BeeSmart

Interação Pessoa-Computador 2024-2025

Phase II – Lo-Fi Prototype and Heuristic Evaluations

3LEIC09 G01

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Project's Abridged Description and Tasks

BeeSmart is, in short, a mobile application designed to allow users to manage smart electric devices located at home. Our design philosophy for the app focuses on avoiding hard to understand complex features and labels, making for a much more intuitive and easy-to-use application.
For this phase of the development of the project, we designed a Low Fidelity Prototype, with few but high priority features. These, in pair with three specific tasks, were given to two of our colleagues from different groups to test and evaluate our current progress. The tasks get gradually more complex through them. The three given tasks were the following:

- **"Check your profile's name."**

In this prototype, we developed three distinct important pages: the "reports", "home" and "profile" pages.
With the given task, which is the most simple of the three, we were able to confirm how intuitive and functional the bottom bar in our prototype is.

- **"Check the Smart TV's weekly energy spending."**

In the "reports" page, a very basic graph will be given. This graph gives the user an energy spending of the week for whatever it is grouped by. The graph can be grouped by Floor, Division and Device. The application starts with the report graph grouped by Division by default.
With this task, we wanted to test how easy it is to understand how to find the desired report values for a specific device.

- **"Toggle Automatic Management on the Smart Toilet."**

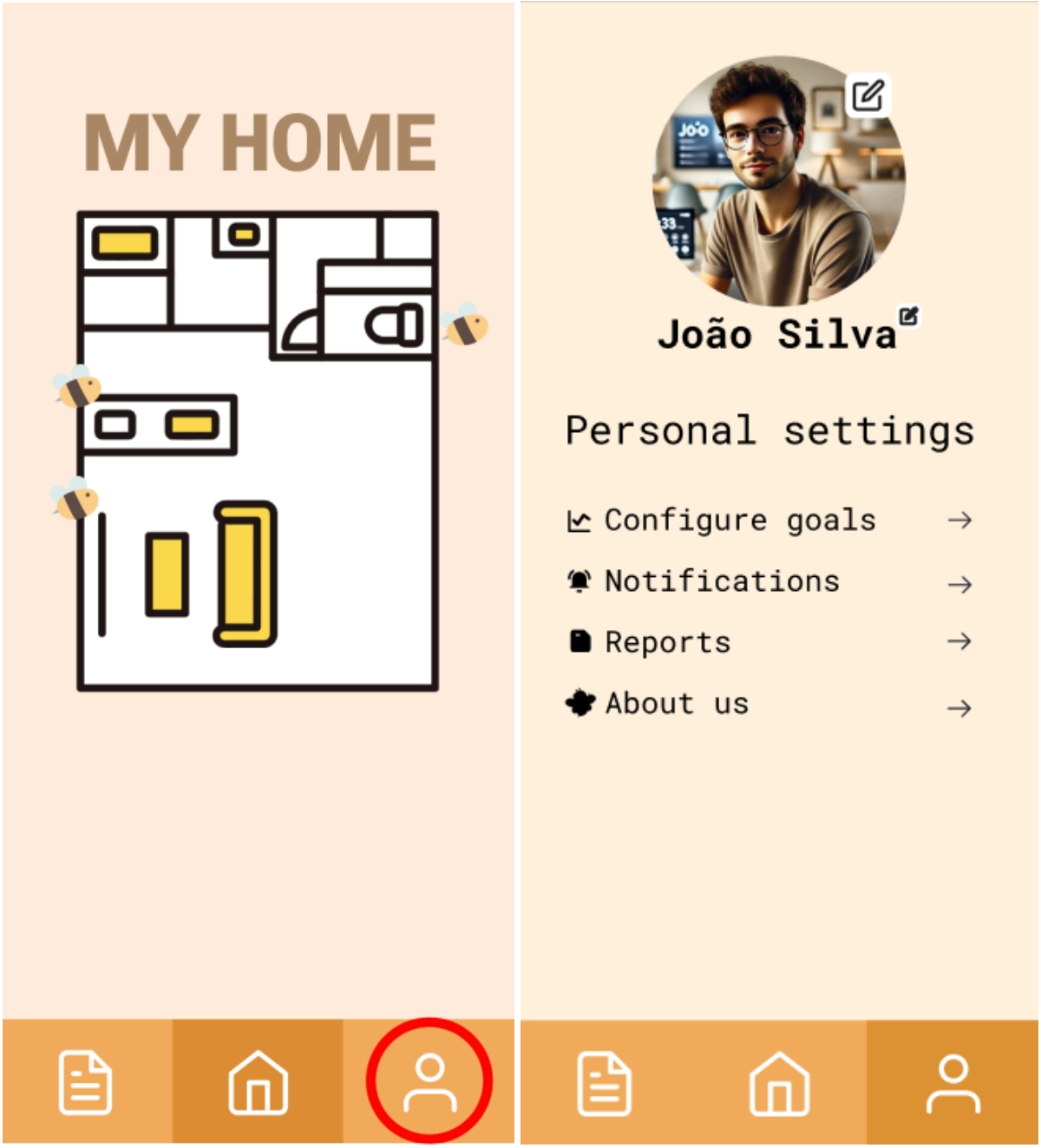
In the "home" page, bee icons are placed next to the devices' locations. These open pop up screens, with a toggle function, used to enable Automatic Management on the specific device. This task allows us to test if the functionality and the usage of the main device management features are easy to understand and use.

