

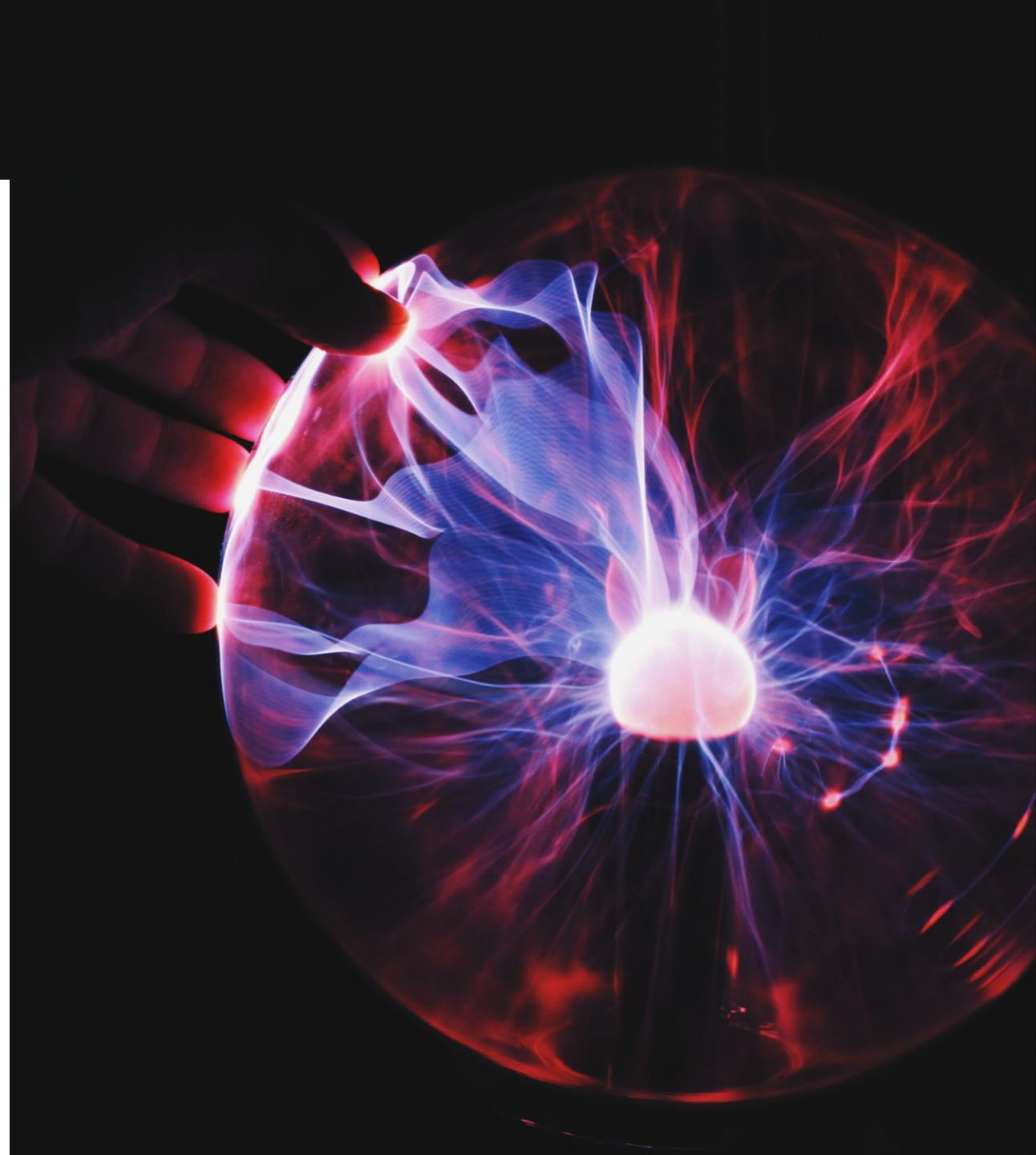


PROJECT REPORT

TEAM ILLUMINATE

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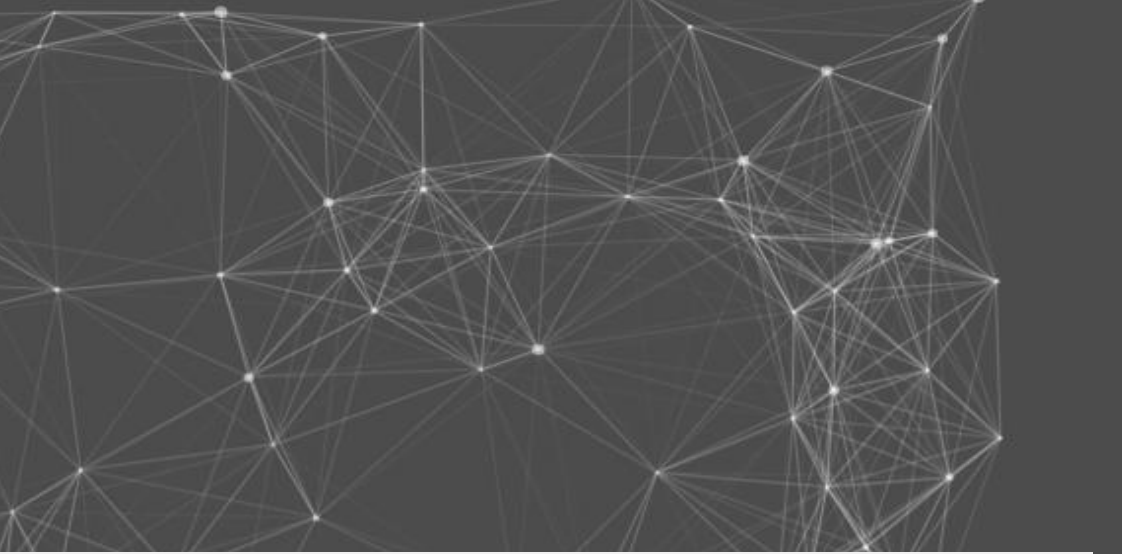
Najim Islam





The challenge

An introduction




"How might we better prepare all learners for the needs of tomorrow by reimagining higher education?"



When we first looked at the list of challenges to pick from, we decided that our priority would be the challenge that has an immediate, real impact. We wanted to create real change, while also pushing our technical skills beyond their current limits. We also wanted something that hits close to home, something we can see affecting ourselves and the people around us.

Even though all the challenges were important, we had to prioritize what would be the best use of our skills, what relates to us personally enough that we can meaningfully contribute to and give that personal touch.



We had many discussions and debates about the topics and tried to visualize us doing the rest of the project with each proposed topic, we ideated the actual solutions we could think of for each topic and weighed the impact of the solution as well and both its feasibility as well as if whether it'll truly allow us to build a complex project as we practice the web technologies throughout the semester.

Finally, we found one that fulfilled our requirements and we could immediately see us doing. It was a tough decision, but the thing that we could agree on was the criteria to compare our chosen ideas against while making the decision. This particular challenge was particularly close to our hearts as we were in the position of a high school student trying to make a decision about higher education and comparing our opportunities and the impact they'll have on our future; we have both worked/are working with children as teachers, we really enjoy what we do and are personally involved in whether the youth of today