

# HCI - ASSIGNMENT NO.2

DESIGN AND PROTOTYPING OF AN APPLICATION USING A HUMAN-CENTERED APPROACH

## FDR - FOOD DONATION RESTAURANTS

RUI OLIVEIRA, PEDRO GONÇALVES & PEDRO SILVA - PI

# INTRODUCTION

## FDR - FOOD DONATION RESTAURANTS

- What does it cost to give away the food we waste every day?  
What for us may simply be leftovers or most possibly garbage, for others, can be the only meal they have been waiting for so long.
- So we came up with the idea of developing an application in which restaurants could donate the daily leftovers.
- This whole idea fits in with other courses as well. It is possible to bring some knowledge about databases and overall programming down the line.



## PROJECT OBJECTIVES

### FDR - FOOD DONATION RESTAURANTS

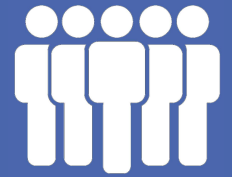


- The main goal is to help the people in need and to reduce the waste of food.
- The human being wastes about 33% of food, and our goal is to reduce that number drastically and help people get well nourished.
- It benefits everyone, as it brings humankind together and arises people's awareness for the well being of others.



# PERSONAS

## FDR - FOOD DONATION RESTAURANTS

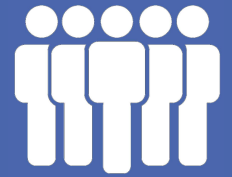


- Name: Jorge Duarte
- Gender: Male
- Age: 47
- Profession: Chef (restaurant owner).
- Background: Comes from a poor family so he knows how hard life is.
- Main motivations/goals: Help others as he once was helped.



# PERSONAS

## FDR - FOOD DONATION RESTAURANTS



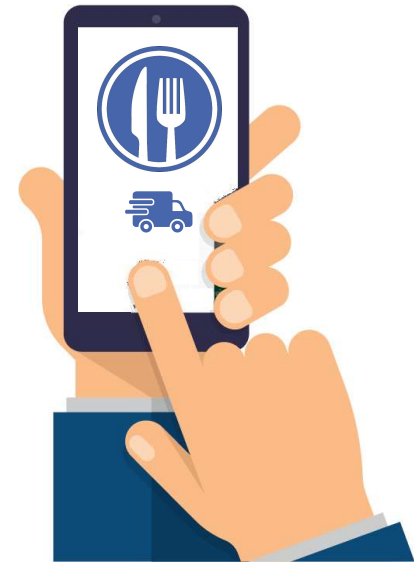
- Name: Beatriz Monteiro
- Gender: Female
- Age: 49
- Profession: Dentist
- Background: She started volunteering to solidify her resume, but ended up joining a charity.
- Main motivations/goals: Helping the most disadvantaged people.



# SCENARIOS

## FDR - FOOD DONATION RESTAURANTS

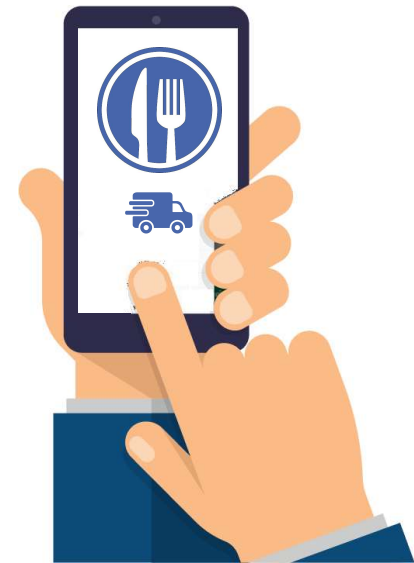
- Each restaurant that proposes to donate the remaining food will access the application.  
This way, the various solidarity distribution chains know that food is left in good condition.
- To facilitate, the distribution should be geographically filtered and the restaurant should indicate the hours of delivery of food to the distribution chain.
- When the distribution chain is available to collect the food, gets the information on the app of the restaurants nearby that are ready to give away the food and then reserve that delivery.



## REAL SCENARIOS

### FDR - FOOD DONATION RESTAURANTS

- Chef Jorge Duarte, after a day of work, concludes that he has some food left. Therefore he decided to donate using de APP.
- Beatriz, who is a volunteer at the charity, opens the APP to see if there are any donations available. After the research Beatriz decides that the restaurant which provides better conditions for their needs is chef's Jorge restaurant.
- On the APP she took the order and gave some information about how they would pick up the food.
- The restaurant receives a notification indicating which charity is collecting the food, and when the time comes, the delivery is successfully made.

