Receipt Mobile App
4/15/2024

Team Awesome Receipt App

Team Members:

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- Scrum Master: Brendan Boone
- Jose Espinoza
- David Serrato
- Thomas Stearns

Problem:

- When grocery shopping with a group of people and putting the cost on one card, it is inconvenient to subdivide the cost of the items, especially if some items are only shared within a subset of the group.
  - This will be useful for roommates, coworkers, and any group who is splitting costs.

Project Scope

- A mobile app that allows the user to take a picture of a receipt and receive a divided cost according to the divisions specified by the user.

Sprint 1

user stories:

- “As a developer, I want to be able to work on the project in a git repo because its convenient for workflow”[2]
- “As a user, I want to be able to take a picture of a receipt and have the text recognized because it is why I installed the app”[8]
- “As a developer, I want to be able to create a simple UI because it makes further development less troublesome” [8]
- “As a user, I want to be able to select a picture of a receipt on my phone and have the text recognized because it is convenient to not take a picture every time” [13]
- As a developer, I want most of the work to be done from the backend because a user device’s capabilities are unknown”[8]

Spikes:

- Learning Git, Learning React (Native), Exploring OCR APIs, testing OCR functionality and performance, Prototyping client-server TCP with images

Infrastructure tasks:

- Create the github repository and invite all collaborators
- Install and test OCR APIs (easyOCR, ML kit)
- Build a demo UI for app
- Implement a means of accessing the camera gallery for selection of photos
- build a server that can accept images and a test client for sending images

Sprint 2

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- user stories:
  - "As a developer , I want the OCR to recognize images of different quality because this allows the user to have flexibility"
  - "As a developer, I want to be able to have high accuracy when scanning receipts because it ensures the data isn't wrong."
  - "As a user, I want to assign people to item, cost pairs, because this will allow me to distribute the price properly"
  - "As a User, I want the application to process pictures quickly, because my time is important"
- Spikes:
  - Learning the OCR API, Learning different processing techniques, Finding a reliable OCR API for accurate readings.
- Infrastructure tasks:
  - Calibrate and handle OCR performance for data collection accuracy
  - Design an account security system for distributing prices
  - Process images to increase reading accuracy

Sprint 3

User Stories:

- "As a user, I want to have an account to keep track of the purchase histories so I won't need the receipt after"[5]
- "As a shopper, I want to be able to send a venmo request based on the receipt so I don't have to remember how the receipt got divided" [13]
- "As a developer I want to have a login page to protect my venmo account. "[8]

Spikes:

- Learn account security
- Learning Venmo API

Infrastructure tasks:

- Creating a database

Sprint 4

User Stories:

- "As a developer, I want a multithreaded backend for greater efficiency because I want to improve the responsiveness and performance of my app."[5]
- "As a user, I want a handsome user interface because I want it to be easy to understand and use." [13]
- "As a user, I want an optimized app because I don't want to wait too long."[21]

