Ubiquitous and Mobile Computing
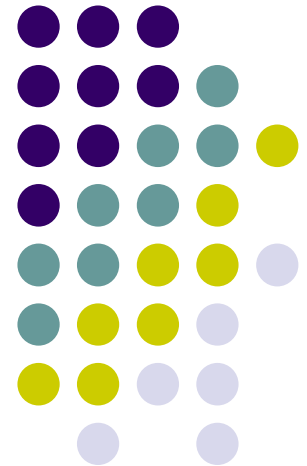# CS 528: *Food Savers*

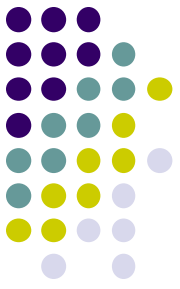Wafaa Almuhammadi

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Introduction

- An excessive amount of food is wasted and yet hunger still persists. There exists minimal or no solution to connect excess food and the hunger.
- In the United States 40% of food is wasted every year
- That is $2,200 worth of food per household annually
- Translates to one in eight Americans remaining food insecure
- What can be done?

Background

Too Good To Go - fight food waste, save great food

Too Good To Go   Food & Drink   ★★★★★ 29,764 👤

E Everyone

✕ This app is incompatible with all of your devices.
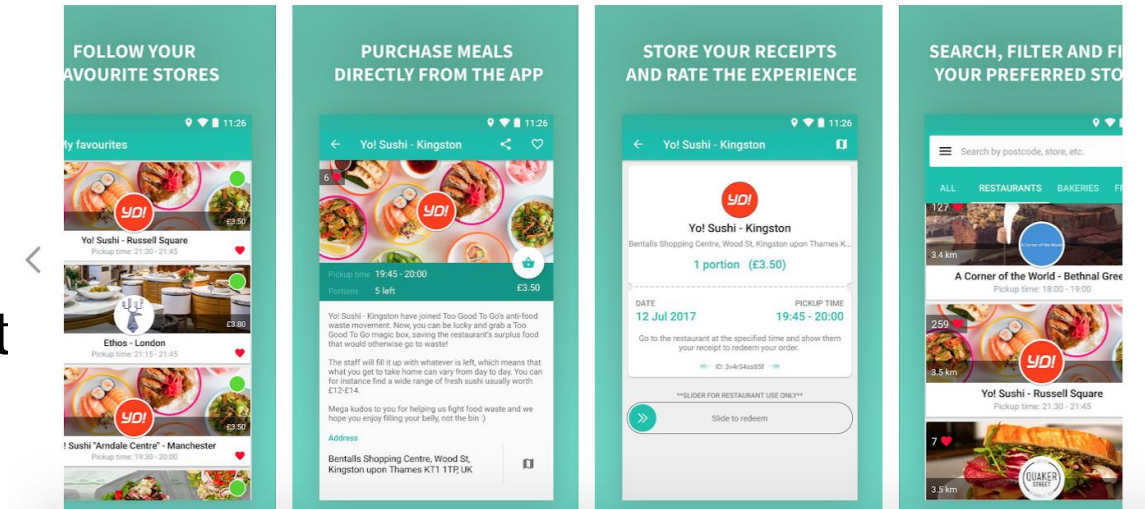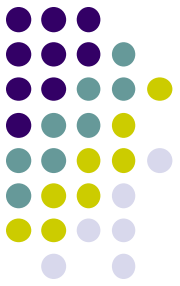
🔖 Add to Wishlist

MintScraps - USA
- Measure Food Waste
- Donate it to non profit organization

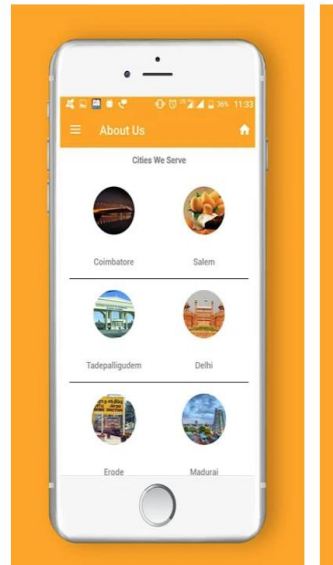**Too Good To Go - UK**
- Discount

Background

No Food Waste

Boomit Solutions **Social**

Everyone

This app is compatible with all of your devices.

