

# IMY 220

## Practical 9:

### Node, Express and Socket

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*Due: Friday 28 October @ 9:30*

*The submission instructions are available on ClickUP. Any deviation from these instructions will cause a 10% deduction from your mark.*

#### Instructions

- The aim of this practical is to use Node.js along with Express.js and Socket.io to create a chat system where multiple users can log in and chat.
- The system should differentiate between messages that you send and messages you receive. It should also indicate a username if a message is received.
- You will have to make use of jQuery for this practical. Please make sure you include the CDN of jQuery.
- Internal CSS is provided, you are welcome to change the styling but that is not the priority of this practical.
- Make use of the recommended syntax that has been discussed throughout the semester.
- HINT: To get started, look at the following: <https://socket.io/get-started/chat>

#### Section 1: Set up the basic chat system

Create a new node project (using *npm init*) and create a file called *index.js* that will be used as your entry point.

Download *index.html* from clickup. Inside this create a script tag at the bottom and add functionality that emits an event with the value of input field when the submit button is clicked, call this event "chatMessage". This event should only be called if the input value is not empty.

Inside *index.js* you should create your express server that runs on port 3000. This file will also handle specific requests such as setting a username, connecting to the server, disconnecting, and reading messages that have been sent from *index.html*. When a new user connects to the server a username should be assigned to them that is in the following structure:

"User " + (Random number between 0 and 100)

e.g., User 58

For section 1, the *chatMessage* event should be handled, and the data that was sent from *index.html* should be logged to the console. The currently logged in user should also be logged as well as when a user disconnects.

HINT: You will need additional events to do this

To make it clearer, the following needs to be implemented for this part:

- When a user **connects** to the server (i.e., opens a tab on localhost:3000) there should be a console log that says “[randomly assigned username] connected”
- When a user **disconnects** (i.e., closes the tab) there should be a console log that says “[randomly assigned username] disconnected”
- When a user types a message in the provided input and clicks on the send button, the message should be logged to the console.

If done correctly, the following output should display in the console:

```
User 43 connected
Hello, how are you?
I am good thank you
User 37 disconnected
```

## Section 2: Showing the chat

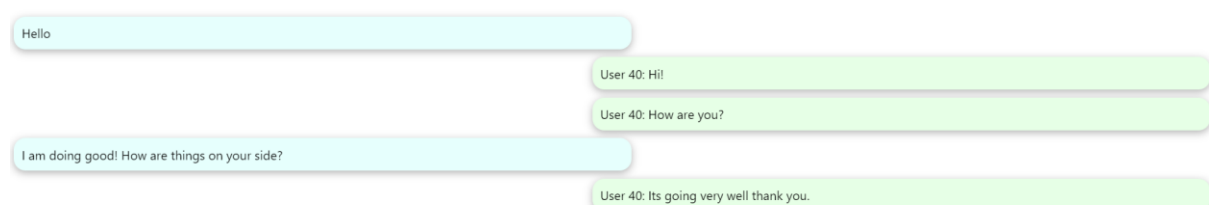
Now that you set up the basis of the chat system, we are going to expand on that so that the messages are displayed in your browser and not just in the console. When a message is sent, a new div element should be created and appended to the div with the id of “messages” with the content of the input. You need to do this part with jQuery so please make sure that you follow the recommended syntax when adding elements. You will also have to send the randomly generated username back to the server along with the message so that it can be used later to test who the message was sent from.

So, now, the messages are broadcasted from all the users, but we don’t have a way to identify who sent the message. Do the following so that it is clear who sent the message:

- If you are the sender of the message, the class ‘sentMessage’ should be assigned to that message.
- If you are the receiver of the message, the class ‘receivedMessage’ should be assigned to the message and the name of the user who sent the message should be in this message.
- Also append a header tag to the div with the class of “messages” with the name of the current user.

If you did this correctly, the following output should be given if 2 users communicate with each other. (You can test this by having 2 tabs open on localhost:3000)

### User 97



## User 40

Hi!

How are you?

Its going very well thank you.

User 97: Hello

User 97: I am doing good! How are things on your side?

**Submit *ONLY* the following file(s) according to the submission instructions.**

- Submit everything ***EXCEPT*** `node_modules`, if you do, you will be penalised.