FOODEALIZE

Milestone 5 activity, part of User Experience (UX) Research and Design Micromaster by University of Michigan and edX, section UX509x

Heuristic Evaluation, Final Prototype, User Test Design

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Heuristic Evaluation

Executive Summary

This report will document our heuristics evaluation of the mobile application "Foodealize". Heuristics evaluation is a cheap, fast and easy-to-use usability engineering method designed by Jakob Nielsen in 1994 to find usability problems in user interface designs. Generally, the process starts off with a meeting of all evaluators to agree on the scope of the project. Evaluators then perform individual analysis of each of the ten heuristics and track the adherence and violations of each. These heuristics cover topics such as feedback, visibility, user control, user efficiency, help, error handling, error prevention and use of metaphors that match the real world. It has been determined through the study that different evaluators find different heuristics, therefore, each evaluator performs a complete heuristics evaluation individually.

Each finding is given a severity rating from 0 (not a usability problem) to 4 (usability catastrophe) and assigned a recommendation. Finally, all evaluators meet to debrief, share their findings, and create a consolidated report of findings, recommendations and severity ratings.

This report has been conducted in order to verify how Foodealize can provide a satisfying user experience when booking or providing a meal.

Through heuristics evaluation, it is possible to provide insights on how to improve the usability of Foodealize and in doing so, improve the sharing experience for users so that the delivery and consumption of meal is effective.

In our study, we hope to answer the following questions:

- What heuristics are being violated? How are they violated and with what severity?
- What recommendations can we give for each violation?
- What heuristics are being adhered to?

Heuristics evaluations are a cheap, fast and easy-to-use method that can identify usability issues in a user interface.

The goal is identifying some critical issues, providing some useful recommendations and also sharing some good findings where Foodealize is doing well.

Methods

Scope of the Evaluation

In the initial meeting to decide on the methods of evaluation, it has been determined that the scope of the evaluation would include both posting of a meal as well as the functionality regarding the booking of a meal.

The evaluation part includes:

- Complete the basic processes of posting a new meal, booking a meal and donate to an NGO with ease
- Evaluate the general layout disposition of element
- Evaluate the textual contents (proper lexicon use, phrases etc.)

Heuristics Used

For this evaluation, we used the heuristics developed by Jakob Nielsen (1994) in the chapter "Heuristic Evaluation" in Usability Inspection Methods.

Additional titles were added to the heuristics for clarification from "6 Tips for a Great Flex UX: Part 5" (Neil, n.d.):

1. FEEDBACK: Visibility of system status

2. METAPHOR: Match between system and the real world

3. NAVIGATION: User control and freedom

4. CONSISTENCY: Consistency and standards

5. PREVENTION: Error prevention

6. MEMORY: Recognition rather than recall

7. EFFICIENCY: Flexibility and efficiency of use

8. DESIGN: Aesthetic and minimalist design

9. RECOVERY: Help users recognize, diagnose, and recover from errors

10.HELP: Help and documentation

Heuristic Evaluations

This consisted of taking multiple passes through the app to determine where there were issues. The issues were then categorized by the heuristic that was violated and the severity of the violation.

Severity was judged based on a five-point rating scale taken from Nielsen's "Heuristic Evaluation" chapter, Table 2.3 (1994):

0. I don't agree that this is a usability problem at all

1. Cosmetic problem only – need not be fixed unless extra time is available on project

2. Minor usability problem – fixing this should be given low priority

3. Major usability problem – important to fix, so should be given high priority

4. Usability catastrophe – imperative to fix this before product can be released

Debrief and Consolidation of Results

Once each interview participant completed their individual assessment, the results consolidated to make a general evaluation.

To begin, a list of the heuristics has been created as well as a list of the issues that violated that particular heuristic. Because of the cyclic process of revision of the report, some of the issues could be recategorized to a different heuristic.

Once the list of issues was complete, it has been assessed to determine which issues were the most important

Findings and Recommendations

Summary Results

The findings are mainly focused on the interface shown to the user for what concerns the "Share a meal" function, in fact part of them are related to the disposition of the form, to have a better understanding of what is going on (the inclusion of a tote, is taken into account, for example).

A closer look at the needs of a general user helped to find more usability details that need care, such as the inclusion of a fixed back-button on the top bar.

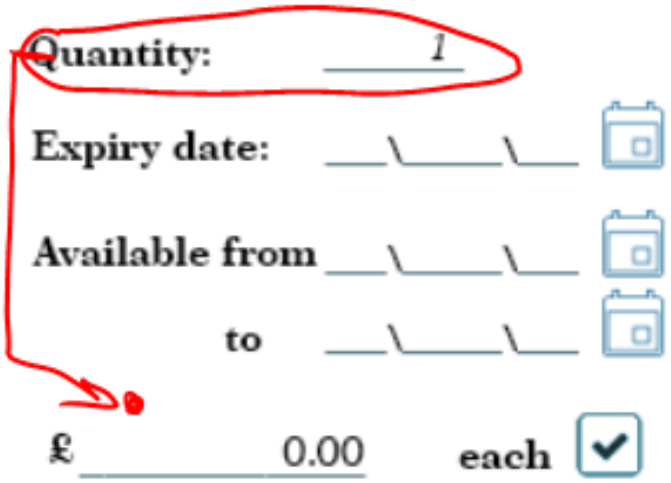
A serious aspect is how the user visualizes the food intolerances on the screen; an effective graphics will grant a proper understanding of the meal offer and at the same type will avoid unwanted legal action towards the developers.

Key Findings

FINDING 1: quantity position distance from price

SEVERITY: 1/4

HEURISTIC VIOLATED: Aesthetic and minimalist design



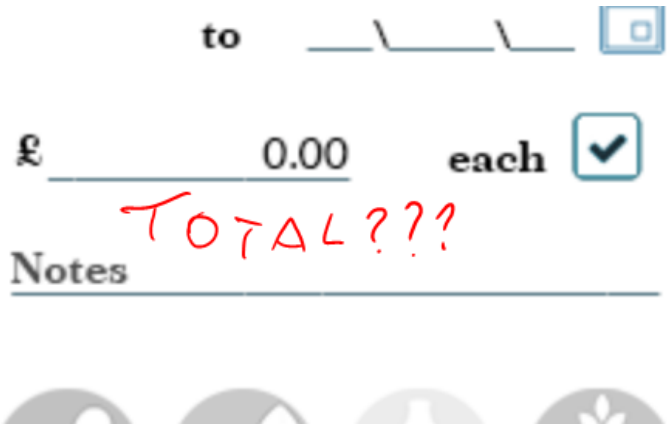
Description. Although it is clear the use of "Quantity", for the sake of coherency, it would be better to reposition it near the Price form.

Recommendations. Moving the quantity near the price will give the user a more comfortable understanding of what he can give/earn in a single sight

FINDING 2: lack of a total for the meal posting

SEVERITY: 3/4

HEURISTIC VIOLATED: Visibility of system status



Description. When preparing the form for a new meal, the user sets the quantity and the price, but he/she will not have the total amount of money to be earned.

Recommendations. Adding a tote that multiplies in real time the price for the number of products.

FINDING 3: icons for the food intolerance not clear

SEVERITY: 4/4

HEURISTIC VIOLATED: Visibility of system status

Description. The dynamics of the icon set used the intolerances is perceived as misleading because the user is not aware if that meal can be or not be edible for him/her due to the combination of the red circle around the coloured inner graphics of

the button. The wrong interpretation of this feature can cause harm to the user, leading to unpredictable health problems.

Recommendations. Using only the red colour (as used in danger signals) for all the type of intolerances: this will avoid misunderstandings and require less time in the button design process.

FINDING 4: missing a back-button

SEVERITY: 2/4

HEURISTIC VIOLATED: *User control and freedom*

Description. Thinking about a cross-platform issue, a software back-button should be placed on the screen. In fact, using inVision as a testing platform, it is impossible to use and simulate hardware buttons (like in Android), moreover, iOS doesn't provide a physical button to go back to the previous screen.

Recommendations. Replacing the sandwich menu button (useful only on the main screen) with a classic back arrow that leads the user back to the previous page.

CONCLUSION

The heuristic evaluation of the app "Foodealize" revealed that there were some issues in the design that are important to be fixed to enhance the user's experience.

Some of the issues that violated heuristics were issues that had been determined in the previous evaluation. Of the issues of primary importance that we determined, the following changes should be made for the next versions of the courses:

1. The position of the quantity should be placed near the price.

2. There should be a label which gives the user the total amount of money he is going to have.

3. The possible problems with food should be displayed in a form of icon coloured in red.

4. For a smooth navigation experience, it should be necessary to add a back button on the top of each screen

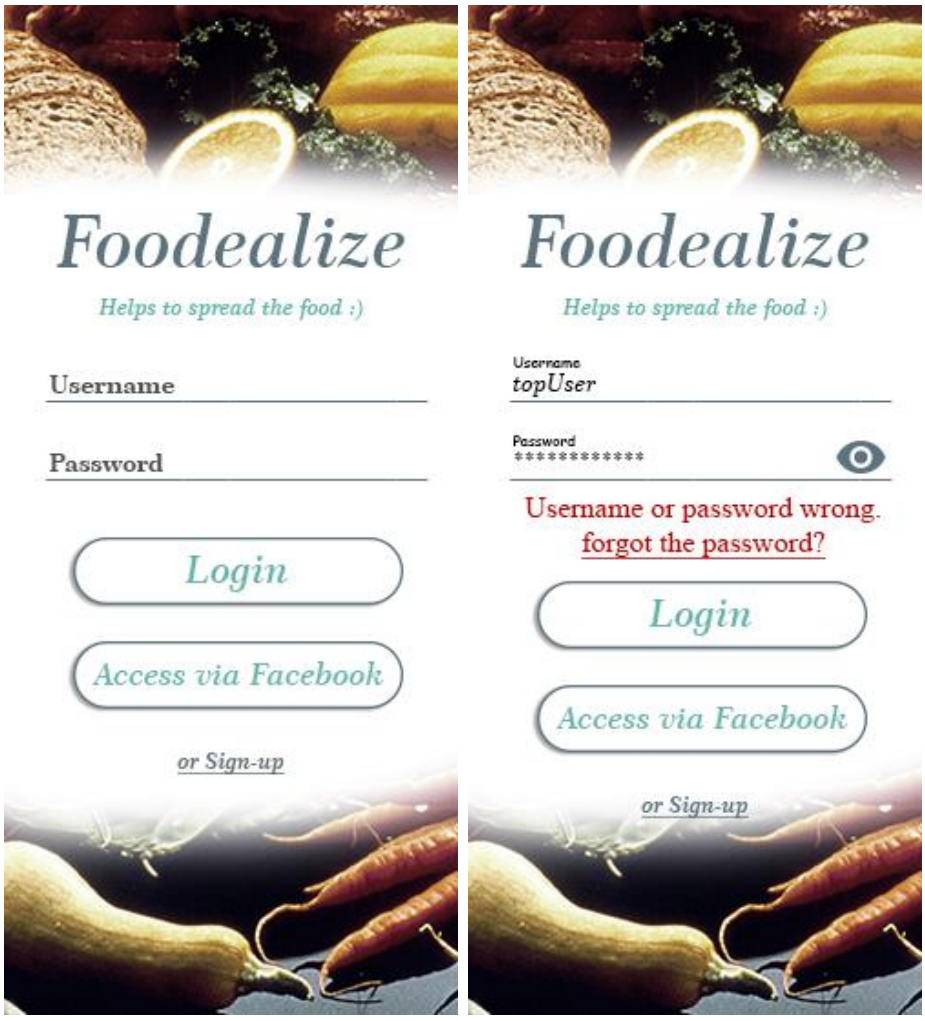
Implementing these changes should significantly enhance the experience of the user and lead to a higher quantity of meals shared, which is the very first goal of this application.

