

## **Capstone 2 Proposal: Expense Tracker Web Application**

### **Stack:**

This web application will use PERN (Postgress, Express, React, and Node.js) for the backend and frontend to create a dynamic and responsive user experience. The backend will handle API requests, user authentication, and data management. PostgreSQL will serve as the database for users, currency rates, and expenses.

### **Focus:**

This is a full-stack application, with both frontend and backend functionality being the focus of the application. The backend will manage data storage, user sessions, and API requests for currency exchanges, while the frontend will provide an intuitive UI for searching, saving, and customizing expenses based on everyday purchases. Perhaps incorporating AI into the application (if time permits).

### **Type:**

The application will be a responsive web app optimized for desktop and mobile access, enabling users to access their recipes and customizations from any device.

### **Goal:**

The goal of the app is to make expenses easier to track, and management easy for users.

### **Users:**

Target users would include anyone who is looking for simple way to keep track of their expenses and manage those expenses according to their goals.

### **Data:**

- **Currency Data:** Currencies will be sourced from an external API (ExcahngeRate), providing details.
- **User Data:** Stored preferences, expenses, and customazation will allow a personalized user experience.

### **Approach Outline:**

1. **Database Schema:**
  - **Users:**
  - **Expenses:**
  - **Wallet:**
  - **Transactions**

## 2. **API Integration and Potential Issues:**

- Connecting to a currency API will allow for data retrieval, but limitations might include incomplete currency data or up to date.
- Handling variations in expense formats from the API may require additional parsing for consistency.

## 3. **Security Considerations:**

- Sensitive user information will be protected using bcrypt for password hashing.

## 4. **Key Features:**

- **Create Expenses:** Users can search for expenses or adjust accordingly.
- **Edit an Expense:** Automatically adjusts ingredient quantities based on desired servings.
- **View Expenses:** Users can save, edit, and add their own recipes.
- **Customizable Options:** Users can modify expenses and create a budget.

## 5. **User Flow:**

- **Home Page:** Displays questionnaire of persons name, age, weight, height, and gender.
- **Sign Up/Sign In:** User will be able to create an account and log in/out.
- **Save & Edit:** Users can save expenses, make edits, and add notes.
- **Profile:** Allows admin to view users, dietary preferences, and recent interactions.

## 6. **Beyond CRUD - Stretch Goals:**

- **Substitution Data:** A database of expenses will support quick modifications based on categories.
- **Auth Features : Better security implementation.**
- **Visual Sharing:** Allows users to have visual charts for tracker and visualize goals.
- **Incorporate AI**