SW Engineering CSC667 Section 01 Spring 2019

Final Project Summary

Team: AspiringDEV

Project: DEVchat

Team Members:

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Nour:	Back End Lead	ndyoussfi@gmail.com
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Saad	Database Master	saadbouayad94@gmail.com

Version History:

5/21/2019: Version v.01

Content and Structure

1. Introduction:

The aim of our project was to successfully develop the DEVchat platform, our unique take on a real-time chat room. As computer science seniors, we are passionate about software development as well as problem-solving. This project served as a way for us to gain experience working on a mid-sized complex application, organizing teamwork, and exploring the use of all the technologies and tools we've been exposed to in this class.

2. Technologies Used:

Our Chat app uses Express and Axios to handle server requests, a browser client built in React, and managed state with Redux and Redux-Thunk. Real-time communication is handled through WebSockets paired with the pub/sub functionality of Redis. To improve modularity we used Microservice architecture to decomposes our application into individual services, and these are managed by PM2. Lastly we used mongoDB as our primary storage. In addition to our core technologies many tools helped tremendously in the development process. Redux-devtools was invaluable in troubleshooting front end issues. Postman and Robo-3T were also used extensively for implementing our database logic.

2.1 Frontend:

- React
- Redux

- CSS

2.2 Backend:

- Node.JS Express
- Axios
- MongoDB
- Redis
- Websocket

3. Hardships Encountered:

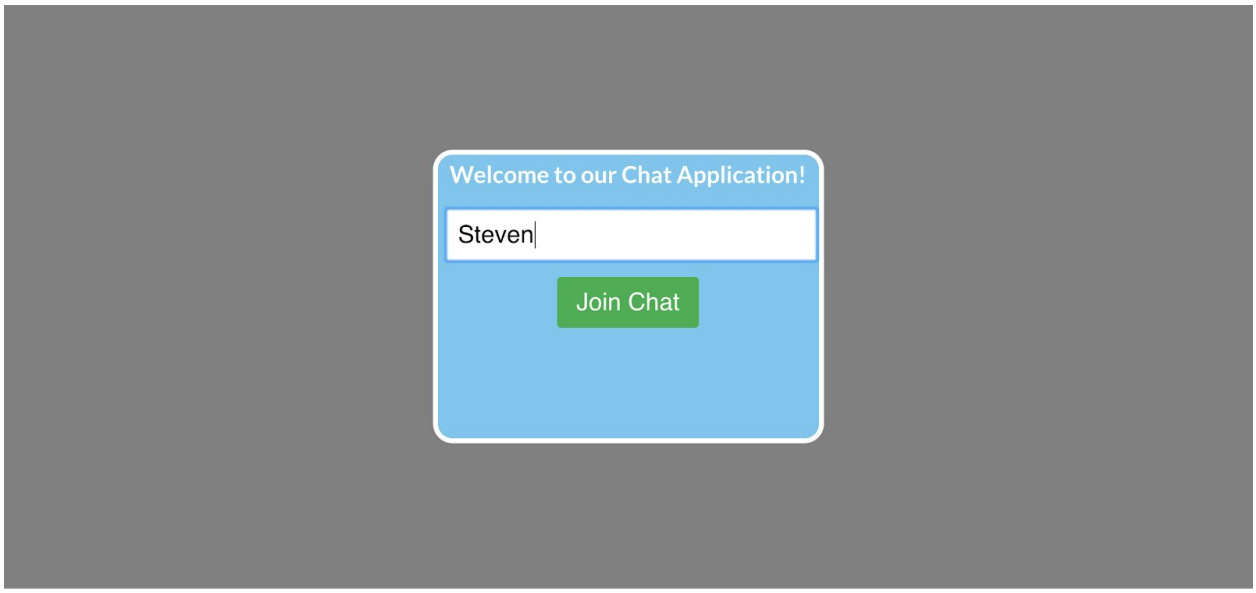
Many of the challenges we faced related to us being still in the learning phase of how to organize, communicate, and delegate as a group. Unfortunately we had no grad students, and no members with real experience dealing with significant group projects or the technologies used. To compound that we were all very busy students with wildly different schedules, and we ended up only having a couple weeks to devote from start to finish.