MED-FI PROTOTYPE

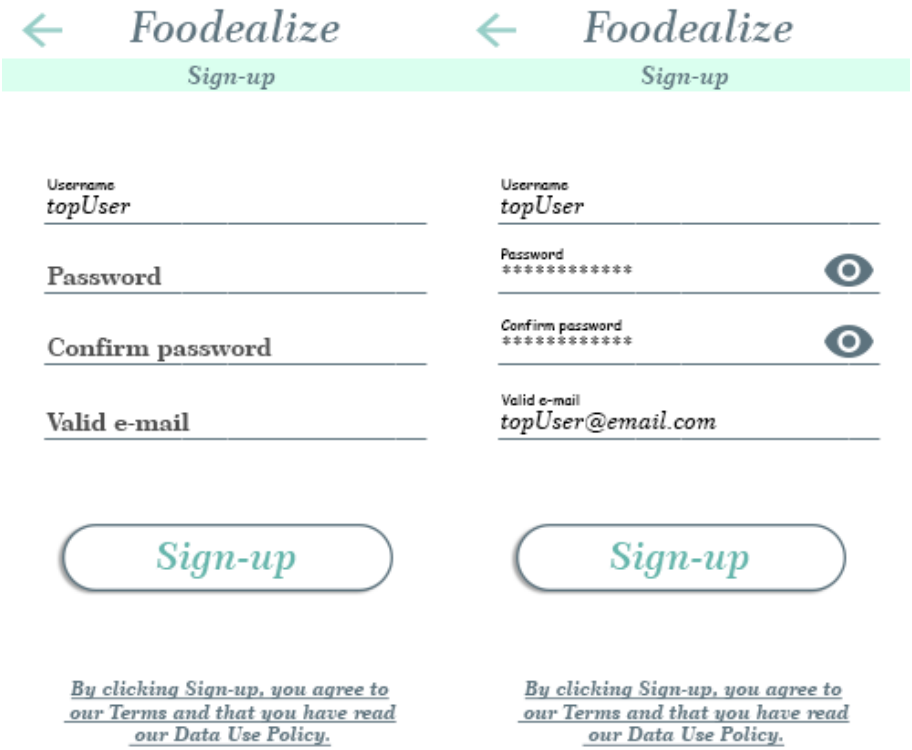
LINK TO SHARED INVISION INTERACTIVE PROTOTYPE

