

# Documentation for Python Chat App

## RCF

### Authors and Date

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### Application name

Bad chat app

### Commands / Responses

Broadcast message: Client would type something like **all:hello** or **ALL:How are you?** Server sees the **broadcast** verb and passes the message along to all clients connected

Private message: Client would type something like **Devon:hello** Server sees the **PRIVATE\_MESSAGE** verb and searches the dictionary for that names socket and then sends the message to that socket

Who: Client would type **who** or **WHO** Server sees the **WHO** verb and joins all values in the dictionary into a string and sends that message to the socket that sent the message

Login: Client types there username and connects to the server Server adds user to dictionary and sends a message to all clients telling them who has arrived

Quit: Client types **quit** or **QUIT** Server removes them from the dictionary and closes there socket

### Non-Command Verbs

Error message: If the client receives an error message it merely prints the fact and continues on.

Resend request: If the server receives a message with a packet that doesn't match the checksum Sends a message with this verb to the client to request the resending of the last message

Confirm: If the server receives a message with a packet that does match the checksum Sends a message with this verb to the client to inform it that it does not need to resend the message

Shutdown: When the server is being shutdown Tells the client that the server is shutting down so it can stop listening to the server

### **Packet**

packet\_number: integer

vn: integer

from\_name: 32bit string

to\_name: 32bit string

verb: integer

checksum: integer

encrypted: boolean

text: 256bit string

There are no separating characters

### **Encryption**

Rot13 but it also includes symbols (all ASCII characters from 32 - 126)

### **LOG**

Server:

```
[devonladd@loki Assignment4]$ python3 server.py
Checksums matched
From: devon, To: ALL, Contents: devon has connected., Verb: LOGIN
Checksums matched
From: not devon, To: ALL, Contents: not devon has connected.,
  ↪ Verb: LOGIN
Checksums matched
From: devon, To: ALL, Contents: , Verb: WHO
devon, not devon
Checksums didn't match, requesting packet again...
Waiting...
Received...
Checksums matched
From: devon, To: all, Contents: uryyl, Verb: BROADCAST
Checksums didn't match, requesting packet again...
Waiting...
```

```

Received...
Checksums matched
From: not devon, To: devon, Contents: uv, Verb: PRIVATE_MESSAGE
devon: <socket.socket fd=4, family=AddressFamily.AF_INET,
↳ type=SocketKind.SOCK_STREAM, proto=0,
↳ laddr=('192.197.151.116', 53289), raddr=('192.197.151.116',
↳ 47128)>
Checksums didn't match, requesting packet again...
Waiting...
Received...
Checksums matched
From: not devon, To: devon, Contents: u|%-n r-'|#-q|v{tL, Verb:
↳ PRIVATE_MESSAGE
devon: <socket.socket fd=4, family=AddressFamily.AF_INET,
↳ type=SocketKind.SOCK_STREAM, proto=0,
↳ laddr=('192.197.151.116', 53289), raddr=('192.197.151.116',
↳ 47128)>
Checksums didn't match, requesting packet again...
Waiting...
Received...
Checksums matched
From: not devon, To: devon, Contents:
↳ y||x-n"- "uv!G-./0123i456789:;<=>?@ABCDEFGHJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnpqrstu
↳ !"#%&'()*+,, Verb: PRIVATE_MESSAGE
devon: <socket.socket fd=4, family=AddressFamily.AF_INET,
↳ type=SocketKind.SOCK_STREAM, proto=0,
↳ laddr=('192.197.151.116', 53289), raddr=('192.197.151.116',
↳ 47128)>
Checksums matched
From: not devon, To: ALL, Contents: not devon has disconnected.,
↳ Verb: QUIT
not devon disconnected.

Sending disconnect message to ALL
DISCONNECTED
No longer listening to <socket.socket [closed] fd=-1,
↳ family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM,
↳ proto=0>
Checksums matched
From: devon, To: ALL, Contents: , Verb: WHO
devon
Checksums matched
From: also not devon, To: ALL, Contents: also not devon has
↳ connected., Verb: LOGIN
Checksums didn't match, requesting packet again...
Waiting...

```

```

Received...
Checksums matched
From: also not devon, To: all, Contents: uv, Verb: BROADCAST
Checksums matched
From: also not devon, To: ALL, Contents: also not devon has
  ↳ disconnected., Verb: QUIT
also not devon disconnected.

Sending disconnect message to ALL
DISCONNECTED
No longer listening to <socket.socket [closed] fd=-1,
  ↳ family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM,
  ↳ proto=0>
Checksums matched
From: devon, To: ALL, Contents: devon has disconnected., Verb:
  ↳ QUIT
devon disconnected.

DISCONNECTED
No longer listening to <socket.socket [closed] fd=-1,
  ↳ family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM,
  ↳ proto=0>
^CMessaging all clients...
Closing all sockets...
Done. Goodbye.

Client 1 (devon):

[devonladd@loki Assignment4]$ python3 client.py
Username: devon
Connected
Message confirmed

devon has connected.

not devon has connected.

who
Message confirmed

devon, not devon

all:hello
Message from will have the wrong checksum
Message confirmed

```

TO: all  
FROM: devon  
hello

TO: devon  
FROM: not devon  
hi

TO: devon  
FROM: not devon  
how are you doing?

TO: devon  
FROM: not devon  
look at this:  
↪ !"#\$%&\'()\*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz

not devon has disconnected.

who  
Message confirmed

devon

also not devon has connected.

TO: all  
FROM: also not devon  
hi

also not devon has disconnected.

bye  
See ya

Client 2 (not devon):

[devonladd@loki Assignment4]\$ python3 client.py  
Username: not devon  
Message confirmed

Connected

not devon has connected.

TO: all  
FROM: devon  
hello

devon:hi  
Message from will have the wrong checksum  
Message confirmed

TO: devon  
FROM: not devon  
hi

devon:how are you doing?  
Message from will have the wrong checksum  
Message confirmed

TO: devon  
FROM: not devon  
how are you doing?

devon:look at this: !"#\$%&\'()\*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz  
Message from will have the wrong checksum  
Message confirmed

TO: devon  
FROM: not devon  
look at this: !"#\$%&\'()\*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz

bye  
See ya

Client 3 (also not devon):

[devonladd@loki Assignment4]\$ python3 client.py  
Username: also not devon  
Message confirmed  
Connected

also not devon has connected.

all:hi  
Message from will have the wrong checksum

Message confirmed

TO: all  
FROM: also not devon  
hi

bye  
See ya