CODECHAT - PROGRAMMING PROBLEM SOLVING PLATFORM WITH LIVE CHAT DISCUSSION

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Abstract:

Master in Programming Problem Solving is the demand and need of every Company when it comes to placement. Many student's get stuck with the problems and find it difficult to cope. It results in discouragement and may lose interest in problem solving. A lot of students are stuck while programming. Helping those students through an interactive platform where they can have live chats with the programming experts is the main focus of my project. This will help them to solve a lot of problems and resolve their queries. This web page will provide them with a lot of facilities, students can practice here, take part in contests, have live discussions, manage their credits on their own. This web page will help a lot of students by enhancing their programming knowledge which will indeed help them to get a better job.

Keyword: HTML, CSS, javascript, node.js, API, Socket.io.

I.   INTRODUCTION

In today's generation there are lots of website which provides great resources and platform for practicing coding problems. This allows learner to enhance their coding skills and excel in their field. But while practicing the coding problems many of us get stuck with the question and it never get cleared. The reason behind this may be the surrounding around us. So to create surrounding I have developed a chatcord with the coding platform where live chat discussion with the people whose interest inclined same as yours.

A chat application is an Internet feature or programme that allows users to connect directly with other users who are online or who are using the internet at the same time. Applications for chatting enables individuals to converse even when they are separated by a large distance. The advancement of information and communication technologies is currently accelerating. The people can receive information and communicate from anywhere, at any time, thanks to information and communication technologies.

Node.js is a software platform for developing server-side adaptable applications in a network environment . Socket.IO is a JavaScript package that implements the WebSocket protocol as well as numerous other real-time web improvisations . JavaScript is a programming language that allows you to make an interactive HTML content in your browser .

II.   LITRATURE REVIEW

In 2016, the *Design and Implementation of Web-Based Real-Time Chat Interfacing Server* was published by Author Diotra Henriyan; Devie Pratama Subiyanti; Rizki Fauzian[1]. In this paper, the authors proposed a chat application built using Node.js, Socket.i MongoDB and java. Chat applications built with Node.js, MongoDB, and Socket.io run much faster in order to achieve real-time chat applications compared with the chat application built with PHP and MySQL. Its only limitation is that it can be only used by less than 100 people (for testing purposes).

The *Research on Integrated Authentication Using Passwordless Authentication Method* was published in the year 2017 by authors Michitom o Morii, Yosuke Seki[2]. In this paper, the authors examined the feasibility of the authentication system with Shibboleth and FIDO, and the system provided password-less authentication. An experimental

authentication system has two phases, the registration phase, and the authentication phase.

In 2015, Brian Carter in his research paper *'HTML Educational Node.js System (HENS) An applied system for web development '*[3]anticipated HENS as an environment that provides a portable education system for software development.

III. METHODOLOGY

System Design:

To build the website I required html, CSS as a frontend tools and JavaScript, node.js, socket.io as a backend tools. The main page is the interface to interact with the other features such as login or register page, Realtime chat application, Contact page, etc. Different coding questions can be practiced based on different topics. The chatting app system will have two components: a server and a client. On the server side, there is service and middleware, and on the client side, there are two multi-platform applications. The service has three services which are node.js, socket.io and express.js,. All server – client data communication will communicate in both ways.