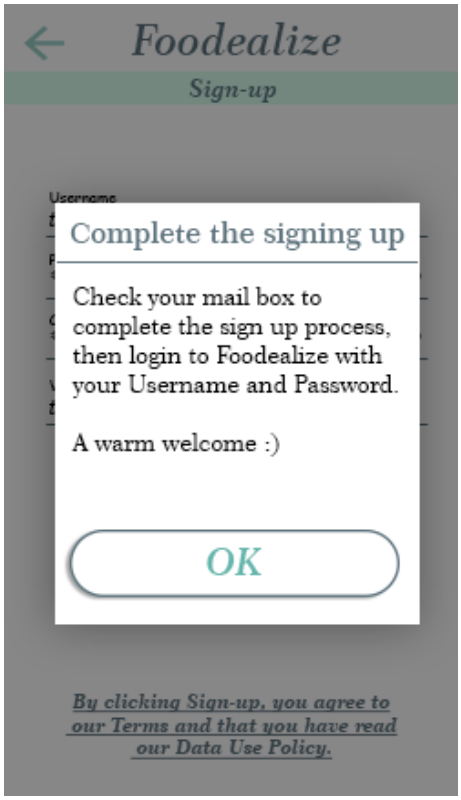
https://invis.io/THOB7BLKQJM

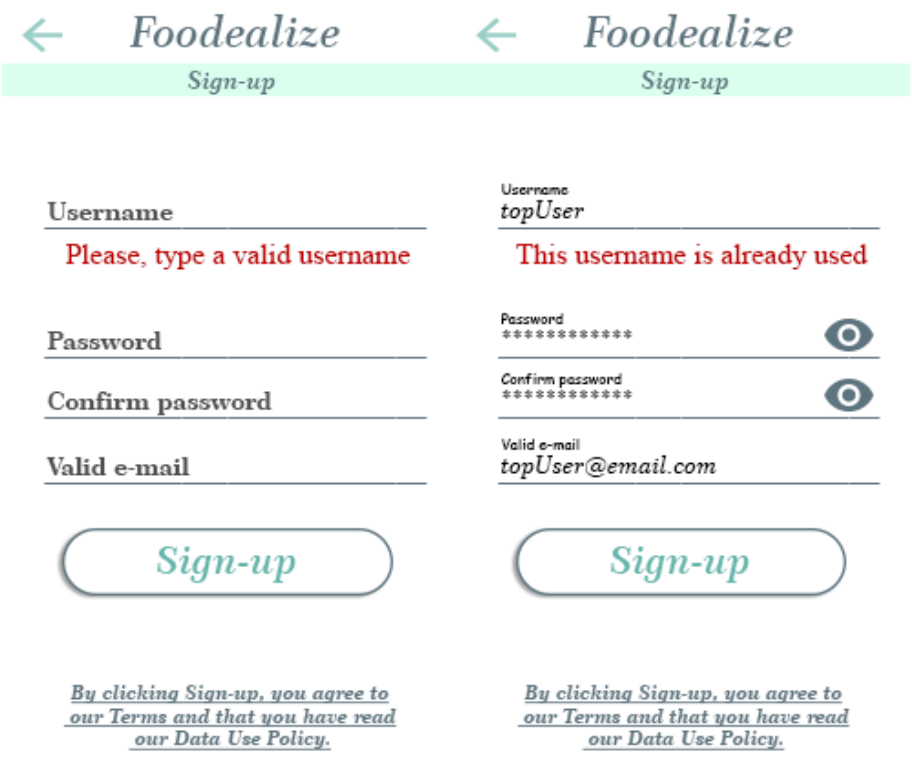
LOGIN PAGES WITH ERRORS

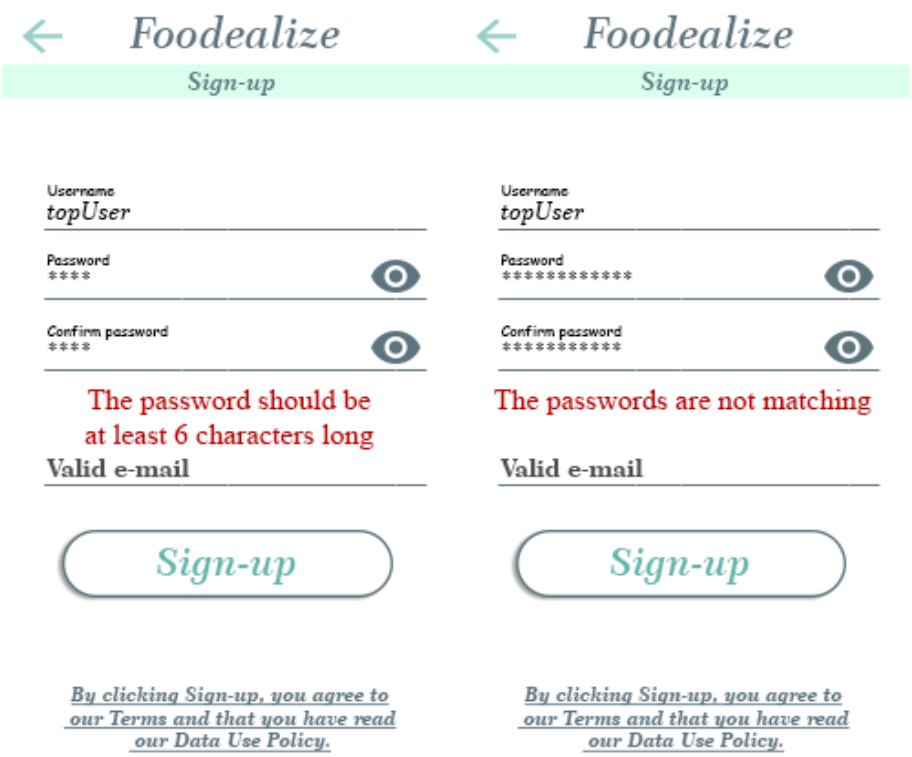


SIGN UP PAGES WITH ERRORS

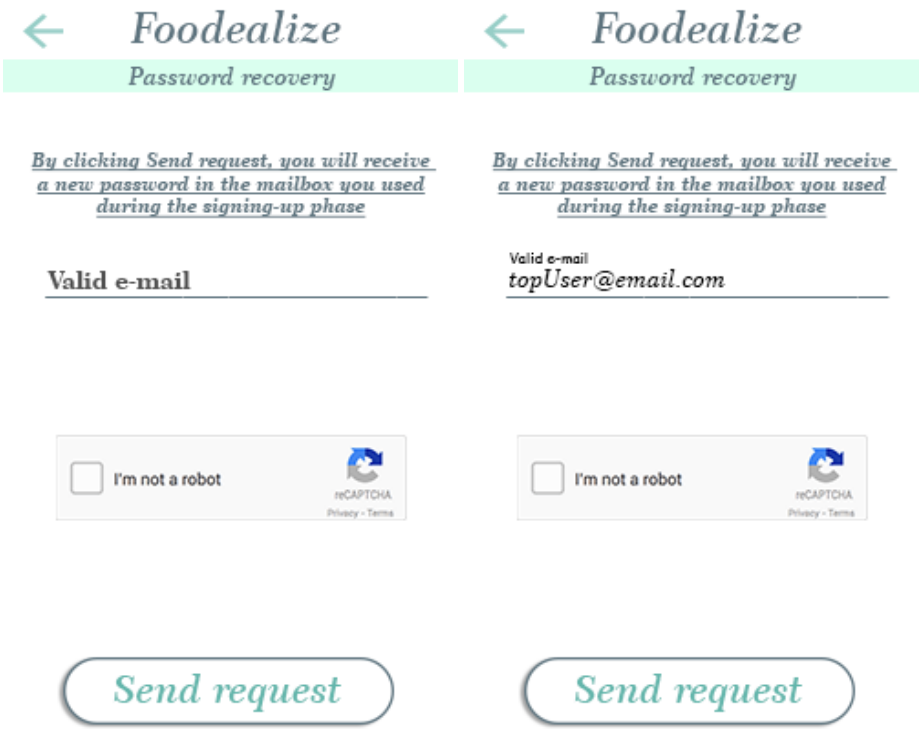


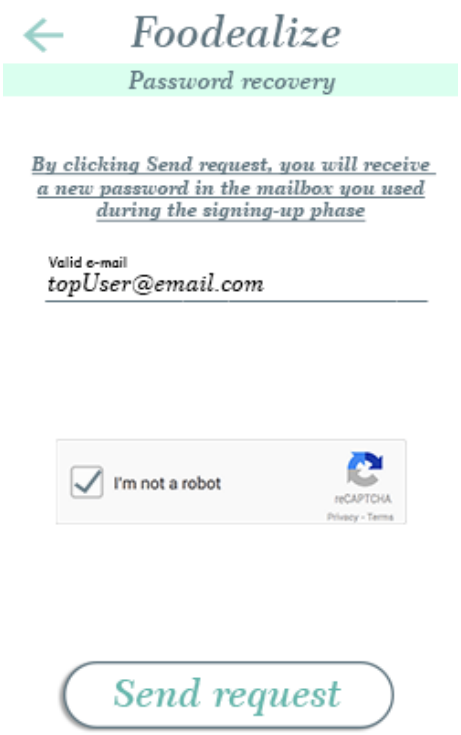


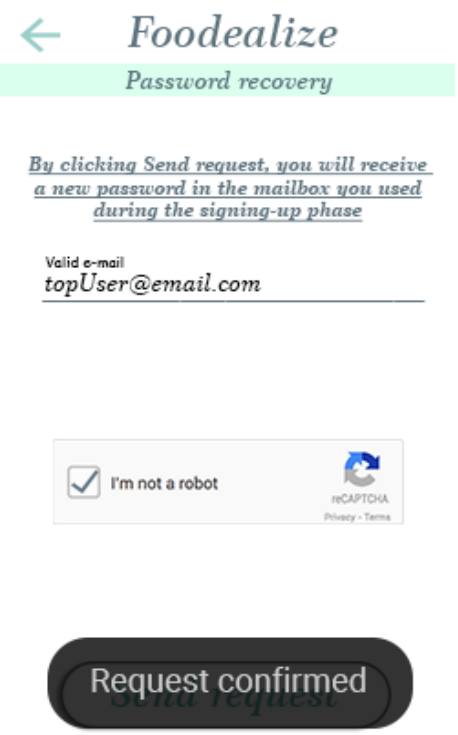

Foodealize
Sign-up
Username
Please, type a valid username
Password
Confirm password
Valid e-mail
Sign-up
By clicking Sign-up, you agree to our Terms and that you have read our Data Use Policy.
Foodealize
Sign-up
Username
topUser
This username is already used
Password
Confirm password
Valid e-mail
topUser@email.com
Sign-up
By clicking Sign-up, you agree to our Terms and that you have read our Data Use Policy.


Foodealize
Sign-up
Username
topUser
Password
Confirm password
The password should be at least 6 characters long
Valid e-mail
Sign-up
By clicking Sign-up, you agree to our Terms and that you have read our Data Use Policy.
Foodealize
Sign-up
Username
topUser
Password
Confirm password
The passwords are not matching
Valid e-mail
Sign-up
By clicking Sign-up, you agree to our Terms and that you have read our Data Use Policy.

PASSWORD RECOVERY PAGES WITH ERRORS




Foodealize
Password recovery
By clicking Send request, you will receive a new password in the mailbox you used during the signing-up phase
Valid e-mail
topUser@email.com
I'm not a robot
reCAPTCHA
Send request

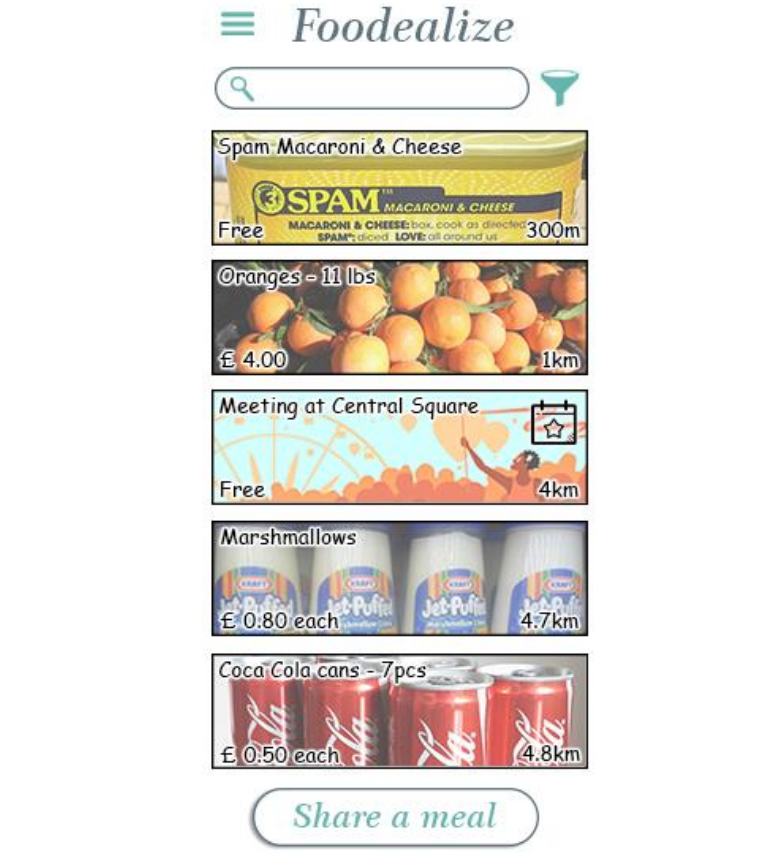

Foodealize
Password recovery
By clicking Send request, you will receive a new password in the mailbox you used during the signing-up phase
Valid e-mail
topUser@email.com
I'm not a robot
reCAPTCHA
Request confirmed

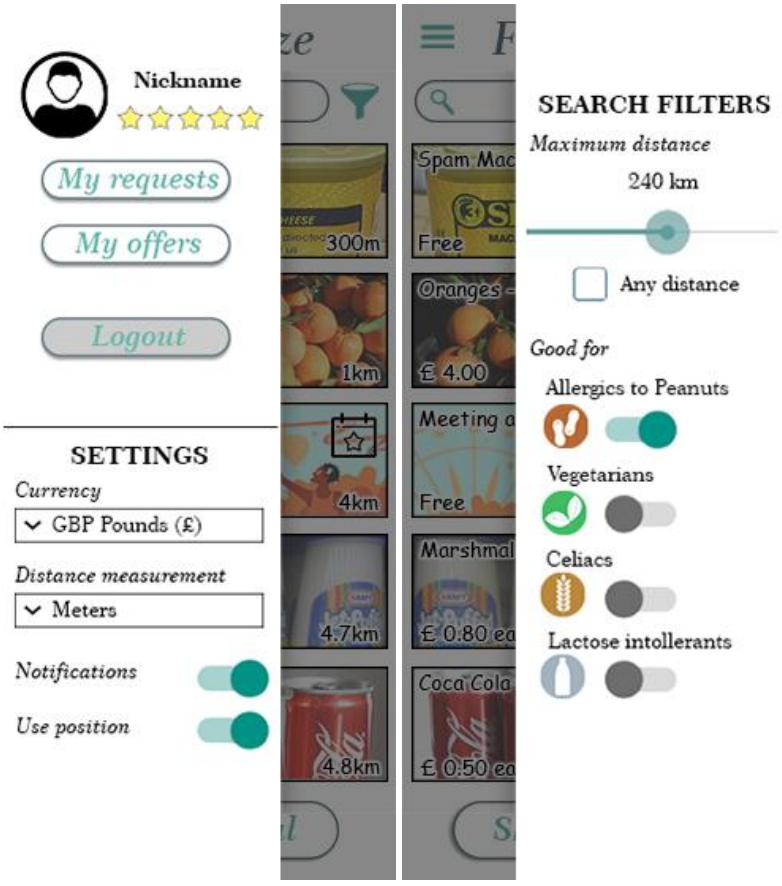
Foodealize
Password recovery
By clicking Send request, you will receive a new password in the mailbox you used during the signing-up phase
Valid e-mail
Please, type a valid e-mail
I'm not a robot
reCAPTCHA
Send request

Foodealize
Password recovery
By clicking Send request, you will receive a new password in the mailbox you used during the signing-up phase
Valid e-mail
topUser@email.com
I'm not a robot
reCAPTCHA
Please click on "I'm not a robot"
Send request

