

# Receipt Image Processing

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## Data

In order to make our project as realistic as possible, we aim to use a collection of our own personal receipts for the next few weeks. This would allow us to use a wide range of receipts from different companies, which would test the image processing capabilities for different formats and image qualities. The collection of receipts would mainly come from companies around the Northeastern University campus and Boston, meaning all the receipts would be written in English to simplify categorization of products and recognizing company names. The receipts would be in a png format and taken with standard smartphone cameras. All project members will take photos of their receipts over the duration of the project and upload them to a shared folder. The images will need to capture the receipt as a whole and all the information should be readable.

## Methods

This project would consist of at least three main parts: parsing the text on the receipt, storing the parsed information in the database, and displaying this information in a user-friendly way on a dashboard. We anticipate that the image parsing will pose the biggest challenge but we plan to use some open-source OCR library/API to make this a little easier. After this, we plan to sort and store this processed information in a MySQL database to help organize everything that gets inputted into the program. Finally, we will display valuable insight and statistics about the inputted images on a Plotly dashboard that will be hosted on Heroku if we have time.

## Objective

Our objective is to offer a user insight on their spending habits through a dashboard of visualizations. We want a user to be able to input different receipts over time and see how their spending habits are changing over time. The main aspect of our project would be to run image processing techniques on a picture of a receipt and be able to pull data from it. This would then update a dashboard and allow the user to see information on both the singular receipt and also information on the receipt in relation to past receipts that had been uploaded.

If we finish early, we can expand on our application's front end and focus on launching it through Heroku, a cloud hosting service that can allow anyone to upload their images and receive real-time dashboards. If we choose, we can try analyzing the spending habits of the user

and apply NLP to analyze the names of different receipt items. This can give us a better sense of the types of items a user buys.