Rosary College of Commerce & Arts

Navelim, Goa

Department of Computer Applications

Room-based Chat Website

WEB TECHNOLOGY LABORATORY

MINI PROJECT DOCUMENTATION

2020-2021

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Class: TYBCA

Div.: B

Submission Date: 26TH NOV 2020

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SYSTEM ANALYSIS

Introduction of the project

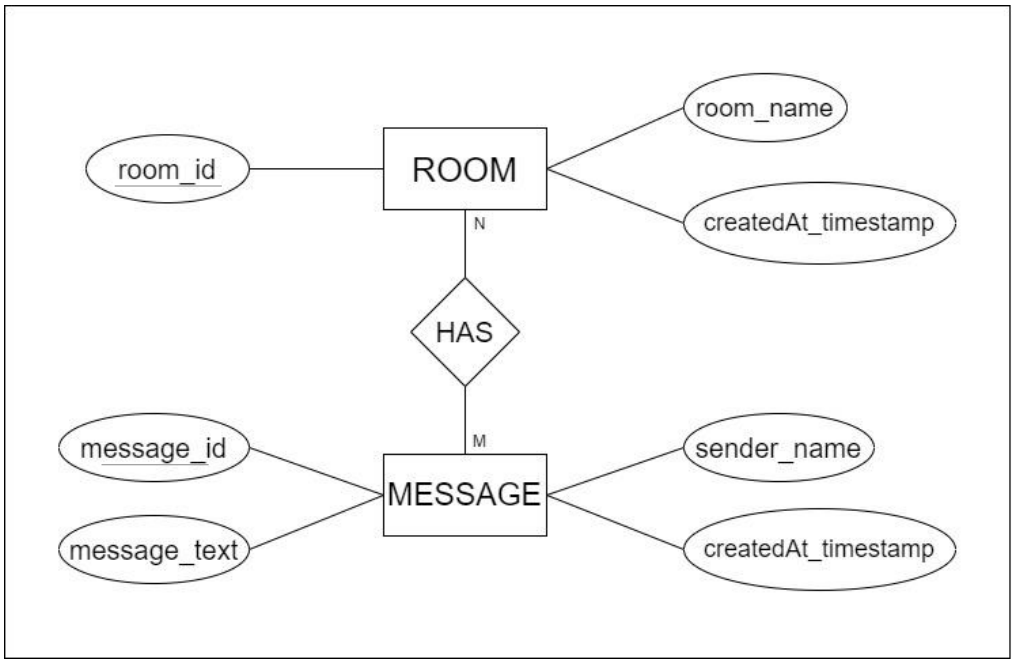
A Room-based Chat website. It includes public rooms where different people can chat, have discussions about a common interest or a single a topic.