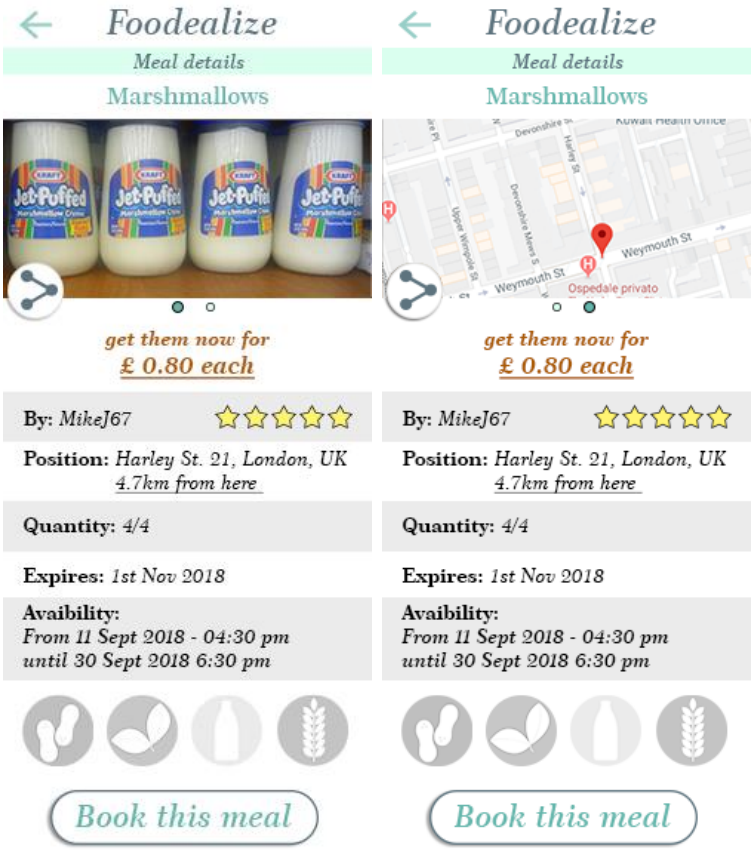
Foodealize
Password recovery
By clicking Send request, you will receive a new password in the mailbox you used during the signing-up phase
Valid e-mail
topUser@email.com
This email is not present in our database
I'm not a robot
reCAPTCHA
Privacy - Terms
Send request