have the ideal educational support and opportunities and what is the room for improvement; and finally we're currently in university, we get to live the higher education experience firsthand, the techniques, the curriculums and the support offered – personally I've also been interested in academia so that was another motivation. And thus, we decided to work on the challenge: "How might we better prepare all learners for the needs of tomorrow by reimagining higher education?".



Background

We were appalled by what we found when researching the effects of higher education compared to not pursuing any higher education at all.

What was especially jarring was the lack of guidance young people receive in making this critical, life changing decision that influences their lives for years to come. There seemed to be a consistent lack of support and encouragement, even when accounting for the difference of opportunity between developed and less developed countries. The only correlations we did find were wealth (relative to the country) and gender: while girls have historically been denied education overall, we spotted a new trend that boys were becoming less likely to enroll in higher education, both as a choice as well as due to another thing we noticed being worse performance in school. Clearly, something was wrong in the approach of education, the support systems (and lack thereof) as well as the information asymmetry in the meta sense of knowing about how 'education' is beneficial.

There seems to be a paradigm shift going on, as we move into the information age, in every single field education as an esoteric concept in itself is being unraveled and democratized. What this means is that information gained has become refined into more democratized.

In the spirit of this challenge, our responsibility was simply to ensure everyone regardless of any personal attributes benefitted equally from all this.






