

Final Project Report

The development process my MERN stack instant messaging web-application has been filled with numerous challenges throughout its development life cycle. The challenges were even larger than expected considering I decided to full stack the development of this application. I have also implemented many additional features to improve the quality of the application. Users can set a bio, their first and last names, and add a profile picture. Users can individually message their friends or create group chats. Users can send images and unsend messages. Users also receive read receipts, and live typing indicators for when other users are writing messages. I also have other features like notification sounds that play whenever a user receives a message in a DM or in a group chat. Notifications are not just limited to sounds but also populate the banner of the webpage and in the chat application itself showing a user how many unread messages they have and where the unread messages are located.

All of these features had their development challenges. But I had great trouble specifically trying to implement the notifications. Getting them to show up on the tab was challenging and so was getting them clearing properly when a message was viewed. Luckily this tied in well with the read receipts feature, which I had already implemented by this point.

I also had trouble getting the group chats to function, specifically with the live indicators. As they had to show up for everyone currently viewing the group chat which added much more complexity than their implementation in DMs. In addition to this, getting group chats to function at all was also troubling and required lots of troubleshooting.

And lastly, getting to test to work properly was very challenging. I always felt like I could keep writing more and more tests for Jest. Also, when I changed something, numerous tests would fail causing me to enter into what felt like a never-ending rabbit hole of debugging. In addition, I also set out to implement feature testing on top of unit testing. I chose to do this by using Cypress, this was very, very hard. I got it to work thus ensuring that the basic, core features operate properly. But Cypress and Jest together easily took up most of my development time invested in this project.

In conclusion, this project was made much harder by my decision to work on it as a full stack application and my other poor decision of adding way too many features I thought sounded cool. Overall, I am happy with the final product as it has many utilities and works as expected.