Product Description

Our product is Finders Keepers, an item trading app for physical items. It allows people to put items up for trade and specify items they are interested in. Other users can find those profiles, and offer up any number of their items for trade for any number of their items. Our app will be able to search for items by tag, as well as automatically find suitable trading partners for a given user, based on the items they are interested in and have. Our target audience is anyone who has lots of stuff and little money, but still wants to get new stuff, or anyone who needs to get rid of their stuff. Our app solves the problem of finding trading partners who not only have items you're interested in, but who are also interested in the items you have.

There are several applications and websites similar to our app. Some of the biggest are Craigslist and OfferUp. Both have the advantage of a large userbase. However, OfferUp only allows you to sell things, not trade them. Craigslist has the disadvantages of being difficult to use and not being mobile friendly. It also does not have any way to guarantee that the person you are trading with is interested in the items you have. Our system, however, will be designed for mobile use and will have automatic trading partner matching.

Our app will have several major features:

- User profiles, tied to phone number and Google Account. Each profile will have an inventory of items tied to it, as well as a list of item tags that user is interested in.
- Automatic matching which will find people for a user to trade with, whose preferences match their inventory, and whose inventory matches their preferences.
- Ability to search for items by tag, view the profile of the item's owner, and request a trade with them after selecting any number of items from their inventory and your own inventory for the trade.
- Managing trade requests - list of pending and completed requests, both outgoing and incoming. Users can accept or reject incoming requests, as well as view old completed or rejected requests. If they accept a request, contact information is automatically swapped so the two users can set up a trade.

We also have several stretch features:

- Configurable search radius - lets you chose how far away you're willing to travel in order to trade, and filters search results based on that.
- A chat system which allows users to discuss deals through the app itself.
- User ratings, which allow people to rate their experience trading with a certain user.
- Counteroffers - in addition to being able to accept or deny a request, there will also be the option to modify the request and send it back to its original sender.

We have several non-functional requirements for our app as well. One of these is secure login and network communication. We hope to use Google Accounts for login, since we know that the Android APIs for it are secure. To help secure our app's networking, we hope to use https for all communication with our API server and database.

Another nonfunctional requirement we have is fast loading of search results. More specifically, after a search is done, it should take no more than 1 second for the results to load. Additionally, after a result is clicked, the user profile corresponding to it should take no more than 1 second to load as well. To ensure scalability and performance, we will have a single API server which forwards search requests to one of several servers tasked with searching the

database. If it becomes necessary for us to process more requests, we can add more search servers.

Our third nonfunctional requirement is our app must be reliable - if the user has an internet connection, they should always be able to use all the app's features. If our services go down, it should be planned, and users should be informed beforehand. In order to ensure this, we need a reliable and easily maintainable host for our servers. We plan to use Amazon Web Services for hosting our API server and database, since we know it to be a popular and reliable service.

Our app will have help documentation available in the app itself. We will have a button on all our screens which, when clicked, will bring up a manual describing how to use the app. The manual will be written, with screenshots, describing how to use the app. If we have time, we will also produce tutorial videos for our application, which we will link to in the manual.