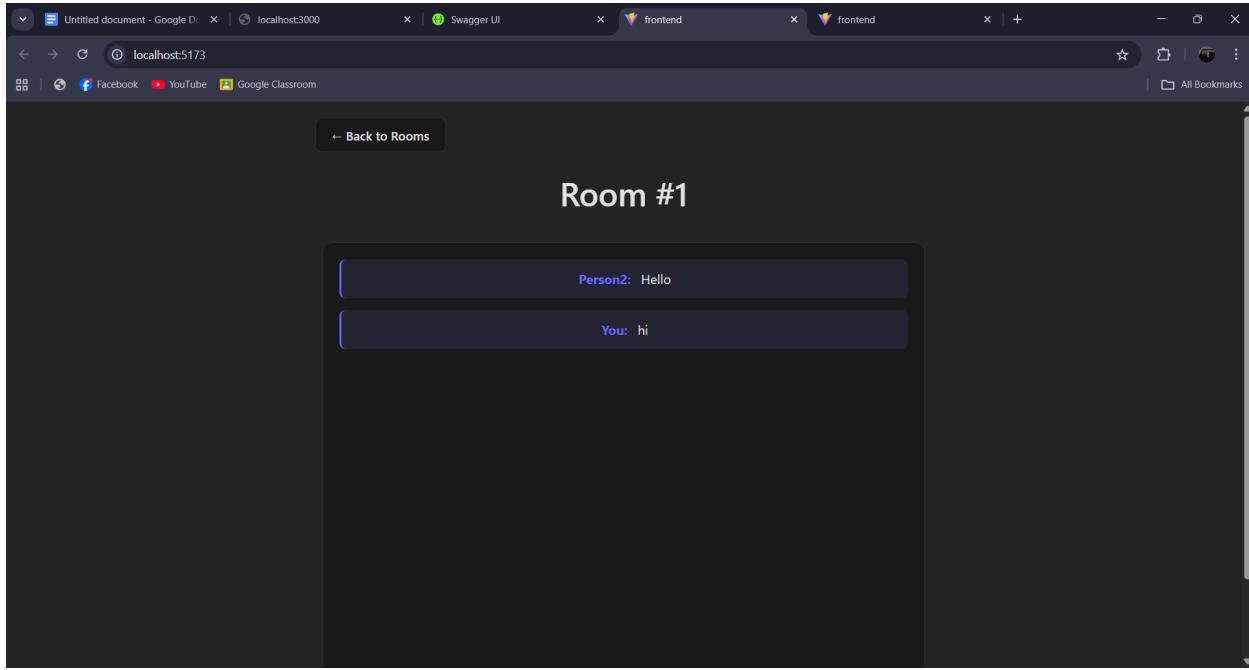


**Activity 8: Chatroom REST API + UI** is a web-based real-time chat application where users can join different chatrooms and send messages instantly. The system uses a REST API to manage chatrooms and WebSocket technology for real-time message delivery. The frontend is built with ReactJS, while the backend is powered by Node.js, NestJS, and TypeScript.



## Chatrooms

A screenshot of the Swagger UI interface. The URL in the address bar is 'localhost:3000/api#/chatrooms/ChatroomController\_findAll'. The request method is 'GET'. The 'Server response' section shows a status code of 200 and a response body containing a JSON array of three chatroom objects. Each object has properties: id, name, description, and icon. The first chatroom is named 'General' with description 'General discussion room' and icon '💡'. The second is 'Random' with description 'Random topics and fun chat' and icon '🌐'. The third is 'Hello World' with description 'HTML &amp; CSS Basics' and icon '💻'. Below the response body, there are 'Download' and 'Copy' buttons. The 'Response headers' section lists standard HTTP headers like 'access-control-allow-credentials', 'connection', 'content-length', 'content-type', 'date', 'etag', 'keep-alive', and 'vary'.

localhost:3000/api#/chatrooms/ChatroomController\_create

Responses

Code	Description	Links
201	Chatroom created Media type <code>application/json</code> Controls Accept header. Example Value   Schema	No links