Server's services are using the Node.js with Express framework, Socket.io. It helps in connecting many clients. It returns a object with username, text that a client send and time at that moment. It also helps to emit messages when a client joined or leave the chat.
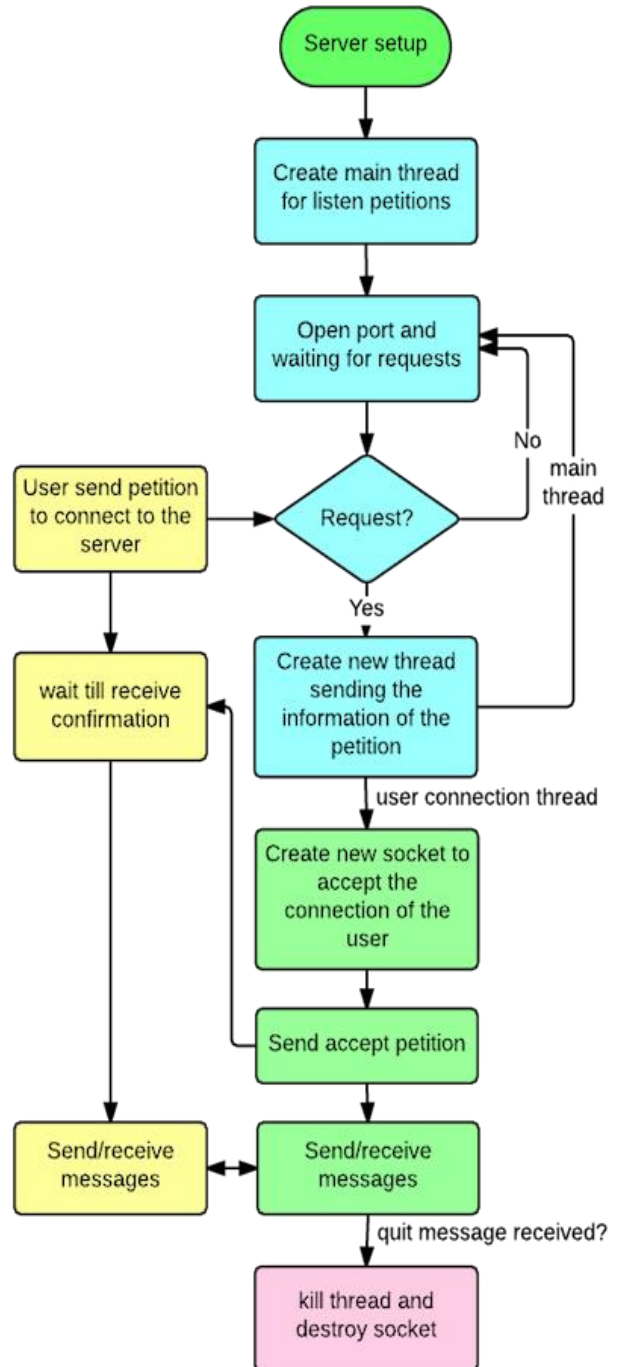
Flowchart:

The explanation for each flow from picture below is as follow:

1. When the server starts it create a main thread for listening petitions and open port on which it is running.
2. As soon as server starts port waits for requests from user and if request is received it create a new thread sending the information of the petition.
3. Server create new socket to accept the connection of the user and send accept petition.
4. Once the client receive confirmation he/she is able to send and receive messages. This

communication is made using server(socket.io).
5. Once the user left the chat, socket of its connection get destroy and this process repeats.


Flowchart of Chatting Web App

Workflow of System

The explanation for each flow from picture above is as follow:-

1. The main page is the interface for varios features. It consists of practice problem for solving, access to login/register page, contact page, console to run the code and Realtime chat.
2. Users can access their credential by login or registering on the website.
3. User can enter in live chat by just putting username and selecting the room. Once they joined they can have live chat discussion on the question's approach with the community.
4. User can contact us for general purpose.

