deti universidade de aveiro
departamento de eletrónica, telecomunicações e informática

ElectRight
Final Presentation & Demo

Design and prototyping of an application using a human-centered approach

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Lab Class: P3

Deliverable: 5

What is ElectRight ?

Online platform where a user can run **open**, **authenticated** and **confidential** polls and/or elections.

Create profiles and friend groups.

Run election only for **selected users**.

Inspired in the formal processes of town councils.

Some competitors

Slido - Has interactive presentations and meetings with live polling tools.

slido

Electionrunner - Create a secure, cloud-based election in which user can vote easily from any device and location.

Our advantages

ElectRight is oriented towards voting in high complexity elections (councils).

Possibility of adding files to ballot.

Election leader has final vote if there is a tie.

Objectives

High-level goals

- Host multiple users.
- Host election between users.
- Organize users in groups to limit access to the elections.
- Run different types of elections.

Benefits

- Make possible to run the election with local and remote voters.
- Faster access to election results.

Expected outcomes

- More truth-worthy election processes.

Personas

Tomás Onofre

- 40 year old, married trucker with 3 children.
- President of a trucker’s trade union.

Goals and Tasks

- Host election for the members of the council.
- Have access to answers while votes from members are anonymous.

Background

Being a trucker and a family man, Tomás has little time to dedicate to activities outside of his schedule.

Personas

Bárbara Isidora

- 21 year old, IT university student.
- Member of university’s student council.

Goals and Tasks

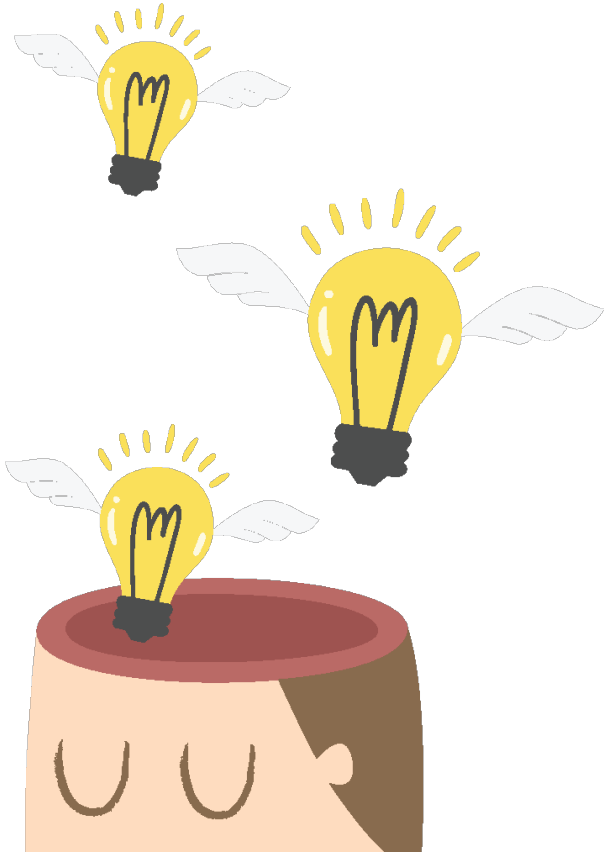
- Vote in elections made by the council.
- Keep track of the council’s elections and results.

Background

Bárbara is studying IT and has a vast knowledge of applications.

Scenarios

Two main **scenarios** are **voting** and **casting elections.**



Tomás wants better work conditions - 1

A big part of the trade union’s members are unsatisfied with work conditions.

Tomás decides to have an election to determine if they are going to go on strike and what demands they have.

What steps should he take ?

Tomás wants better work conditions - 2

1. Tomás enters the platform and his account.
2. Create new election.
3. Give the election a name.
4. Add questions to the ballot.
5. For each question, choose a method of response.
6. Invite users individually or a group of users.
7. Check the number of votes cast and the final results.
8. Make results public.

Bárbara will cast her vote - 1

The university’s student council made an election to determine what to spend their budget on.

Bárbara needs to enter the election in order to vote.

What steps should she take ?

Bárbara will cast her vote - 2

1. Bárbara enters the platform.
2. She accesses the election with its respective code.
3. She reads the plans.
4. She selects if she agrees or not.
5. She submits the ballot.
6. She sees the results of the voting once finished if results are public.

