Easy Food Share

An idea to allow poor people to get food for free or at minimal cost with a focus of reducing food waste

ITIS 6400/8400 Human Computer Interaction

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Problem Statement

- The idea is to help the homeless or poor people by getting them food for free or at minimal cost.

- Reducing the food waste from different restaurants or other locations by utilizing the same food.

- Establishing a community of food banks and associated people.

Design Goals

1. Users can quickly grab free food available with just few steps.

2. Allowing the user to select the type of food from different choices.

3. Enable the user to choose the delivery option for the food.

4. Users can rate the food provider and its quality of food.

5. Users [donators] can donate the food using few simple steps.

6. Users [volunteers] can help the food community by delivering the food to poor people.

DESIGN CONCEPT

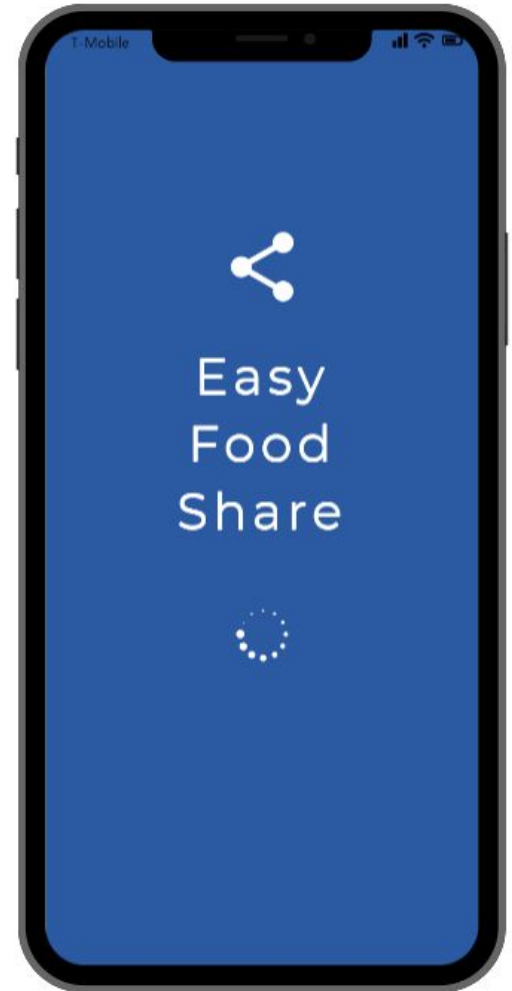Based on user,usability and design goals we have opted to evaluate fitment of three design concepts

- Web based application
- Smart phone application
- Vending machine application

Finally, we have chosen "Smart phone application"
among the above design concepts based on the design goals evaluation
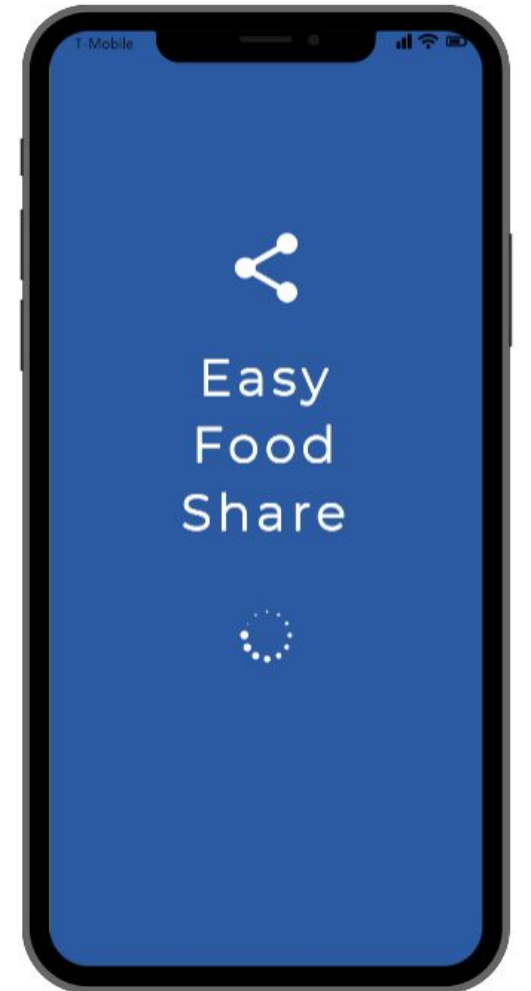
# Project Prototypes

Smart phone application

Interface Flow

- **Login** to the application

      OR

- **Register** towards the application if not registered previously.