Features of proposed system

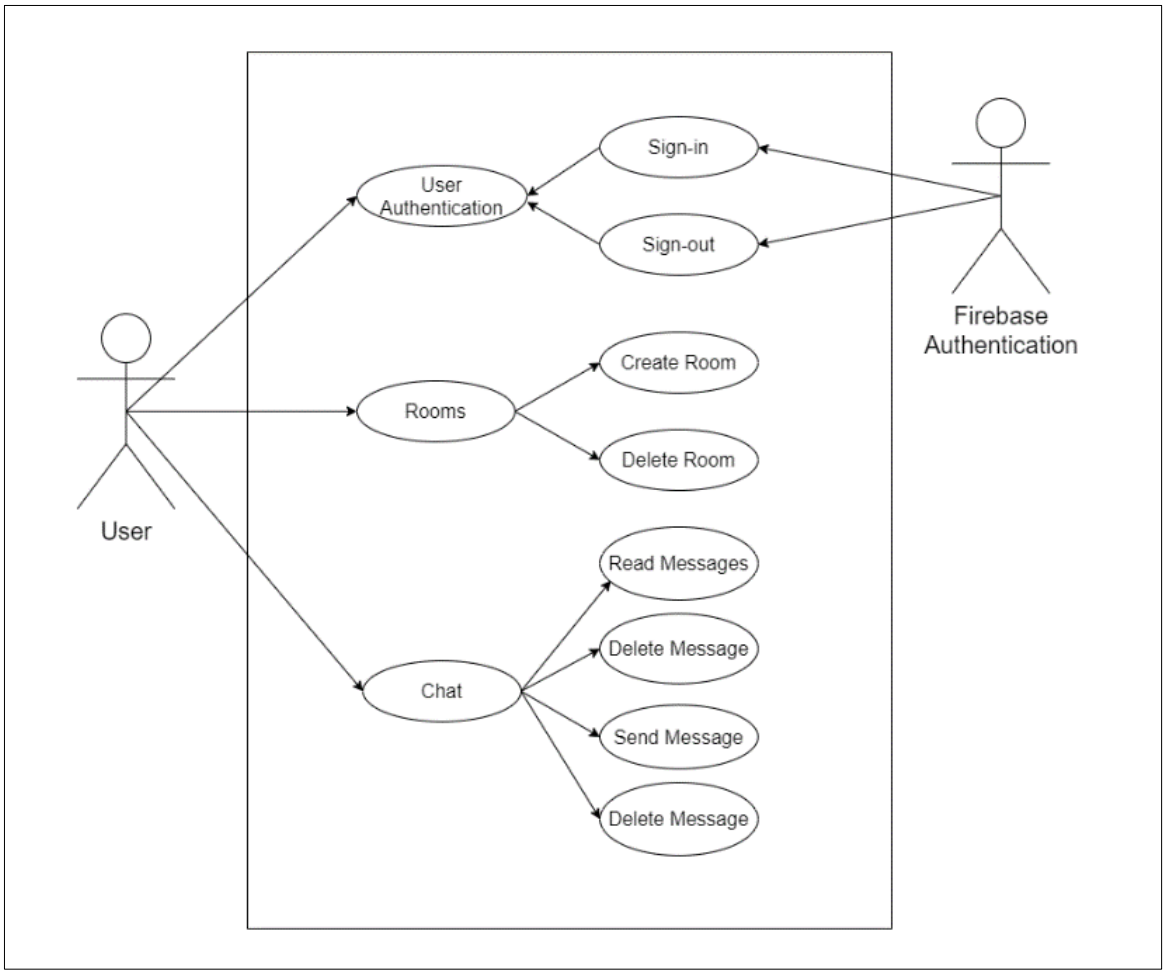
- Creation of rooms.
- Deletion of rooms.
- Sending real-time text messages in the rooms.
- Deletion of sent messages.
- Search for Room
- Sign in With Google.
- Responsive for mobile devices.

SYSTEM DESIGN

- **ERD**



- **Use Case Diagram**



SYSTEM IMPLEMENTATION

- **Frontend technologies**
    - **ReactJS**: It is an open-source, front end, JavaScript library for building user interfaces or UI components. It is maintained by Facebook and a community of individual developers and companies
    - **JSX**: It stands for JavaScript XML. It allows us to write HTML elements in JavaScript and place them in the DOM without any createElement() and/or appendChild() methods.
    - **React Router**: It is a tool that allows to handle client-side routing for single-page applications.
    - **JavaScript**: It is a frontend programming language used most popularly in the web.
    - **CSS**: Cascading Style Sheets is a style sheet language used for describing the presentation of an HTML document.
    - **Font Awesome**: It is an icon toolkit based on CSS and Less.