Task Analysis

Election Creation

1. Option of type of election
    a. Insert name.
    b. Date of start and finish.
2. User will be transported to editing page where:
    a. Add question.
        i. Text,
        ii. Images,
        iii. Answer options.
        iv. Files.
3. Add user groups as voters.

Vote Casting

1. Access election with confirmed identity from any device.
2. Open ballot.
    a. Read questions
    b. Access files
3. Select answer options.
4. Submit ballot
5. Access result at a later time.

Functional Requirements - 1

Need	Feature	Priority	Expected Release
Cast elections	Create election See results	High	First Iteration
Save election	Associate each users with all pasts election	High	First Iteration
Profile view	Page for profile information Profile edition	High	First Iteration
Friends	Create profiles	High	First Iteration
	Create groups	Medium	Second Iteration

Functional Requirements - 2

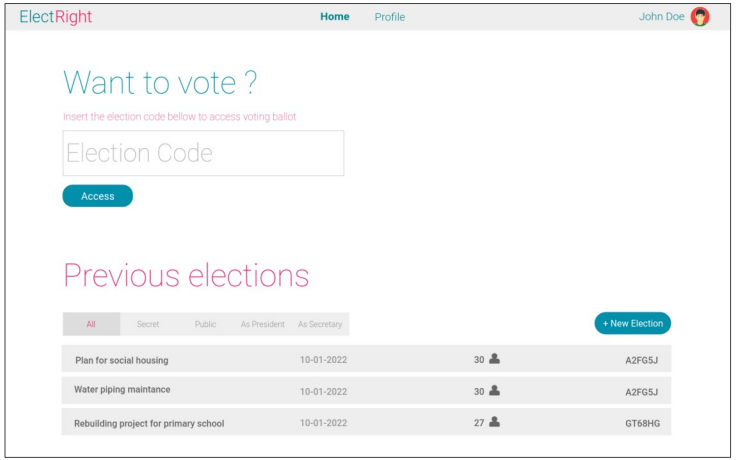
Need	Feature	Priority	Expected Release
Home feed	List of previous and current elections	Medium	Second iteration
File and image support in ballot	Add file to ballot Add image to ballot	Low	Not attainable due to time constraints

Non-Functional Requirements

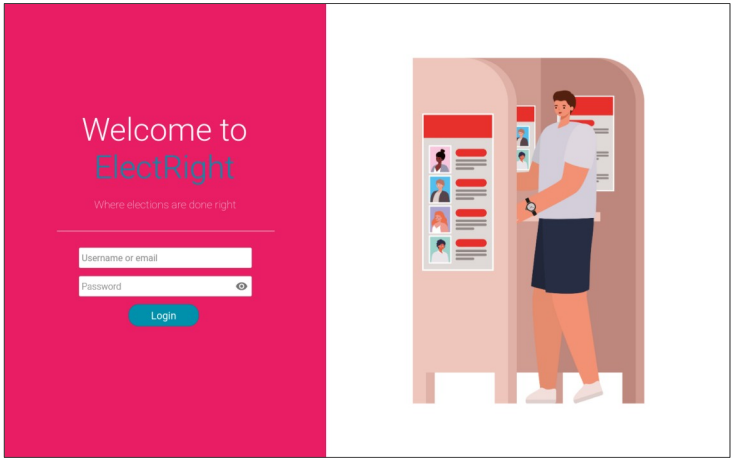
Need	Feature	Priority	Expected Release
Privacy & Security	Users voting in election have their answers anonymous	High	Not implemented due to the aim of the class
Multiple Users	Allow a High amount of users at the same time	High	Not implemented due to the aim of the class
Load Speed	Take little time for the platform to be usable once accessed	Medium	Not implemented due to the aim of the class

Low Fidelity Prototype (LFP) - 1

Digital prototype made using Pencil project.



