

19CSE312 Distributed Systems Lab-1

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Output :

The image shows two side-by-side IDE windows. The left window is titled 'Server.cpp - S6' and contains the following code:

```
1 #include </Users/v/r.h>
2 // #include <bits/stdc++.h>
3 #include <netinet/in.h>
4 #define PORT 8080
5
6 using namespace std;
7
8 // Author: Patel Rajkumar Pankajbhai
9 // Roll No: AM.EN.U4CSE20349
10 // Code: Socket Programming
11 // Date: 09-02-2023
12 // Course: Distributed System
13
14 int main(int argc, char const *argv[])
15 {
16     // Socket creation
17     int sock = socket(AF_INET, SOCK_STREAM, 0);
18     if (sock < 0)
19     {
20         cout << "Socket creation failed" << endl;
21         return 0;
22     }
23     cout << "Socket created" << endl;
24
25     // Socket address
26     struct sockaddr_in addr; // sockaddr_in is a structure that contains an
27     addr.sin_family = AF_INET; // Address family
28     addr.sin_port = htons(8080); // Port number
29     addr.sin_addr.s_addr = INADDR_ANY; // IP address
30
31     // Bind
32     if (bind(sock, (struct sockaddr *)&addr, sizeof(addr)) < 0)
33     {
34         cout << "Bind failed" << endl;
35         return 0;
36     }
37     cout << "Bind successful" << endl;
38
39     // Listen
40     if (listen(sock, 5) < 0)
41     {
42         cout << "Listen failed" << endl;
43         return 0;
44     }
45     cout << "Listening.." << endl;
46
47     // Accept
48     struct sockaddr_in client_addr;
49     socklen_t client_addr_len = sizeof(client_addr);
50     int new_sock = accept(sock, (struct sockaddr *)&client_addr, &client_addr_len);
51     if (new_sock < 0)
52     {
53         cout << "Accept failed" << endl;
54         return 0;
55     }
56     cout << "Accept successful" << endl;
57
58     // Send message
59     char *hello = "Hello from server";
60     if (send(new_sock, hello, strlen(hello), 0) < 0)
61     {
62         cout << "Send failed" << endl;
63         return 0;
64     }
65     cout << "Hello message sent" << endl;
66
67     // Close
68     close(new_sock);
69     cout << "Connection closed" << endl;
70
71     return 0;
72 }
```

The right window is titled 'client.cpp' and contains the following code:

```
11 using namespace std;
12
13 // Author: Patel Rajkumar Pankajbhai
14 // Roll No: AM.EN.U4CSE20349
15 // Code: Socket Programming
16 // Date: 09-02-2023
17 // Course: Distributed System
18
19 int main(int argc, char const *argv[])
20 {
21     // client socket
22
23     int sock = socket(AF_INET, SOCK_STREAM, 0);
24     if (sock < 0)
25     {
26         cout << "Socket creation failed" << endl;
27         return 0;
28     }
29     cout << "Socket created" << endl;
30
31     // Socket address
32     struct sockaddr_in addr; // sockaddr_in is a structure that contains an
33     addr.sin_family = AF_INET; // Address family
34     addr.sin_port = htons(8080); // Port number
35     addr.sin_addr.s_addr = INADDR_ANY; // IP address
36
37     // Connect
38     if (connect(sock, (struct sockaddr *)&addr, sizeof(addr)) < 0)
39     {
40         cout << "Connection failed" << endl;
41         return 0;
42     }
43
44     // Receive message
45     char *hello = "Hello from client";
46     if (recv(sock, hello, 1024, 0) < 0)
47     {
48         cout << "Receive failed" << endl;
49         return 0;
50     }
51     cout << "Hello message received" << endl;
52
53     // Send message
54     if (send(sock, hello, strlen(hello), 0) < 0)
55     {
56         cout << "Send failed" << endl;
57         return 0;
58     }
59     cout << "Hello message sent" << endl;
60
61     // Close
62     close(sock);
63     cout << "Connection closed" << endl;
64
65     return 0;
66 }
```

The terminal output for the server shows:

```
1 warning generated.
Socket created
Bind successful
Listening..
Accept successful
Hello from client
Hello message sent
(base) v@RAJs-MacBook-Air Destro %
```

The terminal output for the client shows:

```
1 warning generated.
Socket created
Connection successful
Hello message sent
Hello from server
Hello message received
(base) v@RAJs-MacBook-Air Destro %
```