HOME PAGE WITH SIDEBARS

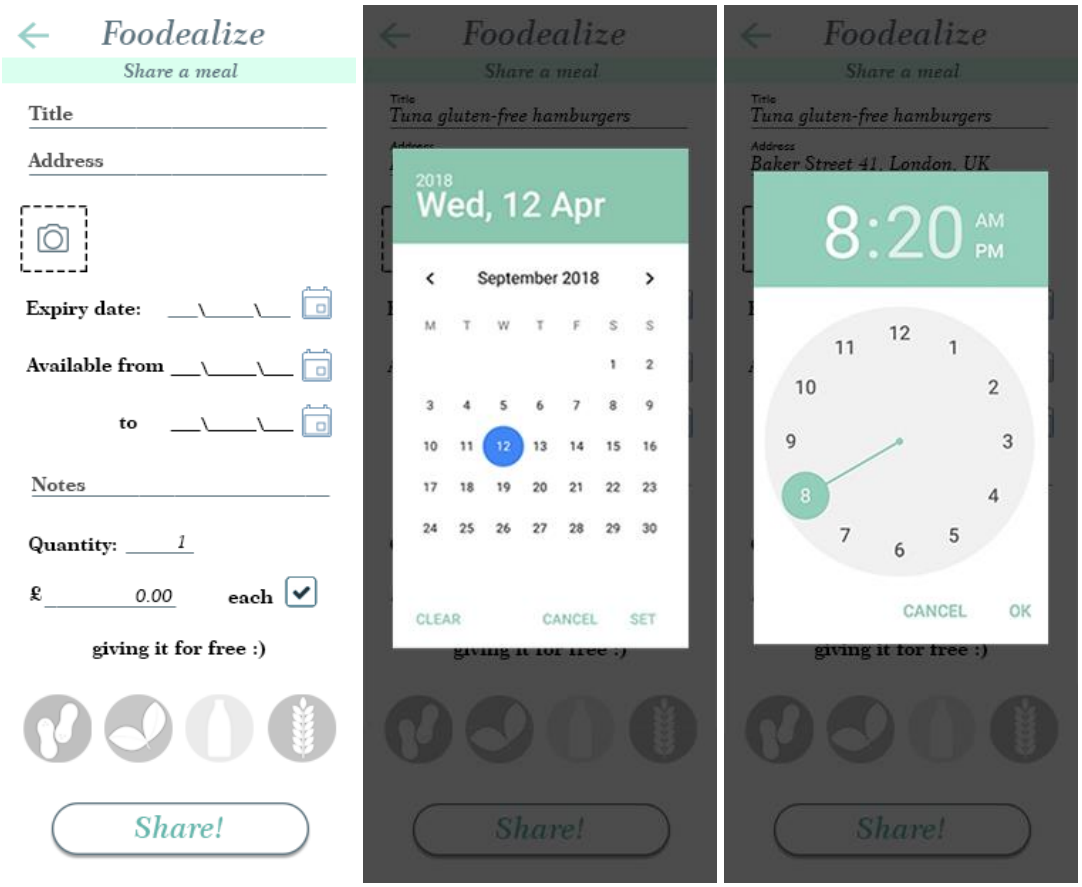


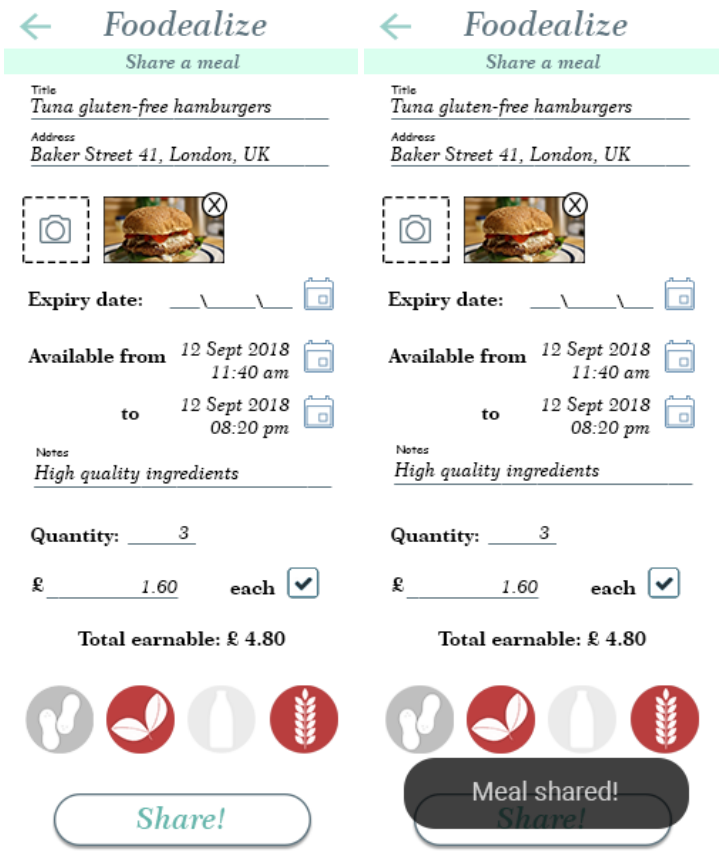


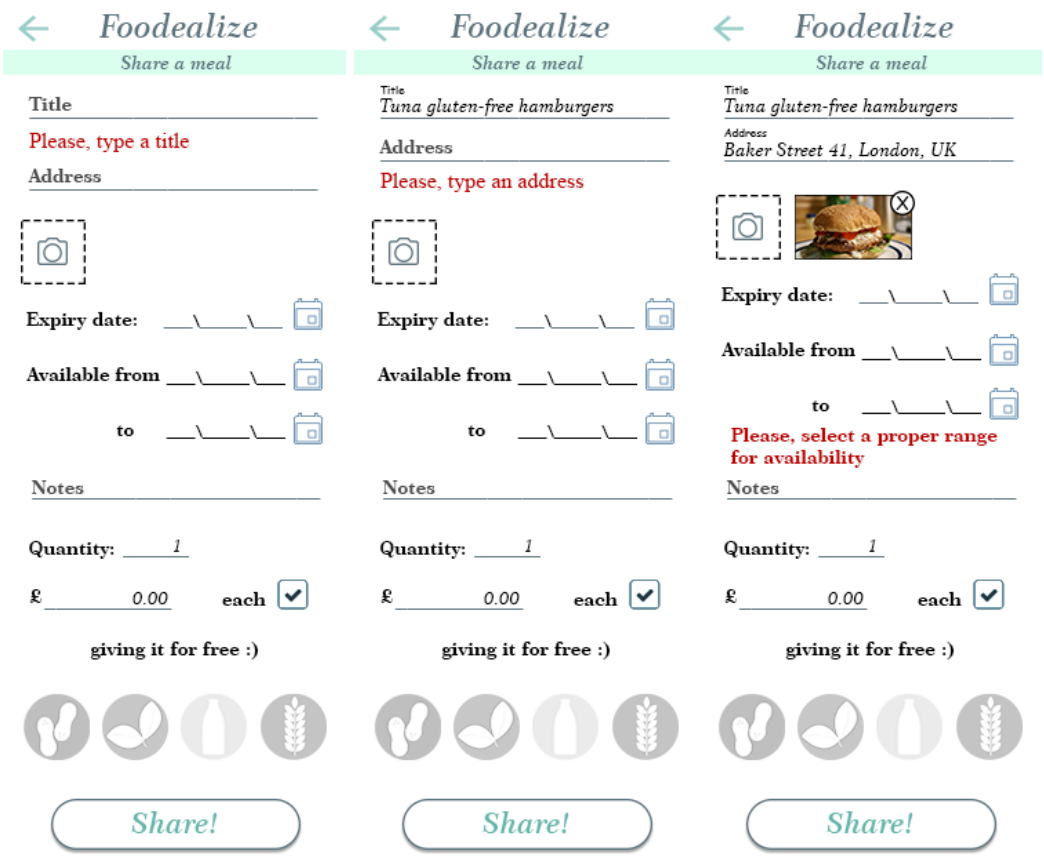
BOOK A MEAL PAGES



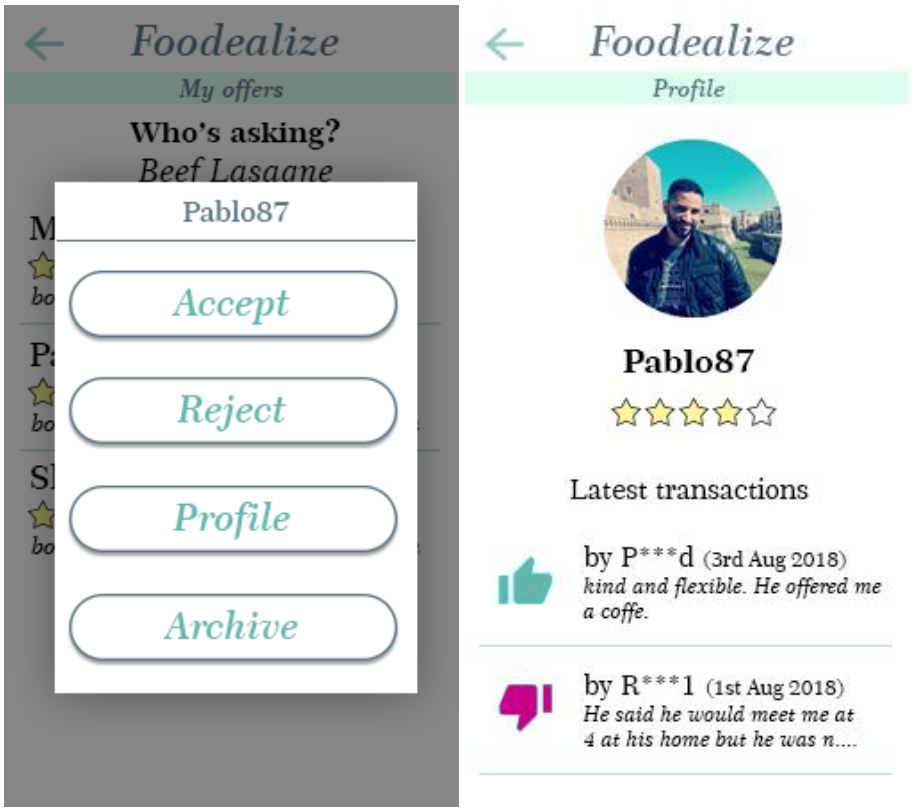
SHARING A MEAL PAGES WITH ERRORS



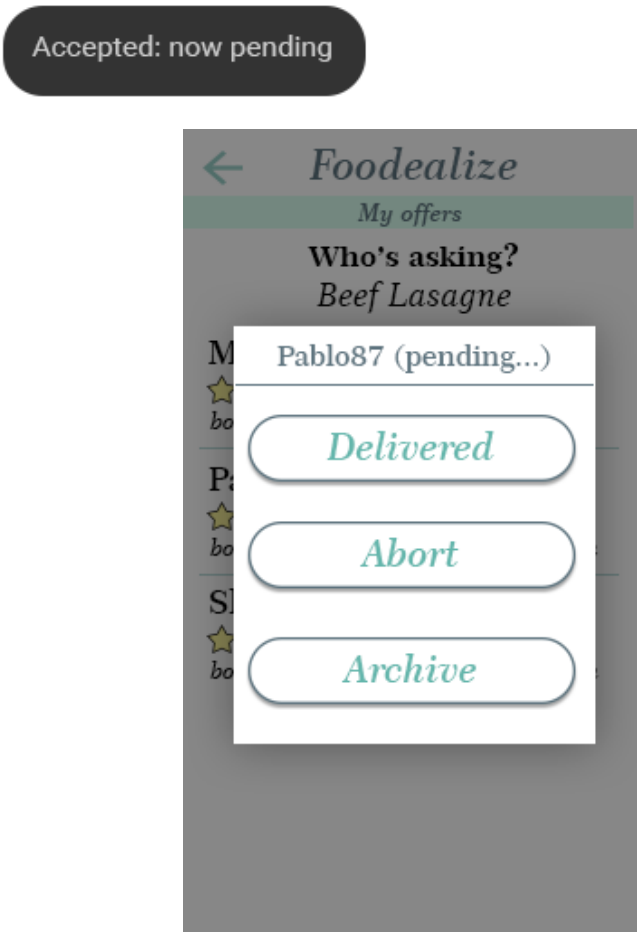


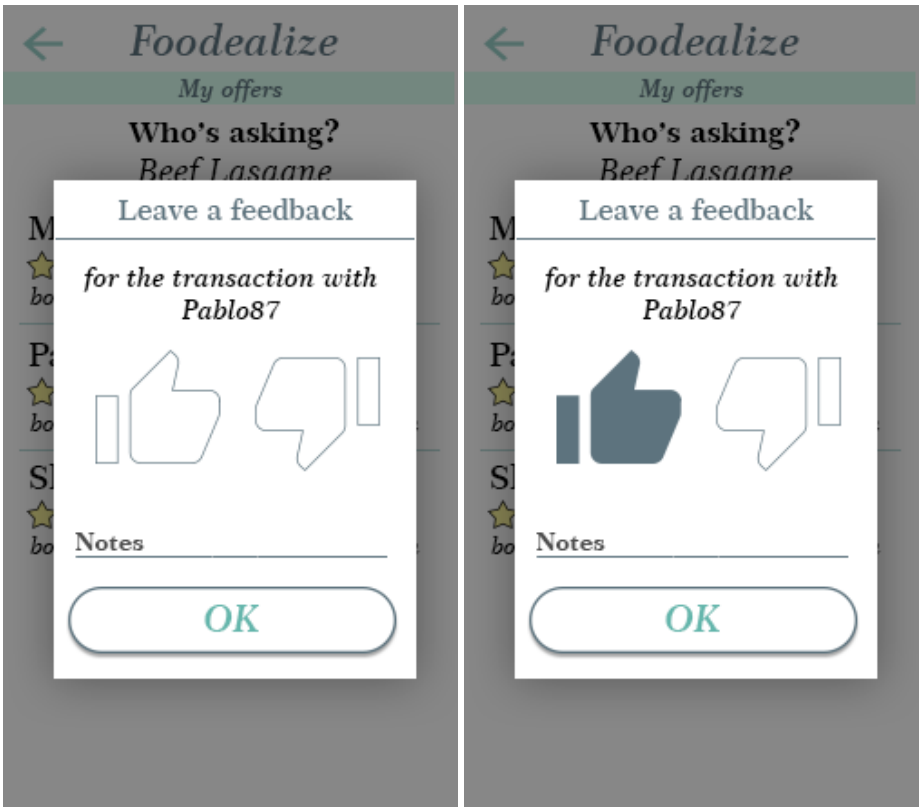

Foodealize
Share a meal
Title
Please, type a title
Address
Expiry date: ______
Available from ______
to ______
Notes
Quantity: 1
£ 0.00 each
giving it for free :)
Share!
Foodealize
Share a meal
Title
Tuna gluten-free hamburgers
Address
Please, type an address
Expiry date: ______
Available from ______
to ______
Notes
Quantity: 1
£ 0.00 each
giving it for free :)
Share!
Foodealize
Share a meal
Title
Tuna gluten-free hamburgers
Address
Baker Street 41, London, UK
Expiry date: ______
Available from ______
to ______
Please, select a proper range for availability
Notes
Quantity: 1
£ 0.00 each
giving it for free :)
Share!

ACCEPT A REQUEST FROM A USER



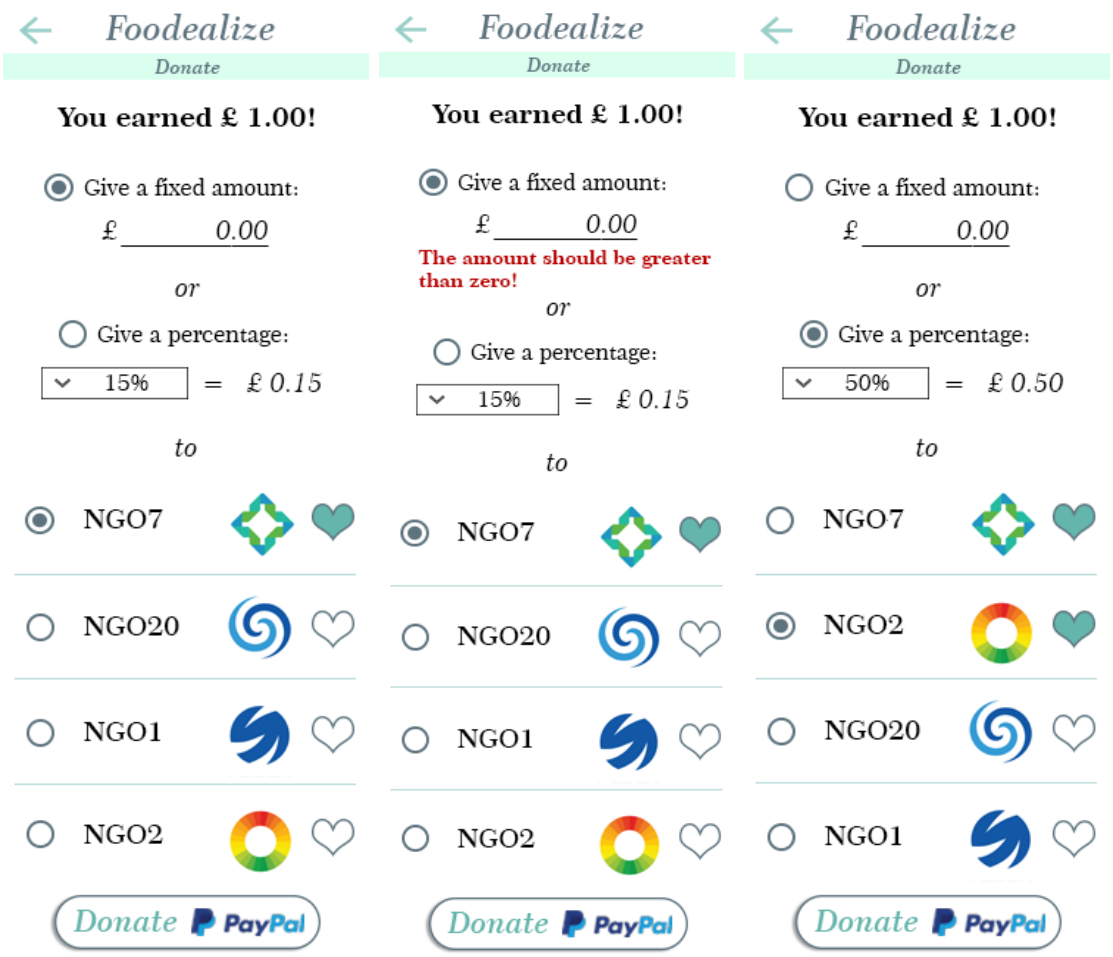
Foodealize
My offers
Who's asking?
Beef Lasagne
Mark_Smith
booked the 9th Sept 2018 10:22 am
Pablo87
Pending...
booked the 10th Sept 2018 11:05 am
Shamalaya
booked the 10th Sept 2018 04:41 pm
Foodealize
My offers
Who's asking?
Beef Lasagne
Mark_Smith
booked the 9th Sept 2018 10:22 am
Pablo87
Pending...
booked the 10th Sept 2018 11:05 am
Shamalaya
booked the 10th Sept 2018 04:41 pm


Accepted: now pending
Foodealize
My offers
Who's asking?
Beef Lasagne
Pablo87 (pending...)
Delivered
Abort
Archive

