RoomEase Design Presentation

Team Members:

Alex Vrhel (avrhel)

Matt Mans (mans1626)

Omar Adel AlSughayer (oasugher)

Cheryl Wang (cwang7)

Jakob Sunde (jsunde)

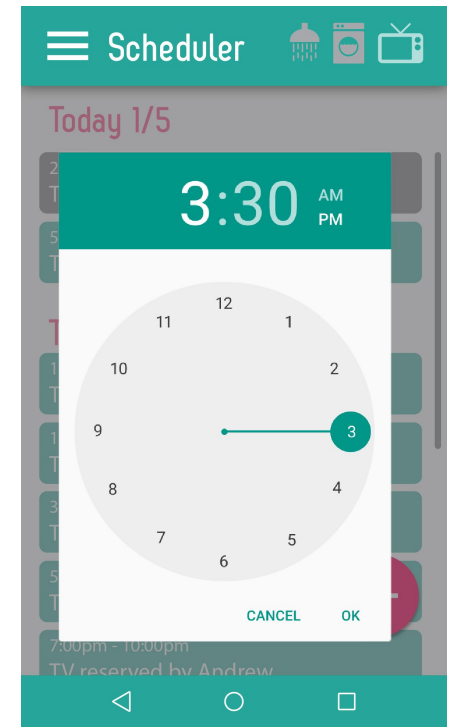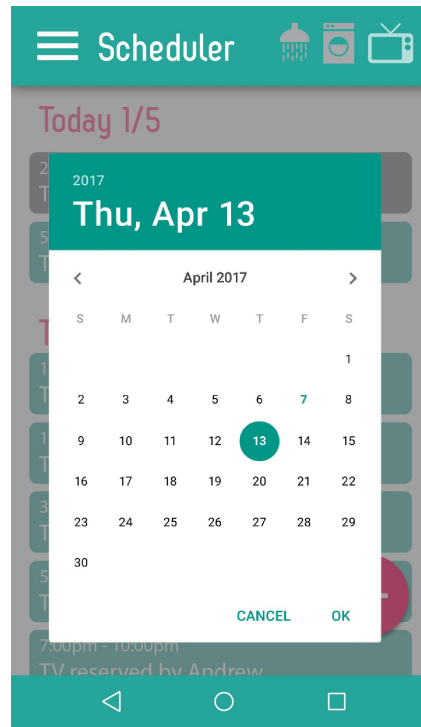Corie Dai (weijid)

Siddhartha Gorti (sgorti3)

The Problem

- Staying organized with roommates is a huge pain

- Food in common areas rots before anyone knows to remove it, hard to know whose food is whose

- Making shared lists (e.g. groceries) can be hard to coordinate

- It is difficult to keep everybody responsible and accountable for the chores they are assigned

- No single platform gives all the tools to stay updated easily

The Solution: RoomEase

- All in one roommate organization app
- 5 main modules: Fridge management, Reservations, Shared lists, Chores Scheduling, Reminders Feed
- Available on both iOS and Android

Why RoomEase?

- Designed to have a compelling set of features that makes coordinating simple and consistent

