

# Expense Monitoring System



CS673 A1

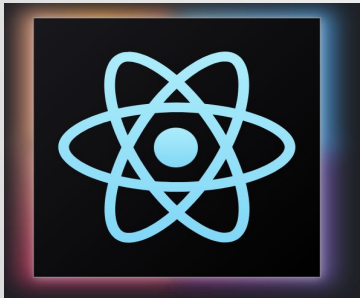


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## Introduction

An Expense Monitoring System is a digital tool designed to help individuals manage and track their financial expenditures efficiently. This system is especially valuable in today's fast-paced world, where individuals often juggle multiple income sources, expenses, and financial goals.

## Tech Stack



## Goal

The main purpose of our application is to provide users with a comprehensive and interactive platform to monitor, track, categorize, and analyze their expenses by setting a budget limit. This also helps the user study and track their spending patterns and revisit their spending on a monthly or yearly basis.

## Benefits

- 01 **Financial Awareness**  
Promotes a deeper understanding of spending habits and encourages responsible financial management.
- 02 **Goal-oriented Savings**  
Facilitates the setting and achievement of financial goals through budgeting and expense tracking.
- 03 **Time Efficiency**  
Streamlines the process of managing personal finances, saving time and reducing the likelihood of oversights.

## Scope

- Efficient Tracking
- Categorization
- Analysis of Personal and Group Expenses

The application facilitates individual expense tracking, group management with collaborative budgeting, and bill splitting functionalities.

With a focus on user-friendly design and mobile accessibility, the platform aims to enhance financial discipline and time efficiency.

## Target Users

- 01 Individual Users
- 02 Corporate Usage
- 03 Group Usage

Any individual interested in personal financial management.

The platform is lucrative for professionals to be used by companies to manage their expenses with an array of features it provides.

The application will also cater to a group of people, family, and friends who plan to go on an outing/trip or even day-to-day expense sharing.

## Our Approach

- We embraced the agile methodology for our project.
- We segmented our work into 12 time boxed sprints focussing on iterative development and continuous feedback.
- An efficient backlog refinement procedure was employed based on our project needs.
- Dividing the work into chunks has proven impactful when reflecting on our past endeavors.
- While roles and responsibilities were distributed among the team, a team culture was cultivated so that no one felt overwhelmed, with team members always ready to step in when needed.

# High-Level Requirements

## **User Registration and Authentication**

- Users shall be able to register with the system and User authentication shall be in place to ensure authorized access only.

## **Individual Expenses Tracking**

- Users shall be able to input expenses, including date, amount, description, and category.

## **Group Expenses Track**

- Users shall be able create groups to track, share expenses among the members in the group and should be able to settle expenses using bill splitting feature.

## **Report/Analytic System**

- Users shall be able access detailed summary of both personal and group expenses by date.



# Quality Assurance

## Test Case



## QA Metrics

### **Manual Testing: 80% coverage.**

- Test plan was laid out.
- Feature and Functionality testing.
- Security and Compliance testing.
- Non-Functional testing.

### **Automation: 20% coverage.**

- Component level testing.
- Using Jest framework in React.

## Project Status

- The application is functionally complete with 3 main component implemented.
  - 1) Personal Expense Tracking - Users can create an account, log in and are fully capable of creating, editing, and deleting expenses on their own personal page.
  - 2) Group Expense - Users can also **create** groups, and **add** other users and can record expenses and also utilize the **bill splitting** function to calculate the amount owed between groups members.
  - 3) Notification: Email will triggered for all group related operations.
  - 4) Analytics Report - Users can view statistics about their personal expenses on the stats page.