- Once, successfully signed in - **Home** screen comes up with **eat**, **donate** and **help** option.

- **Eat** - user who is hungry and wants to eat food.

- **Donate** - user who is willing to donate food for needy people.

- **Help** - willing to volunteer towards the food community.

START
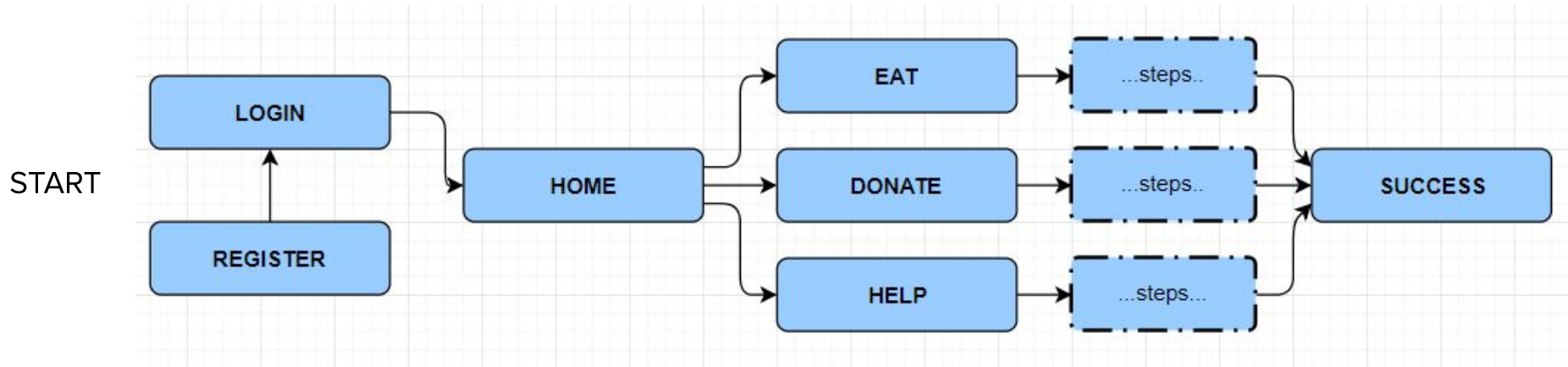
Home Screen

- Allows to select "one" option from three allowed options based on user choice.

- Each option having a button, clicking upon same takes the user towards the next respective screens.