Add to

FOOD for all

#FreeTheHungry

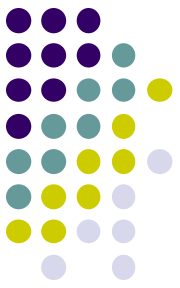...THE GROUP ORGANISES A PICK-UP

Food for all - Boston
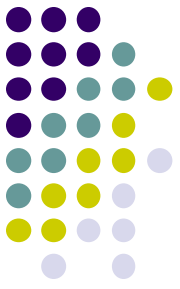- Discount
- Restaurants only

No Food Waste - India
- Surplus food - hunger points

Our Competitive Advantage

- Role Flexibility
- Mixture of business and service aspects
- Connects to all

Methodology

- Our Android application will support Producer as well as Consumer use cases
- Producer uses cases will include features as sharing, tagging, and adding information about food that would be available for the consumers
- Consumer use cases will cover the features such as subscribing to newly available food posts, claiming food when it gets posted and viewing food that is currently available.
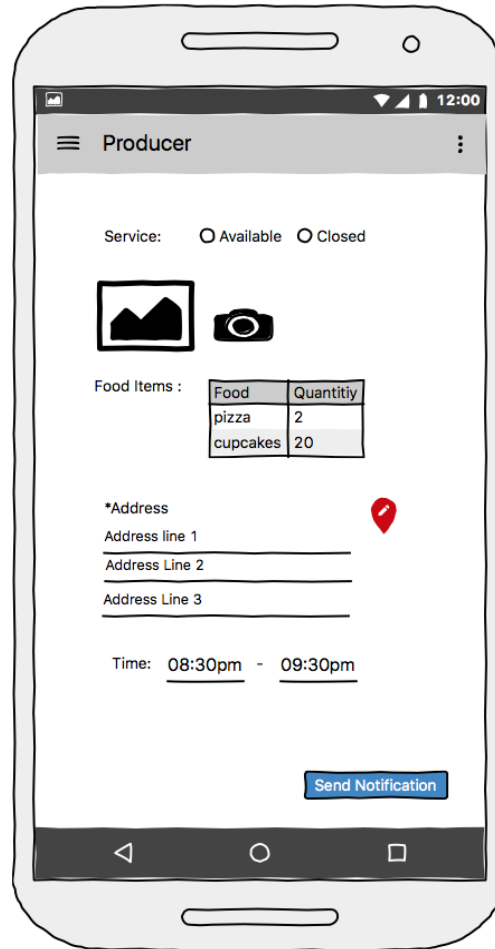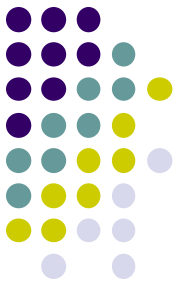
Implementation