**GET** /chatroom/{id} Get a chatroom by ID

**PUT** /chatroom/{id} Update a chatroom

**DELETE** /chatroom/{id} Delete a chatroom

localhost:3000/api#/chatrooms/ChatroomController\_findOne

Responses

Curl

```
curl -X 'GET' \
'http://localhost:3000/chatroom/1' \
-H 'accept: application/json'
```

Request URL

```
http://localhost:3000/chatroom/1
```

Server response

Code	Details
200	Response body { "id": 1, "name": "General", "description": "general discussion room", "icon": "\ud83d\udcbb" } Response headers access-control-allow-credentials: true date: Sat, 10 Jan 2026 08:49:38 GMT etag: W/"4f-6b6Kms/2rKKG/IrGrAzRQgI9qs" keep-alive: timeout=5 vary: Origin x-powered-by: Express

localhost:3000/api#/chatrooms/ChatroomController\_update

```
curl -X 'PUT' \
'http://localhost:3000/chatroom/1' \
-H 'Accept: application/json' \
-H 'Content-Type: application/json' \
-d '{
  "name": "Updated Chat",
  "description": "Updated description",
  "icon": "\ud83d\udcbb"
}'
```

Request URL  
`http://localhost:3000/chatroom/1`

Server response

Code	Details
200	<p>Response body</p> <pre>{   "id": 1,   "name": "Updated Chat",   "description": "Updated description",   "icon": "\ud83d\udcbb" }</pre> <p>Response headers</p> <pre>access-control-allow-credentials: true access-control-allow-origin: http://localhost:3000 connection: keep-alive content-length: 88 content-type: application/json; charset=utf-8 date: Sat, 10 Jan 2026 08:50:19 GMT etag: W/"18-0V4hJx8VS2Ixc/wX8+m4/PedtA" keep-alive: timeout=5 vary: Origin x-powered-by: Express</pre>

Responses

Code	Description	Links
200	Chatroom updated	No links

localhost:3000/api#/chatrooms/ChatroomController\_remove

Execute Clear

Responses

Curl

```
curl -X 'DELETE' \
'http://localhost:3000/chatroom/3' \
-H 'accept: */*'
```

Request URL  
`http://localhost:3000/chatroom/3`

Server response

Code	Details
200	<p>Response body</p> <pre>{   "success": true }</pre> <p>Response headers</p> <pre>access-control-allow-credentials: true access-control-allow-origin: http://localhost:3000 connection: keep-alive content-length: 16 content-type: application/json; charset=utf-8 date: Sat, 10 Jan 2026 08:50:51 GMT etag: W/"18-0V4hJx8VS2Ixc/wX8+m4/PedtA" keep-alive: timeout=5 vary: Origin x-powered-by: Express</pre>

localhost:3000/api#/messages/MessageController\_findAll

```
Curl
curl -X 'GET' \
'http://localhost:3000/message?chatroomId=1' \
-H 'accept: application/json'
```