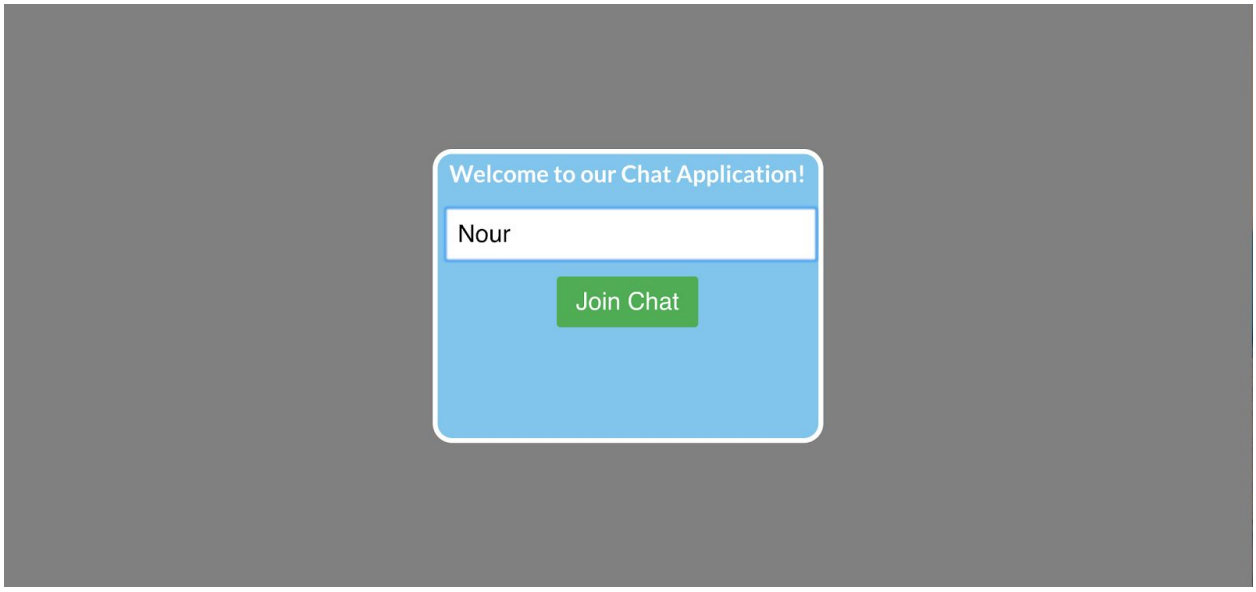
After meeting up and agreeing on a design plan and our individual roles we began the project inspired by a websocket template found by a member of our team. It was extremely elegant, well designed, but it functioned solely on websocket and would needed modification to include the technologies specified in the project requirements. We all spent a lot of time trying to take it apart, build on it, and incorporate in redis,

