

# **Real time data streaming with WebSocket and Socket.IO**

## **Lab 2 Exercises**

### **Socket.IO features and usage**

1	REFERENCES.....	1
2	BROADCASTING .....	1
3	NAMESPACES .....	2
4	ROOMS .....	2

## **1 References**

Official documentation and tutorial:  
<https://socket.io/docs/v4/tutorial/introduction>

[https://www.w3schools.com/nodejs/nodejs\\_socketio.asp](https://www.w3schools.com/nodejs/nodejs_socketio.asp)

## **2 Broadcasting**

Start from the existing codebase in the project folder `secondapp` after you have populated it with the content from:

`index-v3.html`  
`server-v3.js`  
`client-v3.js`

Modify `server.js` and `client.js` so that whenever any message is displayed (server message or client message), include a timestamp such as follows:

### **Socket.IO Broadcast Demo**

```
[7:15:32 pm] Server: Welcome Client 2!  
[7:15:37 pm] Client 2: cool stuff  
[7:15:42 pm] Server: Client 3 joined the chat.  
[7:15:48 pm] Client 3: right now
```

HINT: The JavaScript statement to just show the HH:MM:SS portion of a timestamp is:

```
new Date().toLocaleTimeString()
```

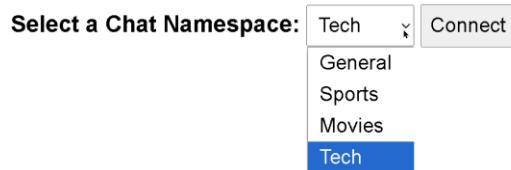
## 3 Namespaces

Start from the existing codebase in the project folder `secondapp` after you have populated it with the content from:

```
index-v4.html  
server-v4.js  
client-v4.js
```

- a) Add a fourth namespace `/tech` that users can join.

### Socket.IO Namespace Demo



Modify `server.js` and `index.html` to accomplish this

- b) Currently the front-end UI shows the count of users in a specific namespace (Users online in `/general` : 3). Add an extension to show **ALL connected users regardless of their namespace** (i.e. the sum of all the users in all the namespaces).

### Socket.IO Namespace Demo

Connected to `/movies` chat

Users online in `/movies`: 1

Total users online: 3

Server: Welcome movies\_User2 to the `/movies` chat!

Modify all 3 files (`server.js`, `client.js` and `index.html`) to accomplish this

## 4 Rooms

Start from the existing codebase in the project folder `secondapp` after you have populated it with the content from:

index-v5.html  
server-v5.js  
client-v5.js

- a) Add a fourth room /RoomD that users can join.

## Socket.IO Namespaces + Rooms Demo

Connected to /general namespace

Users online in /general: 5

Select a Room: Room A ▾ Join Room

- Room A
- Room B
- Room C
- Room D

- a) Add a new button “Join new room” which disconnects the user / client from the current room in the namespace they are in and select another room in the same namespace to join.

Modify client.js and index.html to accomplish this

<p>. Room: RoomA</p> <p>Users in room "RoomA": 1</p> <p>Server: You joined room "RoomA" within /general.</p> <hr/> <p>Type message... <input type="button" value="Send"/></p> <p><input type="button" value="Join New Room"/></p>	<p><b>Socket.IO Namespaces + Rooms Demo</b></p> <p>Connected to /general namespace - please select a NEW room to join.</p> <p>Users online in /general: 5</p> <p>Select a Room: Room A ▾ Join Room</p> <ul style="list-style-type: none"><li>Room A</li><li>Room B</li><li>Room C</li><li>Room D</li></ul>
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