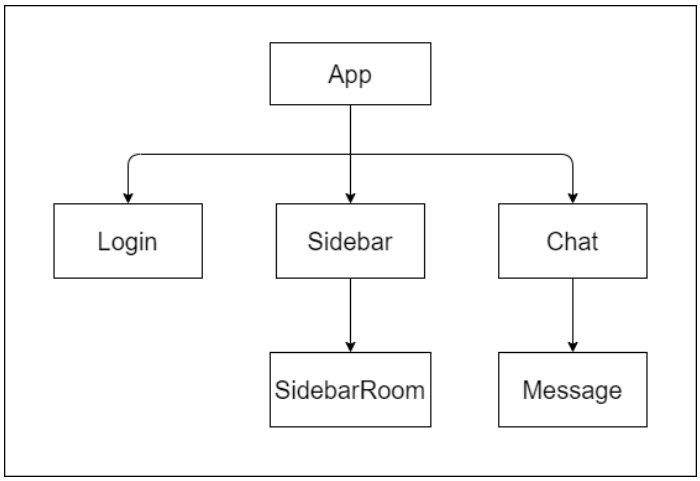
- **Backend technologies**

  Firebase: It is a platform developed and maintained by Google. From it, the following three tools have been used:

    - **Cloud Firestore**: It is a NoSQL document database that lets you easily store, sync, and query data for your mobile and web apps - at global scale.
    - **Firebase Authentication**: It supports authentication using passwords, phone numbers, popular identity providers like Google, Facebook, Apple, Twitter, and more.
    - **Firebase Hosting**: It allows deployment of single-page web apps, mobile app landing pages, or PWAs without all the hassle.

SYSTEM TESTING

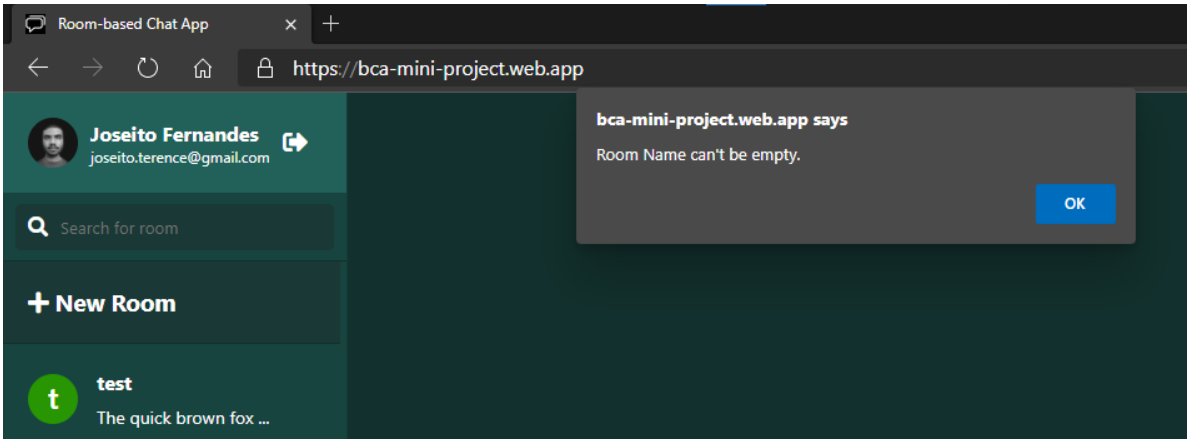
- **Unit testing:**
  - All major units are tested individually, first using dummy and then with actual data.
  - The units include Login, Sidebar, SidebarRoom, Chat, Message.
  - All units or components are stored in separate files with .js extension.
  - Following is the integration diagram of the units (all units are finally integrated into the App component): -