IV. RESULT
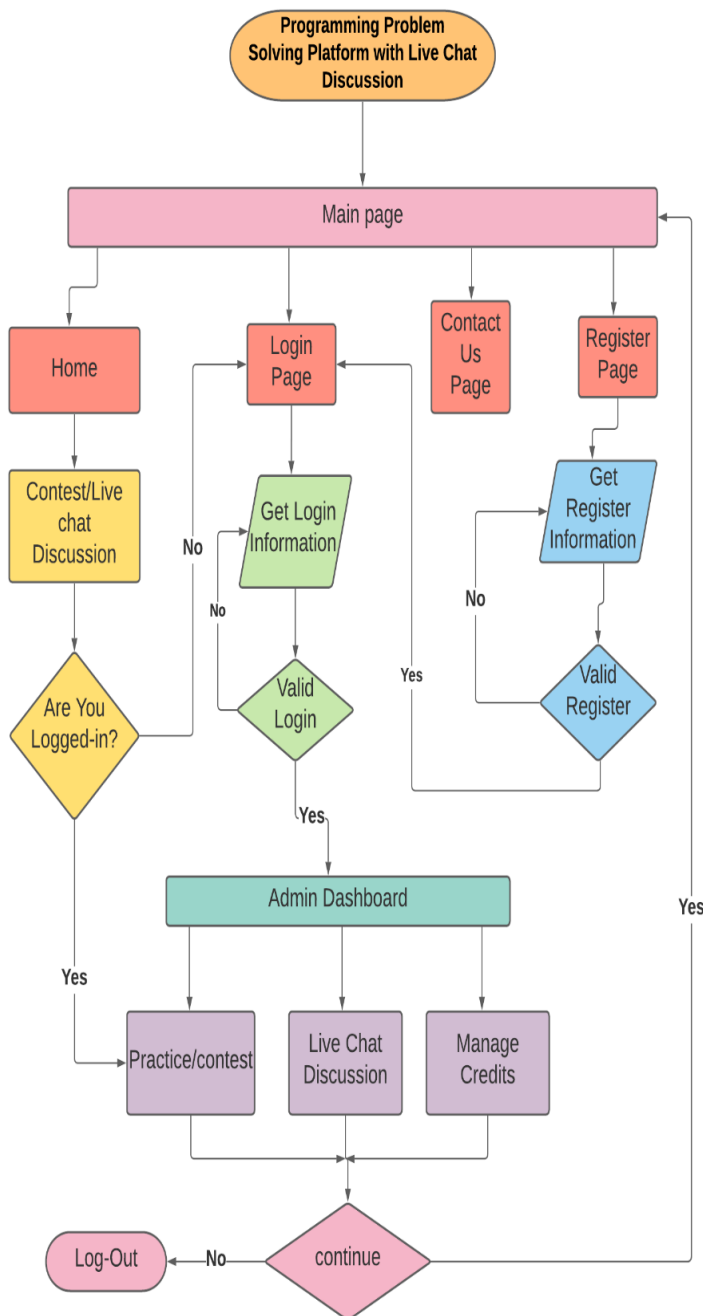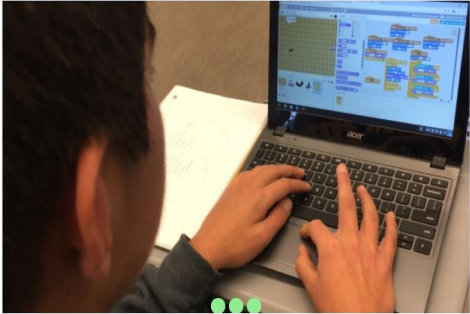
Login/register page

Login/Register

Console   Realtime Chat   Contact us

Sr. no.	Topic	Problem	Sr. no.	Topic	Problem
1	Array	Reverse the array	16.	LinkedList	Reverse a Linked List in group of Given Size.
2.	Array	Find the maximum and minimum	17.	LinkedList	Remove Duplicates in a sorted Linked List.
3.	Array	Find the "Kth" max and min element of an array	18.	LinkedList	Merge Sort For Linked lists.
4.	Array	Kadane's Algo	19.	LinkedList	Deletion from a Circular Linked List.