- Firebase backend for storing information about the food and users
- Firebase Cloud Messaging for push notifications to consumers
- Firebase ML Kit for on device food image classification
- Google Maps for displaying food postings
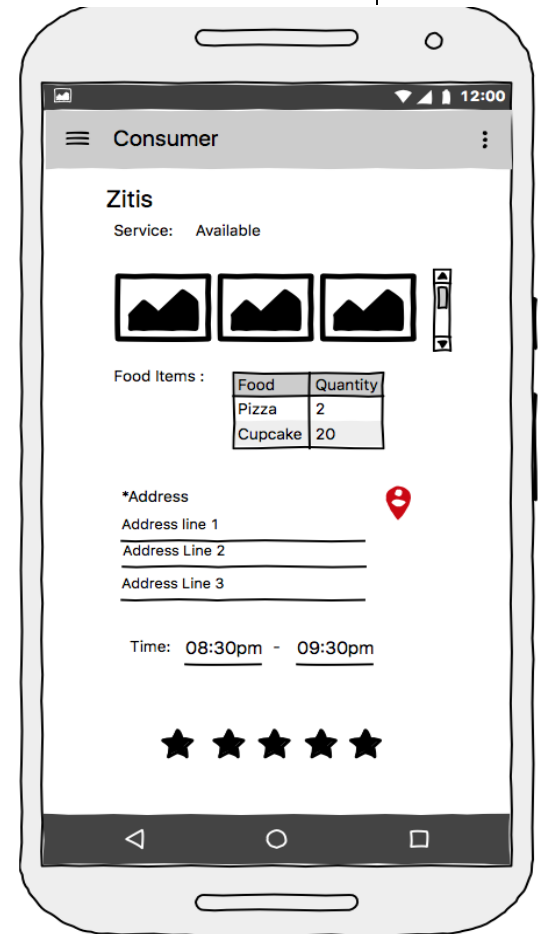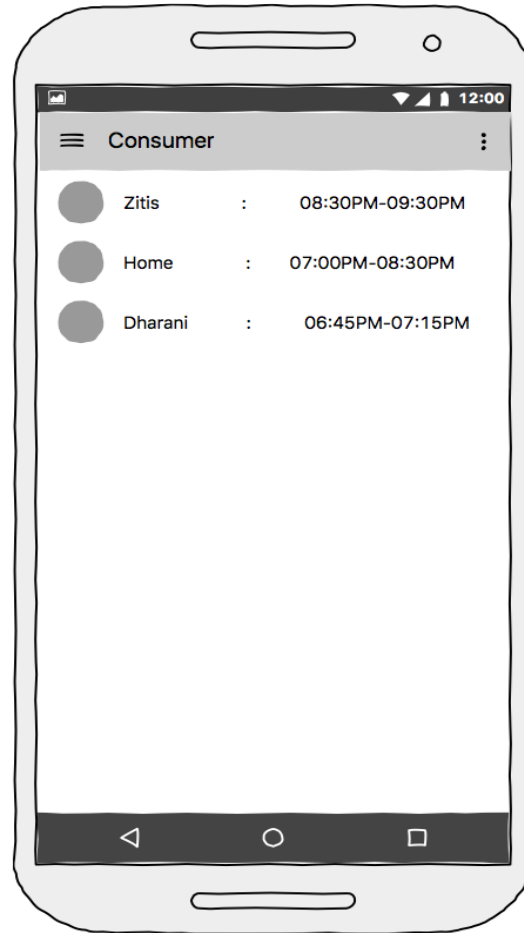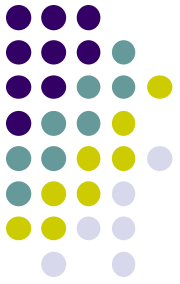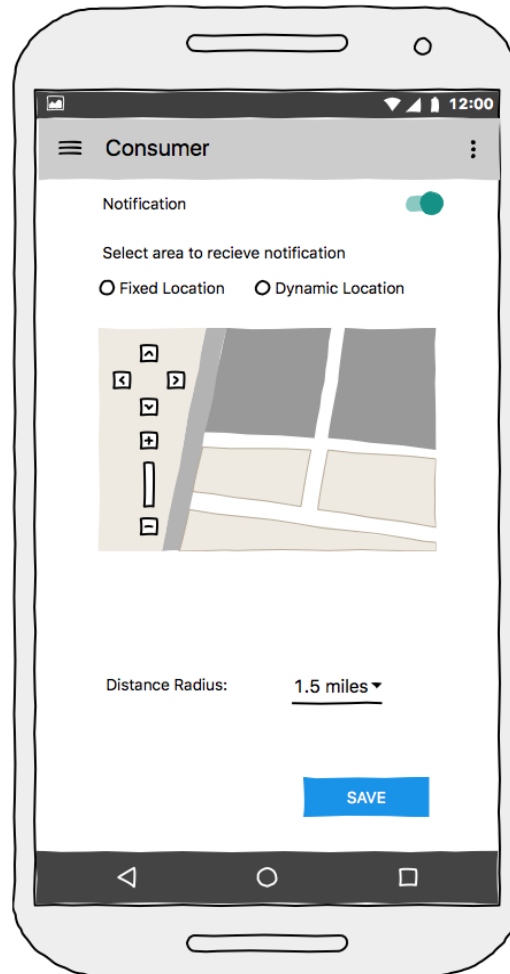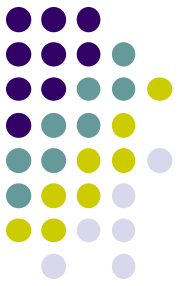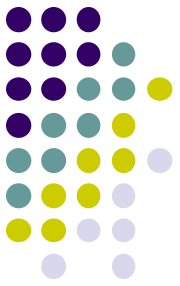
Mock Ups
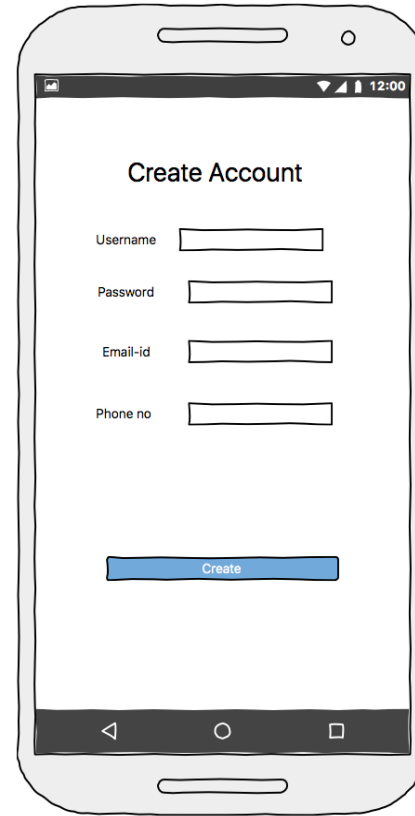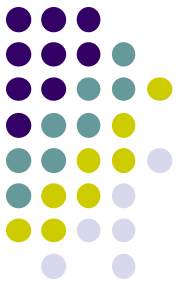
Mock Ups