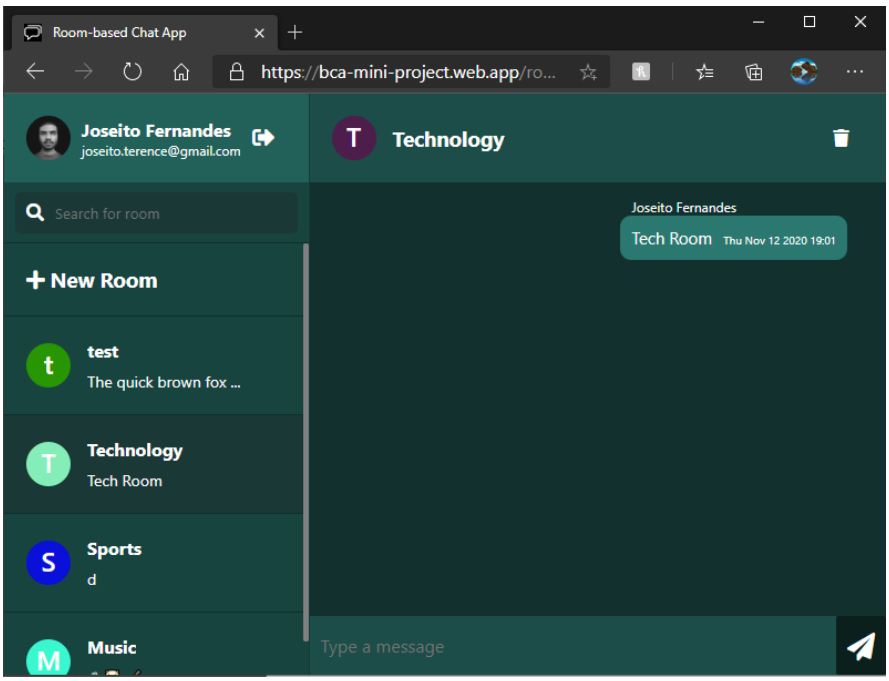
- **System testing:**
  - System testing is testing conducted on a complete integrated system to evaluate the system's compliance with its specified requirements.
  - It is performed after integration testing.
  - All functionalities of the system (given under System Analysis) have been manually tested.

- **Validations and testing screenshots**

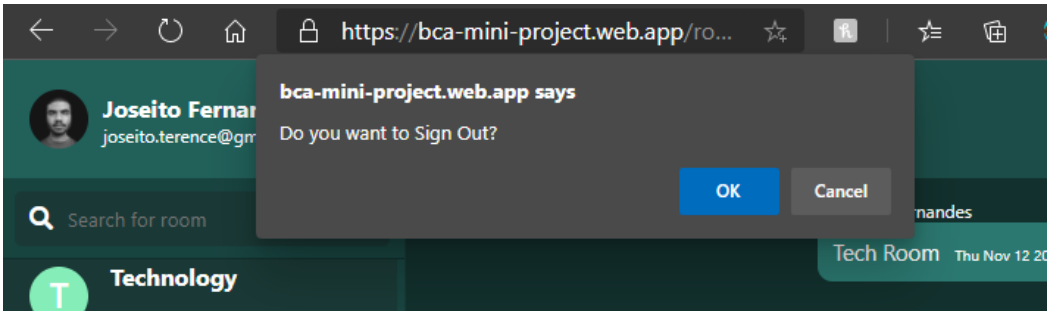
  - Creating a Room with no name displays an alert message “Room Name can’t be empty” and doesn’t proceed.

