CS4530 Final Project: “Proximity Quick Chat”

Group 2O: Nik D’Mello, Bill Funcheon, Brendan King, Zach Wolfe

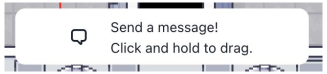
Live Site Link: cs4530-final-project-2o.netlify.app | Source Code: https://github.com/neu-cs4530-s22/team-project-group-2o

Our Feature: Proximity Quick Chat

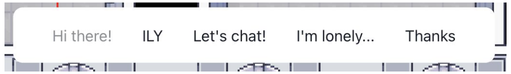
While exploring the world of Covey.Town, we were left with the question: how can players interact with each other in a quick and easy way, without relying on a full-fledged video call? Our feature addresses this with proximity quick chat.

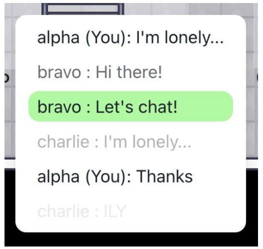
Using our new message select menu, players can select from a list of short predefined messages to broadcast to nearby players. Everyone can see your message, but the farther away you get from the sender, the more transparent the message becomes. And if you’re right next to the sender, their message will render in a green box, signifying that they’re talking directly to you.

This way, players are still aware of the conversations happening around them, but only the ones relevant to them are emphasized. All messages are stored in our custom database.



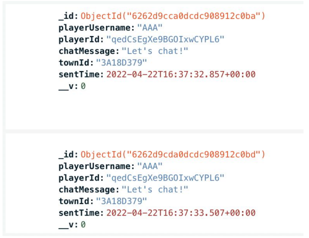
Hover over the message-select box to send a message, and click and drag it wherever you want.





alpha (You): I'm lonely...
bravo : Hi there!
bravo : Let's chat!
charlie : I'm lonely...
alpha (You): Thanks
charlie : ILY

A sample interaction between three players. Bravo starts far away from Alpha, and moves closer until they are right next to Alpha. Charlie moves farther and farther away from Alpha.



```
_id: ObjectId("6262d9cca0dcdc908912c0ba")
playerUsername: "AAA"
playerId: "qedCsEgXe9BGOIxwCYPL6"
chatMessage: "Let's chat!"
townId: "3A18D379"
sentTime: 2022-04-22T16:37:32.857+00:00
__v: 0
```

```
_id: ObjectId("6262d9cda0dcdc908912c0bd")
playerUsername: "AAA"
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chatMessage: "Let's chat!"
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sentTime: 2022-04-22T16:37:33.507+00:00
__v: 0
```

Example Chat Records stored in the database.

Technology Stack and Design

To implement our feature, we use the existing socket-io system to communicate between the backend and frontend parts of the codebase. ProximityChatMessage events are sent to the backend from our MessageSelector React component, where they are pushed to the database. Then, the backend emits a ProximityMessageReceived event, which is picked up by our MessageDisplay React component. This way, database logic is confined to the backend, and the socket event system ensures that any component anywhere in the stack can access Message events, if necessary.

The MessageSelector and MessageDisplay frontend components are custom elements that rely on React hooks and socket events to keep their contents up-to-date. Their logic is entirely separate from the Phaser.js elements, and acts as an overlay on top of the WorldMap component.

With our feature, when a town is created, it is connected to a separately hosted MongoDB database using MongooseJS. Upon receiving a ProximityChatMessage event, in addition to sending out a ProximityChatMessageReceived event to its listeners, it creates a database entry for the respective proximity chat message containing the content of the message, as well as metadata about the message.

Future Work

Our feature currently only supports short, predefined, textual messages in order to support a lightweight interaction system that doesn’t require typing. In the future, we may want to merge this feature with the fully-formed text chat that already exists by adding proximity features to textual messages, or we may want to replace predefined textual messages with emojis/reactions entirely. In this way, we can hopefully solve the functionality overlap between these two features.

While our feature successfully stores message logs in a database for system administrators, we have not provided a user interface where they can interact with these records and moderate CoveyTown with them. To continue the development of this feature, we would undertake the development of a robust, feature-rich system administration and moderation UI to ensure CoveyTown is an appropriate and respectful environment for all.