Interviewing, Ideation and Evaluation

Research and Planning

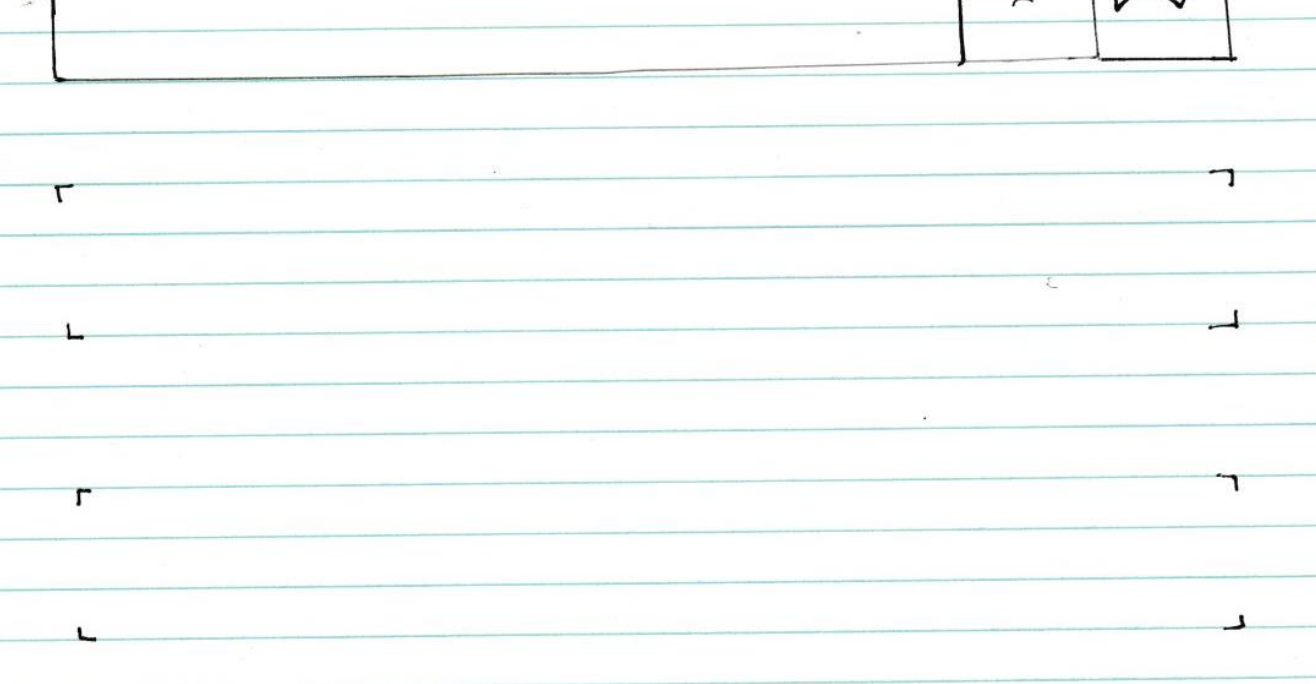
We maintained a two-pronged approach of coming up with ideas and verifying them with current and potential stakeholders, path adjusting in a self-correcting manner to ensure our propositions and plans were in sync with our continuous dealing with the relevant stakeholders and partners.

We formally interviewed two of our friends, we had Fahad a final year BSc student at the University of Melbourne, and another student from RMIT doing arts.

Fahad was particularly interesting because he had been a student at a different university before coming to Melbourne and had a comparative perspective of the education style. He seemed to have quite a few complaints and suggestions with regards to the learning experience and the support and guidance offered. As a final year student, he was also full of tips and warnings for incoming students and had a lot to talk about with young high school students as well about university life, studying and what to expect. Finally, he was going to apply for a PhD position later on after finishing his degree, and as someone interested in research and teaching he had both his ideas and curiosity to offer as well as showed that the direct perspective and experience of professors was needed, and in his own words it seemed like he would be very willing to document and report on his experiences on his journey through academia.

In our ideation process that went along with this, our very first concept was simply to bring all the stakeholders together. We evaluated this by first looking at the options currently available, we critically evaluated the features offered by popular forums, blogs, social media sites (Facebook groups, Tumblr, et cetera) and picked out what we needed in our project, what was currently missing or being done wrong as well as plans on how to bring the advantages from all of these together and create a best of all worlds solution.

