

Groupware and Collaborative Interaction Project

Chat based on node.js

This project has been made with Node.js, express.js, jade, socket.io, bootstrap and Google's diff-match-patch.

How to use it

- Go to the project directory and use type
- npm install socket.io
- npm install express
- npm install diff-match-patch
- npm install jade
- node server.js
- Open a navigator and go to <http://localhost:1234/>

Features of this project

Basic Chat Feature

Identification

In this application each user can connect by choosing their name. The number of connected user is not limited by a number. A warning message will appear if the user chooses an existing name.

Send a message

You can type your message in the text area at the bottom and send it to other connected user by pressing the send button on the left. Messages from you will appear on the right side and messages from other on the left side. Each message block contains the content of the message, the author (Me if it's you) and the date it was send. You may notice that for each users, an color is affected based on the username hash code. These colors will help user to recognize easier each other message. A slimScroll bar appears when too much message is displayed.

Collaborative addition

Modify message

Each user can modify anyone message. You just have to click on the message you want to modify and a text area will appear. Type the new text and click anywhere else. Other users will instantaneously see the modification you've just made with the differences from the previous message version. I use the diff-match-patch library to visualized text differences. If a part of the message has been removed it will be stroked, if added bolded and if unchanged nothing. In order to identify who modify what, these differences will be colored with the color of the user who change the text.

Navigate through version

By click on the left and right arrows, it is possible to navigate through each version of one message seeing every modification. The last element on the right is the current text without any differences displayed.

Presentation of the used libraries

What is Node.js?

It is a JavaScript runtime environment which allows using JavaScript on the server side. Very quick speed result due to the use of the Google Chrome V8 motor and its non-blocking model (it can download something and start doing another thing at the same time)

What is NPM (Node Package Manager)?

It is the default package manager for the JavaScript runtime environment Node.js. It is used here to install other modules.

The file "package.json" tells npm about the project. If you then do npm install in the project root, it will install the dependencies that are listed by name and version locally in a folder called 'node_modules'.

What is Express.js?

It is a light-weight web application framework to help organize your web application into an MVC architecture on the server side. Replace the PHP here.

What is Socket.IO?

It is a JavaScript library for realtime web applications. It enables realtime, bi-directional communication between web clients and servers. It has two parts: a client-side library that runs in the browser, and a server-side library for node.js

What is Jade?

Jade is a templating engine. It is a language that compiles to HTML.

What is Bootstrap?

Bootstrap is a popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web. It is a free and open-source collection of tools for creating websites and web applications. It contains HTML- and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. It aims to ease the development of dynamic websites and web applications.

Problems

I already use Bootstrap in previous project, so I had no particular problem to add it, making the page better-looking. Same for the Google diff-match-patch module, it was easy to use.

I had few issues by using Node.js and the common module Jade, Express and socket.io because I never did that before but there is many tutorials that helped implemented the chat. I also find nice tutorial which explained how to get a random color from a string in Javascript.