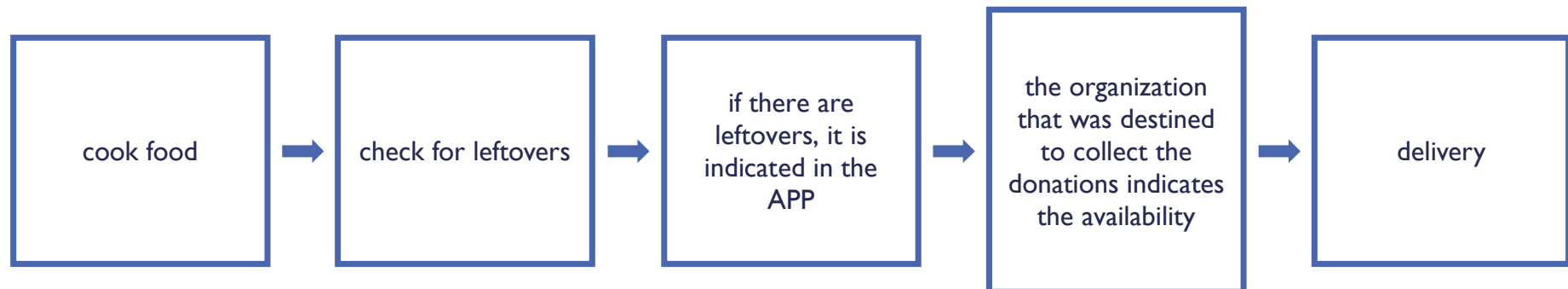


# TASKS

## FDR - FOOD DONATION RESTAURANTS



- Restaurant supplier - Has to go to the app and insert the interval in which he is available to give the food
- Solidarity organization - Searches in the app the restaurant they want to go to get the food (based on location and schedule) and asks to reserve that day's leftovers for them.
- It will become easier to give away the remaining food. Restaurants will not need to throw it away. It will make the life of people in need easier and happier.





# REQUIREMENTS

## FDR - FOOD DONATION RESTAURANTS

- Functional requirements – the app should be able to arrange a time interval for the restaurant to make the donation as well as filter the restaurants and organizations geographically.
- Non functional requirements – both the non-profitable organization and the restaurants must have a permit from the government.



# LOW FIDELITY PROTOTYPE

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- We developed the low fidelity prototype in a digital application prototyping platform called “Proto.io”.
- We began with the sign up procedure, where we need some information about the entities in order to verify if they are official or not and to redirect them to their geographical area.

### SIGN UP

NIF:
<input type="text"/>
INSTITUTION NAME:
<input type="text"/>
CITY:
<input type="text"/>
ADDRESS:
<input type="text"/>

### SIGN UP

CERTIFICATE CODE:
<input type="text"/>
RESTAURANT NAME:
<input type="text"/>
LOCALITY:
<input type="text"/>
ADDRESS:
<input type="text"/>

# LOW FIDELITY PROTOTYPE

## FDR - FOOD DONATION RESTAURANTS



- Then, we focused on what the users would need to do.
- Restaurants are able to make a donation in a time interval of their choice.
- Charity institutions are able to choose a donation in their area having access to all the information about it.

### DONATE FOOD

BRIEF DESCRIPTION:

POSSIBLE HOURS FOR COLLECTION:

RELEVANT EXTRA INFORMATION:

### THIS ARE THE DONATIONS NEAR YOUR PLACE

#### DONATION A

BRIEF DESCRIPTION OF THE DONATION:

- CONTAINS X
- CONTAINS Y

MORE INFO

#### DONATION B

BRIEF DESCRIPTION OF THE DONATION:

- CONTAINS X
- CONTAINS Y

MORE INFO

# LFP USER EVALUATION

## FDR - FOOD DONATION RESTAURANTS



- We made two evaluations, one for the restaurants and other for the organizations.
- Our goal was to evaluate the efficiency of the prototype and if all users had all the information and resources to make the donation work.
- 3 different people tested the prototype, two of them work/worked in restaurants, the other one has volunteered in “Banco Alimentar”.



Google Forms  
Restaurant



Google Forms  
Organization

# LFP USER EVALUATION

## FDR - FOOD DONATION RESTAURANTS



- The evaluation results were positive.
- The only problem were too many options on the restaurant menu which resulted in a little bit of mistakes.
- The users felt the need to know what each button would do before giving any answer.
- We received some advices to improve the app, one of them was the need of an authentication code for the restaurant confirm that the order is delivered to the right organization.

