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Boston Transit Database Management System

Background:

The Boston Transit (BT) is responsible for public transportation in the Greater Boston area. With millions of commuters relying on the BT's services daily, the organization generates a vast amount of data and records. These records encompass everything from operational data, maintenance logs, financial records, customer information, and more. Managing these records efficiently is vital for ensuring the smooth functioning of the BT and maintaining transparency and accountability. Creating centralized database enhances the data accessibility, security, accuracy, and reliability. It also enables advanced analytics and reporting, supporting BT's mission of efficient public transportation.

Purpose:

- The primary purpose is to study the design and implementation of the centralized database system for BT's records management.
- Collect and manage data on schedules, routes, vehicle assignments, service disruptions, budgets, expenditures, revenue, maintenance schedules, repairs, inventory, passenger counts, ticket sales, demographics, personnel records, training, and payroll information.
- Improvement in data accuracy, security, retrieval efficiency, and reporting through centralization.
- Standardize reporting and streamline data retrieval processes.
- Enable data-driven decision-making to enhance BT's operations and services.

Scope:

This study aims to provide valuable insights into the feasibility and benefits of implementing a centralized database system for Boston Transit Management. We'll design a robust database schema, migrate existing data, and prioritize security with role-based access, encryption, and auditing. We'll also provide standardized reporting, data analytics, training, documentation, testing, and ongoing support. The prototype developed in this project will serve as a foundation for future system development and deployment within transit agencies, ultimately enhancing the quality of public transportation services.