
Chat Room

Submitted To:

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Introduction

- A method of using technology to bring people and ideas together instead of geographical barriers.
- Each user can use the chat room by using his username and room name in which he wants to chat.
- Each user can chat in one room at a time.
- All the users of same room can connect to each other through this application.
- User of one room cannot connect to user of another room.
- User can send message as well as send its location.
- Each user can view all the messages exchanged in that particular room.

Hardware Requirements

- Components which provides the platform for the development of the project.
- The minimum hardware required for the development of this project is as follows:
 - Ram- 128 MB
 - Hard disk- 5 GB
 - Processor- Pentium 3

Software Requirements

- Programs which run on our computer.
- Various softwares are needed in this project for its development which are as follows:
 - Operating system- Ubuntu, Windows 7
 - Technology- Node.js, Socket.IO, express
 - Others- heroku

Technologies

- Various technologies are used for the deployment of this project.
- It is application based on Nodejs technology as it is single-threaded, non-blocking, asynchronous programming, which is very memory efficient.
- Socket.io is used as it allows to namespace sockets which essentially means assigning different endpoints or paths.
- Express is a Nodejs framework which provides minimal interface to build applications. Different modules on npm can easily be plugged into it.

Node.js

1. Node.js is a JavaScript runtime built on Chrome's V8 JavaScript engine.
2. V8 engine, written in C++, compiles javascript code into much quicker machine code.
3. Non-blocking I/O model: one user is requesting a url from google, other users can be requesting database file read and write access.
4. It is event-driven and runs single threaded, asynchronous, non-blocking programming resulting in its lightweight and efficient nature.
5. It is designed to optimize throughput and scalability in web applications.

NPM

1. It stands for Node Package Manager.
2. Default package manager for the JavaScript runtime environment Node.js.
3. It is the largest ecosystem of open source libraries in the world.
4. It provides online repositories for node.js packages/modules which are searchable on search.nodejs.org.
5. It provides command line utility to install Node.js packages, do version management and dependency management of Node.js packages.

Socket.io

1. Built on top of the WebSockets API (Client side) and Node.js
2. Provides features like :
 - a. Instant messengers
 - b. Push Notifications
 - c. Collaboration Applications via which multiple user can update simultaneously
3. Provides a bi-directional communication channel between a client and a server

