OTU Contactless Payment

Internal Engineering Competition
January 10, 2021

Programming Team #1
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Source of Inspiration

It all started in mid-March when the entire world was thrusted into lockdowns to help stop the spread of the coronavirus. Even though most provinces were doing all they could from a lockdown and essential travel perspective, we realized that more could be done by ordinary people to help eliminate the spread of covid-19. After some quick research we realized that paper money is one of the dirtiest items in the world. According to time.com paper money can transport a flu or virus for up to 17 days. This scary fact drove us to create a contactless payment system.

We got our inspiration from industry leaders in the financial technology and payments space. We looked to companies like PayPal, CashApp and Venmo to see how to effectively onboard and sign-up/in users, we also used these companies as a template for creating a simple and sleek interface. We took notes for our web applications functionality from companies like Visa, Mastercard and Square.

Even though our web app is inspired by industry leaders we wanted to make our system unique in 2 ways. Firstly, our system would be specifically designed for the Ontario Tech University campus. This will help introduce an avenue that helps promote and advertise OTU businesses. Secondly, we wanted our web app design to be tailored to students and staff because we realize those will be the vast majority of our customers.

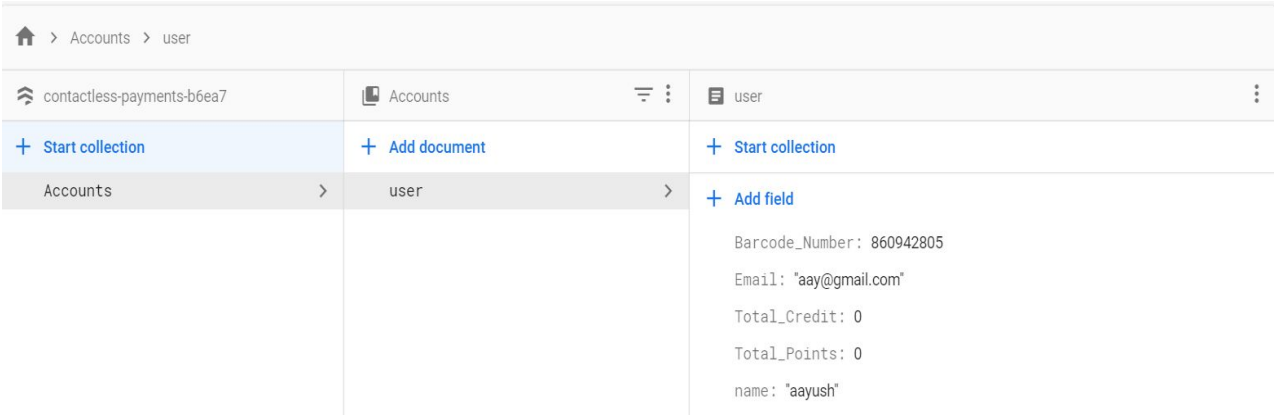
Project Goal

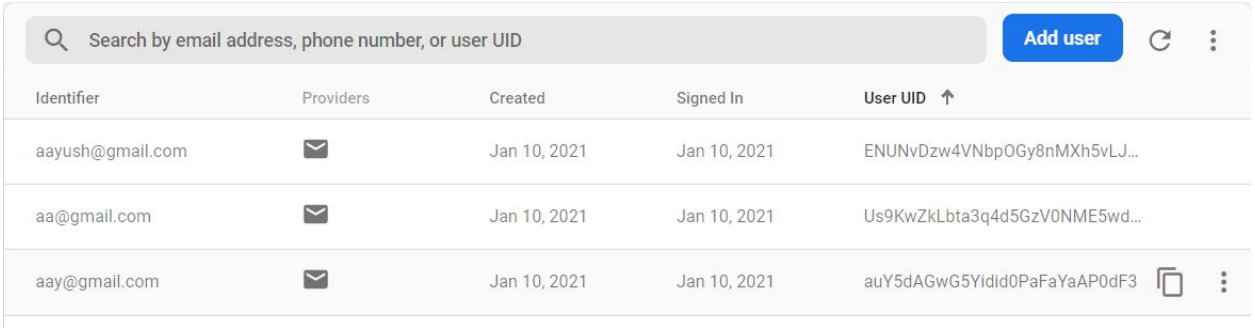
Throughout the development of our web application our goal has always been to create a widely adopted contactless payment system, specifically tailored to Ontario Tech University that helps stop the spread of germs and helps embrace Ontario Tech Businesses.

In order to achieve our goal we need to have an easy-to-use web application, that is simple and stylish. Having a straight forward web app will make it painless for people to sign-up and use, which will help foster quick adoption. This will help eliminate payment with germ soaked cash and make contactless payment fast and painless.

Web Application Design

We decided to create a web application since that would allow users to access their barcode whether they are on their mobile device, tablet, laptop, or desktop. A web app allows for the most flexibility. Using a combination of vanilla Javascript, HTML, and CSS alongside React and Firebase, our team was able to design a beautiful yet functional interface that allows the user to sign on and instantly be greeted by the information they need most. Up front and center you are met with the barcode, and underneath you can see your balances along with items you can spend your money on.





Team Dynamic

In order to have an effective/efficient team you need to make sure that all team members contribute to the project. Our group consisted of 4 team members. We divided the project work up depending on the team members strengths.

Work Breakdown

-**Cassidy:** worked on business point/reward and payment system
-**Austin:** focused on barcode generation for transaction verification
-**Aayush:** handled the login system, includes user registration and sign-in
-**Mitchell:** worked on the report and documentation
-**EVERYONE:** Presentation, Style, Overall Website Design

Even though each team member had specific responsibilities they focused on, if one team member was ever stuck or had a problem another member would step in and help.

Next Steps

We realize that our current web application isn't perfect and that we need to take steps to make it better. Our next steps include:

- Connect a working paypal/stripe api for users to upload funds into their account
- Onboard more users to help stop the spread of germs around campus
- Expand our web application to more schools in ontario
- Focus on more modularizing
- Create a store system to

References for Open Source Code

For our project we used many different open source code to help enhance our applications design as well as functionality. Below is a list of all the api's used:

- **Semantic UI:** Used to help make our web application easy-to-use, stylish and overall more aesthetically pleasing.
- **Barcode-React:** This enables us to generate a random barcode which allows OTU businesses to scan their consumers unique barcode to verify purchases
- **Firebase:** Is our database provider which allows us to store users data as well as verify users data