



Enhancements & Deployment



Project: Node.js Real-Time Chat Application



Input and Output

Input 1:

User 1 sends a message

```
Hello, how are you?
```

User 2 replies

```
I'm good! What about you?
```

Output 1:

Displayed on both users' screens

```
User1: Hello, how are you?  
User2: I'm good! What about you?
```

Input 2:

User 2 starts typing a message

Output 2:

Typing indicator appears


```
User2 is typing...
```

Input 3:

User 1 sends an image or file (e.g.,
"project.png")

Output 3:

File shared successfully

A screenshot of a chat interface. It features a light gray background with a white message bubble on the left. Inside the bubble, the text "User1 sent a file: project.png" is displayed in a monospaced font. The word "a" is highlighted in red. The bubble has a thin gray border and a small tail pointing towards the bottom left.

User1 sent a file: project.png

Input 4:

New user joins the chat room

Output 4:

System message displayed

User3 has joined the chat.

Input 5:

User closes the chat or goes offline

Output 5:

System message displayed

User2 has **left** the chat.

System message displayed

User2 has **left** the chat.

✅ Final Output Example (Chat Window View):

User1: Hello, how are you?

User2: I'm good! What about you?

User2 **is** typing...

User1 sent a file: project.png

User3 has joined the chat.

User2 has left the chat.