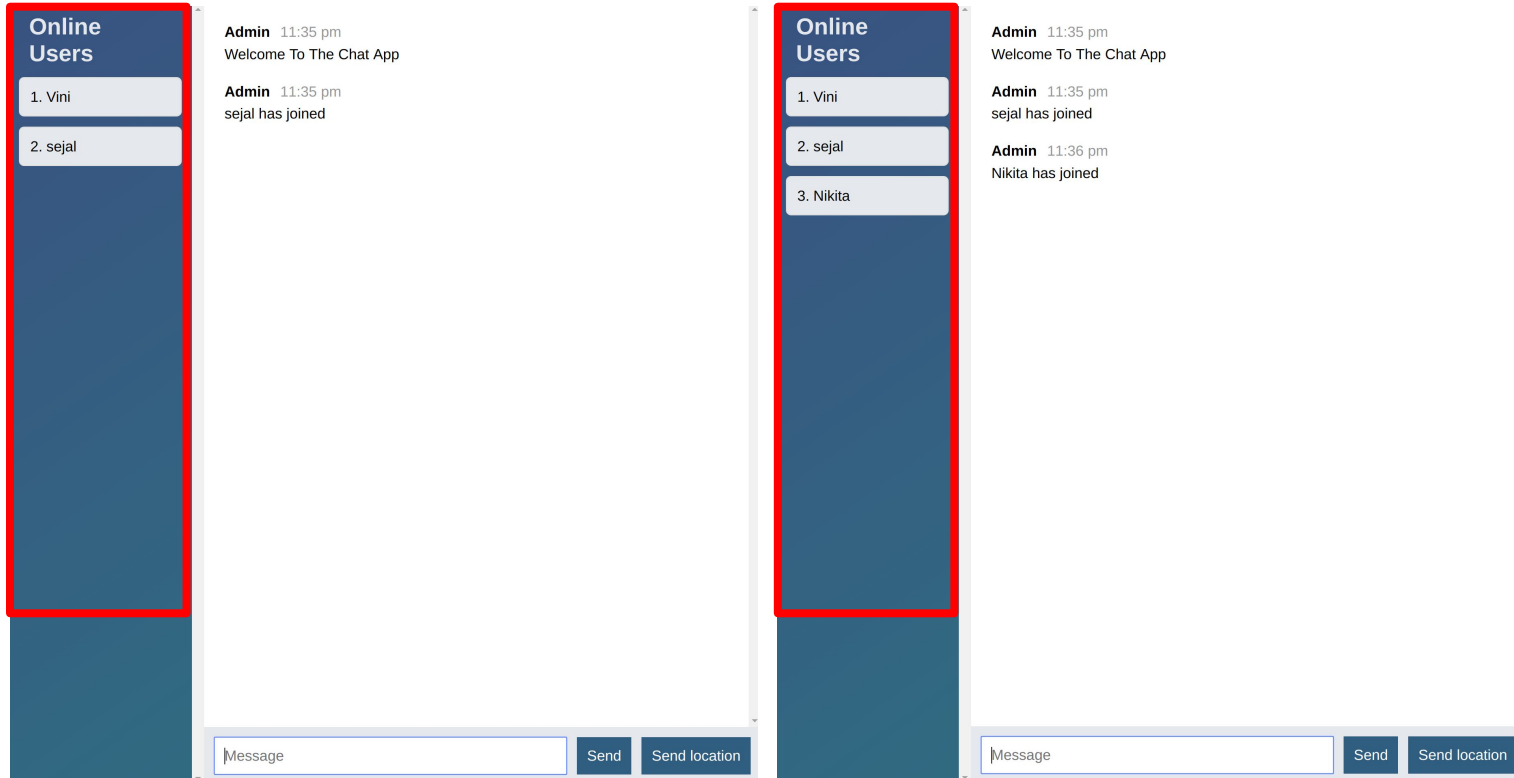
Express

1. Facilitates the rapid development of Node based Web applications.
2. Provides a built-in middleware `express.static` to serve static files and respond to HTTP Requests.
3. Defines a routing table which is used to perform different actions based on HTTP Method and URL.
4. Allows to dynamically render HTML Pages based on passing arguments to templates.

Functionalities

1. Listing all the users active in the room .
2. Notification when a user joins or leaves the room
3. Forwarding the message sent by one user to all the other users in the room.
4. Displaying the sender's name and time at which message is sent by any user.
5. Sharing current location of a user in the chat room.
6. Managing different chat rooms.
7. Scrolling down the chat and fitting in the frame.

Listing Active Users



Red block marks the list of active user.

Notification of Users joining or messaging

Online Users

1. Vini

2. sejal

Admin 11:35 pm

Welcome To The Chat App

Admin 11:35 pm

sejal has joined

Message

Send

Send location

Online Users

1. Vini

2. sejal

3. Nikita

Admin 11:42 pm

Welcome To The Chat App

Admin 11:42 pm

sejal has joined

Admin 11:42 pm

Nikita has joined

Message

Send

Send location

Forwarding Messages

Online Users

1. Vini

2. sejal

3. Nikita

Admin 11:42 pm

Welcome To The Chat App

Admin 11:42 pm

sejal has joined

Admin 11:42 pm

Nikita has joined

Vini 11:43 pm

Hi This is Vini !

sejal 11:44 pm

Hey Vini we got ur message ..

Vini's Window
(Before)

Message

Send

Send location

Online Users

1. Vini

2. sejal

3. Nikita

Admin 11:42 pm

Welcome To The Chat App

Admin 11:42 pm

sejal has joined

Admin 11:42 pm

Nikita has joined

Vini 11:43 pm

Hi This is Vini !

sejal 11:44 pm

Hey Vini we got ur message ..

Nikita 11:44 pm

Hey this is Nikki ..

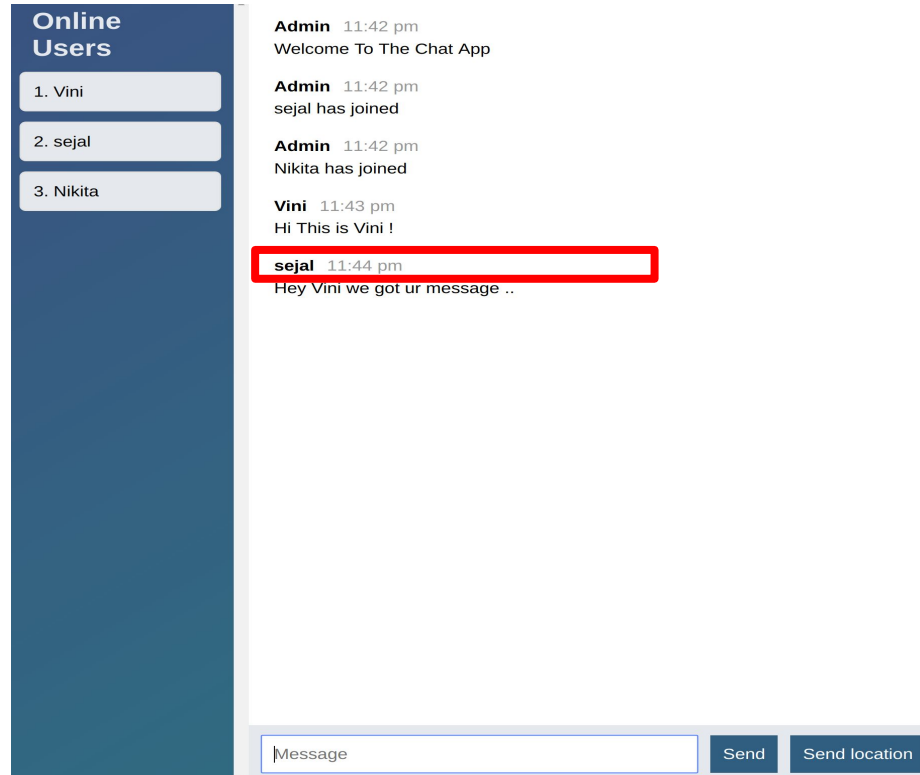
Vini's Window
(After)