We verified that all the parties, we talked casually with our friends and acquaintances who were students, teachers, parents in various different situations, industries and levels of achievement to confirm that they were both willing to contribute to our website, as ultimately we wanted it to be community driven in every way, with content as well as moderation and curation; and on the other hand there was a strong need in the market for this and it would definitely be beneficial to these parties.



A pleasant, friendly user inter

2018-il.herokuapp.com/forum



3



Comments

Mr. Kodon



Programming is Fun

4



Comments

Najim

Tips for studying

4



Comments



Saleh

Illuminate About Users

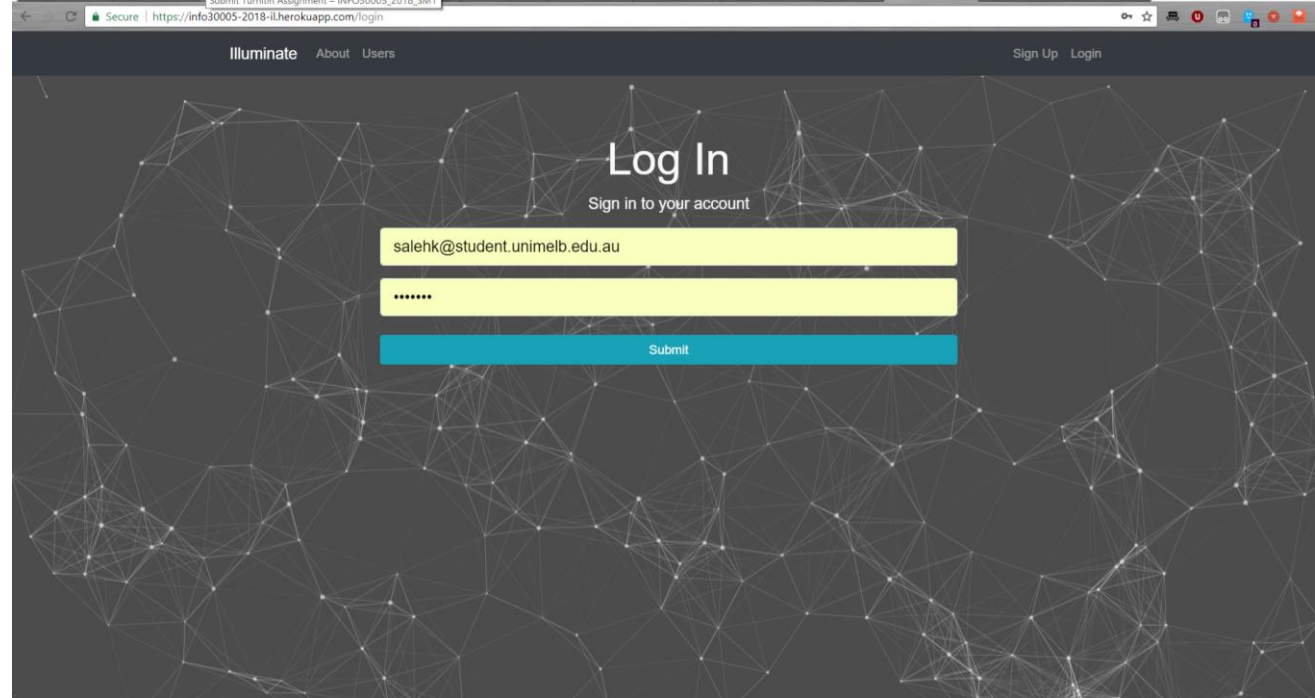
Forum Dashboard Logout

Say Something...

Create a post

Submit

A futuristic design





Development Process

The basic technologies we used that we used were express and node.js to run the server on, Heroku for hosting the app and mongoose and mongoDB for the database backend.