- Each option has description associated with it, which explains about the respective feature.
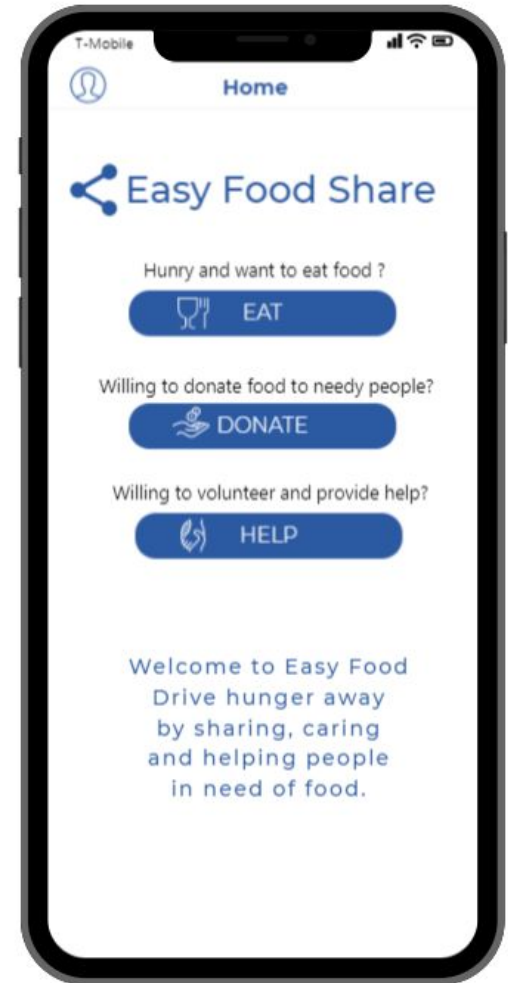
Eat option - Step 1
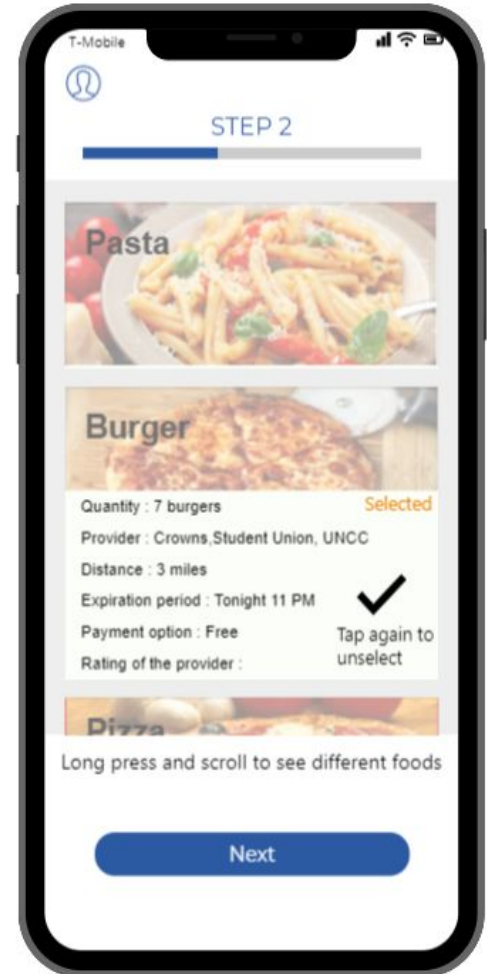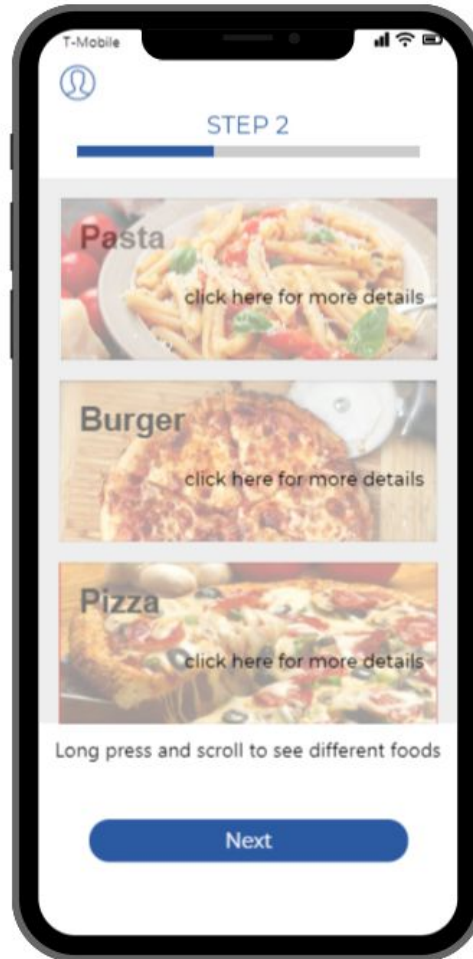
Satisfying design goal 1

- **Step 1** allows user to select the current location

- Initially, current address and "Next" button is hidden.

- Clicking on the map location, displays the current location address.

