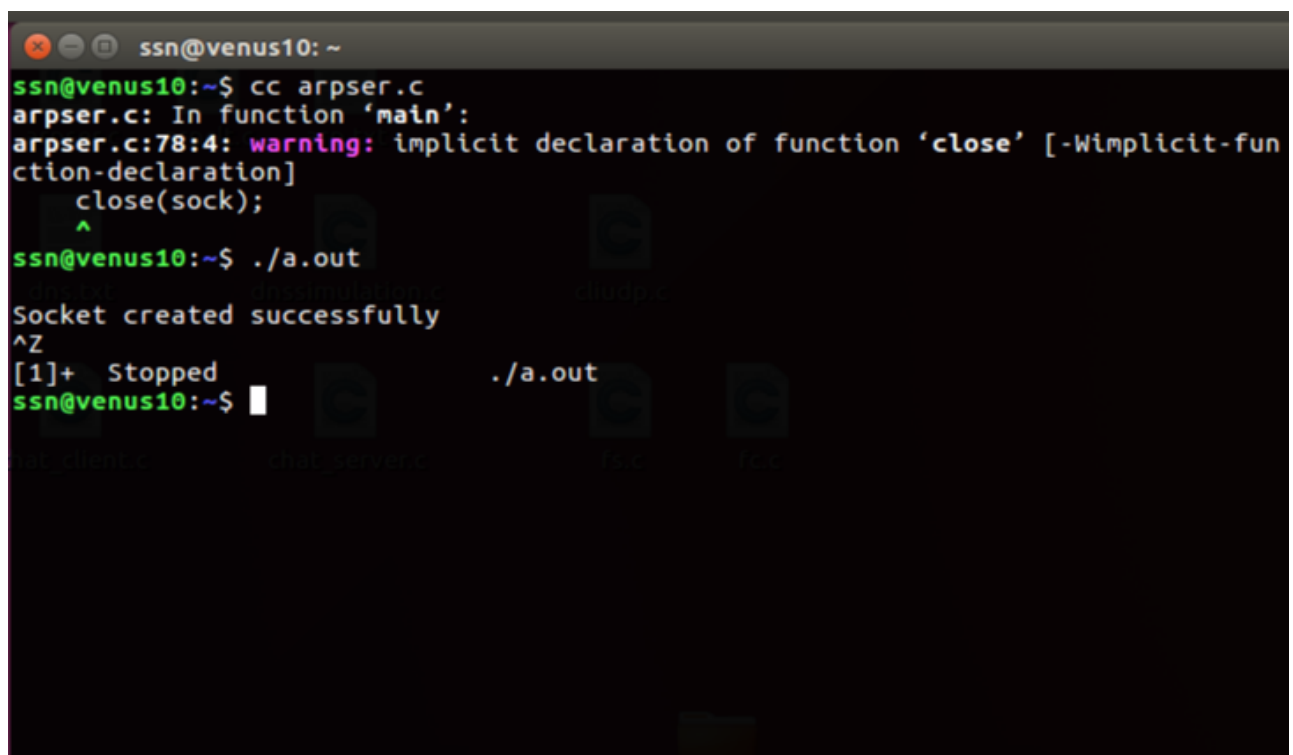
```

```

ser.sin_port=42523;
ser.sin_addr.s_addr=htonl(INADDR_ANY);
n=sizeof(ser);
printf("\nEnter your choice:\n1.ARP\t2.RARP");
scanf("%d",&choice);
if(choice==1){
printf("\nEnter the IP address");
scanf("%s",buf);
sendto(sock,c1,sizeof(c1),0,(struct sockaddr *)&ser,n);
sendto(sock,buf,sizeof(buf),0,(struct sockaddr *)&ser,n);
r=recvfrom(sock,buf1,sizeof(buf1),0,(struct sockaddr *)&ser,&n);
printf("\n%s",buf1);
if((strcmp(buf,"exit")==0))
{
printf("Client exit");
}
}
else{
printf("\nEnter the MAC address");
scanf("%s",buf);
sendto(sock,c2,sizeof(c2),0,(struct sockaddr *)&ser,n);
sendto(sock,buf,sizeof(buf),0,(struct sockaddr *)&ser,n);
r=recvfrom(sock,buf1,sizeof(buf1),0,(struct sockaddr *)&ser,&n);
printf("\n%s",buf1);
if((strcmp(buf,"exit")==0))
printf("\n Client exit");
}
close(sock);
}

```

## OUTPUT:



```

ssn@venus10: ~
ssn@venus10:~$ cc arpser.c
arpser.c: In function 'main':
arpser.c:78:4: warning: implicit declaration of function 'close' [-Wimplicit-function-declaration]
    close(sock);
    ^
ssn@venus10:~$ ./a.out
Socket created successfully
^Z
[1]+  Stopped                  ./a.out
ssn@venus10:~$

```

```
ssn@venus10: ~  
ssn@venus10:~$ cc arpcli.c  
arpcli.c: In function 'main':  
arpcli.c:30:7: warning: implicit declaration of function 'strcmp' [-Wimplicit-fu  
nction-declaration]  
    if((strcmp(buf,"exit")==0))  
        ^  
arpcli.c:45:3: warning: implicit declaration of function 'close' [-Wimplicit-fun  
ction-declaration]  
    close(sock);  
    ^  
ssn@venus10:~$ ./a.out  
  
