

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

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 shown 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

Select a Chat Namespace:

Tech 

Connect

General

Sports

Movies

Tech

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 ▾
Room A
Room B
Room C
Room D

Join Room

- 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> <div>Server: You joined room "RoomA" within /general.</div> <div>Type message... <div>Send</div></div> <div>Join New Room</div> | <p>Socket.IO Namespaces + Rooms Demo</p> <p>Connected to <code>/general</code> namespace - please select a NEW room to join.</p> <p>Users online in <code>/general</code>: 5</p> <p>Select a Room: <div>Room A ▾ Room A Room B Room C Room D</div> <div>Join Room</div></p> |
|---|--|