



Prof Stephen Barrett

[School of Computer Science & Statistics](#)

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Thank you for your submission.

Test executed by user: xiangg

Resubmit test

Testing base protocol.

BEGINNING SOCKET TEST: 2017/12/03 12:02:15pm

Connecting to host: 10.62.0.108 port: 5678

Testing connecting to server.

Socket created.

Attempting to connect to 10.62.0.108:5678

Connection Successful for host 10.62.0.108 on port 5678.

Sent HELO Message to Server:

```
HELO BASE_TEST
```

Received Message from server:

```
HELO BASE_TEST
IP: 10. 62. 0. 108
Port: 5678
StudentID: 17301984
```

Message has 5 lines (we expect at least 4).

First String Correct: HELO BASE_TEST

Second string is correct form IP:XXXX.

IP address is correct: 10.62.0.108

Port number is correct: 5678

Third string reports StudentID as 17301984

baseline message response OK.

Sending unknown message to server. It should handle this.

Tests Successful.

Creating first client connection

Testing connecting to server.

Socket created.

Attempting to connect to 10.62.0.108:5678

Connection Successful for host 10.62.0.108 on port 5678.

Testing joining server by client1. (Socket Resource id #7)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 0

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Received Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client1

Message form is correct: client1 has joined this chatroom. Full message received:

```
client1 has joined this chatroom.
```

Server join message received successfully.

Testing Leaving

Testing leaving on chatroom by client1. (Socket Resource id #7)

Sending Message to Server:

```
LEAVE_CHATROOM: 0
JOIN_ID: 0
CLIENT_NAME: client1
```

Send succeeded.

Received Message from server:

```
LEFT_CHATROOM: 0
```

Room Ref is correct: 0

JOIN ID is correct: 0

Leave Test Successful.

Testing for receipt of leaving message regarding client1 (Socket Resource id #7)

Received Message from server:

```
CHAT: 0
```

Room Ref is correct: 0

Client name has correct form: client1

Full message received:

```
client1 has left this chatroom.
```

Receipt of message successful.

Test join multiple rooms

Testing joining server by client1. (Socket Resource id #7)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 1

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Received Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client1

Message form is correct: client1 has joined this chatroom. Full message received:

```
client1 has joined this chatroom.
```

Server join message received successfully.

Testing joining server by client1. (Socket Resource id #7)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room2

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room2

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 1

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 1

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Received Message from server: CHAT: 1

Room Ref is correct: 1

Clientname is correct: client1

Message form is correct: client1 has joined this chatroom. Full message received:

```
client1 has joined this chatroom.
```

Server join message recieved successfully.

Test leaving multiple chatrooms

Testing leaving on chatroom by client1. (Socket Resource id #7)

Sending Message to Server:

```
{LEAVE_CHATROOM: 0
JOIN_ID: 1
CLIENT_NAME: client1}
```

Send succeeded.

Recieved Message from server:

```
{LEFT_CHATROOM: 0}
```

Room Ref is correct: 0

JOIN ID is correct: 1

Leave Test Successful.

Testing for receipt of leaving message regarding client1 (Socket Resource id #7)

Recieved Message from server:

```
{CHAT: 0}
```

Room Ref is correct: 0

Client name has correct form: client1

Full message recieved:

```
client1 has left this chatroom.
```

Receipt of message successful.

Testing leaving on chatroom by client1. (Socket Resource id #7)

Sending Message to Server:

```
{LEAVE_CHATROOM: 1
JOIN_ID: 1
CLIENT_NAME: client1}
```

Send succeeded.

Recieved Message from server:

```
{LEFT_CHATROOM: 1}
```

Room Ref is correct: 1

JOIN ID is correct: 1

Leave Test Successful.

Testing for receipt of leaving message regarding client1 (Socket Resource id #7)

Recieved Message from server:

```
{CHAT: 1}
```

Room Ref is correct: 1

Client name has correct form: client1

Full message recieved:

```
client1 has left this chatroom.
```

Receipt of message successful.

