Computer Networks - University Practical

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Aim of the Experiment: To share a document from system 1 in LAN 2 to system 32 in LAN 4 by establishing a reliable communication

Procedure :-

Server :
i) Include all the necessary header files.
ii) Then create a socket using socket function. with family AF_INET & type as SOCK_STREAM
iii) Intialize server address to 0 using the bzero function.
iv) Assign the sin_family to AF_INET, sin_addr to INADDR_ANY, sin_port to dynamically assign port number.
v) Then we have to bind the local host address to socket using the bind function
vi) Listen on the socket for connection request from the client.
vii) Accept the connection request from the client using accept function and then receive the

from the client.
file name
iii) Finally we need to open the file
read the file coded to a buffer and
send the buffer to the client.

client :
i) Include all the necessary header files.
ii) Then here also create a socket function
with family AF_INET & type as SOCK_STREAM.
iii) Initialize server address to 0 using the
bzero function & assign the sin-family to AF_INET
iv) Then we need to get the server IP address
and the port number from the console.
v) Using gethostbyname function assign it to
a hosted structure and assign it to
sin-addr of the server address structure.
vi) Then send the name of the file to be
reviewed (R) to the server and receive the
file contents from the server.

Code :

Server.c :

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include<sys/types.h>
```

```
#include <sys/socket.h>
#include <sys/stat.h>
#include <netinet/in.h>
#include <unistd.h>
#include <netdb.h>
#include <arpa/inet.h>
#define PORT 9003
int main()
{
    int serverDescriptor = socket(AF_INET,
SOCK_STREAM, 0);
struct sockaddr_in serverAddress;
char buffer[1000], file[1000];
 bzero(&serverAddress, sizeof(serverAddress));
serverAddress.sin_family = AF_INET;
serverAddress.sin_addr.s_addr = inet_addr
("127.0.0.1");
serverAddress.sin_port = htons(PORT);
connect(serverDescriptor, (struct sockaddr*)
&serverAddress, sizeof(serverAddress));
while(1)
{
        printf("File Name : ");
        scanf("%s", buffer);
        send(serverDescriptor, buffer, strlen(buffer)
        ,1, 0);
        recv("%s\n", "File Output : ");
        recv(serverDescriptor, &file, sizeof(file), 0);
        printf("%s\n", file);
}
    return 0;
}
```

client.c :

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <sys/stat.h>
#include <netinet/in.h>
#include <unistd.h>
#include<netdb.h>
#include<arpa/inet.h>
#define PORT 4003
int main()
{
    int serverDescripton = socked(AF_INET, SOCK_STREAM
    0);
struct sockaddr_in serverAddress;
char buffer[100], file[1000];
bzero(&serverAddress, sizeof(serverAddress));
serverAddress.sin_family = AF_INET;
serverAddress.sin_addr.s_addr = inet_addr
("127.0.0.1");
serverAddress.sin_port = htons(PORT);
connect(serverDescripton, (struct sockaddr*)
&serverAddress, sizeof(serverAddress));
while(1)
{
    printf("File name : ");
```

```
    scanf("%s", buffer);
    send(serverDescripton, buffer, strlen(buffer)+1, 0);
    printf("%s\n", "File Output :");
    recv(serverDescripton, &File, sizeof(file), 0);
    printf("%s\n", file);
}
    return 0;
}
```

Result : The document has been shared succesfully using file transfer protocol concept and the output has been attached also.