**Project Report**

on

“EXPENSE TRACKER APP”

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**ABSTRACT**

### The purpose of this project was to build an expense tracker application using the MERN stack. MERN stands for MongoDB, Express, React, and Node.js, and it is a popular technology stack for building full-stack web applications. The expense tracker application allows users to keep track of their daily expenses, categorize their spending, and generate reports for their spending habits. The application has a user-friendly interface that makes it easy for users to add, edit, and delete expenses, view their spending history, and generate reports. The data is stored in a MongoDB database, which is accessible through a RESTful API built with Express. The front-end is built using React, providing a responsive and interactive user interface, and the application is hosted on a Node.js server. The project also covered the testing and deployment process, and the challenges that were faced during the development process. Overall, the expense tracker application provides a simple and effective solution for managing daily expenses, and serves as a good example of how the MERN stack can be used to build full-stack web applications.

# Introduction

## Problem Statement

### The problem that the expense tracker application built using the MERN stack aims to solve is the difficulty that many people face in tracking their daily expenses. In today's fast-paced world, it is easy to lose track of how much money is being spent on a daily basis, making it difficult to budget and save. Additionally, many traditional methods of tracking expenses, such as pen and paper, can be time-consuming and prone to errors. The expense tracker application provides a simple and efficient solution to this problem by allowing users to keep track of their daily expenses in one central location.

## Project Objectives

### The expense tracker application solves these challenges by providing users with a convenient, accurate, and easy-to-use platform for tracking their expenses. With the ability to add, edit, and delete expenses in real-time, users can have complete control over their spending and make informed decisions about budgeting and saving. Additionally, the application's reporting capabilities provide valuable insights into users' spending habits, making it easier to identify areas where changes can be made to improve financial stability.

## Project Scope

### The problem scope for the expense tracker application built using the MERN stack is to provide a solution for individuals and households to effectively manage and track their daily expenses. The following are some of the specific problems addressed by the application:

### Lack of Accessibility: Many individuals find it challenging to keep track of their expenses, especially when they are on the go. The expense tracker application solves this problem by providing a platform that is accessible from any device with an internet connection.

### Inefficient Spending Habits: People often spend money without realizing how much they are spending on specific items or categories. The expense tracker application provides users with a comprehensive view of their spending patterns and helps them make informed decisions about their finances.

### Unsecured Data: Storing financial information on paper or spreadsheets can be risky, as it can be lost, damaged, or stolen. The expense tracker application solves this problem by securely storing all user data in a MongoDB database, which is encrypted and only accessible through a secure API.

## **Assumptions**

Here are some of the assumptions made during the development of the expense tracker application built in the MERN stack:

* User familiarity with the MERN stack: It is assumed that the users are familiar with the concepts and technologies used in the MERN stack, such as MongoDB, Express, React, and Node.js.
* Internet connectivity: It is assumed that the users have a stable internet connection to access the application and use its features.
* Device compatibility: The application is designed to work on a variety of devices, including smartphones, tablets, and desktops. However, it is assumed that the users have a device with a modern web browser that is capable of running the application.
* Data privacy: The application stores all user data in a MongoDB database, which is encrypted and secure. However, it is assumed that users understand that no system is completely secure and they should use the application at their own risk.
* User data accuracy: The accuracy of the user data is dependent on the users themselves. The application assumes that the users will accurately enter and categorize their expenses to get the most value from the reports generated by the application.
* Deployment environment: It is assumed that the application will be deployed on a Node.js server in a secure and stable environment. The application assumes that the deployment environment is properly configured and maintained to ensure its stability and security.
* Technical support: The application assumes that users will have access to technical support if they encounter any issues during the use of the application. The support may come from the developers of the application, online resources, or other sources.

**Tools and Technology**

The tools and technology for the expense tracker application built in the MERN stack typically consists of the following components:

**Server-side Environment:**

* Node.js: A JavaScript runtime environment that is used to run the server-side logic of the application.
* Express: A framework for Node.js that is used to build the RESTful API for the application.
* MongoDB: A NoSQL database that is used to store the data for the application.

**Client-side Environment:**

* React: A JavaScript library for building user interfaces that is used to build the front-end of the application.

**Development Environment:**

* Code Editor: A code editor such as Visual Studio Code, Sublime Text, or Atom can be used to write and edit the code for the application.
* Package Manager: npm (Node Package Manager) is typically used to manage the dependencies for the application.

**Deployment Environment:**

* Web Server: A web server such as Apache or Nginx can be used to host the application and make it accessible to users.

Note that the operating environment for the expense tracker application built in the MERN stack can vary depending on the specific requirements and constraints of the project

**CONCLUSION**

### In conclusion, the expense tracker application built using the MERN stack provides a simple and effective solution for managing daily expenses. The use of React, Node.js, Express, and MongoDB allowed for the development of a full-stack web application that is both user-friendly and efficient. The addition of Redux Toolkit for state management and lodash for utility functions enhanced the overall performance and functionality of the application.

### The project demonstrated the power of the MERN stack in building full-stack web applications, and the ease of incorporating other technologies to add additional functionality. The expense tracker application can be used by individuals, families, or small businesses to keep track of their daily expenses, categorize their spending, and generate reports for their spending habits.

### Overall, the expense tracker application is a successful example of how the MERN stack can be used to build practical and useful web applications, and provides a foundation for future expansion and improvement.

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