Testing multiple clients with single room

Testing joining server by client1. (Socket Resource id #7)

Send Succeeded. Testing response.

Recieved Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 2

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client1

Message form is correct: client1 has joined this chatroom. Full message recieved:

```
client1 has joined this chatroom.
```

Server join message recieved successfully.

Creating second client connection

Testing connecting to server.

Socket created.

Attempting to connect to 10.62.0.108:5678

Connection Successful for host 10.62.0.108 on port 5678.

Testing joining server by client2. (Socket Resource id #8)

Send Succeeded. Testing response.

Recieved Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 3

Server Join Test Success

Testing join message regarding client2. (Socket Resource id #7)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client2

Message form is correct: client2 has joined this chatroom. Full message recieved:

```
client2 has joined this chatroom.
```

Server join message recieved successfully.

Testing join message regarding client2. (Socket Resource id #8)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client2

Message form is correct: client2 has joined this chatroom. Full message recieved:

```
client2 has joined this chatroom.
```

Server join message recieved successfully.

Test multiple clients leaving one room

Testing leaving on chatroom by client2. (Socket Resource id #8)

Sending Message to Server:

```
{LEAVE_CHATROOM: 0
JOIN_ID: 3
CLIENT_NAME: client2}
```

Send succeeded.

Recieved Message from server:

```
{LEFT_CHATROOM: 0}
```

Room Ref is correct: 0

JOIN ID is correct: 3

Leave Test Successful.

Testing for receipt of leaving message regarding client2 (Socket Resource id #8)

Recieved Message from server:

```
{CHAT: 0}
```

Room Ref is correct: 0

Client name has correct form: client2

Full message recieved:

```
client2 has left this chatroom.
```

Receipt of message successful.

Testing for receipt of leaving message regarding client2 (Socket Resource id #7)

Received Message from server:

```
{CHAT: 0
```

Room Ref is correct: 0

Client name has correct form: client2

Full message received:

```
client2 has left this chatroom.
```

Receipt of message successful.

Testing leaving on chatroom by client1. (Socket Resource id #7)

Sending Message to Server:

```
{LEAVE_CHATROOM: 0  
{JOIN_ID: 2  
{CLIENT_NAME: client1
```

Send succeeded.

Received Message from server:

```
{LEFT_CHATROOM: 0
```

Room Ref is correct: 0

JOIN ID is correct: 2

Leave Test Successful.

Testing for receipt of leaving message regarding client1 (Socket Resource id #7)

Received Message from server:

```
{CHAT: 0
```

Room Ref is correct: 0

Client name has correct form: client1

Full message received:

```
client1 has left this chatroom.
```

Receipt of message successful.

Testing multiple clients with multiple rooms**Testing joining server by client1. (Socket Resource id #7)**

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 4

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client1

Message form is correct: client1 has joined this chatroom. Full message recieved:

```
client1 has joined this chatroom.
```

Server join message recieved successfully.

Testing joining server by client2. (Socket Resource id #8)

Send Succeeded. Testing response.

Recieved Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 5

Server Join Test Success

Testing join message regarding client2. (Socket Resource id #7)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client2

Message form is correct: client2 has joined this chatroom. Full message recieved:

```
client2 has joined this chatroom.
```

Server join message recieved successfully.

Testing join message regarding client2. (Socket Resource id #8)

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client2

Message form is correct: client2 has joined this chatroom. Full message recieved:

```
client2 has joined this chatroom.
```

Server join message recieved successfully.

Creating third client connection

Testing connecting to server.

Socket created.

Attempting to connect to 10.62.0.108:5678

Connection Successful for host 10.62.0.108 on port 5678.

Testing joining server by client3. (Socket Resource id #9)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room1

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room1

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 0

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 6

Server Join Test Success

Testing join message regarding client3. (Socket Resource id #7)

Received Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client3

Message form is correct: client3 has joined this chatroom. Full message received:

client3 has joined this chatroom.

Server join message received successfully.

Testing join message regarding client3. (Socket Resource id #8)

Received Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client3

Message form is correct: client3 has joined this chatroom. Full message received:

client3 has joined this chatroom.