- At the same, "Next" button appears to proceed further.
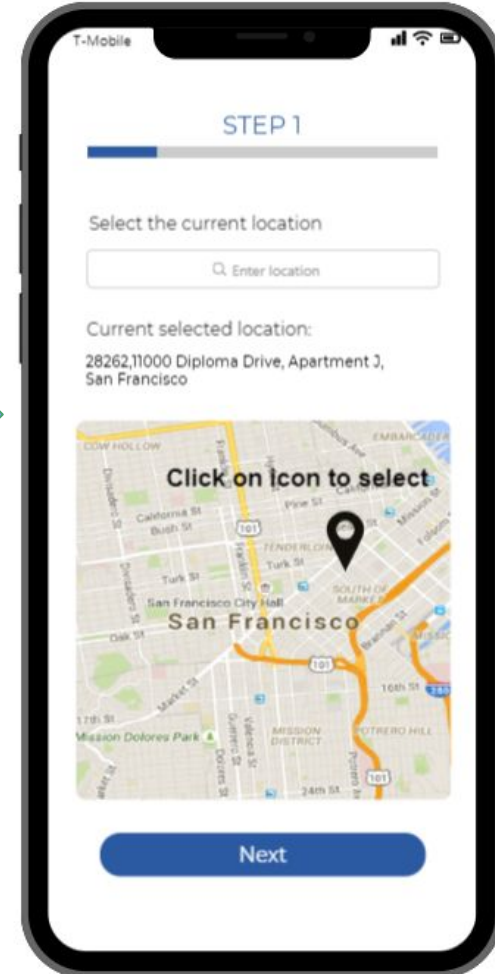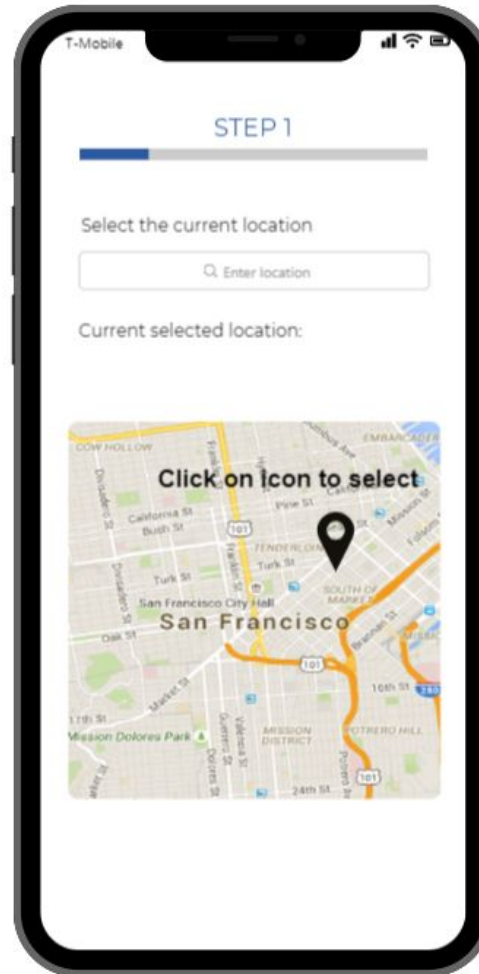
Eat option - Step 2
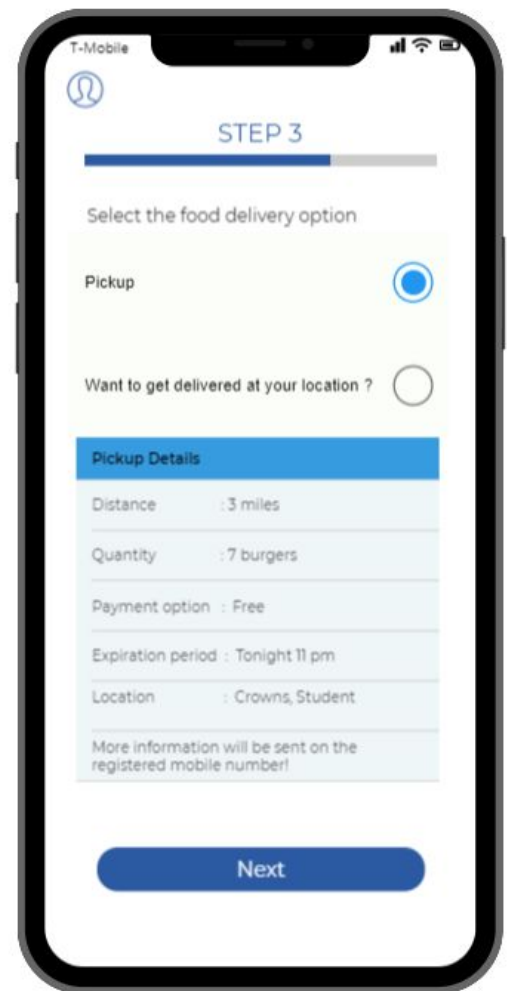
Satisfying design goal 2