Request URL  
http://localhost:3000/message?chatroomId=1

Server response

Code Details

200 Response body

```
[{"id": 1, "chatroomId": 1, "username": "Person1", "message": "hi"}, {"id": 2, "chatroomId": 1, "username": "Person2", "message": "Hello"}, {"id": 3, "chatroomId": 1, "username": "Person1", "message": "hi"}, {"id": 4, "chatroomId": 1, "username": "Person3", "message": "uyy"}, {"id": 5, "chatroomId": 1, "username": "Person4", "message": "uyy"}, {"id": 6, "chatroomId": 1, "username": "Person5", "message": "uyy"}, {"id": 7, "chatroomId": 1, "username": "Person6", "message": "uyy"}, {"id": 8, "chatroomId": 1, "username": "Person7", "message": "uyy"}, {"id": 9, "chatroomId": 1, "username": "Person8", "message": "uyy"}, {"id": 10, "chatroomId": 1, "username": "Person9", "message": "uyy"}, {"id": 11, "chatroomId": 1, "username": "Person10", "message": "uyy"}, {"id": 12, "chatroomId": 1, "username": "Person11", "message": "uyy"}, {"id": 13, "chatroomId": 1, "username": "Person12", "message": "uyy"}, {"id": 14, "chatroomId": 1, "username": "Person13", "message": "uyy"}, {"id": 15, "chatroomId": 1, "username": "Person14", "message": "uyy"}, {"id": 16, "chatroomId": 1, "username": "Person15", "message": "uyy"}, {"id": 17, "chatroomId": 1, "username": "Person16", "message": "uyy"}, {"id": 18, "chatroomId": 1, "username": "Person17", "message": "uyy"}, {"id": 19, "chatroomId": 1, "username": "Person18", "message": "uyy"}, {"id": 20, "chatroomId": 1, "username": "Person19", "message": "uyy"}, {"id": 21, "chatroomId": 1, "username": "Person20", "message": "uyy"}, {"id": 22, "chatroomId": 1, "username": "Person21", "message": "uyy"}, {"id": 23, "chatroomId": 1, "username": "Person22", "message": "uyy"}, {"id": 24, "chatroomId": 1, "username": "Person23", "message": "uyy"}, {"id": 25, "chatroomId": 1, "username": "Person24", "message": "uyy"}, {"id": 26, "chatroomId": 1, "username": "Person25", "message": "uyy"}, {"id": 27, "chatroomId": 1, "username": "Person26", "message": "uyy"}, {"id": 28, "chatroomId": 1, "username": "Person27", "message": "uyy"}, {"id": 29, "chatroomId": 1, "username": "Person28", "message": "uyy"}, {"id": 30, "chatroomId": 1, "username": "Person29", "message": "uyy"}, {"id": 31, "chatroomId": 1, "username": "Person30", "message": "uyy"}, {"id": 32, "chatroomId": 1, "username": "Person31", "message": "uyy"}, {"id": 33, "chatroomId": 1, "username": "Person32", "message": "uyy"}, {"id": 34, "chatroomId": 1, "username": "Person33", "message": "uyy"}, {"id": 35, "chatroomId": 1, "username": "Person34", "message": "uyy"}, {"id": 36, "chatroomId": 1, "username": "Person35", "message": "uyy"}, {"id": 37, "chatroomId": 1, "username": "Person36", "message": "uyy"}, {"id": 38, "chatroomId": 1, "username": "Person37", "message": "uyy"}, {"id": 39, "chatroomId": 1, "username": "Person38", "message": "uyy"}, {"id": 40, "chatroomId": 1, "username": "Person39", "message": "uyy"}, {"id": 41, "chatroomId": 1, "username": "Person40", "message": "uyy"}, {"id": 42, "chatroomId": 1, "username": "Person41", "message": "uyy"}, {"id": 43, "chatroomId": 1, "username": "Person42", "message": "uyy"}, {"id": 44, "chatroomId": 1, "username": "Person43", "message": "uyy"}, {"id": 45, "chatroomId": 1, "username": "Person44", "message": "uyy"}, {"id": 46, "chatroomId": 1, "username": "Person45", "message": "uyy"}, {"id": 47, "chatroomId": 1, "username": "Person46", "message": "uyy"}, {"id": 48, "chatroomId": 1, "username": "Person47", "message": "uyy"}, {"id": 49, "chatroomId": 1, "username": "Person48", "message": "uyy"}, {"id": 50, "chatroomId": 