Project Title
SmartSpender (TBD)

Project Summary
        This website will be a budget tracker and expense management website that helps users efficiently manage their finances. With a built-in receipt scanner, users can simply upload an image of their receipt and the website will automatically extract information such as date, item, and price from the receipt and catalog the expense. Users will also be able to manually input any other expenses and choose categories these expenses fall under. There will also be an interactive dashboard to help visualize monthly/weekly expenses as well as provide a breakdown on how much was spent on each category.
        The website will also have a bill splitting functionality which allows users to easily split any bills among multiple people. With an account system implemented, bills that are split will be able to be tracked on each person's expenses catalog, removing the need for more manual work.

Description
        The goal of this project is to help people budget and provide a visual representation of their expenses to promote healthy saving and spending habits. While people could create their own spreadsheet to keep track of expenses, the need to manually type out each expense deters people from doing so. A spreadsheet also does not come with an easily readable interface to help visualize their expenses, something we plan on fixing through this project.

Creative Component
- <u>Receipt Scanner</u>: Scans receipt, extracts the date, item, price, and automatically adds it as an expense.
- <u>Manual Input</u>: User can manually input expenses
- <u>Expense Categorization</u>: Users can categorize their expenses to categories either predefined or user made
- <u>Bill splitting</u>: Users can select items from their expenses and split it evenly with other people. This can be for restaurant bills or any other expenses.
- <u>Interactive dashboard:</u> To make it easy to visualize monthly/weekly spending
- <u>Account system</u>: This will allow users to see each other's expenses and inspire healthy budgeting. Another feature would be when splitting bills, connected users will get their own split of the bill added to their account.

Usefulness
        This application will be useful as it will allow users to save time when cataloging expenses through the receipt scanner. Users will also be able to easily split bills with other people so only the portion they paid will be reflected on the account.
        Simple Features:
- <u>Interactive Dashboard</u>
- <u>Expense Categorization</u>
- <u>Manual Input</u>

        Complex Features:
- <u>Receipt Scanner</u>

- Bill splitting
- Account system

While there are many similar budgeting/financing apps out there (like Rocket Money and NerdWallet), our app is different because we allow users to track their spending from scanning their receipts rather than credit card transactions. There is also a categorizing feature that allows users to split up items and display spending statistics for each category. Additionally, our project puts more emphasis on group spending than other apps do so that multiple people can efficiently split up costs while still being able to manage their personal expenses.

Realness

The following datasets will be made from user actions and stored in csv files. Cardinality depends on how much users use the application. Degree is described below.
- Account Information: UserId, Username, Password
    - Primary Key(UserID)
- Items: ReceiptId, ItemNumber, ItemName, Price
    - Foreign Key(ReceiptID)
    - Primary Key(ReceiptId, ItemNumber)
- Owner of Receipts: UserID, ReceiptId, Purchase Date, TotalPrice
    - Primary Key(UsedID)
- Receipt Split: UserId, ReceiptId, ItemNumber
    - Foreign Key(UserId, ReceiptId, ItemNumber)
    - Primary Key(UserId, ReceiptId, ItemNumber)

External datasets we might use:
Tables : U.S. Bureau of Labor Statistics
The data comes from the U.S. Bureau of Labor Statistics. The tables available on the following website are all in XLS format. The dataset consists of 665 rows and 11 columns. It is sourced from the 2023 Consumer Expenditure Surveys and provides information on average annual expenditures across various categories, including food. The food category is further broken down into specific subcategories such as beef, pork, cereal products, eggs, fresh fruits, and vegetables.
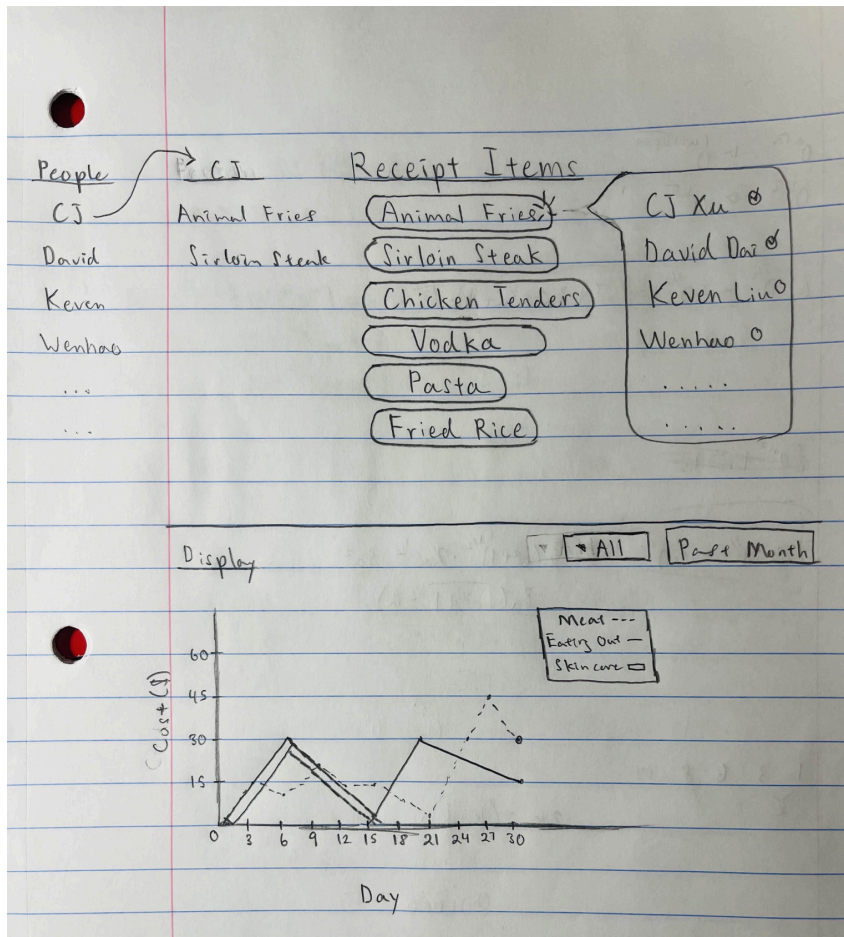
Functionality
Create - Users can create expenses and upload receipts to automatically create new expenses
Update - After receipts are uploaded users can also manually update and add any changes, users can split bills with other people and the actual expense will be updated.
Delete - Users will be able to delete any expenses if needed
Search For - Users can search specific time frames to see their expense for that time frame.

A low-fidelity UI mockup

(Barebone UI mockup for two different features, the Bill Splitting and main page with dashboard)

Project work distribution
- <u>Manual Input:</u> Everyone should work on this as it is necessary for a lot of the things later on and it would be good to discuss and learn.
- <u>Expense Categorization:</u> Kevin, Wenhao
- <u>Receipt Scanner:</u> Chi Jay, David
- <u>Bill splitting:</u> Kevin, Wenhao
- <u>Account system:</u> Chi Jay, David
- <u>Interactive Dashboard:</u> This can also be a group task so that we can properly design a website that we all like visually.