We needed a user authentication system, with security and the ability to author posts and maintain profiles, for that we used the following:

Concurrently	to run the server and frontend on different ports
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For authentication:

passport-jwt	to generate web token to secure RESTful endpoints without sessions.
passport	for authentication
bcryptjs	to encrypt password hashed with salt
jsonwebtoken	to securely transmit json objects

The following miscellaneous technologies were used to add functionality and make the website visually engaging.

gravatar	to generate image an email is associated with gravatar
body-parser	to parse request
validator	to validate requests

The front-end was built using the following:

create-react-app	to generate a boiler plate for front end react application
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react	for the main front end
axios	to deal with http requests
redux	to reduce states and run in different environments
jwt-decode	to decoding JWTs token
moment	to handle dates
bootstrap	for styles and to make it responsive in smaller screens

The following was used for deployment:

webpack	to minify and uglify all files when deployed on heroku
babel	to transpile es6 for old browser support

Collaboration

In addition to the above technologies, we used git (using the built-in support of the JetBrains WebStorm IDE by Saleh, and VSCode customized with extensions and addons for Najim) with a private Github repository for both version control and collaboration as well as for straightforward Heroku deployments.

We divided the workload 50-50, as we were only a two-member team. In some parts we would divide the weeks deliverable into equal amounts of works, while at other times we would have one of us do the work for a deliverable and take the lead and the other contributing in a secondary capacity and providing help, guidance and feedback, this was generally done to balance our time commitments with our other subjects, tests, personal responsibilities and assignments so that each did more work in weeks where they had more freedom, and alternated when the other was relatively more free from other work.

As a backup plan we thought we'd have the member who had expertise in a required task and was more familiar with the technologies to do it but in practice we avoided this due to the fact that we wanted to push ourselves and our skills, and learn and gain as much experience out of this project as possible. Thus, we both learned new skills and polished what we already knew, and this lead to more conscious design decisions and creative new ideas as we worked because we were outside our comfort zones.

The complete project

An example usage scenario:

A university student needs to find out what are the best study methods during SWOTVAC as finals draw near:

- i. Discovers our website
- ii. Is drawn in by the friendly, inviting interface
- iii. Makes an account
- iv. Is intrigued by the options to add more details about his/herself
- v. Decides to make a complete profile
- vi. Searches the forum and finds relevant posts with helpful comments
- vii. Decides they have a few more inspired questions
- viii. Creates a post
- ix. Receives answers
- x. Another user comes upon this post, and instead of answering gets curious about the poster and decides to investigate
- xi. This user is impressed by the student's profile
- xii. This user turns out to be a recruiter
- xiii. The student receives a graduate job offer
- xiv. The student lives happily ever after 😊



Desperate Student

Developer at Google (past)

Desperate's Bio

Desperate does not have a bio

Skill Set

5 JS *wow!*

Discussion

We strongly believe that students learn and get informed better when it's in an organic and interactive way. We also know that students do seek out casual discussion with fellow young people and enjoy sharing ideas, thoughts and ranting their complaints in a social manner.

On the other hand, advice and discussion from, as well as the opportunity to raise their issues with their seniors, people in powers and most importantly teachers, professors and supervisors is always appreciated all sides.

Our belief in the above is based on real word discussions and seeking commitment and gauging interest from interviews, meetings and online conversations and questionnaires – hence we've launched the platform that answers the challenge by letting the stakeholders interact, have a voice and share their own solutions, hurdles and journeys.

Final thoughts

We learned a lot and in the grand scale of things, not much is there we'd have done differently. Perhaps we'd have started with the final web development in the first week itself to get comfortable with the tricky parts of the technologies we used earlier, but in the end we still had a rewarding experience full of learning and problem solving and expanded our minds in many new and often unexpected ways.

We found Javascript, while familiar in syntax, to have quite a few interesting traps and quirks that were different in languages we're familiar with. We found that in a quality industry standard system a lot of time needs to be spent on authentication and building robust user interaction.