### ACCEPTED DONATIONS

DESCRIPTION: PEDIDO 1  
PICK'UP TIME: 12:00 - 13:00  
EXTRA INFO: CONTEUDO ADICIONAL 1  
CODE: GH5AC

Restaurant

SHOW THE CODE BELOW TO THE RESTAURANT  
WHEN YOU'RE RECEIVING YOUR ORDER

YOUR CODE:

Organization

## PLATFORM USED FOR THE FUNCTIONAL PROTOTYPE FDR - FOOD DONATION RESTAURANTS



- For the functional prototype, we only used the Microsoft Visual Studio.
- We created a WPF client application using C#, and started developing it with help from the guides of the practical classes.



# USER EVALUATION OF THE FUNCTIONAL PROTOTYPE

## FDR - FOOD DONATION RESTAURANTS



- Observation and query were the usability tests used.
- We had the 2 personas and the real scenarios on our test.
- On the Google Forms we can see the different tasks used.
- Our goal was how easy it would be to navigate the application.
- We chose System Usability Scale (SUS) since we had a small sample size and we wanted reliable results.



Google Forms

# USER EVALUATION OF THE FUNCTIONAL PROTOTYPE

## FDR - FOOD DONATION RESTAURANTS



People (age) \ Tasks	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7
Ana Cebola (52)	2	1	2	1	2		
Fernando Gonçalves (55)	1	1	2			1	1
Filipa Sousa (21)	1	1	1	1	3		
António Domingues (20)	1	1	1			1	1
Rui Silva (20)	1	1	1	2	2		
Afonso Cardoso (20)	1	1	2			1	2
MEDIANA	1	1	1.5	1	2	1	1



# USER EVALUATION OF THE FUNCTIONAL PROTOTYPE

## FDR - FOOD DONATION RESTAURANTS



People (age) \ SUS Sentences	1	2	3	4	5	6	7	8	9	10
Ana Cebola (52)	5	2	4	2	3	2	5	2	4	2
Fernando Gonçalves (55)	5	2	5	1	5	1	4	1	5	2
Filipa Sousa (21)	4	1	5	1	5	1	5	1	4	1
António Domingues (20)	5	1	5	1	4	1	5	1	5	1
Rui Silva (20)	5	2	5	1	5	1	4	1	5	2
Afonso Cardoso (20)	4	2	5	2	4	1	4	2	4	1
MEDIANA	5	2	5	1	4.5	1	4.5	1	4.5	1.5

# DEMO

## FDR - FOOD DONATION RESTAURANTS



- The main features of our application is the freedom the user has in terms of adding, editing and removing donations, as well as the capability to see their previous orders/donations.
- This way, users will not feel lost, giving the ability and advantage of having more than one person using the application with the same account.

### YOUR CURRENT DONATIONS

Bacalhau à Gomes de Sá  
Horas: 14.00 - 15.00  
15 doses

Cozido à portuguesa  
Horas: 14.00 - 15.00  
10 doses

Sopa de legumes  
Horas: 14.00 - 15.00  
15 doses

Carne de porco à alentejana  
Horas: 15.00 - 16.00  
13 kg;

**NOTE:**  
ONLY THE DONATIONS THAT THAT  
HAVEN'T BEEN ACCEPTED YET WILL SHOW  
UP HERE.

EDIT

REMOVE

DONATE FOOD

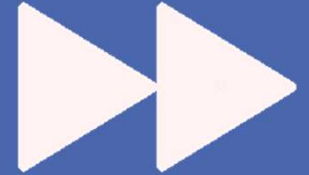
YOUR CURRENT DONATIONS

ACCEPTED DONATIONS

YOUR PAST DONATIONS

## FUTURE WORK

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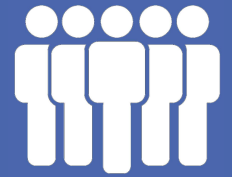


- Right now, our project is only designed for Portugal.
- Our next step should be making it available all over the world.
- We could also make a section where organizations could announce the time and place of their meal distributions so that every person on the app can be able to see it and attend it if they need.
- A database implementation would also be something useful and interesting to do in the future.



## ACKNOWLEDGMENTS

### FDR - FOOD DONATION RESTAURANTS



- We would like to thank all the participants that helped us improve this application. From their answers on the usability tests to their opinions on what we should do to upgrade this project.

*Thank  
you*

## EFFORT OF EACH GROUP MEMBER

### FDR - FOOD DONATION RESTAURANTS

- Same effort for every member of the group.