Project Name
NearBuy - (Local Marketplace App)

Project Group 16
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Project Location
https://gitlab.cs.umd.edu/cmsc436spring2019/cmsc436-jtrinh

Description of Project

NearBuy is a location-based marketplace application, where users can view and buy nearby items, and even sell items of their own. NearBuy sets itself apart from other marketplace apps catering to an audience more interested in local transactions. The location data associated with items in this marketplace service is crucial to this aspect of it's design. With information on a location's data, users can look for listings of items as close or far away from them as they would mind. This is enabled by allowing users to filter and sort items by location.

Features of Project

- User Authentication
    - Using Firebase Authentication, users can create profiles with an email/password in order track their funds
- User to User Messaging
    - Using Firebase's Realtime Database, users can message each other and read through their chat history in real time
- Location-based Listing
    - Through CoreLocation, each item has an associated longitude and latitude value based on the item lister's location at the time of listing.
    - This location information is used to calculate each item's distance relative to the current user's location.
- Filter Functionality
    - Users are able to filter listing visibility by specifying a min and max value for either an item's price or distance from them (in miles).
- Sort Functionality

    - Users are able to sort listing visibility by either ascending or descending order based on an item's price or distance from them (in miles).
- Mock Purchasing System
    - Users are allocated a "fund" value upon account creation to purchase items.
    - Each item purchase deducts the item's price from a user's fund value and removes the purchased item from the listing database.

Evaluation of Goals

The minimal goals for this project were to create a local marketplace application where users could view nearby items for sale, post new items for sale, and message other users to facilitate purchase. Each one of these goals initial goals were met. Additionally, we changed the feature to sort/filter nearby items from a stretch goal to a minimum goal. We completed this goal as well.

There were several stretch goals for this project. One was to implement payment methods such as Apple Pay. Due to time constraints, we were unable to implement this feature. If future development of this app continued, this feature could be implemented to work along with our already completed messaging system. The other stretch goal we had was to create a "recommended items" list based on a user's previous purchases. This feature was also not implemented due to time constraints. However, in researching this feature we found that we could possibly use the existing SmartReply API of the MLKit to create the functionality behind the recommended items list.

Overall, this project was successful because we accomplished our minimal goals to create a functional marketplace app. Even though we were unable to implement either of our remaining stretch goals, we did research into both to determine possible plans of action for future implementation.