Message

Send

Send location

Displaying message MetaData



Managing different Chat Rooms Simultaneously

Online Users

1. Vini

2. sejal

3. Nikita

Admin 11:42 pm
Welcome To The Chat App

Vini 11:43 pm
Hi This is Vini !

sejal 11:44 pm
Hey Vini we got ur message ..

Nikita 11:44 pm
Hey this is Nikki ..

Nikita 11:51 pm
this is chat room project

Online Users

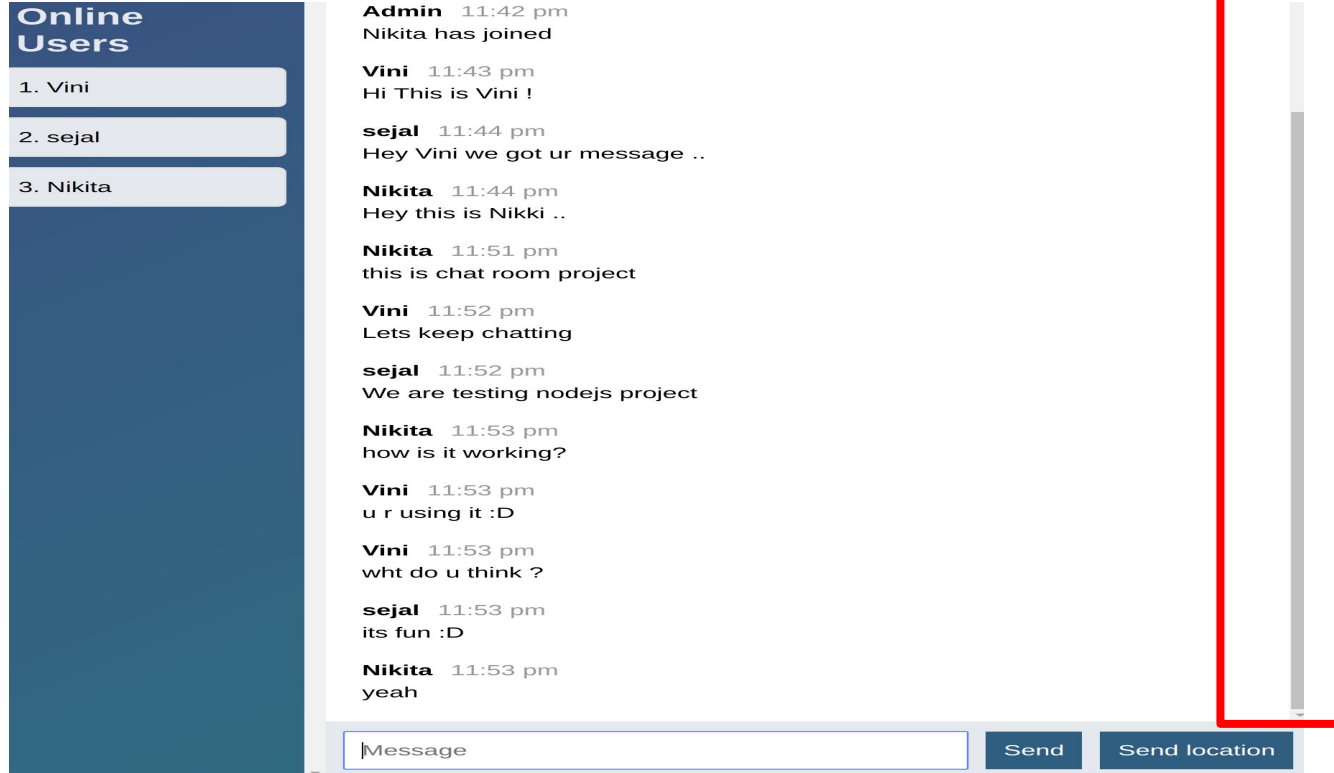
1. A

2. B

Admin 11:50 pm
Welcome To The Chat App

A 11:50 pm
This is chat room nodejs

Scrolling chat to fit the frame



References and Code Links

1. Udemy tutorial by Andrew Mead
2. Tutorials point
3. stackoverflow

Github Link:

<https://github.com/vinigarg/node-chat-server->

Thank You!