Technical Decisions for Nully Project

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***Abstract*—This document outlines the key technical decisions made in the database design for the 'Nully' project, a web-based task management application. It focuses on the selection of technologies and data structures that facilitate project organization and team collaboration.**

I. Introduction

'Nully' is a web application designed to enhance productivity and team collaboration. This document details the technical decisions behind the choice of technologies and database design.

II. Technical Decisions

A. Use of Binary UUIDs

Universal Unique Identifiers (UUIDs) are stored in binary format to ensure global uniqueness and improve database performance.

B. Relationships and Cascades

Foreign key relationships with cascade actions are implemented to maintain referential integrity and simplify related data management.

C. Normalized Structure

The database follows a normalized structure, facilitating scalability and system maintenance.

D. Audit Fields

Fields such as *created_date* and *signup_date* are included to track the creation and activity of records.

E. Password Security

Passwords are stored using secure hashes, reflecting the importance of security in authentication.

F. Indexes

Indexes are created for frequently searched fields, thus improving query performance.

III. Technology Selection

The choice of specific technologies was made with the goal of optimizing development and the end-user experience. The reasons for the selection are detailed below:

A. Next.js

Next.js was chosen for its server-side rendering (SSR) capability, which significantly improves SEO and page load speed. Additionally, its routing system and automatic optimization facilitate development.

B. React

React is a JavaScript library for building user interfaces with reusable components. It was selected for its development efficiency and ease of maintenance.

C. Prisma

Prisma is used as an ORM to simplify database operations. Its type-safe approach and simplified database migrations are crucial for agile development.

D. MySQL

MySQL is a relational database management system known for its robustness. It is complemented by PlanetScale to ensure scalability and high availability.

E. Clerk

Clerk provides authentication and user management solutions. It was integrated for its security and ease of use, allowing quick implementation of authentication features.

F. Stripe

Stripe is a payment platform with a powerful and flexible API. It was chosen for its security, ease of integration, and optimized user experience for financial transactions.

IV. Conclusion

The technical decisions made in the database design for 'Nully' reflect a focus on security, performance, and flexibility, supporting the key functionalities of the application.