Server join message received successfully.

Testing join message regarding client3. (Socket Resource id #9)

Received Message from server: CHAT: 0

Room Ref is correct: 0

Clientname is correct: client3

Message form is correct: client3 has joined this chatroom. Full message received:

client3 has joined this chatroom.

Server join message received successfully.

Testing joining server by client1. (Socket Resource id #7)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room2

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room2

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108
Third string is correct form PORT:XXXX.
Port string is valid form: 5678
Third string is correct form ROOM_REF:XXXX.
room_ref string is valid form: 1
Third string is correct form JOIN_ID:XXXX.
join_id string is valid form: 4

Server Join Test Success

Testing join message regarding client1. (Socket Resource id #7)

Recieved Message from server: CHAT: 1
Room Ref is correct: 1
Clientname is correct: client1
Message form is correct: client1 has joined this chatroom. Full message recieved:

client1 has joined this chatroom.

Server join message recieved successfully.

Testing joining server by client3. (Socket Resource id #9)

Send Succeeded. Testing response.
Recieved Message from server: JOINED_CHATROOM: room2
First string is correct form JOINED_CHATROOM:XXXX.
Chatroom name is correct: room2
Second string is correct form SERVER_IP:XXXX.
IP string is valid form: 10.62.0.108
Third string is correct form PORT:XXXX.
Port string is valid form: 5678
Third string is correct form ROOM_REF:XXXX.
room_ref string is valid form: 1
Third string is correct form JOIN_ID:XXXX.
join_id string is valid form: 6

Server Join Test Success

Testing join message regarding client3. (Socket Resource id #7)

Recieved Message from server: CHAT: 1
Room Ref is correct: 1
Clientname is correct: client3
Message form is correct: client3 has joined this chatroom. Full message recieved:

client3 has joined this chatroom.

Server join message recieved successfully.

Testing join message regarding client3. (Socket Resource id #9)

Recieved Message from server: CHAT: 1
Room Ref is correct: 1
Clientname is correct: client3
Message form is correct: client3 has joined this chatroom. Full message recieved:

client3 has joined this chatroom.

Server join message recieved successfully.

Creating fourth client connection

Testing connecting to server.

Socket created.

Attempting to connect to 10.62.0.108:5678

Connection Successful for host 10.62.0.108 on port 5678.

Testing joining server by client4. (Socket Resource id #10)

Send Succeeded. Testing response.

Received Message from server: JOINED_CHATROOM: room2

First string is correct form JOINED_CHATROOM:XXXX.

Chatroom name is correct: room2

Second string is correct form SERVER_IP:XXXX.

IP string is valid form: 10.62.0.108

Third string is correct form PORT:XXXX.

Port string is valid form: 5678

Third string is correct form ROOM_REF:XXXX.

room_ref string is valid form: 1

Third string is correct form JOIN_ID:XXXX.

join_id string is valid form: 7

Server Join Test Success

Testing join message regarding client4. (Socket Resource id #7)

Received Message from server: CHAT: 1

Room Ref is correct: 1

Clientname is correct: client4

Message form is correct: client4 has joined this chatroom. Full message received:

```
client4 has joined this chatroom.
```

Server join message received successfully.

Testing join message regarding client4. (Socket Resource id #9)

Received Message from server: CHAT: 1

Room Ref is correct: 1

Clientname is correct: client4

Message form is correct: client4 has joined this chatroom. Full message received:

```
client4 has joined this chatroom.
```

Server join message received successfully.

Testing join message regarding client4. (Socket Resource id #10)

Received Message from server: CHAT: 1

Room Ref is correct: 1

Clientname is correct: client4

Message form is correct: client4 has joined this chatroom. Full message received:

```
client4 has joined this chatroom.
```

Server join message received successfully.