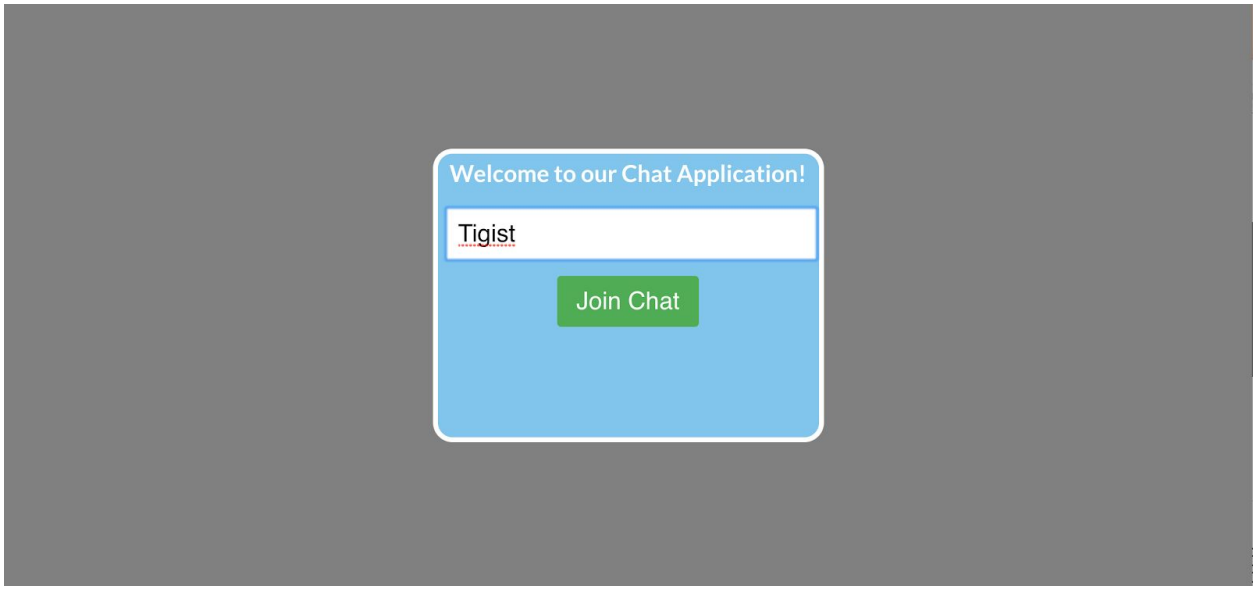
mongodb, and kafka. Ultimately the design was outside the scope of what we learned in the class, and none of us could figure out how to build or change things the way we wanted, so with just a few days left our nuclear option was to completely rebuild the backend using lab9 as inspiration. We did a redesign with the needed functionality and brought over the frontend and the login page we had already added to the first app.

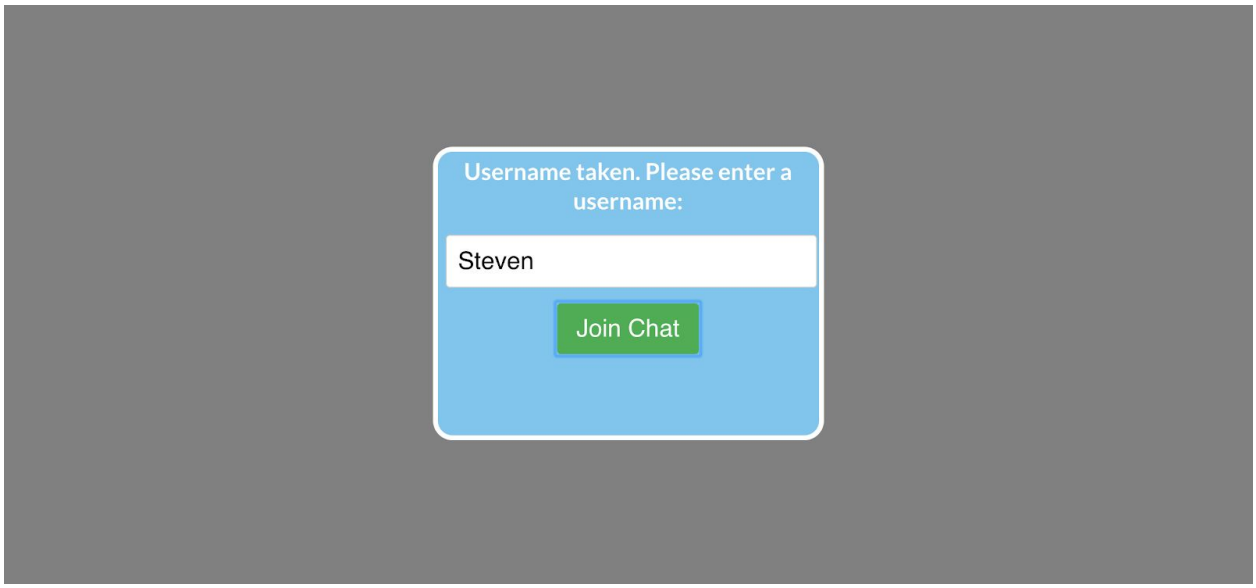
Another major challenge was deployment, there were no experienced docker users in our group, and we found that to be tricky. We created a build folder with NPM, and intended to use express to serve the static files as demonstrated in the Swarm App. After dockerizing all of our processes into images and pushing those to dockerhub, we are unsuccessful in getting it to work when deployed by docker swarm.