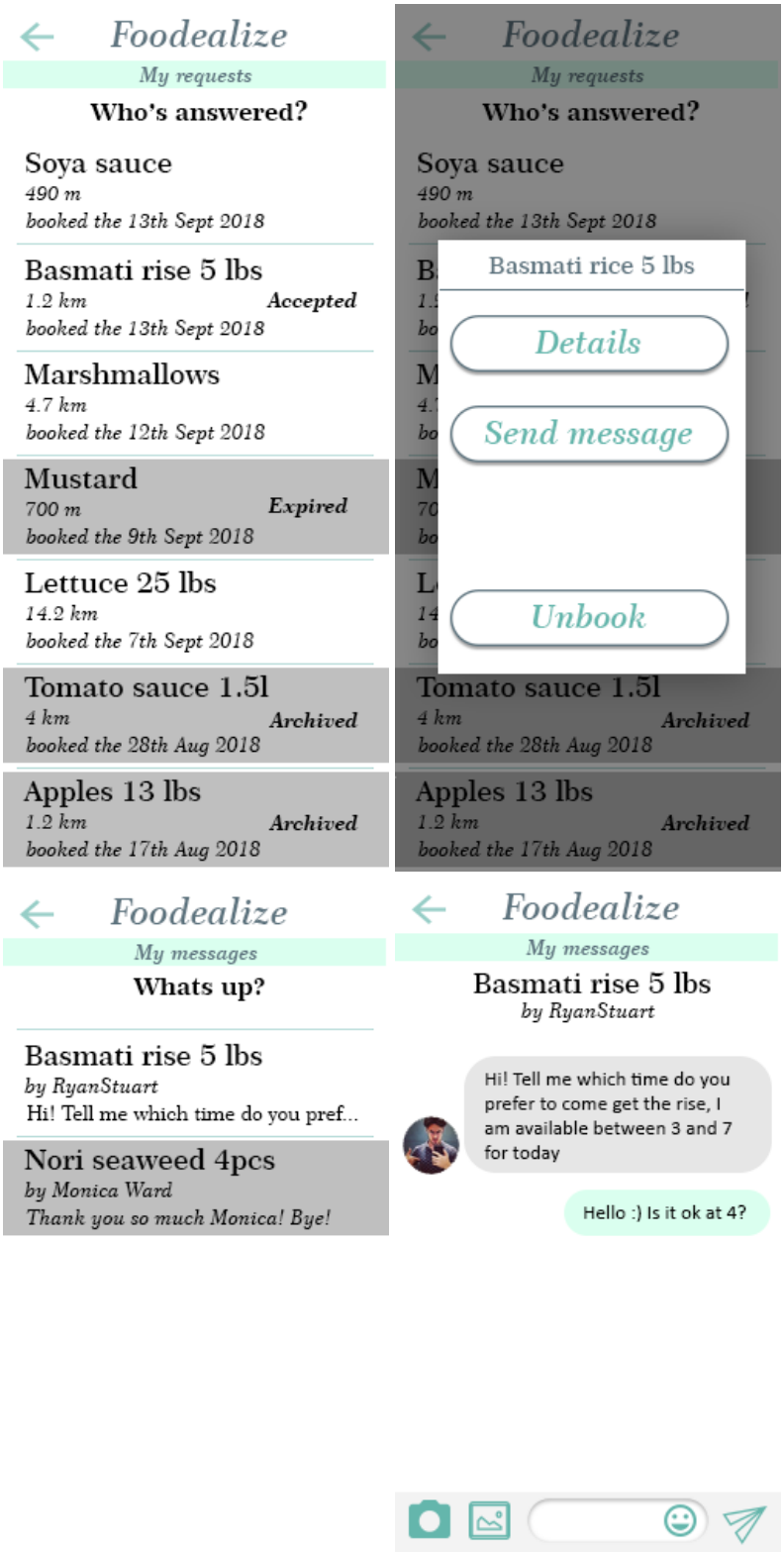

Foodealize
My offers
Who's asking?
Beef Lasagne
Leave a feedback
for the transaction with Pablo87
Notes
OK
Foodealize
My offers
Who's asking?
Beef Lasagne
Leave a feedback
for the transaction with Pablo87
Notes
OK

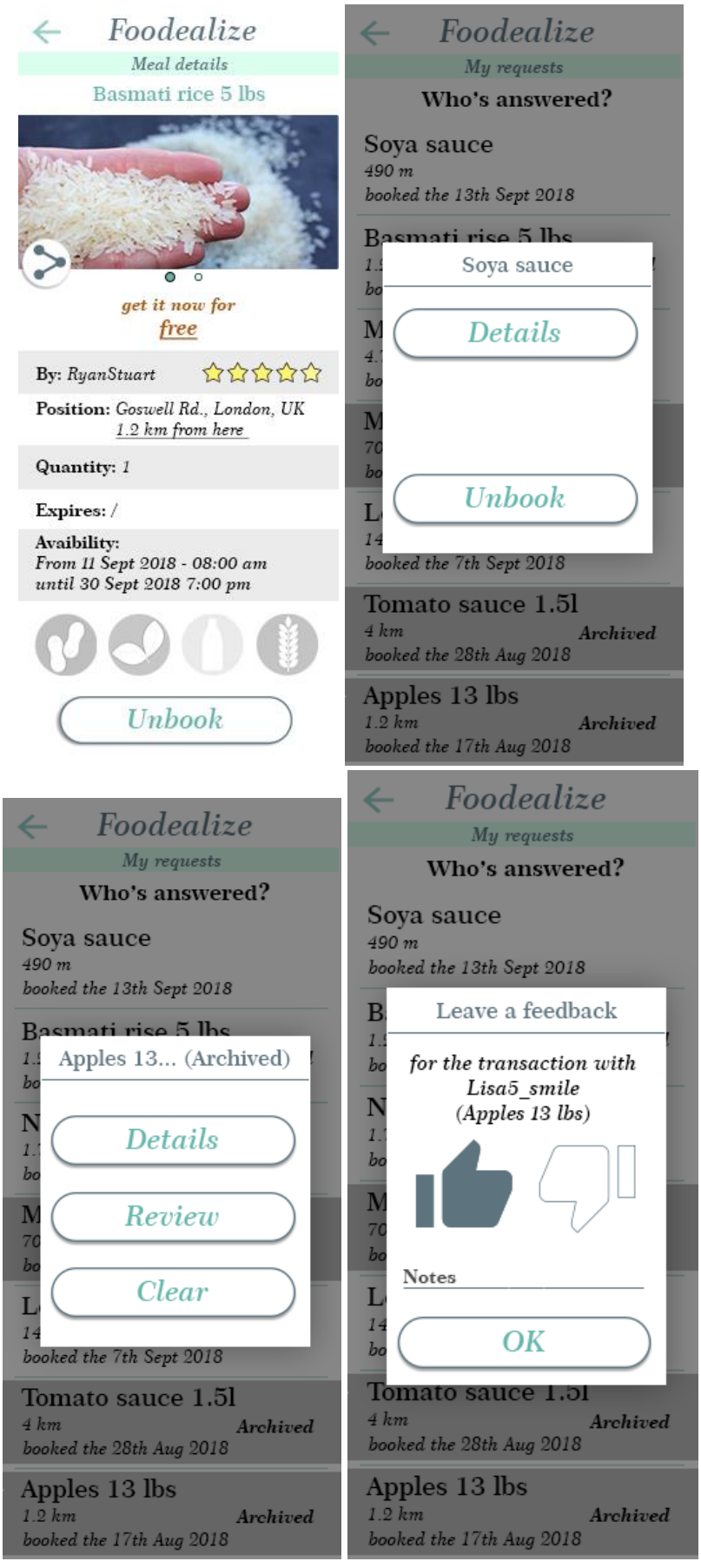
Foodealize
My offers
Who's asking?
Beef Lasagne
Donate?
Would you like to donate part of your earnings?
Donate
No, next time :)