Testing Messaging

Testing the sending of a message from client1**Sending Message**

```
CHAT: 0
JOIN_ID: 4
CLIENT_NAME: client1
MESSAGE: hello world from client 1
```

Send Succeeded.**Testing for receipt of message from client1. (Socket Resource id #7)**

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

clientname is correct: client1

Message content is correct:

```
hello world from client 1
```

Message receipt successful**Testing for receipt of message from client1. (Socket Resource id #8)**

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

clientname is correct: client1

Message content is correct:

```
hello world from client 1
```

Message receipt successful**Testing for receipt of message from client1. (Socket Resource id #9)**

Recieved Message from server: CHAT: 0

Room Ref is correct: 0

clientname is correct: client1

Message content is correct:

```
hello world from client 1
```

Message receipt successful**Testing for no receipt of message from client1. (Socket Resource id #10)****Nothing to read on Resource id #10 socket. This is correct.****Testing the sending of a message from client2****Sending Message**

```
CHAT: 0
JOIN_ID: 4
CLIENT_NAME: client2
MESSAGE: hello world from client 2
```

Send Succeeded.**Testing for receipt of message from client2. (Socket Resource id #7)**

Recieved Message from server: CHAT: 0

Room Ref is correct: 0
clientname is correct: client2
Message content is correct:

```
hello world from client 2
```

Message receipt successful

Testing for receipt of message from client2. (Socket Resource id #8)

Received Message from server: CHAT: 0
Room Ref is correct: 0
clientname is correct: client2
Message content is correct:

```
hello world from client 2
```

Message receipt successful

Testing for receipt of message from client2. (Socket Resource id #9)

Received Message from server: CHAT: 0
Room Ref is correct: 0
clientname is correct: client2
Message content is correct:

```
hello world from client 2
```

Message receipt successful

Testing for no receipt of message from client2. (Socket Resource id #10)
Nothing to read on Resource id #10 socket. This is correct.

Testing the sending of a message from client3

Sending Message

```
CHAT: 0  
JOIN_ID: 6  
CLIENT_NAME: client3  
MESSAGE: hello world from client 3
```

Send Succeeded.

Testing for receipt of message from client3. (Socket Resource id #7)

Received Message from server: CHAT: 0
Room Ref is correct: 0
clientname is correct: client3
Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for receipt of message from client3. (Socket Resource id #8)

Received Message from server: CHAT: 0
Room Ref is correct: 0

clientname is correct: client3

Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for receipt of message from client3. (Socket Resource id #9)

Received Message from server: CHAT: 0

Room Ref is correct: 0

clientname is correct: client3

Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for no receipt of message from client3. (Socket Resource id #10)

Nothing to read on Resource id #10 socket. This is correct.

Testing the sending of a message from client3

Sending Message

```
CHAT: 1
JOIN_ID: 6
CLIENT_NAME: client3
MESSAGE: hello world from client 3
```

Send Succeeded.

Testing for receipt of message from client3. (Socket Resource id #7)

Received Message from server: CHAT: 1

Room Ref is correct: 1

clientname is correct: client3

Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for receipt of message from client3. (Socket Resource id #9)

Received Message from server: CHAT: 1

Room Ref is correct: 1

clientname is correct: client3

Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for receipt of message from client3. (Socket Resource id #10)

Received Message from server: CHAT: 1

Room Ref is correct: 1

clientname is correct: client3

Message content is correct:

```
hello world from client 3
```

Message receipt successful

Testing for no receipt of message from client3. (Socket Resource id #8)
Nothing to read on Resource id #8 socket. This is correct.

Testing Disconnections

Testing sending message to server by client1. (Socket Resource id #7)

Sending Message to Server:

```
DISCONNECT: 0  
PORT: 0  
CLIENT_NAME: client1
```

Send Succeeded.

Testing for receipt of disconnection message regarding client1. (Socket Resource id #7)
ERROR: Server response is empty: Connection reset by peer

Sending Message to server:

```
KILL_SERVICE
```

Succeeded.

Your server should have shutdown...we will now test.

ERROR: Host not disconnected as expected

Tests Complete

All tests passed

Grade: 73 = round((75 / 75) * 20 + (1275 / 1755) * 70 + (5 / 25) * 10)

No grade possible.

Complete.