- **Step 2** allows user to select the food from different available foods
- Initially, it shows a scrollable list view.
- Enables user to scroll and see different foods available.
- Tap on the food image, shows more details and gets selected.
- Once selected, shows a "right" tick as confirmation.
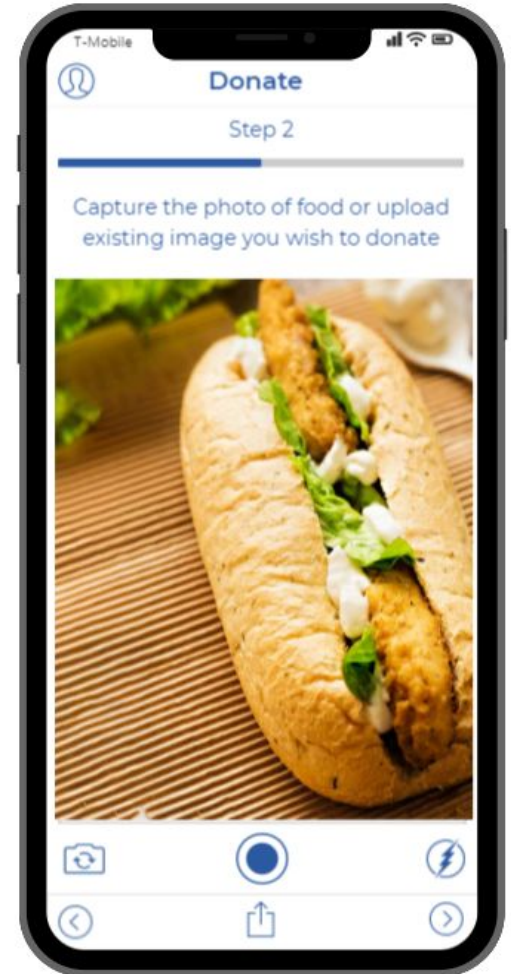
Eat option - Step 3

Satisfying design goal 3

- **Step 3** allows user to select the delivery option

- Radio button allows user to select one option from available two options.

- Based on the selected radio button, the details appear.

- Tap on the "Next" button takes the user to further steps.

Donate option - Step 2
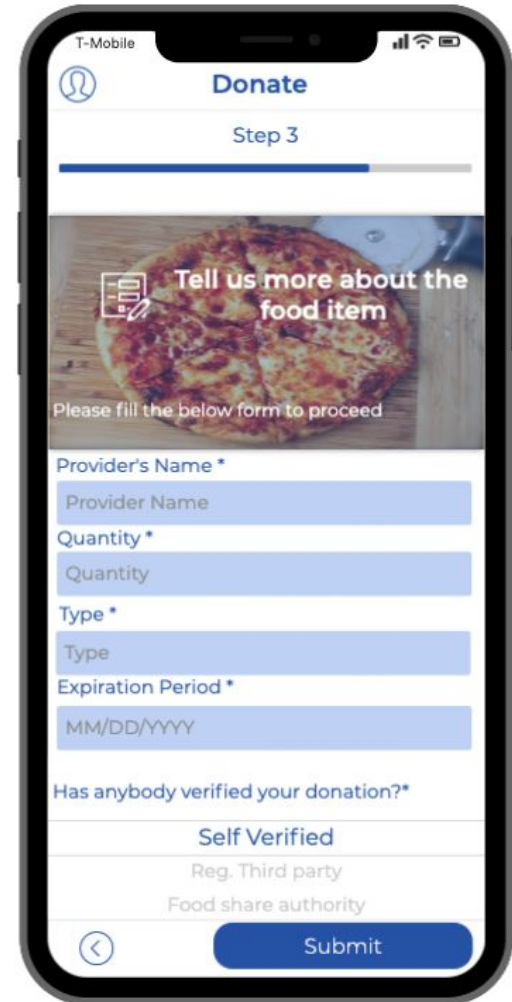
Satisfying design goal 5

- **Step 2** allows user to take the picture of the food which he/she wants to donate.

