

# Chatting with Web Sockets

# Lecture Question

## Task: Write a Web Socket Server for Direct Messages (DMs)

In a package named `server`, write a class named `DMServer` that:

- When created, sets up a web socket server listening for connections on `localhost:8080`
  - Listens for messages of type `"register"` containing a username as a String (Use data structures to remember which socket belongs to which username)
  - Listens for messages of type `"direct_message"` containing a JSON string in the format `{"to": "username", "message": "text"}`. When such a message is received:
    - Send a message of type `"dm"` only to the socket of the `"to"` username containing a JSON string in the format `{"from": "username", "message": "text"}`
- Example: If 2 different users connect to the server and send:
    - `emit("register", "Aesop")` and `emit("register", "Rob")`
    - User `"Aesop"` sends `emit("direct_message", '{"to": "Rob", "message": "Happy to be on the food chain at all"}')`
  - User `"Rob"` will receive a message from the server of type `"dm"` containing the string `'{"from": "Aesop", "message": "Happy to be on the food chain at all"}'`

# Chat Demo

- Live demo and walkthrough of the chat app code
- `week8.chat` package in the examples repo

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- Listens for messages of type `"direct_message"` containing a JSON string in the format `{"to": "username", "message": "text"}`. When such a message is received:
  - Send a message of type `"dm"` to the `"to"` username containing a JSON string in the format `{"from": "username", "message": "text"}`
- Example: If 2 different users connect to the server and send:
  - `emit("register", "Aesop")` and `emit("register", "Rob")`
  - User `"Aesop"` sends `emit("direct_message", '{"to": "Rob", "message": "Happy to be on the food chain at all"}')`
- User `"Rob"` will receive a message from the server of type `"dm"` containing the string `'{"from": "Aesop", "message": "Happy to be on the food chain at all"}'`