Problem Statement and Goals
Grocery Spending Tracker

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Table 1: Revision History

Date	Developer(s)	Change
20/09/23	Sawyer Tang	Add Problem Statement.
20/09/23	Ryan Yeh	Added section introduction for Problem Statement
20/09/23	Jason Nam	Added Inputs and Outputs for Problem Statement Doc
22/09/23	Jason Nam	Completed Stakeholders Section
23/09/23	Ryan Yeh	Added initial Goals and Stretch Goals
24/09/23	Jason Nam	Added Environment section for Problem Statement and Goals Doc
25/09/23	Jason Nam	Removed team members as Stakeholders
17/10/23	Ryan Yeh	Rearranged Goals in order of importance and added metrics
18/10/23	Allan Fang	Formatting and style adjustments from feedback

1 Problem Statement

This section will outline the problem being solved by the Grocery Spending Tracker. It will go over the general problem, expected inputs and outputs of the application, stakeholders, and the environment the application will be used in.

1.1 Problem

With the rising cost of living in Hamilton as well as across Canada, many households are searching for ways to cut back on costs of their living expenses. Grocery prices, most notably, are quickly on the rise and are making it difficult for households to handle/manage their budgets. **Grocery Spend Tracker** will strive to make it easier for users to make *smart* grocery decisions to lower their spending on food and household needs.

1.2 Inputs and Outputs

The following outlines the inputs and outputs to the proposed system.

1.2.1 Inputs

- Personal consumer spending data
- Location data
- Historical shopping lists
- Shopping history

1.2.2 Outputs

- Analysis of spending data
- Purchase suggestions based on spending data
- Budgeting plans
- Local price comparison
- Shopping trip summaries

1.3 Stakeholders

- Students of McMaster University
- Single income households
- Dr. Spencer Smith and TAs

1.4 Environment

The following outlines the environment of the proposed system.

1.4.1 Hardware

The system will utilize any apparatus equipped with optical sensors for image capture and visual display components for presenting graphical information.

1.4.2 Software

The system will employ a centralized data repository managed by a database server to facilitate data storage and aggregation.

2 Goals

- Provide cost savings to users
  - Considering the application is being created to help lessen the burden of increasing grocery prices and lower food spending, there should be a tangible decrease in grocery spending over time with its use.
- Users should be able to input receipts with little involvement
  - The application will allow users to input receipts into the application via OCR meaning the amount of manual input from the user should be minimal. The user should just need to submit a photo of the receipt.
- Ensure accuracy and correctness within 99% of true values
  - Since the application is targeted towards reducing the spending of users, mistakes on the application side should be minimal and low risk if any. The possibility of negatively impacting a user's financial state due to bugs would be unacceptable for this kind of project.
- Create an intuitive application that should be usable by users within 15 minutes
  - The application is intended for a broad range of users of different age groups and demographics. Therefore, the application should be easy to use such that anyone can navigate and use its features without guidance.
- Ensure high performance by ensuring operations take one second at most to complete
  - The application's performance should not provide any disruption to the user's life. It should be a tool that can be seamlessly integrated without requiring user accommodation.

3 Stretch Goals

- Create a heatmap for locations with cheaper spending
  - Using mapping and location data, a visual representation of locations with cheaper grocery spending could be created to better assist users in making smarter financial decisions.

- Add in-app budgeting suggestions for users
  - Through further analysis of spending data and user data, it may be possible to provide automatic in-app budgeting suggestions to further help reduce user grocery spending.