- Tapping on the center circle button allows to capture the photo.

- Once captured, the photo is shown in a large view on the screen as shown in the interface.

Donate option - Step 3

- **Step 3** enables the user to provide the details of food which is to be donated.

- It gives a form having two text fields and one drop down list to fill out accordingly.

- Once the form is completely filled, user can click on the submit button to proceed further.

Help option

Satisfying design goal 6

- **Help** enables the user to choose one of the radio button option from different available options.
- Only one option can be chosen based on the preference and then submit button is used to move towards next screen interface.

DEMO

[Click here](#) to access the prototype

[Click here](#) to access the video demo

Smart phone application

EVALUATION RESULTS

Smart phone application

Participant Evaluation Methodology

- Performed user study across a group of user to analyzed their performance , collect feedback and based on this that did minor changes.

- Simple evaluation, focus on efficiency, learnability, effectiveness.

- Perform three task and captured results.

- Overall 10 users participated in this evaluation study, they all were able to complete the evaluation successfully.

Discount Evaluation

Cognitive Walkthrough

Identified three tasks to evaluate from the perspective of users also set of questions related to each task.

- Task 1: User wants to avail the eat option to eat food.

- Task 2: A person wants to upload the photo of a food item he wants to donate to the needy people.

- Task 3: A person wants to volunteer towards the cause.

Heuristic Walkthrough

- Performed evaluation based on all heuristic methods.

- Find out flows in each methods.

- Used rating map to score flows.

Result of Heuristic Evaluation

Heuristic Violated	Feedback/ comment/ suggestion/ improvements	Rate of severity
On Landing page		
Match between system and the real world	A picture depicting food can be shown instead of human logo icon	2
Match between system and the real world	Shift the sign in, register button towards bottom of the screen placed side by side.	2
Aesthetic and minimalist design	Sign in, Register buttons are too big.	3
On Register page		
User control and freedom	Absence of icon or button to go back to landing page	3
EAT Option- STEP 2 screen		
Flexibility and efficiency of use	The food items pictures can be made more visible when that food item is selected.	3
Consistency and standards	The text 'Click here for more details' can be shifted more towards lower right side with decrease in font size.	2
Error prevention	Modify text 'Long press and scroll to see different foods' to 'Drag screen upwards' to remove scrolling confusion.	4
EAT Option- STEP 4 screen		
Match between system and the real world	Increase in font size to make the rating number more visible	3
Recognition rather than recall	Logo/ icon used on 'submit' button not understandable	3
DONATE option- STEP 3 screen		
Visibility of system status	Options for question 'Has anybody verified your donation?', when scrolled up, the text does not correctly overlap with the text of question making it unclear.	3
For All pages		
Flexibility and efficiency of use	Home button to be placed in each screen	4

# Evaluation Result

Task	Task Description	Average taps	Median taps	Average time (seconds)	Median time (seconds)	Error rate
1.	Find a food item to eat.	5.5	5	30	28.03	13%
2.	Add a food item to donate.	7.7	6.9	29.78	29	21%
3.	Find out how you can volunteer yourself.	4.2	4	8.96	8	2%

Evaluation Result - Box Plot

Analysis of time taken for each Tasks

Time in secs

T1 - Find a food item to Eat values: 39.03, 33.4775, 31.9, 32.188, 29.7325, 28.21

T2 - Add a food Item to Donate values: 38.09, 34, 32.755, 32.924, 30.99, 30.93

T3 - Find out how you can volunteer yourself values: 17.01, 13.3, 10.725, 11.227, 8.765, 7.82

Legend: ■ T1 - Find a food item to Eat ■ T2 - Add a food Item to Donate ■ T3 - Find out how you can volunteer yourself