1, "username": "Person49", "message": "uyy"}, {"id": 51, "chatroomId": 1, "username": "Person50", "message": "uyy"}, {"id": 52, "chatroomId": 1, "username": "Person51", "message": "uyy"}, {"id": 53, "chatroomId": 1, "username": "Person52", "message": "uyy"}, {"id": 54, "chatroomId": 1, "username": "Person53", "message": "uyy"}, {"id": 55, "chatroomId": 1, "username": "Person54", "message": "uyy"}, {"id": 56, "chatroomId": 1, "username": "Person55", "message": "uyy"}, {"id": 57, "chatroomId": 1, "username": "Person56", "message": "uyy"}, {"id": 58, "chatroomId": 1, "username": "Person57", "message": "uyy"}, {"id": 59, "chatroomId": 1, "username": "Person58", "message": "uyy"}, {"id": 60, "chatroomId": 1, "username": "Person59", "message": "uyy"}, {"id": 61, "chatroomId": 1, "username": "Person60", "message": "uyy"}, {"id": 62, "chatroomId": 1, "username": "Person61", "message": "uyy"}, {"id": 63, "chatroomId": 1, "username": "Person62", "message": "uyy"}, {"id": 64, "chatroomId": 1, "username": "Person63", "message": "uyy"}, {"id": 65, "chatroomId": 1, "username": "Person64", "message": "uyy"}, {"id": 66, "chatroomId": 1, "username": "Person65", "message": "uyy"}, {"id": 67, "chatroomId": 1, "username": "Person66", "message": "uyy"}, {"id": 68, "chatroomId": 1, "username": "Person67", "message": "uyy"}, {"id": 69, "chatroomId": 1, "username": "Person68", "message": "uyy"}, {"id": 70, "chatroomId": 1, "username": "Person69", "message": "uyy"}, {"id": 71, "chatroomId": 1, "username": "Person70", "message": "uyy"}, {"id": 72, "chatroomId": 1, "username": "Person71", "message": "uyy"}, {"id": 73, "chatroomId": 1, "username": "Person72", "message": "uyy"}, {"id": 74, "chatroomId": 1, "username": "Person73", "message": "uyy"}, {"id": 75, "chatroomId": 1, "username": "Person74", "message": "uyy"}, {"id": 76, "chatroomId": 1, "username": "Person75", "message": "uyy"}, {"id": 77, "chatroomId": 1, "username": "Person76", "message": "uyy"}, {"id": 78, "chatroomId": 1, "username": "Person77", "message": "uyy"}, {"id": 79, "chatroomId": 1, "username": "Person78", "message": "uyy"}, {"id": 80, "chatroomId": 1, "username": "Person79", "message": "uyy"}, {"id": 81, "chatroomId": 1, "username": "Person80", "message": "uyy"}, {"id": 82, "chatroomId": 1, "username": "Person81", "message": "uyy"}, {"id": 83, "chatroomId": 1, "username": "Person82", "message": "uyy"}, {"id": 84, "chatroomId": 1, "username": "Person83", "message": "uyy"}, {"id": 85, "chatroomId": 1, "username": "Person84", "message": "uyy"}, {"id": 86, "chatroomId": 1, "username": "Person85", "message": "uyy"}, {"id": 87, "chatroomId": 1, "username": "Person86", "message": "uyy"}, {"id": 88, "chatroomId": 1, "username": "Person87", "message": "uyy"}, {"id": 89, "chatroomId": 1, "username": "Person88", "message": "uyy"}, {"id": 90, "chatroomId": 1, "username": "Person89", "message": "uyy"}, {"id": 91, "chatroomId": 1, "username": "Person90", "message": "uyy"}, {"id": 92, "chatroomId": 1, "username": "Person91", "message": "uyy"}, {"id": 93, "chatroomId": 1, "username": "Person92", "message": "uyy"}, {"id": 94, "chatroomId": 1, "username": "Person93", "message": "uyy"}, {"id": 95, "chatroomId": 1, "username": "Person94", "message": "uyy"}, {"id": 96, "chatroomId": 1, "username": "Person95", "message": "uyy"}, {"id": 97, "chatroomId": 1, "username": "Person96", "message": "uyy"}, {"id": 98, "chatroomId": 1, "username": "Person97", "message": "uyy"}, {"id": 99, "chatroomId": 1, "username": "Person98", "message": "uyy"}, {"id": 100, "chatroomId": 1, "username": "Person99", "message": "uyy"}]
```