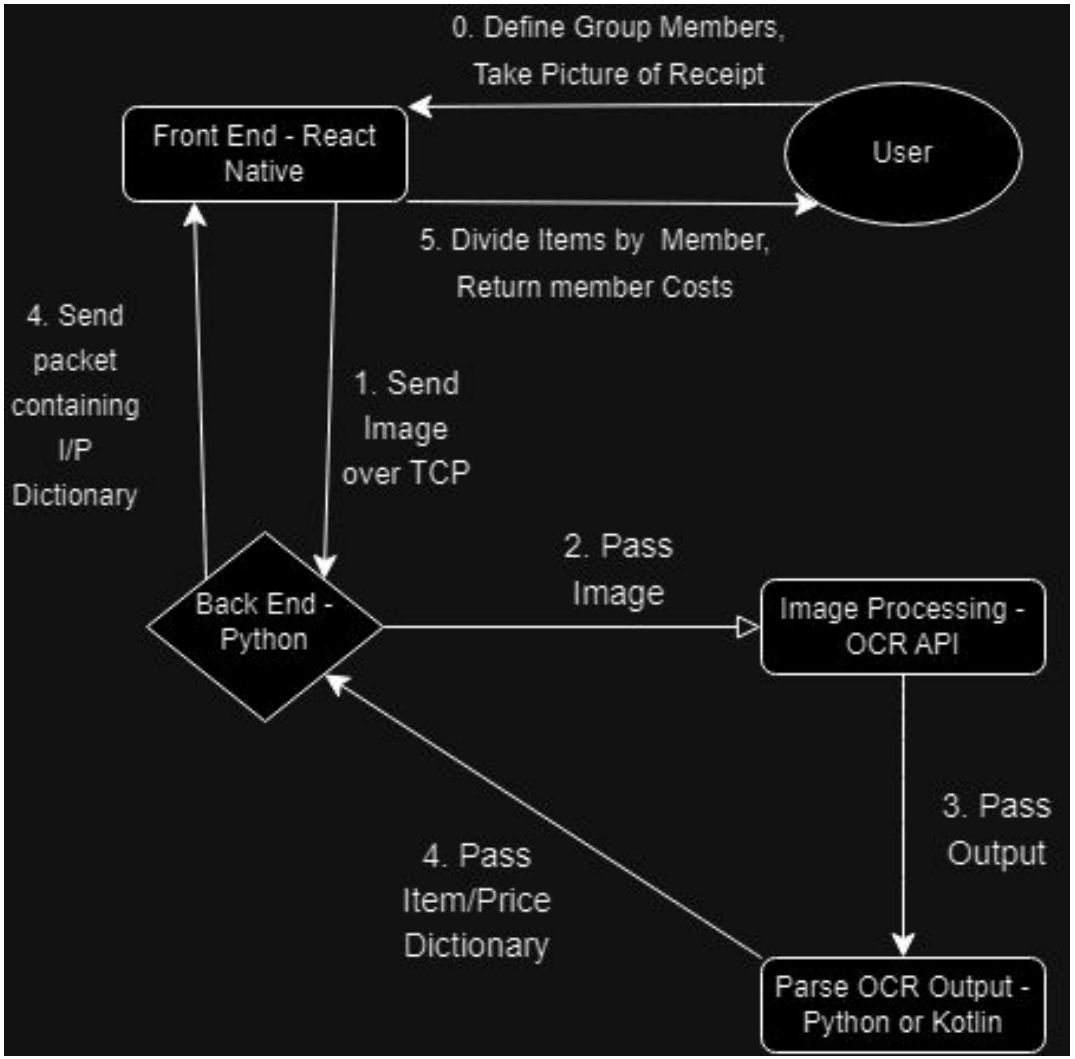
Spikes:

- Incorporate "java.lang.thread"
- Explore the UI components React Native offers
- Implement efficient code practices (i.e minimizing memory)

Infrastructure tasks:

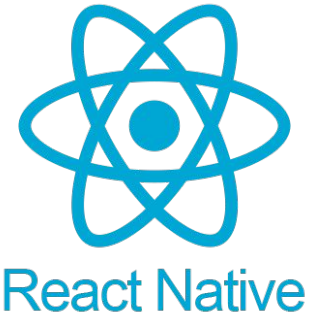
- Have a Java Virtual Machine
- Reading React Natives core Components and APIs

Architecture




Technologies

- Language: Python, kotlin, javascript
- Frontend: React native
- Backend: Python, SQL
- Development environment: Android Studio, VSC
- Source/Version Control: Github
- API Libraries: easyOCR, venmoAPI



Challenges/Risks

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1) Setting up new environments:
   - Creating the environment typically leads to dependencies which lead to more dependencies
2) Learning new software technologies:
   - Finding a technology which works typically is a long process, and with the abundance out there, investing time into the best ones is a problem.

Minimum Viable Product

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Have a user take a picture of a receipt and receive the amount split accordingly

User stories:

- “As a user, I want an app because it grants me convenience”
- “As a user, I want to be able to take a picture of a receipt and have the text recognized”
- “As a user, I want to assign different people lines on a receipt.”
- “As a user, I want to create and save people names for assigning receipt costs”