Evaluation Result - Box Plot

Analysis of Taps for each task
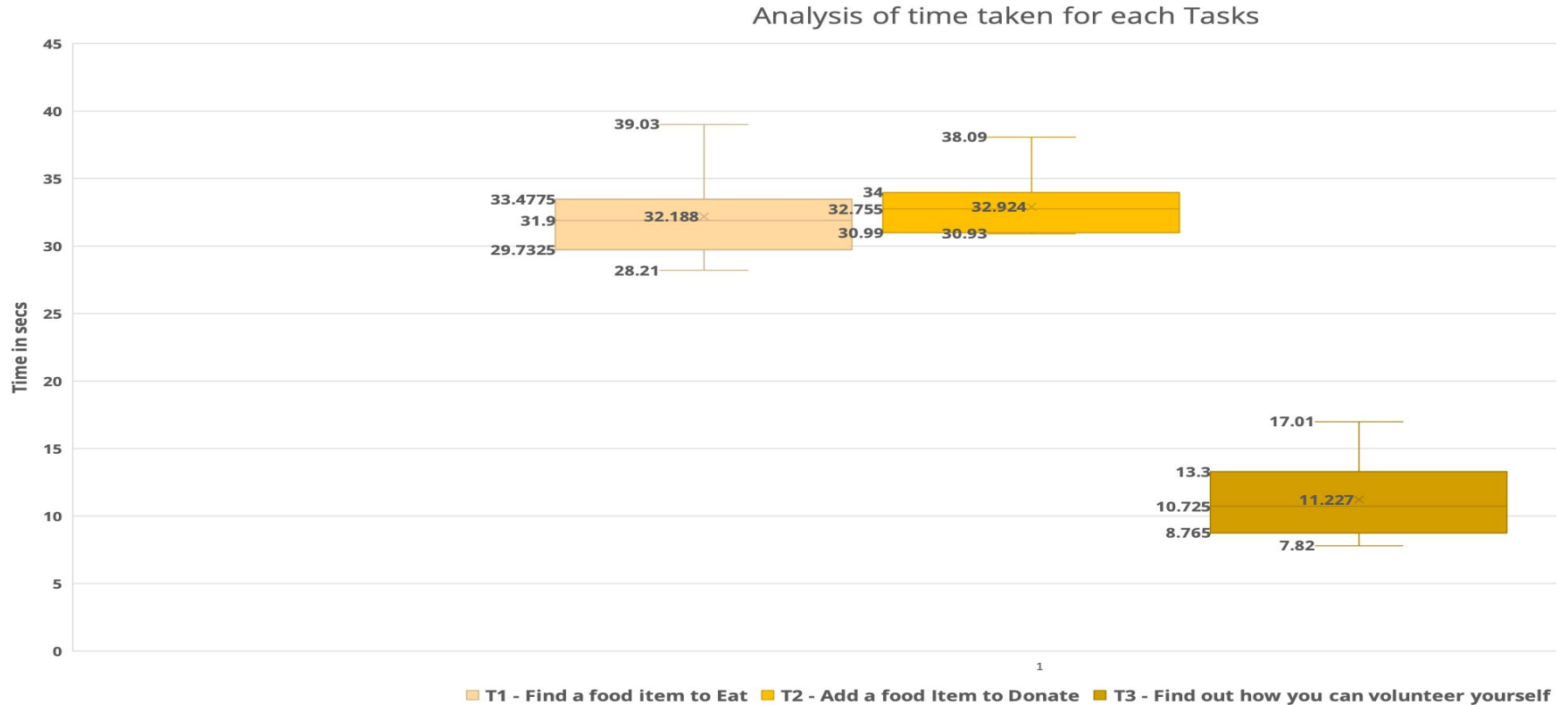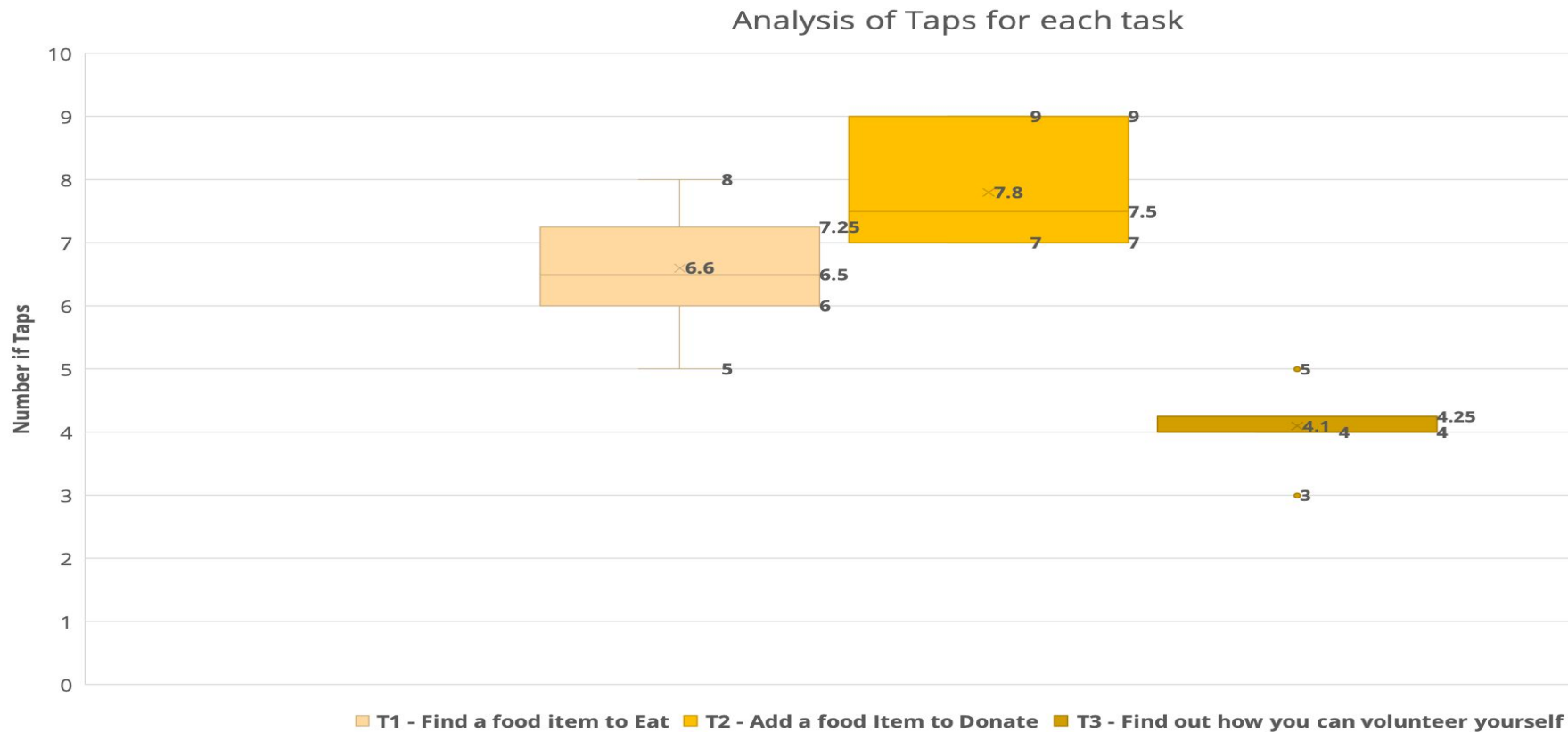
Usability Goal evaluation

- **Learnability:** Strongly supports

- **Efficiency:** Strongly supports

- **Memorability:** Strongly supports

- **Errors:** Strongly supports

- **Satisfaction:** Strongly supports

Design Goals evaluation

- The users/ consumer should be able to quickly choose the type and select available free food located within minimum distance shown or to opt for delivery option for food - **Strongly supports.**

- The consumers can rate the food provider and the quality of food by rating system with minimal ambiguity - **Strongly supports.**

- The donators or producers should be able to upload details of excess food without any hurdle - **Strongly supports.**

- The volunteers should be able to choose whether they want to help financially, packing or delivering food item - **Strongly supports.**

LESSONS LEARNED

Smart phone application

Future Improvements

- Simplicity of the design

- Increasing the font size on EAT option-step 4 to make the rating more visible.

- Donate option-step 4, the scroll list for 'Has anybody verified your donation' overlap the other input fields which should be fixed.

- Shifting the sign and register button towards bottom of the screen place side by side in the landing screen.

- EAT option - step 2, the food items pictures can be made more visible when the food item is selected.

QUESTIONS ?

Smart phone application