

CarlPost

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Group 6 - CRN 43512

Introduction

What is a Content Management System?

The primary purpose of a content management system (CMS) is to provide users with a user-friendly interface, so that individuals without extensive technical knowledge, can collaboratively create, edit, organize and publish content on the internet.

Why did we choose to design a CMS?

Many Content Management System platforms available in the current market, are closed source, unintuitive and up being very inflexible due to enforcement of strict database requirements. CarlPost aims to reinvent content creation, publication and distribution, while overcoming these issues in an efficient manner.

Project Goal

- Our project has two key focal points: first and foremost, we aim to apply the foundational database concepts taught in class to enhance CarlPost. This involves implementing and integrating concepts we've learned as well as creating a solid foundation for our database.
- Additionally, we have set a secondary objective to leverage familiar technologies like Next.js and Typescript, which we've used in previous coursework. We also explored the potential of new, open-source database management systems, specifically Supabase and DrizzleORM.
- Beyond the technical aspects, the primary aim of CarlPost is to transition from a prototype to a fully realized application that can serve the public and be commercialized.

Languages and APIs Used

- To lower the scope of the project, we used PostgreSQL.
 - Offers reliability, transactions, and supports complex queries and is used in industry.
 - Supports Next.js, a Node.js framework that unifies the frontend, backend and database.
- We use Next.js & REACT to create the HTML pages, with shadcn/ui & tailwind for styling the site.
- JSON is used for the REST API, which is used to call into our database or external APIs.
- DrizzleORM, an Object-Related Mapping (ORM) library which uses Javascript to manipulate the database instead of using the SQL query language

Relation to DBMS / Other Work

- The project was originally inspired by Okiki's co-op term experience, where he evaluated various CMS platforms.
- Existing CMS Limitations
 - Closed-source
 - Inflexible
 - Not user-friendly
 - Impose a specific database type, resulting in a restrictive environment.
- Our Vision
 - Offer a more adaptable and user-centric alternative to traditional CMS platforms
- The project draws inspiration from popular blog post platforms like Tumblr and Reddit.
- We want to transcend the limitations observed in traditional CMS platforms, by offering more flexibility

Future Work

The long term vision for a project of this scale, is to allow clients to be able to integrate their existing database providers, single-sign-on system and more. In the case that clients use multiple database providers, the system would allow them to mix and match as they see fit.

However, our main vision is to allow the system to support Cloud Native deployment, such as docker or kubernetes, in a manner that is secure and easy to self-host.

Future Work

Other Improvements:

- Profile page
- Following users/tags within the user interface
- Tracking of post reads
- Complete search feature
- Improve the UI in the future

DEMO