D1: PROPOSAL REPORT

Team: Divide And Conquer

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Project: Zippy, a grocery list service.

Application Description:

Zippy is an application proposal which will improve in-store grocery shopping experience in a flexible and convenient mobile form, designed for Android platform. It will allow users to quickly and easily create grocery shopping lists, which can be shared among people with real time updates, while also providing them an interactive competition game experience.

We live in an era where people are constantly busy and need optimized tasks. We all need to take our time every few days in order to go buy home supplies, and grocery is the shopping category which is done more often. *Zippy* can optimize this experience in two ways:

1. **Fast listing:** The app can automatically add items to the list with the selection of entire groups such as fruits, vegetables, dairy. Within one click, all the selected group items are instantly added to the list. These groups can be customized by the user. Users can then go on to save these lists for future use.
2. **Fast shopping:** The grocery list will be nicely displayed and sorted by areas in which stores are often structured, optimizing the way the user navigates in the store. The same list can be shared with more people, reducing the overall time spent shopping, while also making the experience fun. In shared mode, all users will have a synchronized list. Every item checked, added or updated by someone will be monitored by everyone. Every shopping event can be timed, and this can be used as a game that can be played between roommates, partners, family, providing a fun experience while being productive.

   Some additional features *Zippy* can also integrate in the future are:
   1. Allowing users to apply store coupons to their order at the store cashier.
   2. Suggesting recipes which can be selected by the user and all ingredients are automatically added to the shopping list.

System Functional Properties

Basic Properties

1. *Interactive Grocery List*
   - 1.1. Write and save numerous grocery lists for later use.
   - 1.2. View, edit or delete previously saved lists.
   - 1.3. Grocery items grouped by type allows quick list addings.
2. *List Sharing*
   - 2.1. View others' lists and share your own.
3. *Real-time List Editing with Others*
   - 3.1. Grocery shopping with others allows every participant to edit the grocery list. Others can see this change as it occurs.
4. *Race Alone or with Others at the Grocery Store*
   - 4.1. Track how long a grocery trip takes, alone or with others.
   - 4.2. Holds a record of previous trip times and displays comparisons.

Additional Properties

1. *Coupon and Sale Support*
   - 1.1. Displays weekly coupons or sales pertaining to the user's postal code.

System Non-Functional Properties

1. *Development in Java*
   - 1.1. Chosen IDE: Android Studio
2. Minimum Software Requirements
   - 2.1. Android 4.0.3 (IceCreamSandwich)
3. *Performance*
   - 3.1. List editing must occur with minimal latency.
   - 3.2. Efficient in saving and loading lists.
4. *Usability*
   - 4.1. Clear design, application must be easy to use.
   - 4.2. Consistent layout.
5. *Scalability*
   - 5.1. Versatile screen resolution to support different mobile devices.
   - 5.2. Scalable web services to sync information between devices
6. *Network Protocol Support*
   - 6.1. Users may interact using WiFi or LTE.

User Interactive Scenarios

Scenario 1:

Ben (a user) is out doing the weekly groceries using a *Zippy* list shared by Ben and Carle (another user). Carle is at home getting ready to clean the washroom when he notices that there is not a lot of toilet paper left. He quickly finds his phone and opens *Zippy* to update the grocery list with toilet paper. Ben receives a notification on his phone immediately after Carle updated their *Zippy* list with the new item. *Zippy* delivers the benefit that Ben will be able to notify his shopping partner and automatically add it to the list instead of Ben needing to manually add it to his grocery list.

Scenario 2:

Every weekend Mark cooks a few meals for the week so he decides to go on his weekly grocery run. Mark can enter multiple grocery lists into *Zippy* (Functional Properties 1.1) so he can chose what type of cooking he would like to do for the week. When Mark goes shopping, he can pick the list he wants to use to shop. Mark is shopping with his friend James and uses the *List Sharing* feature (Function Properties 2.1) so James can also see the items they need to ensure they are done their shopping sooner.

Scenario 3:

Mark goes to Shoppers Drug Mart while James goes to Costco. Today, Mark used *Zippy* to time his grocery run, which amounted to two hours. *Zippy* displays a list of previous times for this grocery list and Mark is able to see whether Mark and James can beat his previous time record. Once they are done their trip, *Zippy* will record how long they took and will add it to that grocery list's time history. *Zippy* has benefited them both as they will be able to turn shopping into a game, and try to shop faster and with more efficiency.