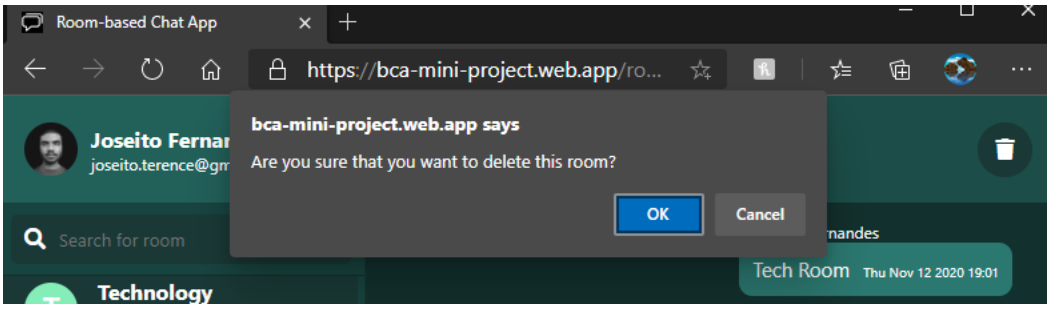


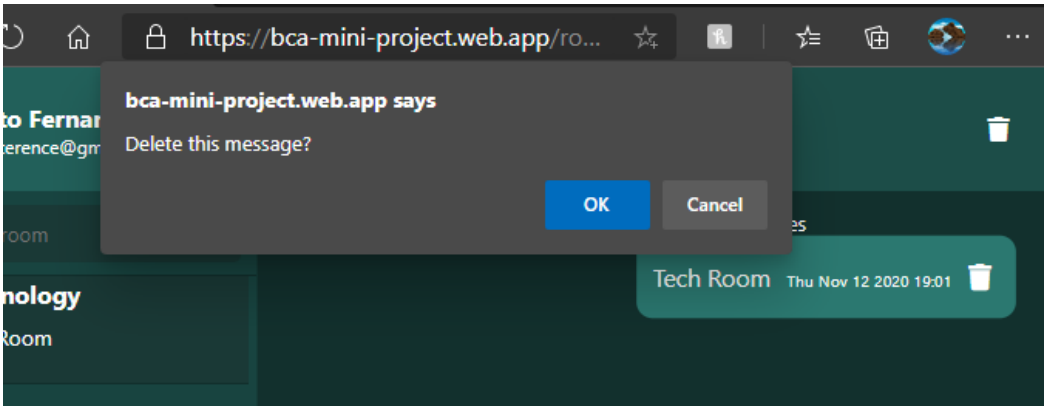
- Sending a message with no text is not allowed, i.e. the message is not to be sent when the message text box is empty.



- User's confirmation for actions like Sign Out, Delete Room and Delete Message is obtained with the display of appropriate messages.