Socket created successfully  
Enter your choice:  
1.ARP 2.RARP 2  
  
Enter the MA C address 00_16_17_31_8e_22  
192.168.0.60ssn@venus10:~$ 
```

## PROGRAM CODE:

```
/* server */
#include<stdio.h>
#include<netinet/in.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netdb.h>
#include<stdlib.h>
#include<string.h>
#define MAX 80
#define PORT 43454
#define SA struct sockaddr
void func(int sockfd)
{
    char buff[MAX];
    int n;
    for(;;)
    {
        bzero(buff,MAX);
        read(sockfd,buff,sizeof(buff));
        printf("From client: %s\t To client : ",buff);
        bzero(buff,MAX);
        n=0;
        while((buff[n++]=getchar())!='\n');
        write(sockfd,buff,sizeof(buff));
        if(strncmp("exit",buff,4)==0)
        {
            printf("Server Exit...\n");
            break;
        }
    }
}

int main()
{
    int sockfd,connfd,len;
    struct sockaddr_in servaddr,cli;
    sockfd=socket(AF_INET,SOCK_STREAM,0);
    if(sockfd==-1)
    {
        printf("socket creation failed...\n");
        exit(0);
    }
    else
        printf("Socket successfully created..\n");

    bzero(&servaddr,sizeof(servaddr));
    servaddr.sin_family=AF_INET;
    servaddr.sin_addr.s_addr=htonl(INADDR_ANY);
    servaddr.sin_port=htons(PORT);
    if((bind(sockfd,(SA*)&servaddr, sizeof(servaddr)))!=0)
```



```

{
    printf("socket bind failed...\n");
    exit(0);
}
else
    printf("Socket successfully binded...\n");

if((listen(sockfd,5))!=0)
{
    printf("Listen failed...\n");
    exit(0);
}
else
    printf("Server listening...\n");

len=sizeof(cli);
connfd=accept(sockfd, (SA *)&cli,&len);
if(connfd<0)
{
    printf("server acccept failed...\n");
    exit(0);
}
else
    printf("server acccept the client...\n");
func(connfd);
close(sockfd);
}

```

/\* client \*/

```

#include<stdio.h>
#include<netinet/in.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netdb.h>
#include<string.h>
#include<stdlib.h>
#define MAX 80
#define PORT 43454
#define SA struct sockaddr
void func(int sockfd)
{
    char buff[MAX];
    int n;
    for(;;)
    {
        bzero(buff,sizeof(buff));
        printf("Enter the string : ");
        n=0;
        while((buff[n++]=getchar())!='\n');
        write(sockfd,buff,sizeof(buff));
    }
}

```

```

        bzero(buff, sizeof(buff));
        read(sockfd, buff, sizeof(buff));
        printf("From Server : %s", buff);
        if((strcmp(buff, "exit", 4)) == 0)
        {
            printf("Client Exit...\n");
            break;
        }
    }
}

int main()
{
    int sockfd, connfd;
    struct sockaddr_in servaddr, cli;
    sockfd = socket(AF_INET, SOCK_STREAM, 0);
    if(sockfd == -1)
    {
        printf("socket creation failed...\n");
        exit(0);
    }
    else
        printf("Socket successfully created..\n");

    bzero(&servaddr, sizeof(servaddr));
    servaddr.sin_family = AF_INET;
    servaddr.sin_addr.s_addr = inet_addr("127.0.0.1");
    servaddr.sin_port = htons(PORT);
    if(connect(sockfd, (SA *)&servaddr, sizeof(servaddr)) != 0)
    {
        printf("connection with the server failed...\n");
        exit(0);
    }
    else
        printf("connected to the server..\n");
    func(sockfd);
    close(sockfd);
}

```

## OUTPUT:

```
ssn@venus10: ~  
serverex.c: In function 'func':  
serverex.c:18:3: warning: implicit declaration of function 'read' [-Wimplicit-f  
unction-declaration]  
    read(sockfd, buff, sizeof(buff));  
    ^  
serverex.c:23:3: warning: implicit declaration of function 'write' [-Wimplicit-f  
unction-declaration]  
    write(sockfd, buff, sizeof(buff));  
    ^  
serverex.c: In function 'main':  
serverex.c:74:2: warning: implicit declaration of function 'close' [-Wimplicit-f  
unction-declaration]  
    close(sockfd);  
    ^  
ssn@venus10:~$ ./a.out  
Socket successfully created..  
Socket successfully binded..  
Server listening..  
server accept the client...  
From client: hello siva  
           To client : hii da  
From client: ok da  
           To client : bye
```

```
ssn@venus10: ~  
unction-declaration]  
    write(sockfd, buff, sizeof(buff));  
    ^  
clientex.c:23:3: warning: implicit declaration of function 'read' [-Wimplicit-fu  
unction-declaration]  
    read(sockfd, buff, sizeof(buff));  
    ^  
clientex.c: In function 'main':  
clientex.c:48:27: warning: implicit declaration of function 'inet_addr' [-Wimpli  
cit-function-declaration]  
    servaddr.sin_addr.s_addr=inet_addr("127.0.0.1");  
                                ^  
clientex.c:58:2: warning: implicit declaration of function 'close' [-Wimplicit-f  
unction-declaration]  
    close(sockfd);  
    ^  
ssn@venus10:~$ ./a.out  
Socket successfully created..  
connected to the server..  
Enter the string : hello siva  
From Server : hii da  
Enter the string : ok da  
From Server : bye  
Enter the string : 
```