

## Part A

My CBO is based on a web database for a food bank. It begins with a simple home page with a button for staff to log in. Data in the database is inaccessible until a login is successful. The login is designed to only be successful if the username and password match one that is currently in a table in the mySQL database. The passwords are accessed and saved to the database as hashed strings.

Once logged in, the staff member is taken to a page with an option to search/add the staff database or search/add the customer database. Once the staff search/add button is pressed the user is then taken to a search page where they can either search for existing staff in the database by phone number (less chance of multiple staff members being displayed), or they can click another button to add a new staff member to the staff table in the database. If add is clicked, the user is routed to another page with a bunch of forms to fill out for the new staff and then an add submit button. The button adds a staff to the staff database and also adds the new staffs chosen username and password to the sign in table for the database, they can be queried together by a matching id. If a phone number is added in the search bar, the user will be shown a new page with the results of the query.

The same format is used for when a staff clicks the search/add customer button. Instead of a search only by phone number, there is a choice for searching by name in case a customer does not have a phone number in the database, or if a staff member wanted to search for every customer by a certain name.

## Part B

I chose the container-based cloud Platform as a new technology. I chose this technology because it did not require changing my already created program. I was able to use my node.js server without any changes. I also chose this platform because cloud-based technology is becoming used more and more and I wanted to learn more about how it works.

## Part C

I used Heroku to run my node.js application I had already created in Part A. Heroku uses the package.json file and the node.js code to build the application. Heroku also uses Git to deploy the node.js application, by pushing the app to Git then Heroku can access it and deploys it.

## Part D

My design and architecture is the same as Part A since Heroku does not require changing any code or language to deploy my application. Heroku is beneficial for security and encryption through http. It would also be very beneficial if I needed to actually use this web database for a business. It is cheap and easy to use to test out the beginning stages of an application.