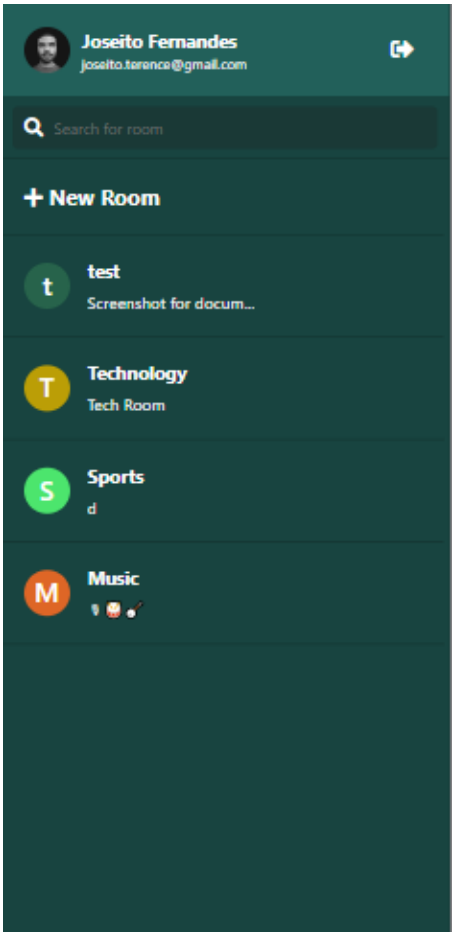


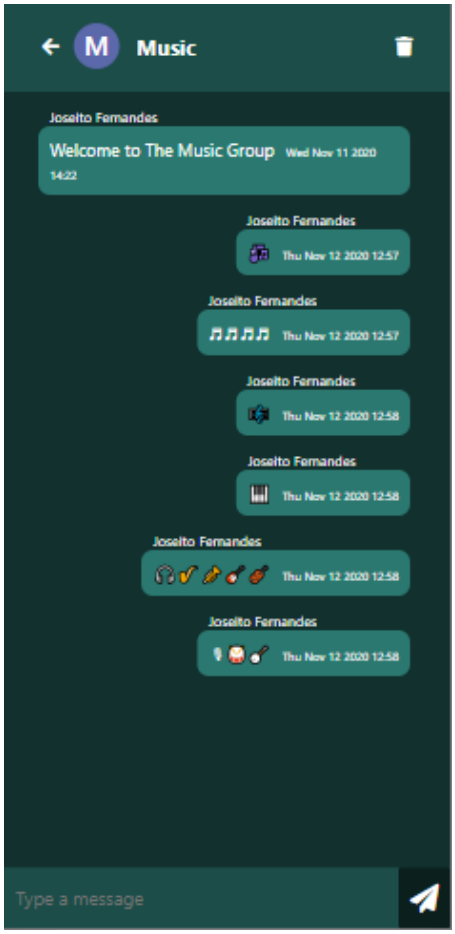


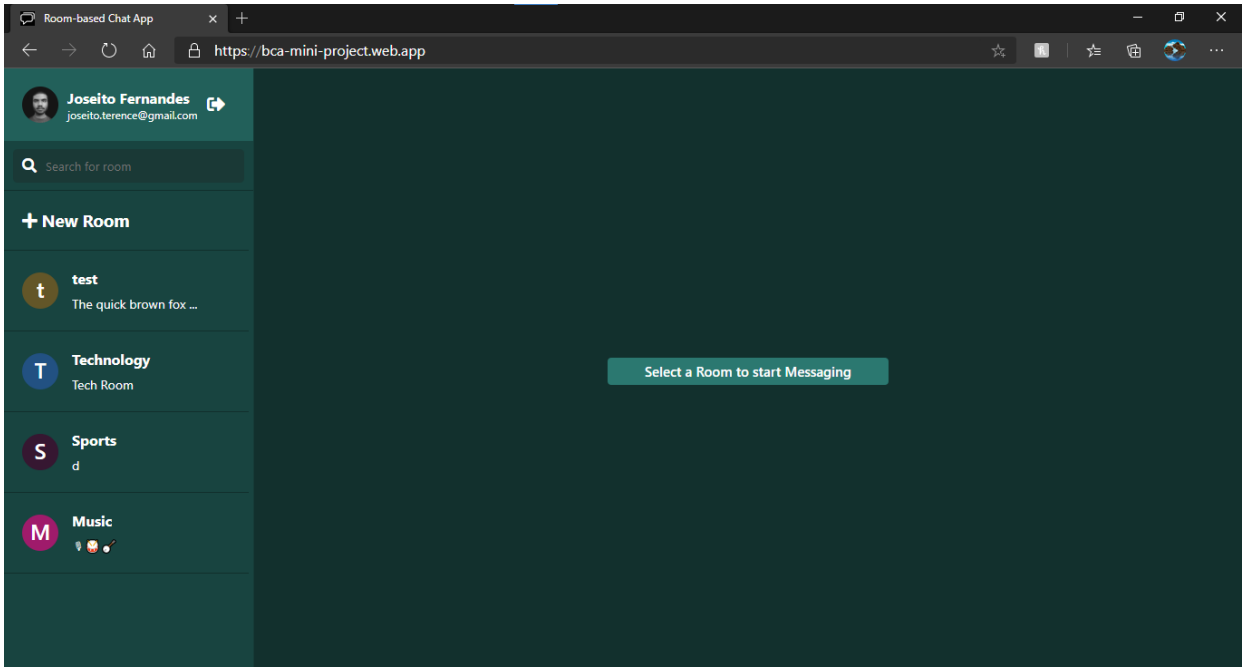
USER MANUAL

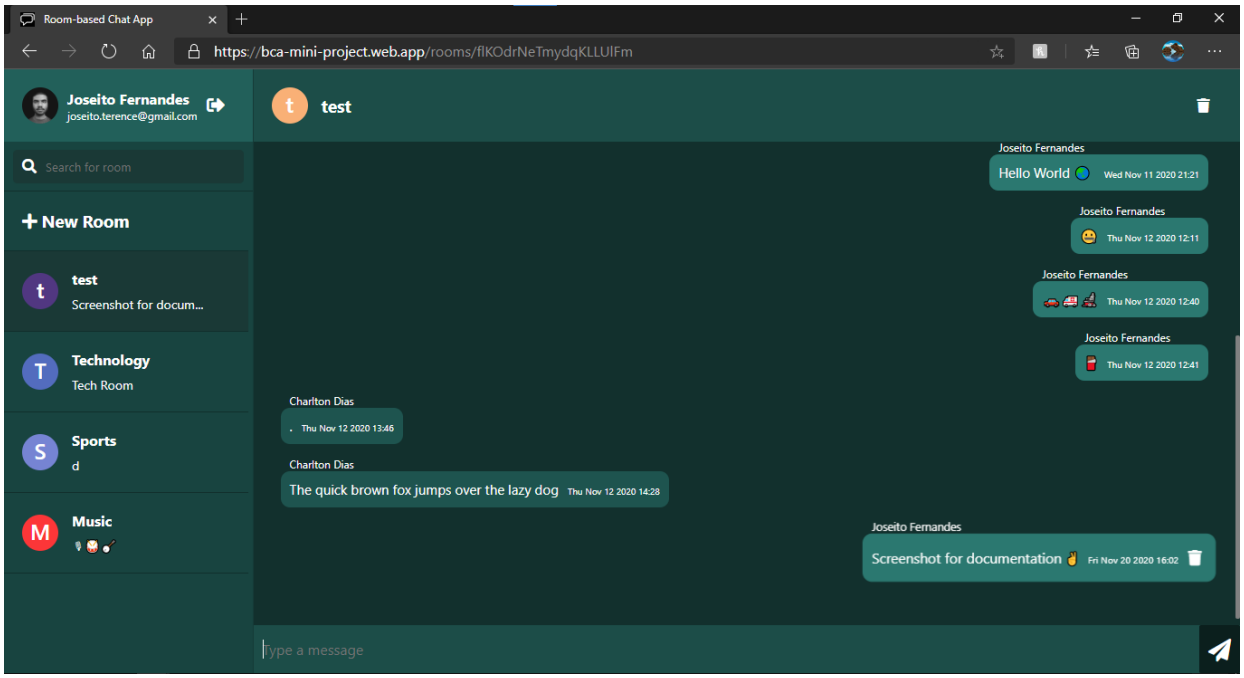
- **System requirements of your project for deployment**
  - Node.js (download from https://nodejs.org/)
  - In the command-line navigate to the project directory.
  - Run `npm init`, this command can be used to set up a new or existing npm package
  - Run `npm install`, this command pulls out all the require node modules
  - Run `npm run build`, this command will create a build folder.
  - Run `firebase login`, this command is to login to the Firebase CLI
  - Run `firebase init`, to initialize firebase for deployment i.e. Firebase Hosting.
  - And Run `firebase deploy`, to finally deploy the website to Firebase Hosting.

