Software Design and Engineering

Lab Document

High Level Purpose Statement:	My goal for this lab is to re-use a previous lab project (PostgreSQL lab). This project will use Express.js, a web framework that simplifies the use of Node.js. More specifically this project will use Postgres, Express.js, React.js, and Node.js.
Experimental Design:	• I will use PostgreSQL for the DB. • I will use NPM for the full stack dependencies • I will use Express.js for the web server framework • I will re-use my frontend and backend from the Postgres lab.
Resources Available:	References used using Postgres with the PERN Tech Stack: • https://gist.github.com/manuelbieh/3864088 - Batch File Implementation • https://dev.to/cwrcode/create-css-fireworks-animation-3nn7 - Firework Background animation • https://alvarotrigo.com/blog/animated-backgrounds-css/ - #12 Particles Animation • https://github.com/sambuddha92/pern-boilerplate - PERN Boilerplate
Time Estimate:	I won't have to spend much time implementing the Express.js code since it is being used for a previous lab. Time estimate to make sure everything is still working should be around 30 minutes.
Experiment Notes:	• Using NPM for adding various dependencies is very easy • Vite allows a basic template for using TSX or JSX • I like how the Connection Pool can be modified inside code in order to setup the connection to Postgres • It is very simple to make queries to the users table when it is SQL, although MongoDB in my experience is much quicker and has fewer lines of code. • It took some time to set up some npm dependencies, each time the repo was cloned, they wouldn't save. In order to fix this, I saved the dependencies to –save-dev, also I called an npm command to install any faulty dependencies that don't save. • After using the PERN boilerplate, it is pretty straight forward at implementing a login/registration system.
Results:	The project now properly runs using NPM and the PERN stack to authenticate login or registration through a React form field. NPM

	acts a lot like Maven or Gradle in this case because it is used for dependency management and run configuration. Once I configured the scripts within NPM all the user has to do to run this project is open the terminal and type “npm start”.
Consequences for the Future:	In the future, I should save some dependencies to the devDependencies so that they are not deprecated, and account for machines that do not already have NPM or NodeJS installed.