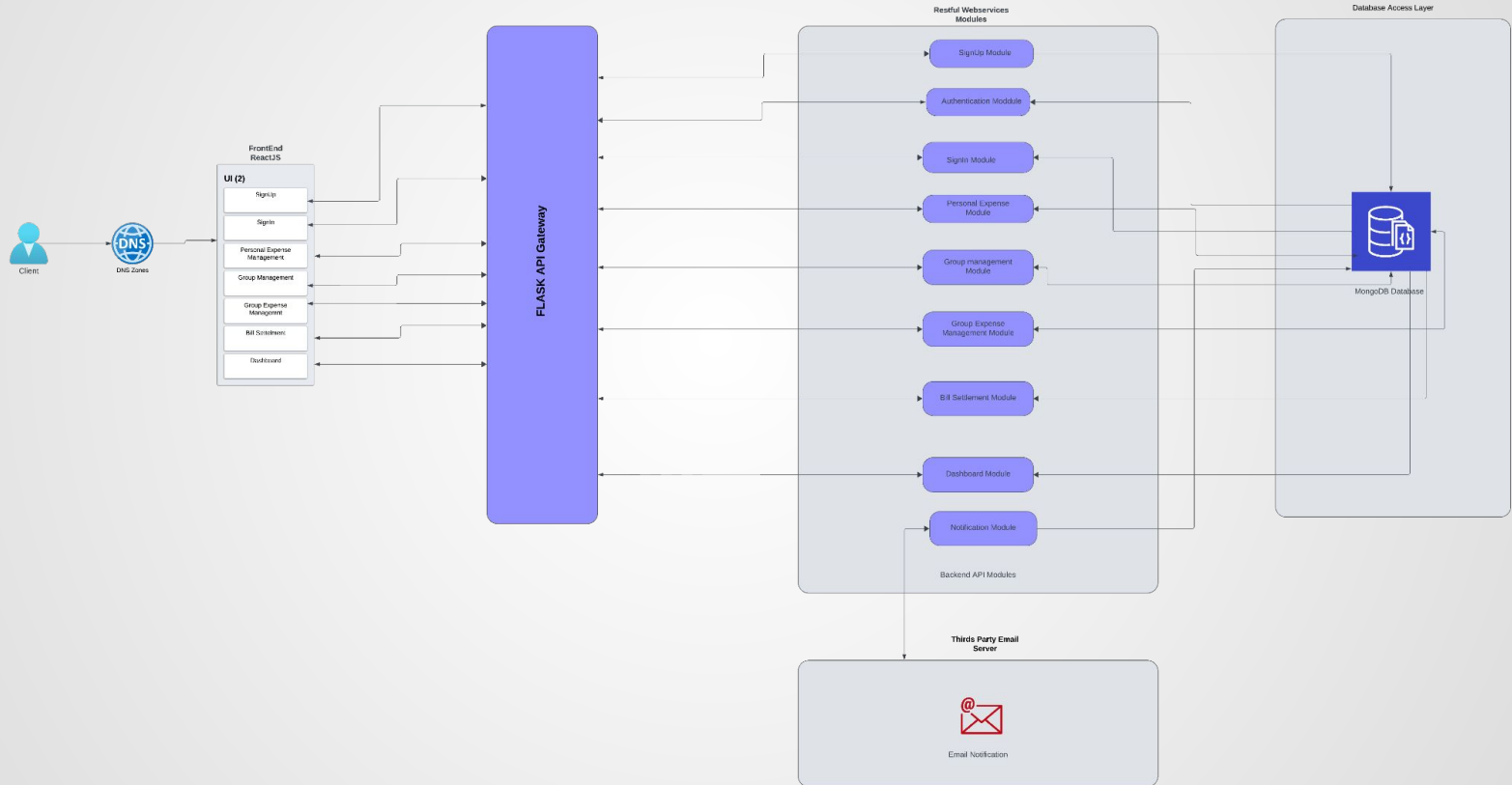
## Demo of Application



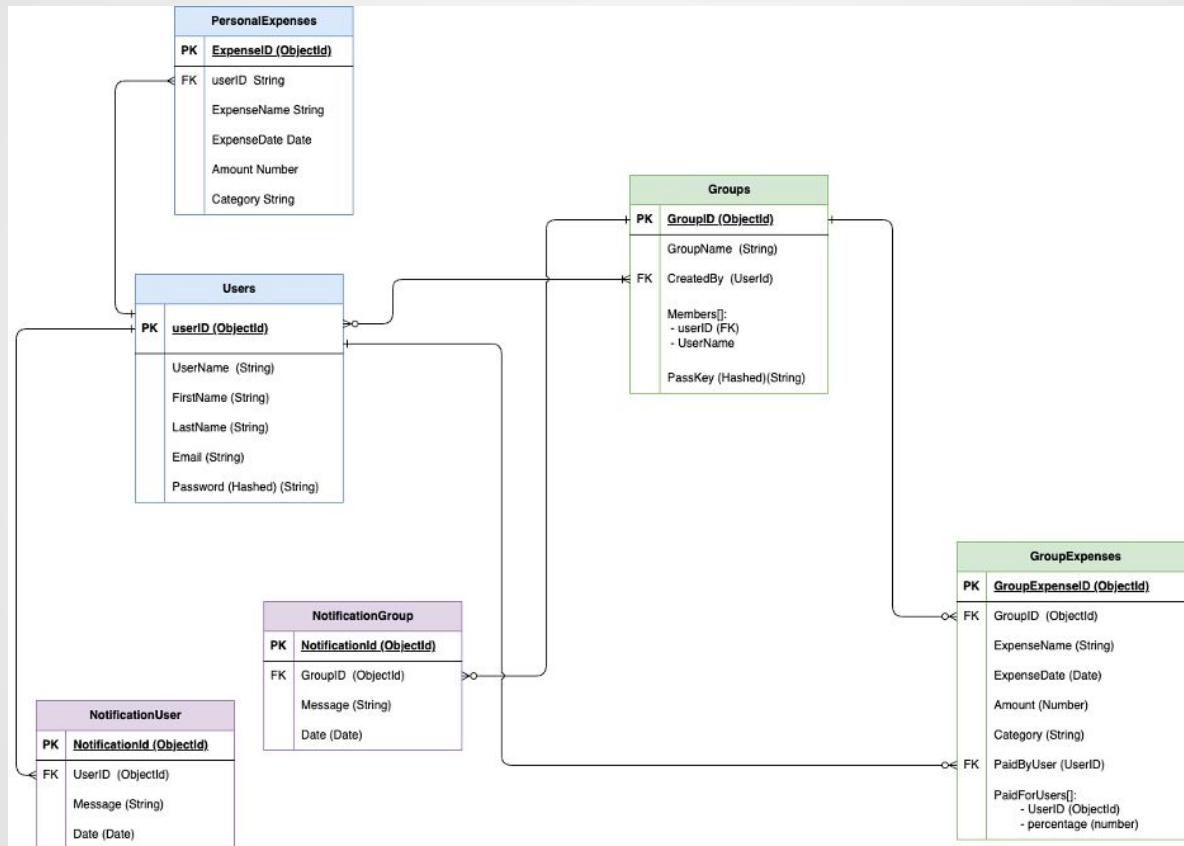
Demo Link:

<https://drive.google.com/file/d/1BrFuUwa-ImmQPEa9iqWq17jiQw4uMVGa/view?usp=sharing>

# Application Architecture



# Database Schema



## Deployment



## Deployed link:

<https://serene-atoll-75134-64bea5025fac.herokuapp.com/>

## Retrospective

- Development of the Expense Monitoring System involved the careful coordination of a team of developers along with the allocation of roles and resources.
- Team faced a variety of challenges that had to be overcome with considered planning and team management.
- These challenges were both technical and managerial in nature, as all of the members come from different backgrounds and levels of experience, which needed to be considered throughout the process.
- Overall, the team would consider the development of the application to be a success, albeit one that faced many challenges.



## Lessons Learned

Some of the lessons the team learned throughout development:

- Techniques from Agile methodologies are extremely helpful for team management.
- Task allocation is important while working in a team.
- Weekly meetings are extremely important to keeping all team members on the same page.

A stylized graphic of an open book. The top half of the image is white, and the bottom half is a solid dark blue. The dark blue area is shaped like the pages of an open book, with two curved lines on each side representing the book's edges. The text "Thank you!" is centered in the dark blue area.

**Thank you!**