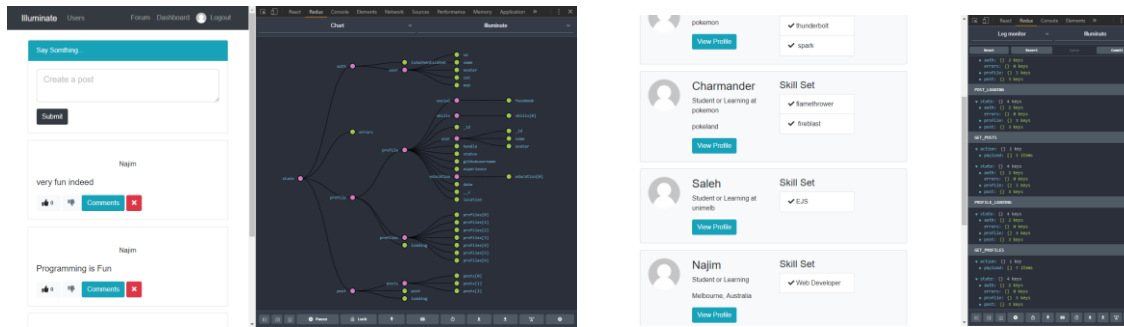
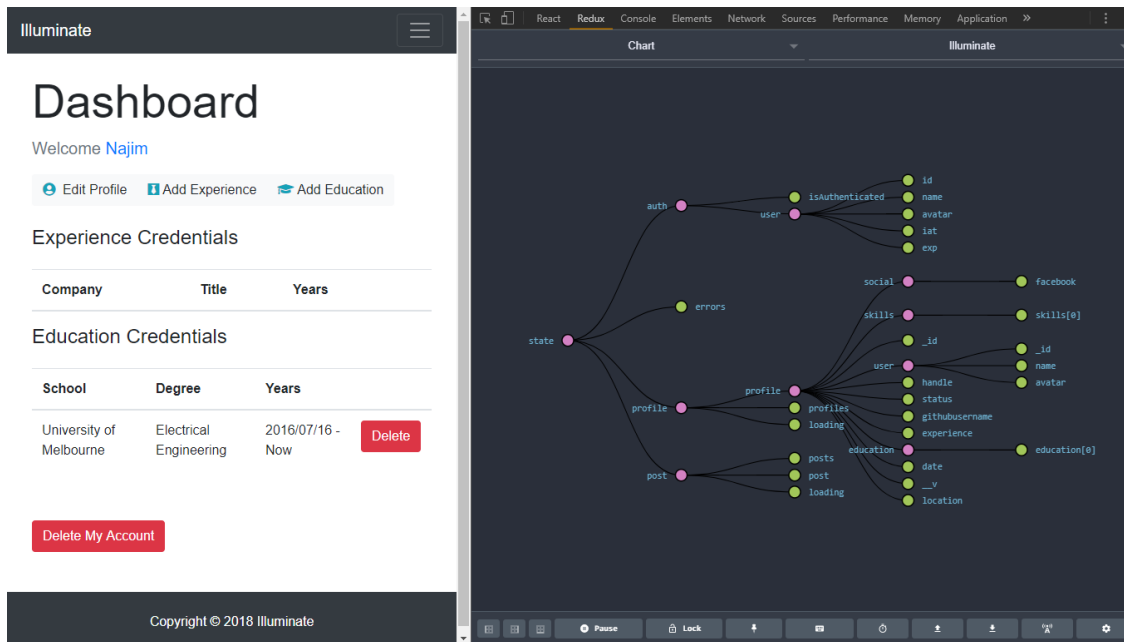


Figure 1 Using redux to debug and view the site's tree (another vital skill, web development at this level required us to do a lot of debugging to make all the features work together)



In the end of all this, we have something we can be extremely proud of, the skills that we learned are definitely going on our resumes and this project is going to have a memorable and bright spot on our developer portfolios – and will be the first of many in our path to solving challenges that make an impact on the world!

INFO30005-2018-il

INFO30005 project

[Najim Islam](#) Student ID: 797803

[Saleh Ahmed Khan](#) Student ID: 798839

Project Proposal

“How might we better prepare all learners for the needs of tomorrow by reimagining higher education?”

To run in local machine

Create the following files:

config/keys_dev.json

```
module.exports = {  
  mongoURI: 'your mongo uri',  
  secretOrKey: 'your secret or key'  
};
```

If you want to show public repos of users, set a github oauth app, then use the keys in the following file. More info [here](#).

client/src/config/keys_dev.json

```
export const GithubClientId = 'your github client id';  
export const GithubClientSecret = 'your github client secret';
```

Then use the command:

```
npm run illuminate
```

This will run the frontend on <http://localhost:3000/> and the server on <http://localhost:5000/>

To run in developer mode, install the dev dependencies and use the command:

```
npm run dev
```

To deploy in heroku

Set the following config vars with your keys:

MONGO_URI SECRET_OR_KEY GITHUB_CLIENT_ID GITHUB_CLIENT_SECRET