Ubiquitous and Mobile Computing
CS 528: *Food Savers*

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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

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.

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

- **Food available near by**

- **Consumer**
  - Zitlis: 08:30PM-09:30PM
  - Home: 07:00PM-08:30PM
  - Dharani: 06:45PM-07:15PM

- **Zitlis**
  - Service: Available
  - Food Items:
    - Pizza: 2
    - Cupcake: 20

- **Address**
  - Address line 1
  - Address line 2
  - Address line 3

- **Time**: 08:30pm - 09:30pm

- **Rating**: ★★★★★
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 criteria:

- 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 criteria:

- Maps on two separate 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


- https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127881

- Planning a usability study
Questions?