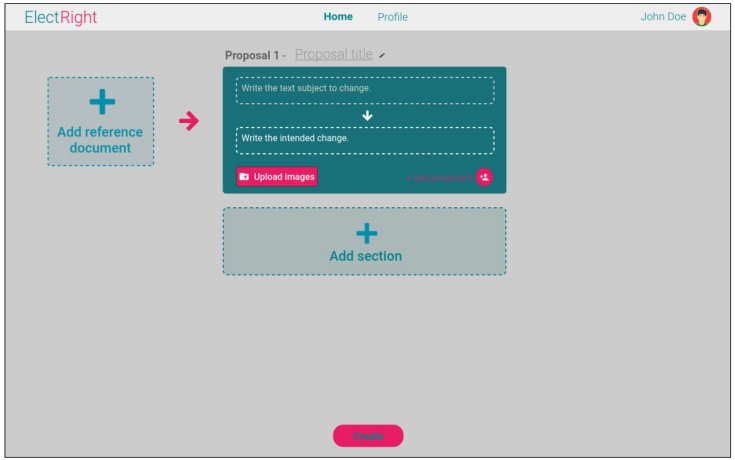
Home Page



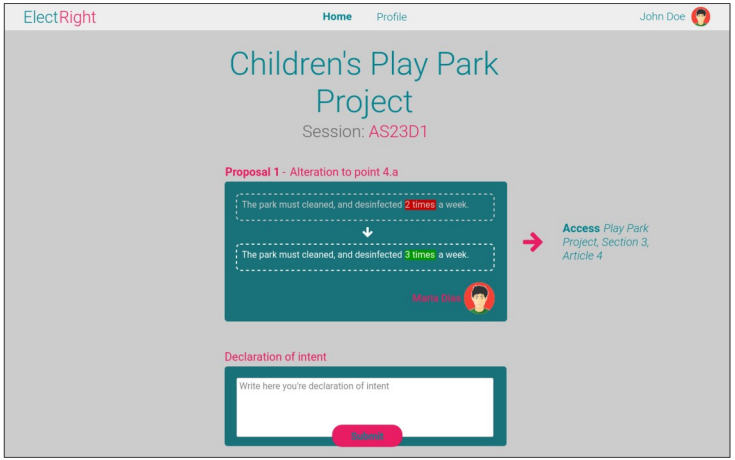
Login Screen

Low Fidelity Prototype (LFP) - 2

Digital prototype made using Pencil project.



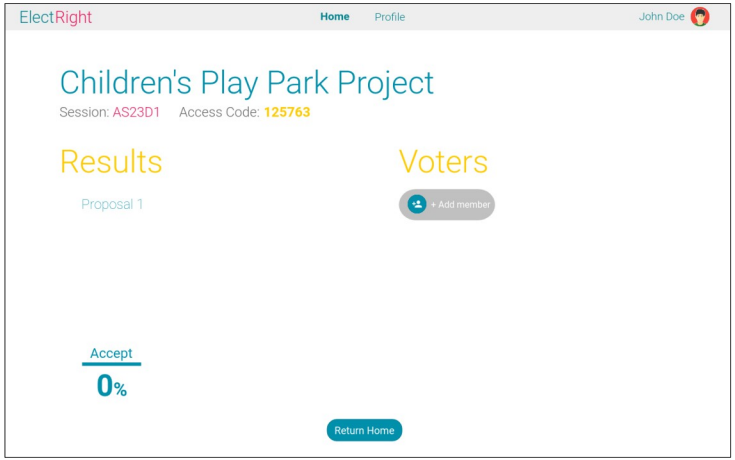
Election Editor



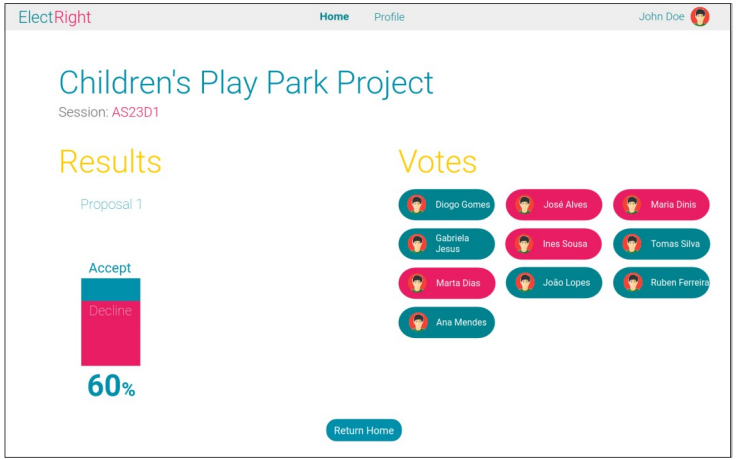
Election Ballot

Low Fidelity Prototype (LFP) - 3

Digital prototype made using Pencil project.



Election Share



Election Results

LFP Usability Tests

User evaluation was conducted in the form of a usability test with volunteer participants.