DONATE PART OF EARNINGS WITH ERRORS

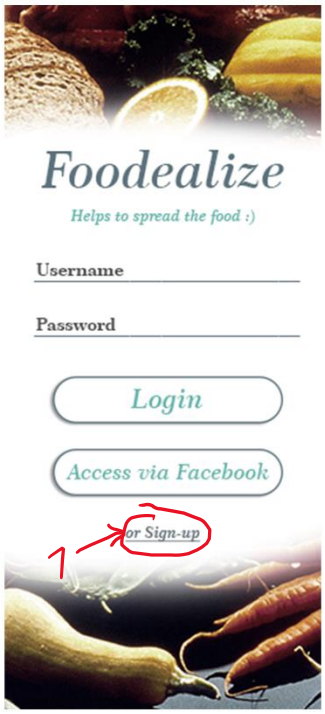


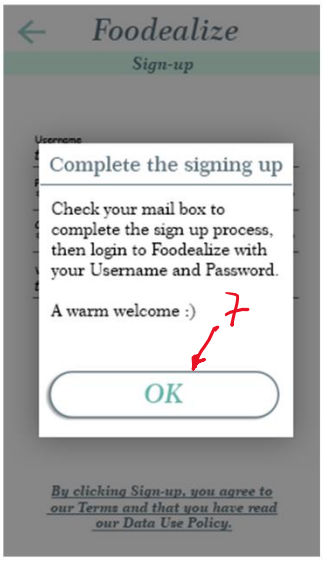
MANAGING MY REQUESTS/BOOKINGS



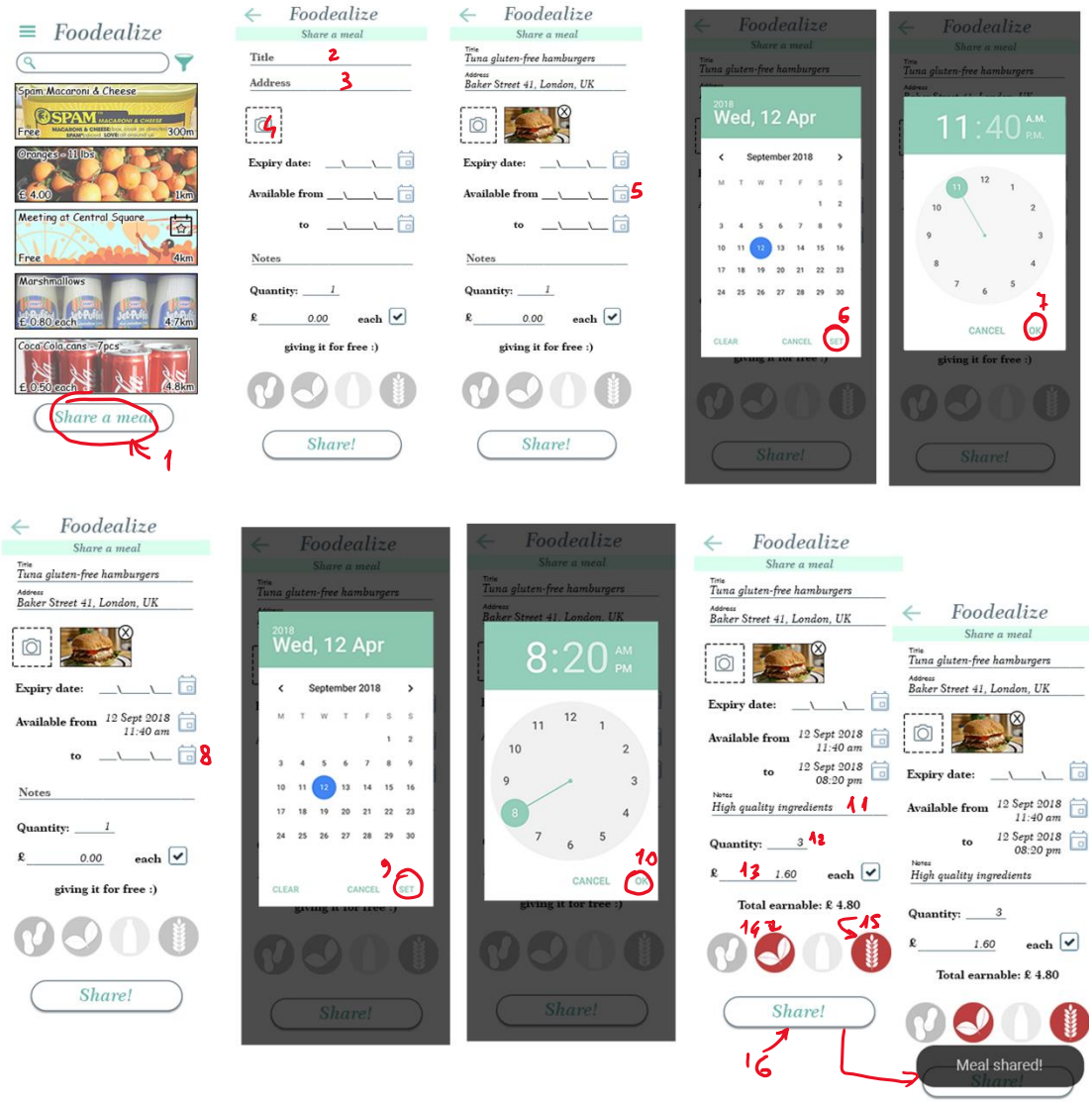

Foodealize
Meal details
Basmati rice 5 lbs
get it now for
free
By: RyanStuart
Position: Goswell Rd., London, UK
1.2 km from here
Quantity: 1
Expires: /
Avaibility:
From 11 Sept 2018 - 08:00 am
until 30 Sept 2018 7:00 pm
Unbook
Foodealize
My requests
Who's answered?
Soya sauce
490 m
booked the 13th Sept 2018
Soya sauce
Details
Unbook
booked the 7th Sept 2018
Tomato sauce 1.5l
4 km
Archived
booked the 28th Aug 2018
Apples 13 lbs
1.2 km
Archived
booked the 17th Aug 2018
Foodealize
My requests
Who's answered?
Soya sauce
490 m
booked the 13th Sept 2018
Apples 13... (Archived)
Details
Review
Clear
booked the 7th Sept 2018
Tomato sauce 1.5l
4 km
Archived
booked the 28th Aug 2018
Apples 13 lbs
1.2 km
Archived
booked the 17th Aug 2018
Foodealize
My requests
Who's answered?
Soya sauce
490 m
booked the 13th Sept 2018
Leave a feedback
for the transaction with
Lisa5_smile
(Apples 13 lbs)
Notes
OK
Tomato sauce 1.5l
4 km
Archived
booked the 28th Aug 2018
Apples 13 lbs
1.2 km
Archived
booked the 17th Aug 2018

KEY TASK FLOW NO. 1: SIGN-UP AND LOGIN

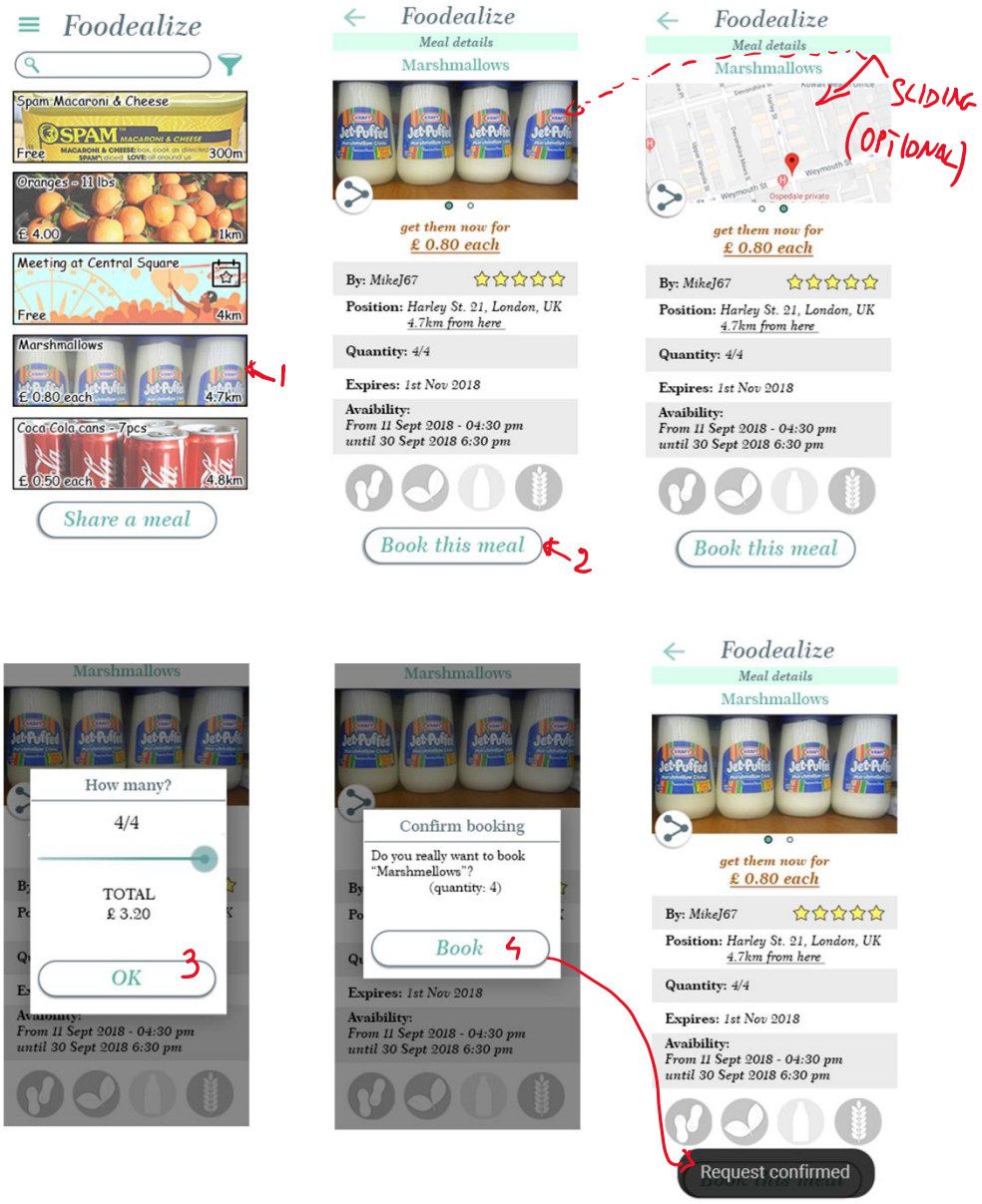




KEY TASK FLOW NO. 2: SHARING A MEAL

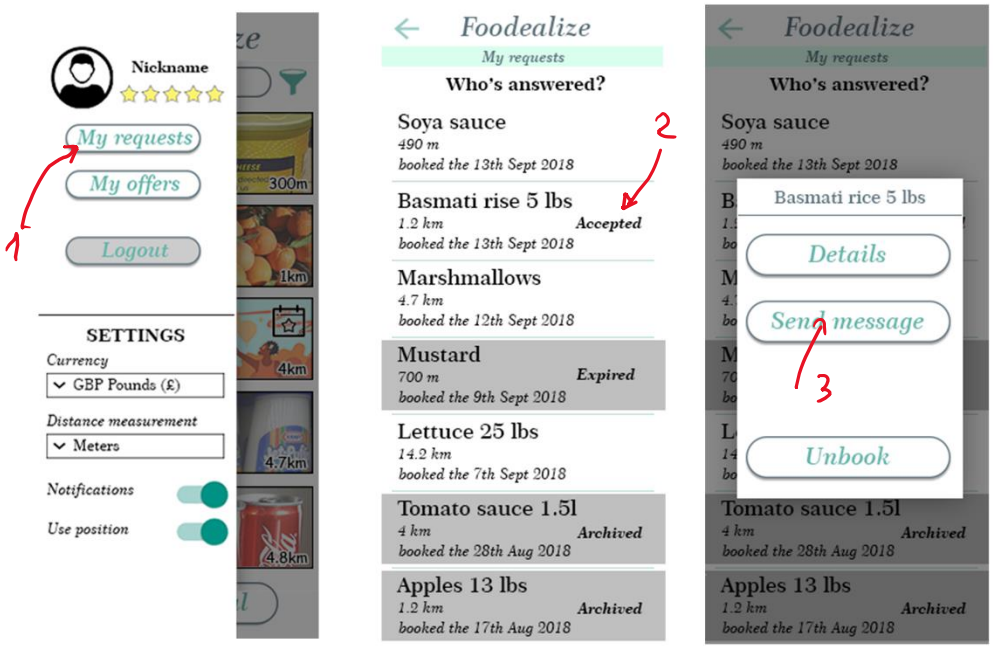


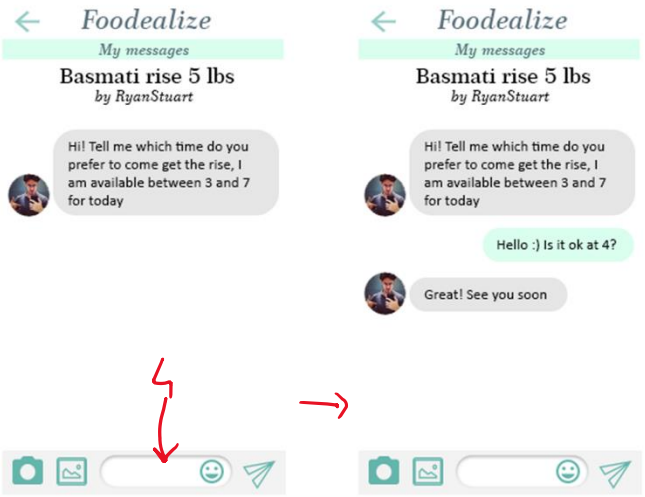
KEY TASK FLOW NO. 3: BOOKING A MEAL



KEY TASK FLOW NO. 4: ACCEPT A REQUEST AND DONATE

KEY TASK FLOW NO. 5: MANAGE MY REQUESTS/BOOKINGS





User Test Plan

Overview

high-level goals

The purposes of this test plan are the following

- Being sure that the disposition of the elements in the layouts of each screen is adequate to the pursuing of the main functions of the system.
- Checking the quality of the flow of the usability of the interface for what concerns the cause-effect transitions, making sure that the tester is well aware of the steps he did until that moment and what he/she needs to do to accomplish a particular task.
- Getting knowledge about how an average user would recover from errors searching for a more adequate solution.
- Getting an overall feedback about the intuitiveness and pleasantness of the structure of the interface.
- Getting an overall feedback about the functionality of the app, collecting at the same time proposal of improvements by adding/removing certain behaviours from the system.

