Budgeted

Tuong Nguyen, Zehua Liu, Marcus Zhou

Team 12

CS 157A Database Mangement

Project Description

This project will be a database application that is based on the financial domain. Our group is going to develop a robust B2C budgeting app. People nowadays oftentimes have difficulties managing their budget as well as income. Services such as Netflix, Spotify, Amazon Prime, and various mortgage payments are mostly monthly recurring, and they are becoming a huge portion of people's spending. With so many transactions taking place on a monthly basis, people fail to keep track of all of their monthly recurring spending. Without an insightful and informative understanding of their own personal finance, people tend to make poorer financial decisions. As a result, people are gradually getting into worse financial situations.

The goal of this application is to provide a comprehensive way to monitor the conditions of the budget. Users will be able to monitor their financial transactions to track their income and expenses with ease. We will also implement a user-friendly interface that is intuitive to navigate throughout the application. The constant struggle of issues with other similar applications provided the motivation to create another such application with those problems addressed

System Environment

Hardware	HP Pavilion Notebook Signature Edition Dell MacBook Air
Software	Atom, Sublime
Application Language	Javascript, SQL, HTML, CSS
Technology	ReactJS/ NodeJS/ ExpressJS MySQL / MySQL WorkBench 8.0

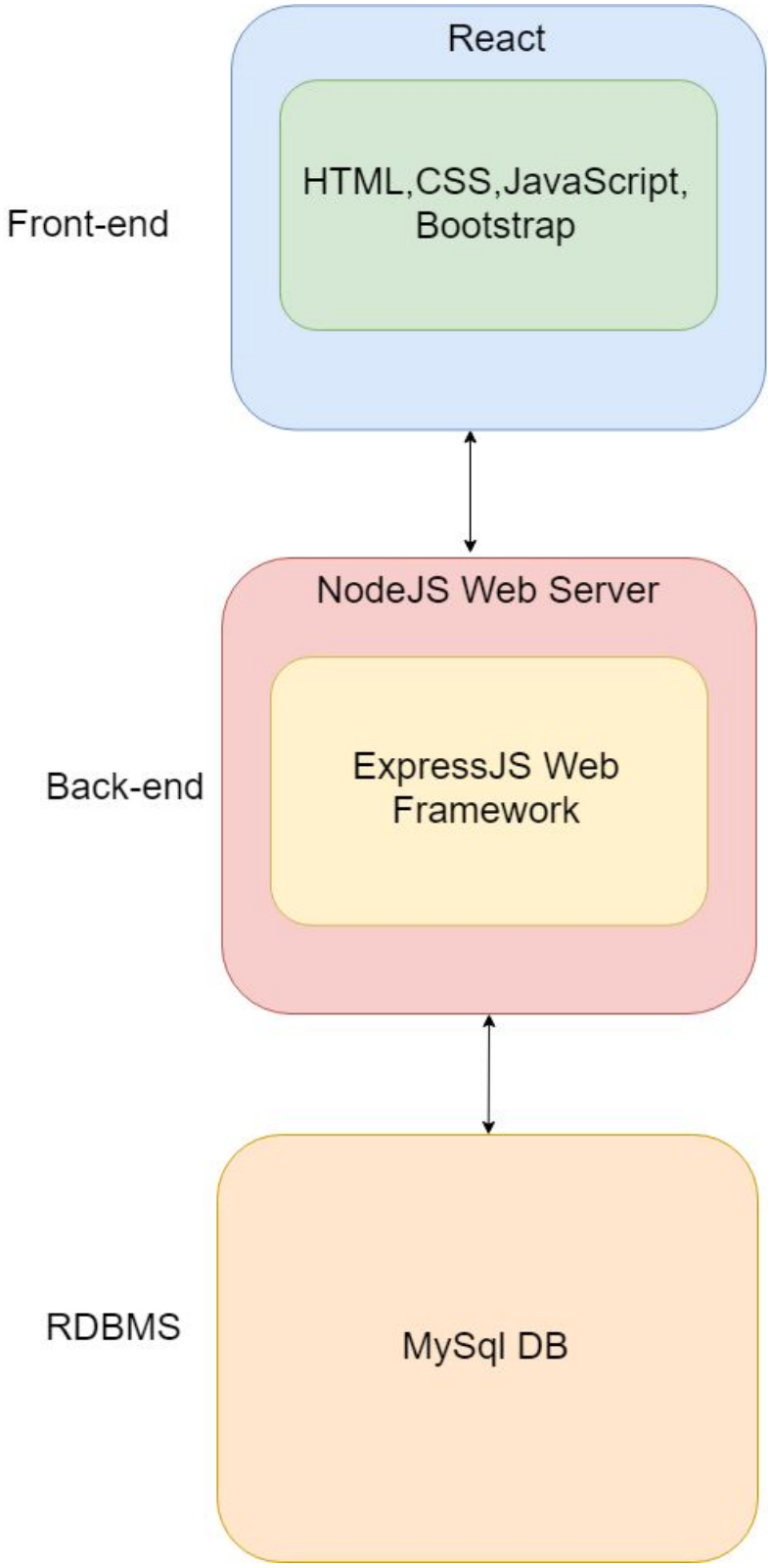

Figure 1: System Architecture

Functional Requirement

Our target audience is those who participate in economical events where they have income and expense on a regular basis. The user will be able to sign up to create an account where they will be able to make entries to record their financial transactions. They can also generate the monthly report to review the transactions they made for the month. Furthermore, the application will allow users to delete their accounts as they wish.

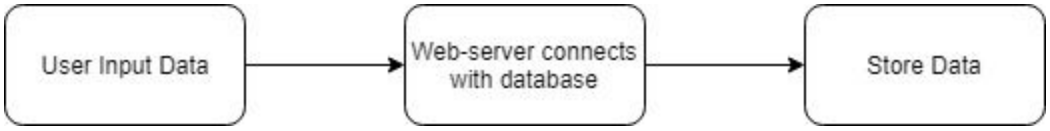

Figure 2: Functional Flow Overview

User Account Creation/Login

- The end-user shall be able to use the application and create an account with a password and other attributes.

Delete Account

- End-user shall be able to delete their account via GUI

Record Income, Expense, and Saving

- End-user shall be able to make entries to record their income.
- End-user shall be able to make entries to record the saving.
- Income will be classified into categories: job, investment, and bank interest, others
- Users shall describe each income transaction.
- End-user shall be able to make entries to input their expenses.
- The expense will be classified into categories: household, utility, rent, others
- End-user shall be able to describe each expense transaction.

Update Transaction

- The end-user shall be able to make updates and changes to the existing transactions in the database.

Browse Transactions

- The end-user shall be able to customize the search on dates where they can review the transactions on the specified dates.

Generate Report

- Users shall be able to generate a graph or chart type report based on all the data associated with their accounts.

Non-Functional Requirement

We will implement a dashboard as our graphical user interface where the user can intuitively communicate with the Budgeted application. We will also secure our application by implementing access control for users. So each user will have their own login detail and will not be able to access other accounts except their own.

Dashboard

- A dashboard will be implemented for the Budgeted application where users can conduct their functional activities.

Security

- Input Email will be validated to prevent spam accounts.
- After account creation password will be hashed and salted and securely stored in the database.
- Access tokens will be stored in localStorage for authentication

Access Control

- Users are authenticated using JSON web tokens (JWT)
- Each access token will expire after a week and users will have to log in again.

Figure 3: Access Control Overview