- A few competitors exist, but RoomEase:
  - Will have multi-platform access (Android and iOS)
  - Will have a user-friendly UI with an emphasis on speed
  - Has unique features not available on other apps, such as food management
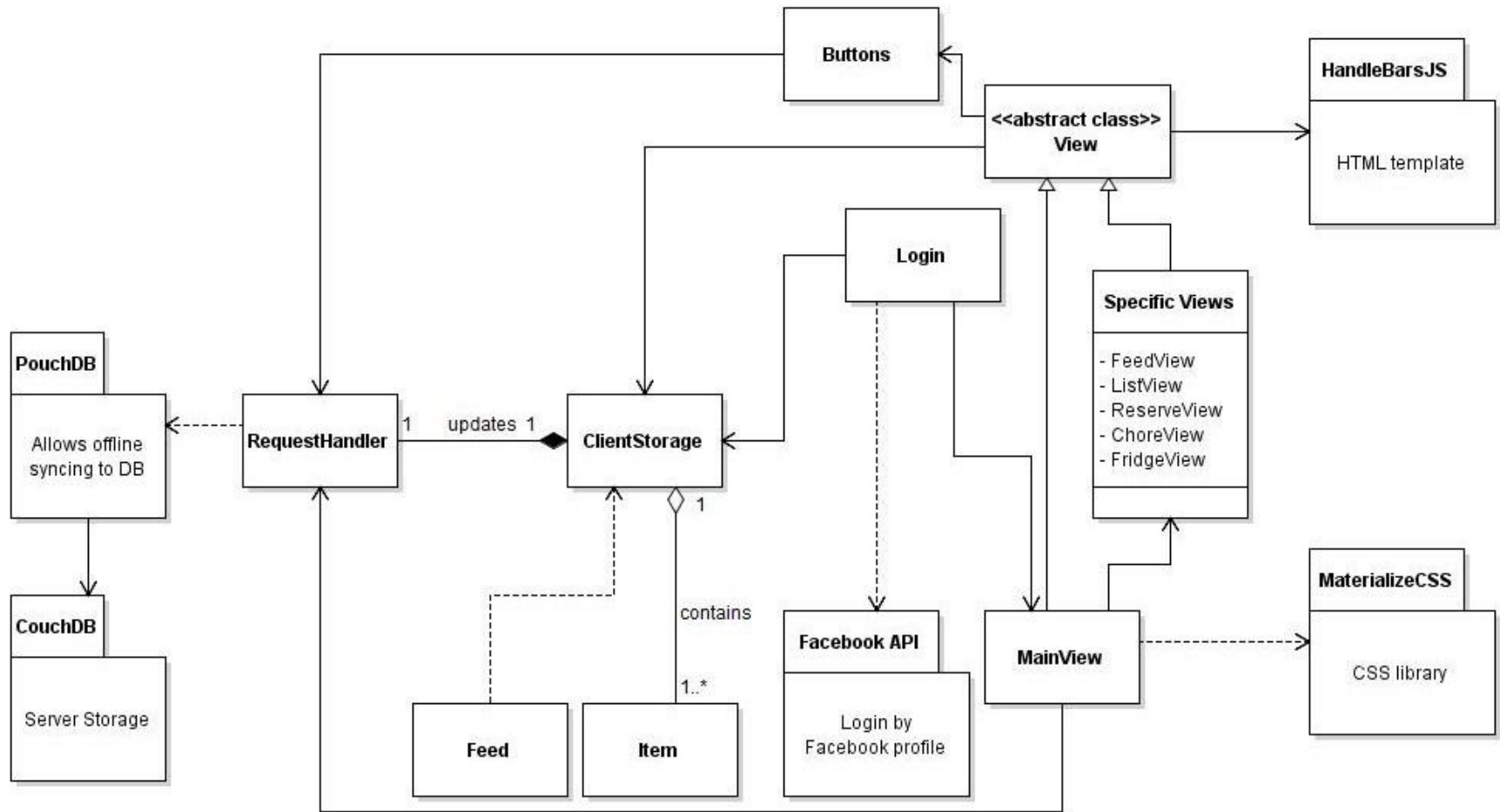 - Will have offline capability; be useful without a constant connection

Implementation Plan

- Overall Application
  - Developed using PhoneGap
    - Cross platform compiler (iOS, Android, etc)
    - Write as web application
    - Much smaller learning curve than Android/iOS development
- Front End UI
  - HandlebarsJS: HTML templates
    - Easy injection of data into HTML document
  - MaterializeCSS: Pre-made CSS/JS/HTML elements
    - No use wasting time making elements that already exist
- Data Storage
  - CouchDB on Azure, PouchDB on client
  - Local cache of most recently synced data to use offline
  - Data stored as JSON objects
  - No need for server-side DB interaction!

PhoneGap

pouchdb

System Architecture

Development Schedule

- Spiral model on shared list feature
- Multiple prototypes to get user feedback, released as follows:

Feb 7th	List module implemented, able to get/post data to DB
Feb 14th	List, reservation, and fridge modules, all views (with dummy values if necessary)
Feb 19th (Beta)	Facebook Login, group joining, modify/delete DB entries
Feb 23rd	Polish animations, all modules implemented
Feb 26th	User docs complete, main module bugs handled

Biggest Risks

- Fridge management feature not used consistently, could be tedious
  - Users may find UI slow
  - Could be time consuming to enter each item and expiration date
  - To mitigate risk, we'll integrate shortcut features
    - Auto-fill items using history
    - Calendar to select expiration date
    - Store expiration duration for previous entries
    - Incentivize feature by adding removed items to grocery list

- Race conditions in DB can be hard to resolve
  - Race conditions have to be solved client side
  - DB can recognize conflicting revisions on entries, provide indication
  - Race conditions for items with overlapping times not always easy to detect

In conclusion

- RoomEase is a unique solution for staying organized with roommates

- 5 user-facing modules, similar backend structure for each, local storage for recently synced data

- MVC architecture for application, easily split work between front and backend teams

- Planning to user test multiple prototypes of the application at various stages

- Features have been planned to mitigate the perceived risks

RoomEase