post-questionnaires

For the post-test questionnaire, we will administer the standard SUS questionnaire on paper. The form should be printed out before each session.

pretest checklist

- Reload target inVision web page
- Double check success criteria
- Print task instructions, one per page
- Print post-test questionnaire
- Print logging sheet
- Print this Test Script
- Start screen recording

posttest checklist

- Stop recording, save audio and video to backup drive
- File informed consent form
- File logging sheet

recruiting criteria

The system will make it possible the meeting of two types of people: the “providers” and the “requesters”. The providers are the ones who can give and share leftovers on the

common platform from where the requesters can get them. Considering also the possibility of these two entities to act like the other one, the target audience can be very broad:

- Age: 16-80
- Level of instruction: any
- Gender: any
- Salary/incomes: probably low for the requesters

Having this big range of selection will make it easier to find testers for the system.

The strategy will imply asking a possibility of interviewing to the owners / employees of grocery shops, soup kitchens and catering services as well as the average person of the neighbourhood.

components of the test

Milestones

- Being able to retrieve and understand information about the available offers
- Being able to complete the posting of an offer by filling the proper fields
- Understanding the diverse ways to donate earnings to a charity opera
- Being able to follow the flow of the overall process of meals exchange (finding->requesting->getting->posting/sharing->giving)

Hardware

- 1x SONY ICD-UX533 audio recorder
- 1 PC for dynamic app usability test on inVision
- pens
- paper

Environment details

The environments in which the interviews will take part are preferably in a familiar place to the respondent. These places must be tranquil enough to permit both concentration for the interviewed and audio clearness for the recording, moreover an appropriate source of light will be essential to make possible a comfortable reading of the features on the computer screen.

In case of impossibility to find a proper place for a certain interview, other options will be taken into account, like renting a room for audio recording.

Team composition

All the phases of testing (warming-up, introduction, core task execution, post-test questionnaire) will be carried out by one person.

Entry and Exit Criteria

The interviewer will be asked to start the interview when he feels ready, soon after the warm-up.

According to the “Consent form” and to the introduction phase, the respondent will be able to quit the interview any time he/she prefers. In the case of early quit, the work done till that moment will not be considered in the report.

The core interview will be considered terminated when the last task will be completed, then “post-test” questions will follow.

Suspension and Resumption Criteria

The respondent is completely free to pause the interview any time he wants, in that case, the interview can ask the respondent the motivation behind the stop (if opportune).

Tracking tools

- Audio recording using the audio recorder for offline deep analysis
- Screen recorder software (e.g. TinyTake)
- Logging sheet

Appendix A

Project brief

In a world afflicted by famine, poverty and inefficiencies, half of the total available food [1] is (especially in the western world) wasted due to a thought totally conformed to aesthetic standards before of quality (for what concerns the buyers), and to economic pressures on the market (for what concerns the goods exchange and globalisation). This can lead to catastrophic consequences on the social (scuffles), environmental (land consumption, water shortage) and, in the end, on geopolitical equilibrium.

The main question is: can a software improve the quality and quantity of food consumption in a modern social way?

The system is called “Foodealize”, resembling the union of the words “Food” and “Realize” or ”Idealize” (letting the users imaging which fits more to them).

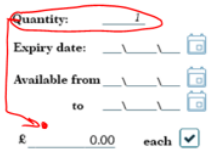
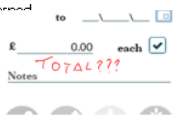
Foodealize is a platform born by taking into account all the issues arisen by the users that are concerned about the lack of long-term vision about food redistribution over the population; in particular, wants to provide its users a useful set of tools that can help them to accomplish their needs of eating (if they act as “consumers”) and their need to share (whether they act as “producers”), keeping always an eye to the possibility to make business.

As this system will run under the form of mobile application, it will give to the users the possibility to get the advantage of the built-in device sensors (like GPS), as well as the connectivity capabilities that pervade our lives in the last decade.

Last but not least, a robust centralized infrastructure will be “behind the scenes” to guarantee a proper service to the users: in fact, a client-server architecture is the only one that can provide the data durability and the coordination of the activities between the application installed on multiple devices.

APPENDIX B

HEURISTIC VIOLATED – SUMMARY TABLE

Description	System Location	Heuristics Violated	Severity
Although it is clear the use of "Quantity", for the sake of coherency, it would be better to reposition it near the Price form. 	"Share a meal" screen	#8 - DESIGN	1
When preparing the form for a new meal, the user sets the quantity and the price, but he/she will not have the total amount of money to be earned 	"Share a meal" screen	#1 - FEEDBACK	3
The dynamics of the icon set used the intolerances is perceived as misleading because the user is not aware if that meal can be or not be edible for him/her 	"Share a meal" screen	#1 - FEEDBACK	4
Thinking about a cross-platform issue, a software back-button should be placed on the screen 	Every screen except for the home page	#4 - NAVIGATION	2

Appendix C

USER TEST SCRIPT

pre-test interview

The goal of the pre-test interview is to characterize the participants' experience with leftovers management, and to characterize the participants' experience and preferences.

Sample questions:

1. What do you think is the best way to be aware of the new events about food in you area?

2. Have you ever had the necessity to search for the lowest prices at your favourite grocery shop?

3. Do you think that the food waste has increased or decreased in the last year, by your experience? Why?

debriefing guidelines

The focus of the debrief is to walk through any problems that were encountered during the tasks. If any time remains afterwards, ask higher-level questions 2-5.

1. Review parts of the test where the user struggled: What difficulties did you have on ____? I noticed you struggled with____, can you tell me what happened? You paused here, tell me more about that.

2. Preferences: What did you think of the site? What did you like/dislike? Which parts of this page are most/least important to you?

3. Changes: If you had 3 wishes to make this better for you, what would they be? Why?

4. Understanding: How would you describe this to a friend?

5. Use Cases: Under what circumstances would you use this? Why?

Task Instructions

TASK 1

You have heard by a friend of yours that the app "Foodealize" is the perfect solution to give to someone in the need, the leftovers or the things in your fridge about to expire but that you are not in the mood to eat.

You installed and started it for the first time.

- Before starting the use of the functions, create an account
- Login to Foodealize

TASK 2

It's the 12th September morning in Baker Street 41, London, where you work in your bar. Only now you notice that there are some fine gluten-free Tuna hamburgers that no one touched from the day before. Since you feel guilty for throwing them in the trash, you have the idea to try selling these on Foodealize

• You think posting it with a photo is a good idea

• You want to sell three of them for £ 1.60 each

• By experience you know that the highest possibility to start selling a hamburger is from 11:40 am

• At the same time, you don't think to keep the hamburgers over the 8:20 pm since this will not keep their quality high.

• Describe it as made of high-quality ingredients to have more chances to find a requester.

TASK 3

You are scheduling your next evening party at home, you've heard from your friend Carl that marshmallows are a nice product to share with other people.

• Search for marshmallows and access the detail of the product

• book 2 bottles of marshmallows

TASK 4

You post on Foodealize that Beef Lasagne your mother continues to buy you, although she never remembers that you don't like it at all.

The application, then, notifies you that more than one person has shown interest in your offer

• Accept the request for the product Beef Lasagne done by the user Pablo87

• Accept confirmation and give a positive feedback

• Choose to devolve 50% of money using PayPal to the NGO2, after putting it in your favourites

TASK 5

You have received a notification regarding the user RyanStuart who accepted your request of booking of Basmati Rice.

• Go to the list of the meals you made a request for

• Search for the message of RyanStuart related to the basmati rice you've chosen

• Chat with him to pinpoint a meeting about the delivery of the rice

Consent Form (Unsigned)

Consent Form

I agree to participate in the study “Foodealize milestone 3 - test” being conducted as part of the edX course “UX 509x: Milestone 3: Initial Prototype, User Test Plans”.

I consent to the recording of this test. This recording will be used for research and product improvements only.

I understand that participation in this usability study is voluntary and I agree to immediately raise any concerns or areas of discomfort during the sessions with the study administrator.

Please, sign below to indicate that you have read, and you understand the information on this form and that any questions you might have about the session have been answered.

Date: _____

Full name: _____

Signature: _____

Thank you!

We appreciated your participation.

Logging Sheet

User Test Logging Sheet

Test Name: Logger:

Participant ID: Date:

Task Number: Task Success:

Clock Time	Event Code	Notes
	TASK START	Be sure to log start time for syncing later

Post-Test Questionnaire

Post-test questionnaire

Answer the following questions based on the scale of 1 -5 where 1 is strongly disagree and 5 is strongly agree

1. I think that I would like to use this system frequently

   1 2 3 4 5

2. I found the system unnecessarily complex

   1 2 3 4 5

3. I thought the system was easy to use

   1 2 3 4 5

4. I think that I would need the support of a technical person to be able to use this system

   1 2 3 4 5

5. I found the various functions in this system were well integrated

   1 2 3 4 5

6. I thought there was too much inconsistency in this system

   1 2 3 4 5

7. I would imagine that most people would learn to use this system very quickly

   1 2 3 4 5

8. I found the system very cumbersome to use

   1 2 3 4 5

9. I felt confident using the system

   1 2 3 4 5

10. I needed to learn a lot of things before I could get going with this system.

    1 2 3 4 5

References

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