Mock Ups

Mock Ups

Timeline

- November 5th
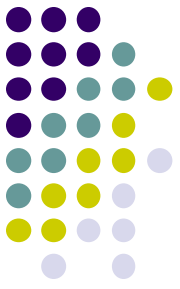 - Provision Firebase project with final schema
  - Build simple producer UI
- November 10th
  - Build Consumer UI
- November 20th
  - Implement user authentication
  - Implement push notifications
- December 2th
  - Finish Implementation
  - Begin Usability Study
- December 8th
  - Conclude usability study
- December 12th
  - Finish incorporating user feedback into application

System Architecture
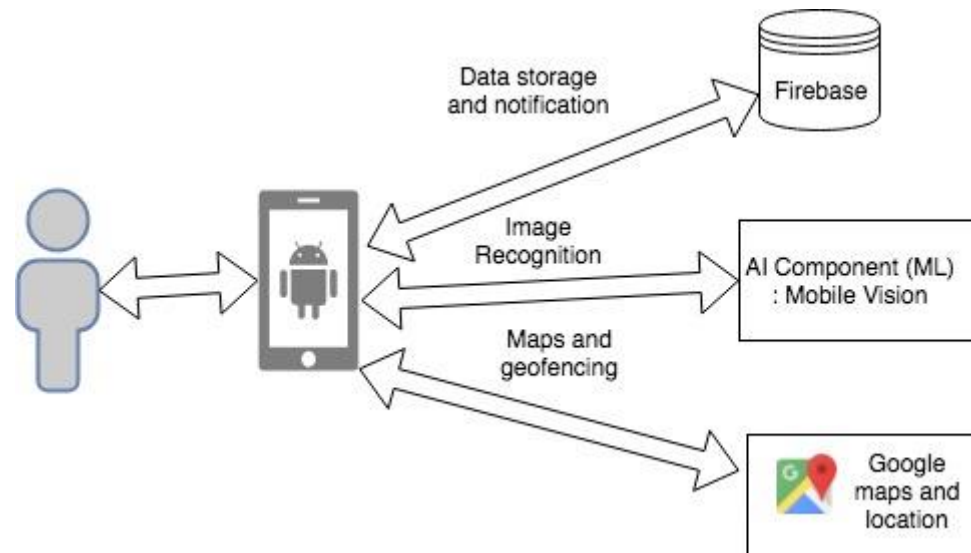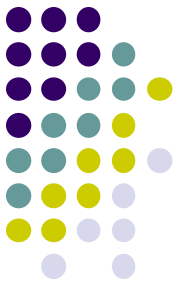
Evaluation

We propose a Usability Study that will evaluate our application based on the following criterias

- Successful Task Completion
- No Critical Errors
- Error-Free Rate
- Subjective Measures
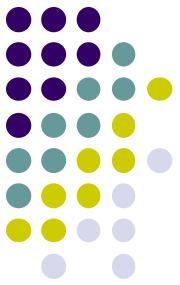- Likes, Dislikes and Recommendations:

Difficulty

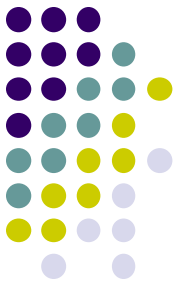We propose a Usability Study that will evaluate our application based on the following criterias

- Maps on two seperate screens (4 points)
- Camera taking a picture (4 points)
- Location sensing (4 points)
- Firebase Firestore API (4 points)
- Mobile vision API for detecting what food is being photographed (6 points)

References

- US Geological Survey. "How Much Water Is in Common Foods and Products: USGS Water Science School." *The USGS Water Science School* (2016). Accessed October 3, 2016.https://water.usgs.gov/edu/activity-watercontent.php.

- Feeding America, "Hunger Facts & Poverty Statistics," Accessed May 29, 2017, http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/hunger-and-poverty/hunger-and-poverty-fact-sheet.html.

- https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127881
[4]https://www.theguardian.com/sustainable-business/2017/feb/06/food-waste-apps-global-technology-leftovers-landfill

- Planning a usability study
https://www.usability.gov/how-to-and-tools/methods/planning-usability-testing.html

Questions?