

Chat Application

A real-time chat application built with React and Firebase that allows users to communicate in different chat rooms.

Features

- **User Authentication:** Secure login through Firebase Authentication
- **Real-time Messaging:** Instant message delivery using Firebase Firestore
- **Chat Rooms:** Support for multiple chat rooms with room creation functionality
- **Responsive Design:** Works on desktop and mobile devices

Technology Stack

- **Frontend Framework:** React 18
- **Build Tool:** Vite
- **Routing:** React Router v6
- **Authentication:** Firebase v10
- **Database:** Firebase Firestore
- **UI Components:** React Bootstrap v2
- **CSS Utilities:** Tailwind CSS v3
- **Form Components:** React Select v5
- **Firebase Hooks:** React Firebase Hooks v5

Project Structure

The application consists of the following main components:

- **App.js:** Main component that handles routing and authentication state
- **Welcome.jsx:** Landing page for unauthenticated users
- **Room.jsx:** Container for the chat room experience
- **ChatBox.jsx:** Displays messages and handles message loading
- **Message.jsx:** Individual message display component
- **SendMessage.jsx:** Form for sending new messages
- **Navigation.jsx:** Navigation component for the application
- **RoomCreation.jsx:** Component for creating new chat rooms
- **RoomsList.jsx:** Component for displaying available chat rooms

Getting Started

Prerequisites

- Node.js (v14 or higher)
- npm or yarn

Installation

1. Clone the repository

 Copy

```
git clone https://github.com/yourusername/chat-application.git
cd chat-application
```

2. Install dependencies

 Copy

```
npm install
```

3. Create a `.env` file in the root directory with your Firebase configuration

 Copy

```
VITE_FIREBASE_API_KEY=your-api-key
VITE_FIREBASE_AUTH_DOMAIN=your-auth-domain
VITE_FIREBASE_PROJECT_ID=your-project-id
VITE_FIREBASE_STORAGE_BUCKET=your-storage-bucket
VITE_FIREBASE_MESSAGING_SENDER_ID=your-messaging-sender-id
VITE_FIREBASE_APP_ID=your-app-id
```

4. Start the development server

 Copy

```
npm run dev
```

5. Build for production

 Copy

```
npm run build
```

6. Preview production build

 Copy

```
npm run preview
```

Usage

1. **Sign In:** Use the authentication method on the Welcome page
2. **Create a Room:** Use the RoomCreation component to create a new chat room
3. **Join a Room:** Select from the available rooms in the RoomsList
4. **Send Messages:** Type your message in the input field and press send
5. **View Messages:** See real-time updates of messages in the current room
6. **Navigate:** Use the Navigation component to move between different sections of the app

Firestore Setup

1. Create a new Firebase project at [Firebase Console](#)
2. Enable Authentication (Email/Password, Google, etc.)
3. Create a Firestore database with the following structure:

 Copy

```
- rooms (collection)
  - roomId (document)
    - messages (collection)
      - messageId (document)
        - text: string
        - createdAt: timestamp
        - uid: string
        - name: string
        - avatar: string
```

Development

This project uses several development tools:

- **Vite:** Fast build tool and development server
- **ESLint:** For code linting and quality control
- **Tailwind CSS:** For utility-first CSS styling
- **PostCSS:** For CSS processing
- **Autoprefixer:** For adding vendor prefixes to CSS

License

MIT

Contributing

Contributions are welcome! Please feel free to submit a Pull Request.