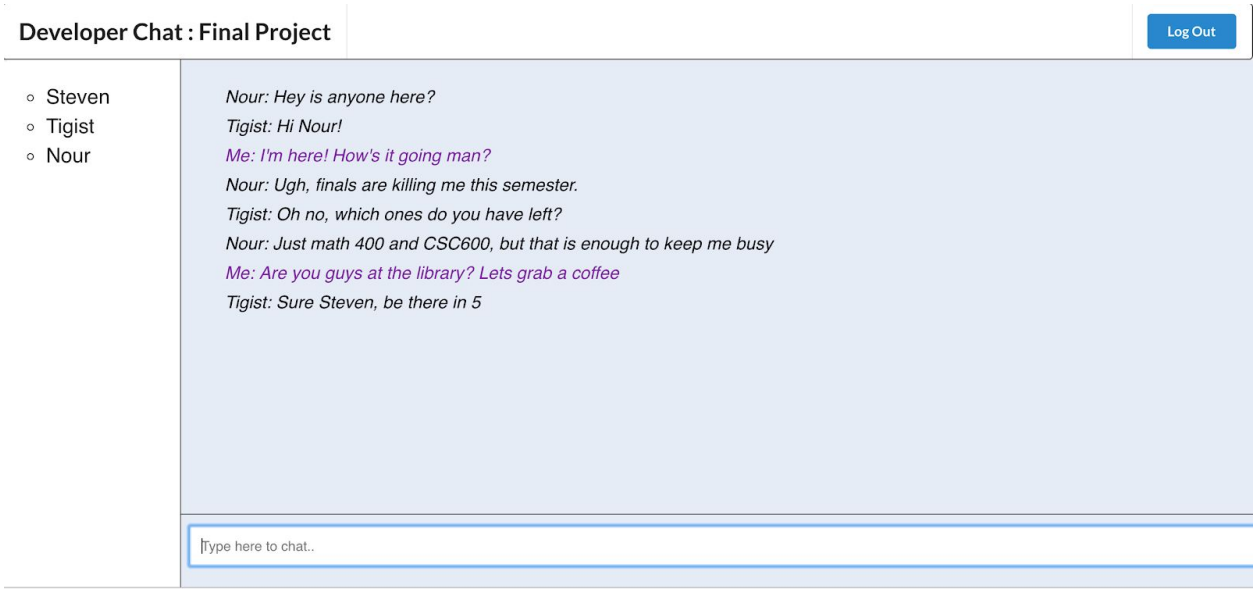
4. UI screenshots:

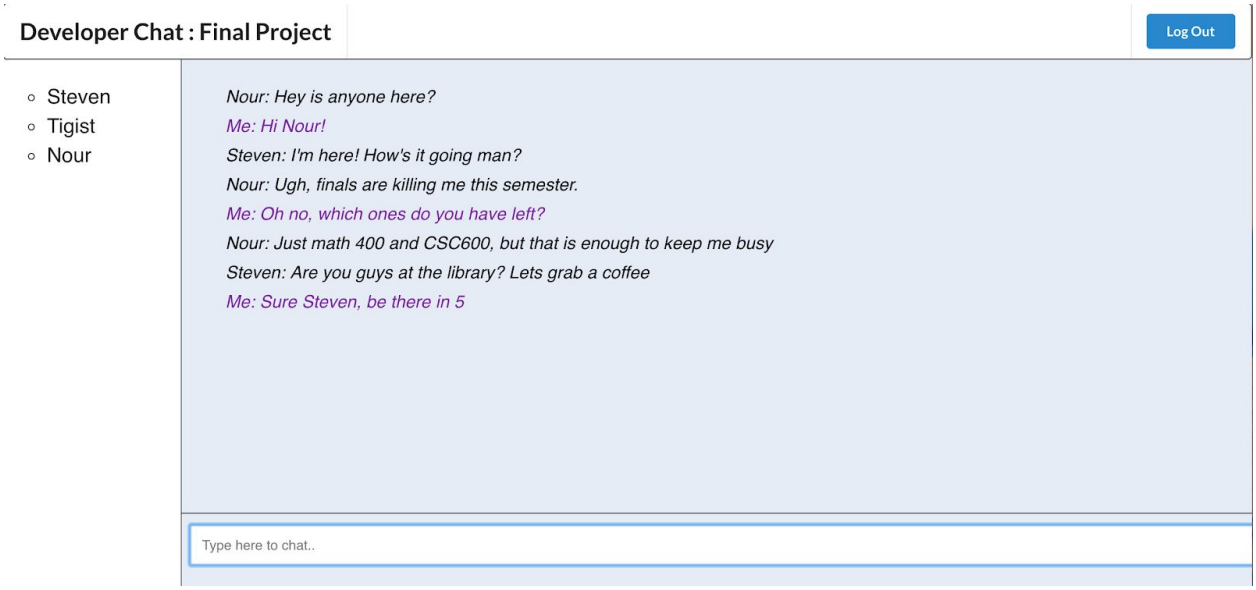





Welcome to our Chat Application!
Tigist
Join Chat


Username taken. Please enter a username:
Steven
Join Chat


Developer Chat : Final Project
Log Out
Steven
Tigist
Nour
Nour: Hey is anyone here?
Tigist: Hi Nour!
Me: I'm here! How's it going man?
Nour: Ugh, finals are killing me this semester.
Tigist: Oh no, which ones do you have left?
Nour: Just math 400 and CSC600, but that is enough to keep me busy
Me: Are you guys at the library? Lets grab a coffee
Tigist: Sure Steven, be there in 5
Type here to chat..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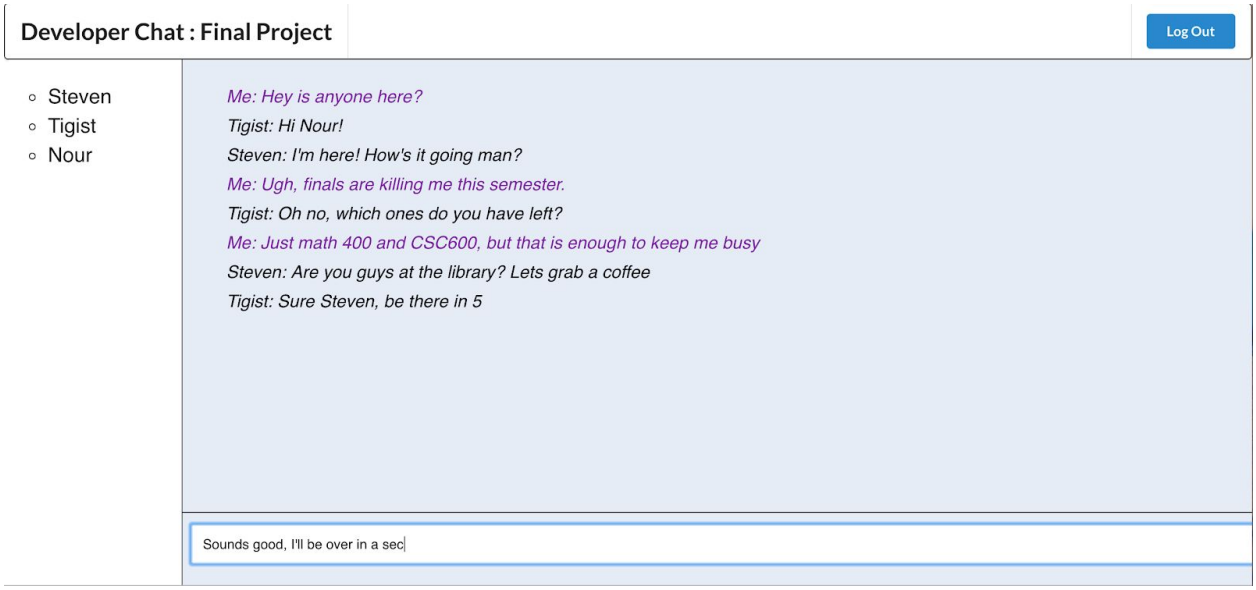

5. Summary

Ultimately this was a challenging assignment that pushed us to learn more about the tools involved, time management, file management, and team communication. Unfortunately we ran out of time before we can fully deploy it, but we certainly intend to keep trying after this is submitted. We found this to be a valuable experience and learned a lot in the process.