Scenarios tested:

1. Election Creation
2. Vote Casting
3. View Results

User evaluation tasks:

4. Create an election.
5. Enter the election with the given code.
6. Cast your vote.
7. See the results of the election.

LFP Usability Tests - Results

The users found the **Low Fidelity Prototype:**

- ❑ Easy to use;
- ❑ Intuitive design.

The **flaw** that became clear from the tests was:

- ❑ Background colour in the election editor and election ballot;

Functional Prototype (FP)

The **platforms used** in the making of **ElectRight** were **React**, **Bootstrap 5** and **Font Awesome**.

It was **designed** for both **computers** and **phones**.

Created with the **previous prototype** as a **baseline**.

FP Main Issues

Given the deadline of the project, some aspects needed to be simplified or not implemented:

- President’s vote -> Special vote to end a tie in the election;
- Group Creation -> Elections must have every member assigned individually;
- File and image support -> Not implemented.

FP Usability Tests - 1

User evaluation was conducted in the form of the **previous usability tests** with the addition of a **SUS questionnaire**.

The **scenarios** tested **during classes** were **limited** due to the amount of functionalities implemented at the time.

FP Usability Tests - 2

Scenarios tested:

1. Election Creation

User evaluation tasks:

2. Add a title to the proposal.
3. Write the text to be changed and the respective change.
4. Add a file.
5. Add a second proposal.
6. Delete the second proposal.
7. Submit the proposal.

FP Usability Tests (Creating Election) Results

Several flaws became apparent in the functional prototype, **tested during classes**:

- User did not realize you could input a title.
- Lack of visual explanation -> user did not know what to do in some ballot fields.
- Proposal “window” too big -> user has to scroll to find the submit button.
- Homepage’s focus on create election should be altered to a focus on casting a vote.

FP Usability Tests (Voting) Results

Similar to the **Low Fidelity Prototype** of this task, users found voting:

- ❑ Easy to use;
- ❑ Intuitive design.

There was also a **small flaw** pointed out:

- ❑ Only 1 type of response possible(declaration of intent).

FP Usability Tests SUS Results - 1

Creating Election (6 participants):

- SUS questionnaire results: 70, 75, 85, 72.5, 75, 60;
- Mean SUS questionnaire score: 72.92.

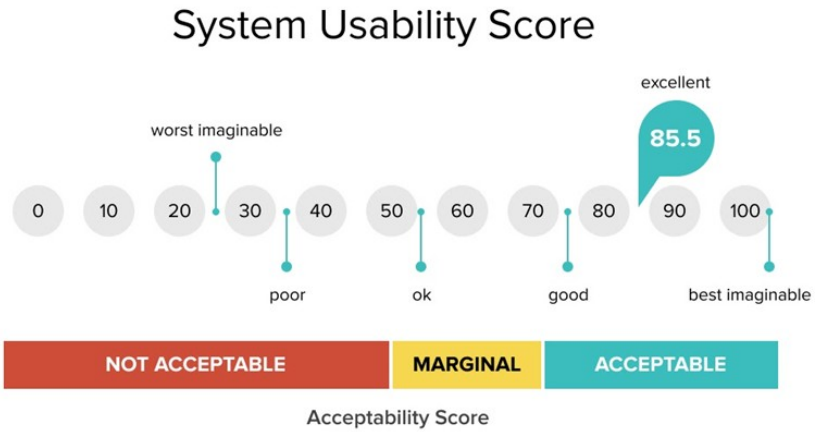
Voting (4 participants):

- SUS questionnaire results: 75, 82.5, 80, 80;
- Mean SUS questionnaire score: 79.38.

FP Usability Tests SUS Results - 2

Contextualising the previous results:

- ❑ Average user will find it easy to use our application;
- ❑ Even older people (1 participant had 66 years old) can easily interact with app.



FP Heuristic Evaluation

Description	Evaluation	Usability Heuristic
Can’t make groups	3	#7: Flexibility and efficiency of use
Lack of help in application	2	#10: Help and documentation

FP Demo

We'll now have a quick rundown of the functional prototype.

Future Work

Implementing further requirements, such as:

- File and image support;
- Complexity in the voting process;
- Create groups of people;

Acknowledgments

Special thanks to:

- **Usability test participants** - for giving us their feedback on our platform;
- **HCI teachers** - for giving us suggestions along the development of the project.

Team effort:

- David Araújo 50%;
- Gonçalo Sousa 25%;
- Catarina Oliveira 25%.