Sat, Apr 13th 2024

COMP3005 - Final Project V2

Implementation Approach for Relational Database Application

In this project, we built this application using a Server-Client architecture running on Javascript, HTML, and CSS, while utilizing Heroku to host our database on the cloud. On the server side implementation, we additionally used express, node js, and the pg library to connect our cloud-based database to the server side application to allow us to run queries and retrieve data accordingly.

Whereas a command line interface would have been limited in its ability to display retrieved results in a user-friendly way, and would have potentially been limited by the underlying operating system, we have decided to instead go with a Website as it has more potential for further expansion and more refinements in the future.

From the server side, there are many approaches used which enhance the server making it more robust and modular. Of these pathways, we note the usage of modular file serving which makes it easier to organize files and further eases the process of scalability as new files are added to these directories which are linked in the server. Additionally, we have the use of asynchronous database queries, which allows the server to handle other incoming requests while the database retrieves the desired data and this minimizes the downtime of our server. Thirdly, there’s the case of RESTful API design that was taken into account which interacts with the database by returning data in JSON format that can be more easily parsed on the client side for rendering purposes. Finally, we use comprehensive error handling in our server side code for each API endpoint which returns meaningful HTTP status codes and messages, all this making our application easier to diagnose in the case of a malfunction.