Main Page

Contact

General

For general & contest-related queries

help@.com open_in_new

To report contest plagiarisms & unethical practices

plagiarism@.com open_in_new

Colleges

Host-Your-Contest queries

contests@.com open_in_new

College-related general queries
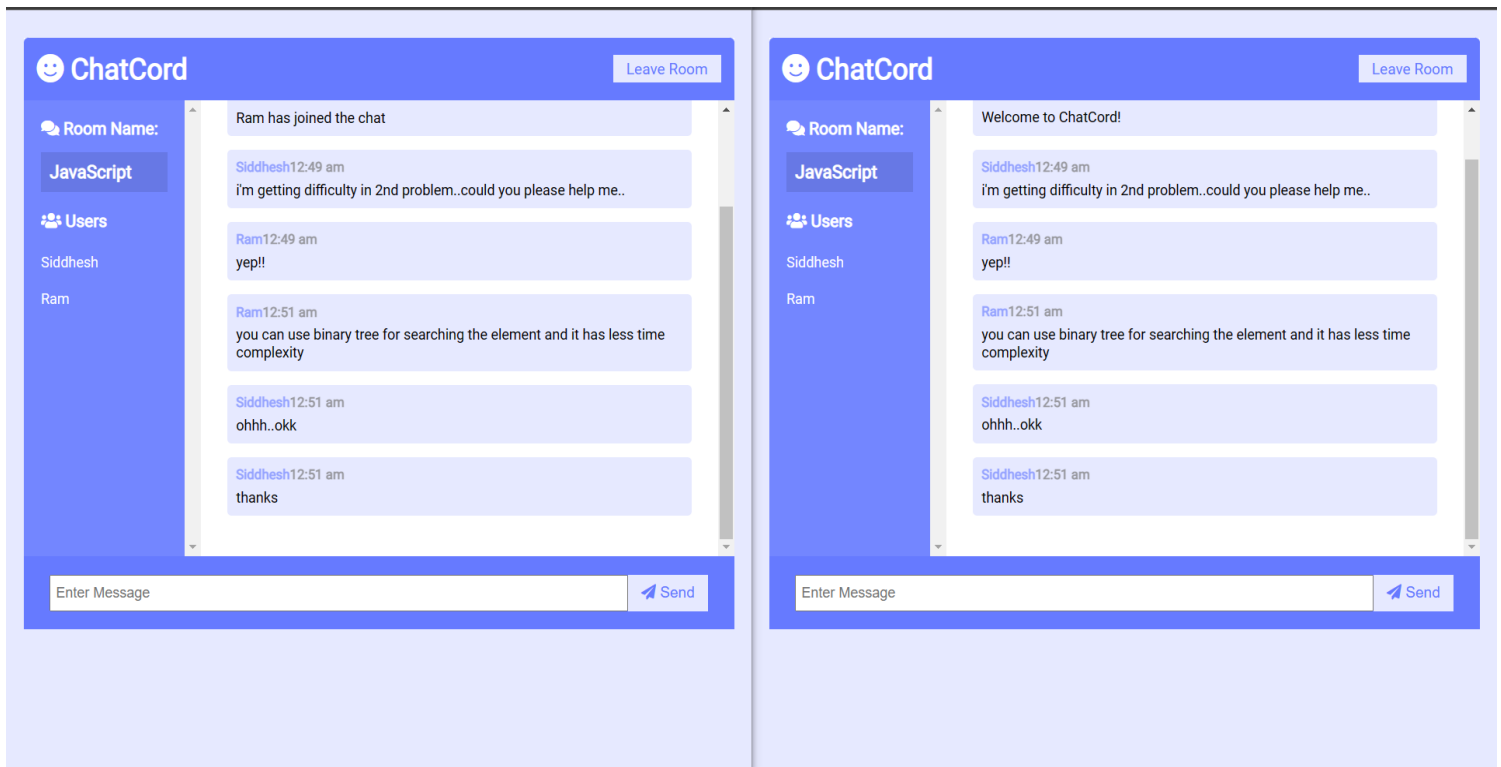
colleges@.com open_in_new

Technical

For reporting critical security bugs

bugs@.com open_in_new

For API related queries

Contact page

Chatting Web App

V. CONCLUSION

It can be concluded that:

1. The chat application build with node.js , socket.io and express is running very fast in a real time.
2. The main page is very interactive and consists of coding problems from different topics.

VI. FUTURE SCOPE

1. Dashboard for student and companies can be created for hiring purpose through contest.
2. Challenging coding problems can be made possible through the website.

VII. REFERENCES

[1] "*Design and Implementation of Web-Based Real-Time Chat Interfacing Server*" published in 2016 by "Diotra Henriyan"; "Devie Pratama Subiyanti"; "Rizki Fauzian".

[2] "*The Research on Integrated Authentication Using Passwordless Authentication Method*" published in 2017 by "Michitom o Morii, Yosuke Seki".

[3]" *HTML Educational Node.js System (HENS) An applied system for web development*" published in 2015 by "Brian Carter".