Response headers

Download

localhost:3000/api#/messages/MessageController\_create

Responses

Curl

```
curl -X 'POST' \
'http://localhost:3000/message' \
-H 'accept: application/json' \
-H 'Content-Type: application/json' \
-d '{
  "chatroomId": 1,
  "username": "John Doe",
  "message": "Hello, world!"
}'
```

Request URL  
http://localhost:3000/message

Server response

Code Details

201 Response body

```
{"id": 17, "chatroomId": 1, "username": "John Doe", "message": "Hello, world!"}
```

Response headers

```
access-control-allow-credentials: true
access-control-allow-origin: http://localhost:3000
connection: keep-alive
content-length: 72
content-type: application/json; charset=utf-8
date: Sat, 10 Jan 2026 08:52:03 GMT
etag: W/"48-yaQ8xxdtRcgvjuQPtysi0j7a8"
keep-alive: timeout=5
vary: Origin
x-powered-by: Express
```

Untitled document - Google Docs x localhost:3000 x Swagger UI x frontend x frontend x +

localhost:3000/api#/messages/MessageController\_findOne

Execute Clear

Responses

Curl

```
curl -X 'GET' \
'http://localhost:3000/message/1' \
-H 'accept: application/json'
```

Request URL

```
http://localhost:3000/message/1
```

Server response

Code Details

200 Response body

```
{
  "id": 1,
  "chatroomId": 1,
  "username": "Person1",
  "message": "hi"
}
```

Response headers

```
access-control-allow-credentials: true
access-control-allow-origin: *
content-length: 59
content-type: application/json; charset=utf-8
date: Sat, 10 Jan 2026 08:52:28 GMT
etag: W/3b-JneWnO1m1v59Tqjyis17j1Vw
keep-alive: timeout=5
vary: Origin
x-powered-by: Express
```

Responses

Untitled document - Google Docs x localhost:3000 x Swagger UI x frontend x frontend x +

localhost:3000/api#/messages/MessageController\_update

Execute Clear

Responses

Curl

```
curl -X 'PUT' \
'http://localhost:3000/message/1' \
-H 'accept: application/json' \
-H 'Content-Type: application/json' \
-d '{
  "message": "Updated message text"
}'
```

Request URL

```
http://localhost:3000/message/1
```

Server response

Code Details

200 Response body

```
{
  "id": 1,
  "chatroomId": 1,
  "username": "Person1",
  "message": "Updated message text"
}
```

Response headers

```
access-control-allow-credentials: true
access-control-allow-origin: http://localhost:3000
connection: keep-alive
content-length: 77
content-type: application/json; charset=utf-8
```

Curl

```
curl -X 'DELETE' \
  'http://localhost:3000/message/1' \
  -H 'accept: */*'
```

Request URL

```
http://localhost:3000/message/1
```

Server response

Code	Details
200	<p>Response body</p> <pre>{ "success": true }</pre> <p>Download</p> <p>Response headers</p> <pre>access-control-allow-credentials: true access-control-allow-origin: http://localhost:3000 connection: keep-alive content-length: 16 content-type: application/json; charset=utf-8 date: Sat, 10 Jan 2026 08:53:22 GMT etag: W/\"10-o4hXxjVSExc/xX&amp;emA4/PedtA" keep-alive: timeout=5 vary: Origin x-powered-by: Express</pre>

Responses

Code	Description	Links
200	Message deleted successfully	No links
404	Message not found	No links

## Instructions: How to Run the System

### Start the Backend Server

1. Open a terminal

Go to the backend folder:

```
cd Activity-8/backend
```

Install dependencies:

```
npm install
```

- 2.

Run the backend:

```
npm run start:dev
```

- 3.

Make sure you see:

```
Application is running on http://localhost:3000
```

4.

## Start the Frontend (UI)

1. Open another terminal

Go to the frontend folder:

```
cd Activity-8/frontend
```

2.

Install dependencies:

```
npm install
```

3.

Run the frontend:

```
npm run dev
```

4.

Open the browser and go to:

```
http://localhost:5173
```

## How to Use the Chatroom

1. Select or add a chatroom from the list
2. Open the same chatroom in another browser tab
3. Send a message
4. Messages will appear in real-time without refreshing

## API Testing (Optional)

Use Postman to test the chatroom API:

- `GET /chatrooms` – view all chatrooms

- POST /chatrooms – add a new chatroom

## Expected Output

- Chatrooms can be added via UI or API
- Messages are delivered in real-time
- No page refresh is needed