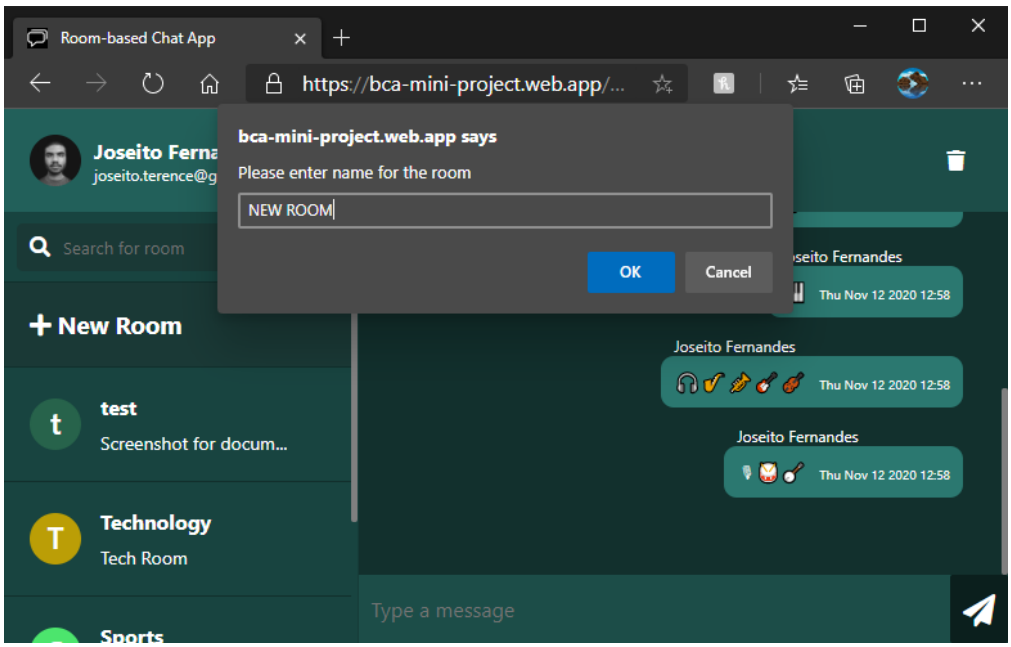
- **Screenshots of the project**






Room-based Chat App
https://bca-mini-project.web.app
Joseito Fernandes
joseito.terence@gmail.com
Search for room
+ New Room
test
The quick brown fox ...
Technology
Tech Room
Sports
d
Music
Select a Room to start Messaging


Room-based Chat App
https://bca-mini-project.web.app/rooms/flKOdrNeTmydqKLLUlFm
Joseito Fernandes
joseito.terence@gmail.com
test
Search for room
+ New Room
test
Screenshot for docum...
Technology
Tech Room
Sports
d
Music
Joseito Fernandes
Hello World Wed Nov 11 2020 21:21
Joseito Fernandes
Thu Nov 12 2020 12:11
Joseito Fernandes
Thu Nov 12 2020 12:40
Joseito Fernandes
Thu Nov 12 2020 12:41
Charlton Dias
. Thu Nov 12 2020 13:46
Charlton Dias
The quick brown fox jumps over the lazy dog Thu Nov 12 2020 14:28
Joseito Fernandes
Screenshot for documentation Fri Nov 20 2020 16:02
Type a message


Room-based Chat App
https://bca-mini-project.web.app/...
bca-mini-project.web.app says
Please enter name for the room
NEW ROOM
OK
Cancel
Search for room
+ New Room
test
Screenshot for docum...
Technology
Tech Room
Joseito Fernandes
Thu Nov 12 2020 12:58
Joseito Fernandes
Thu Nov 12 2020 12:58
Joseito Fernandes
Thu Nov 12 2020 12:58
Type a message

FUTURE ENHANCEMENTS

- Ability to make rooms private.
- Admin-based control for the rooms.
- Typing on a new line in the message textbox.
- Features to share multimedia content and other documents.

CONCLUSIONS

Room-based Chat is an application developed as a project for Web Technology Laboratory.

The website has been built mainly with React and Firebase. The nature and features of both React and Firebase make is easy to integrate and use the two tools in harmony. Cloud Firestore being a real-time database is a great option for building a chat application, since changes in the database quickly reflect in all real-time listeners.

Deployed/Hosted at https://bca-mini-project.web.app/

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https://firebase.google.com/docs/firestore/query-data/order-limit-data

https://firebase.google.com/docs/auth/web/google-signin

https://reactrouter.com/web/guides/quick-start

GANTT CHART