Prototype's Wireflow

The wireflow of the prototype during all tasks will show how the process and steps intended to take through the application are expected to be. The buttons pressed in each step are highlighted by the red circles.

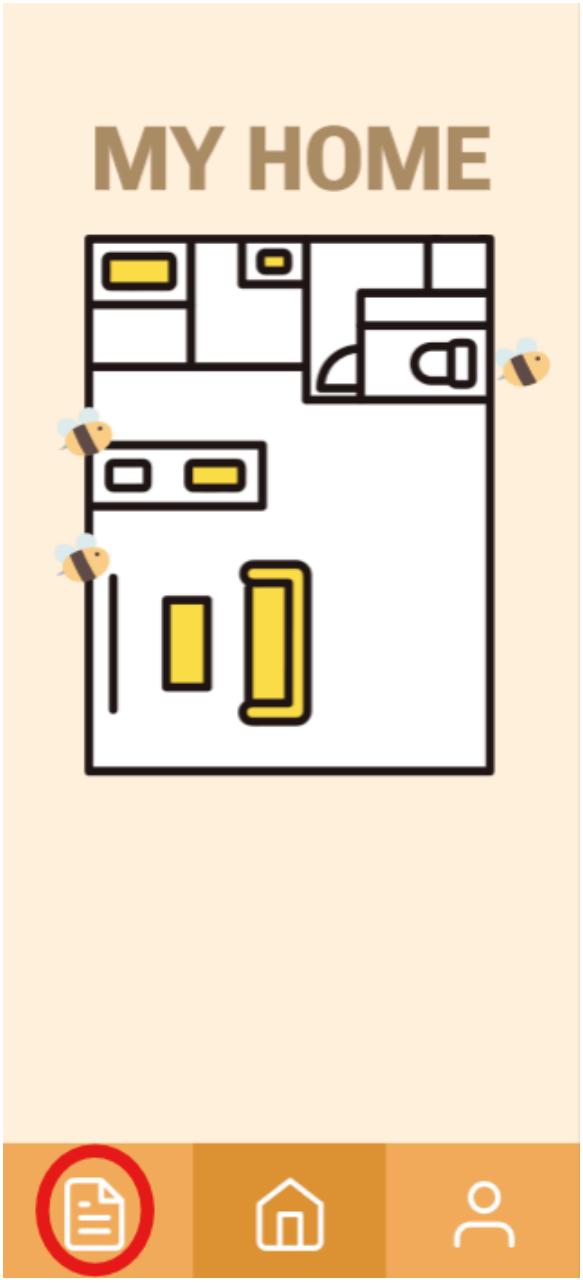
- **Task #1**

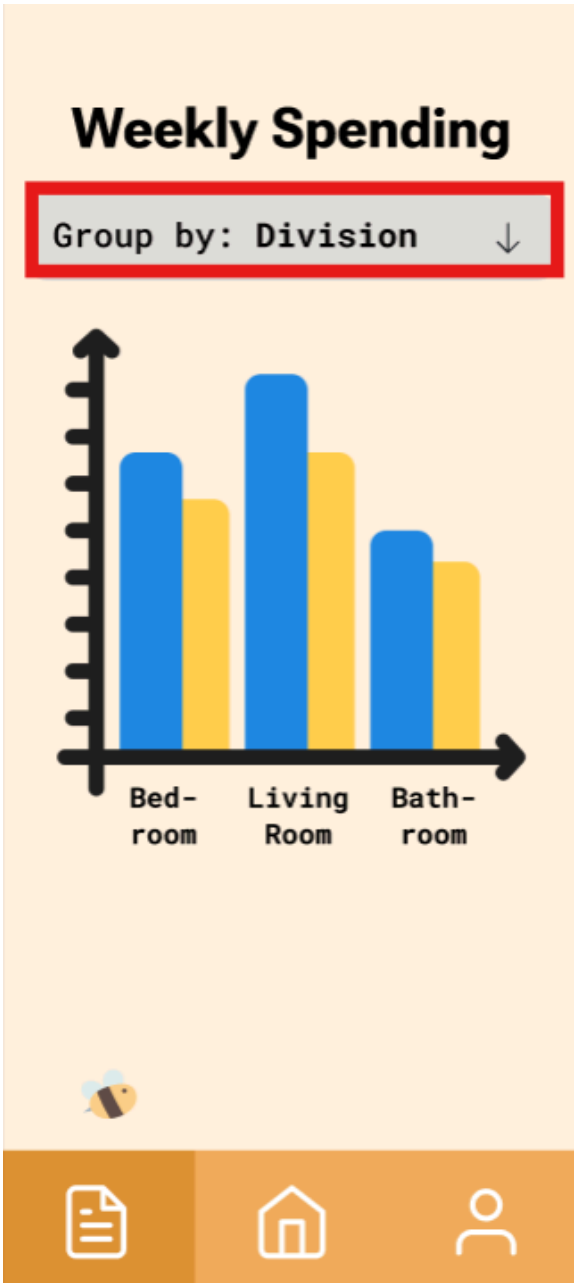
1. Click on the profile page.

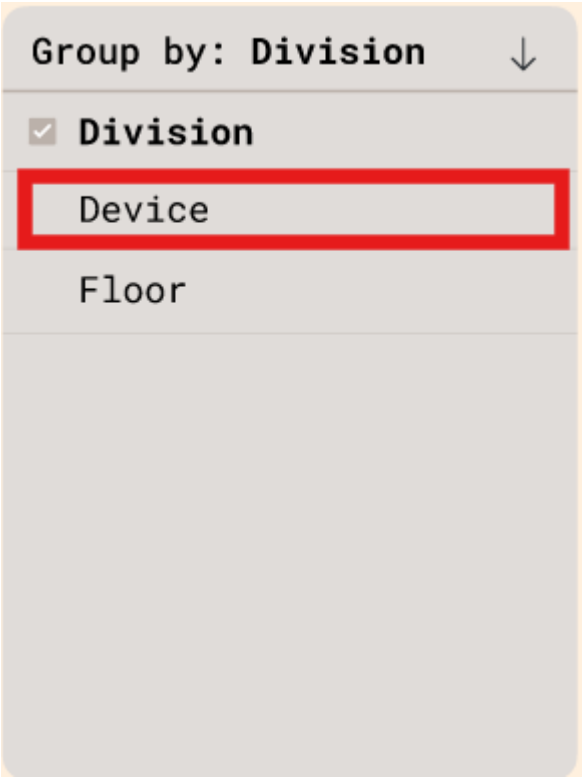


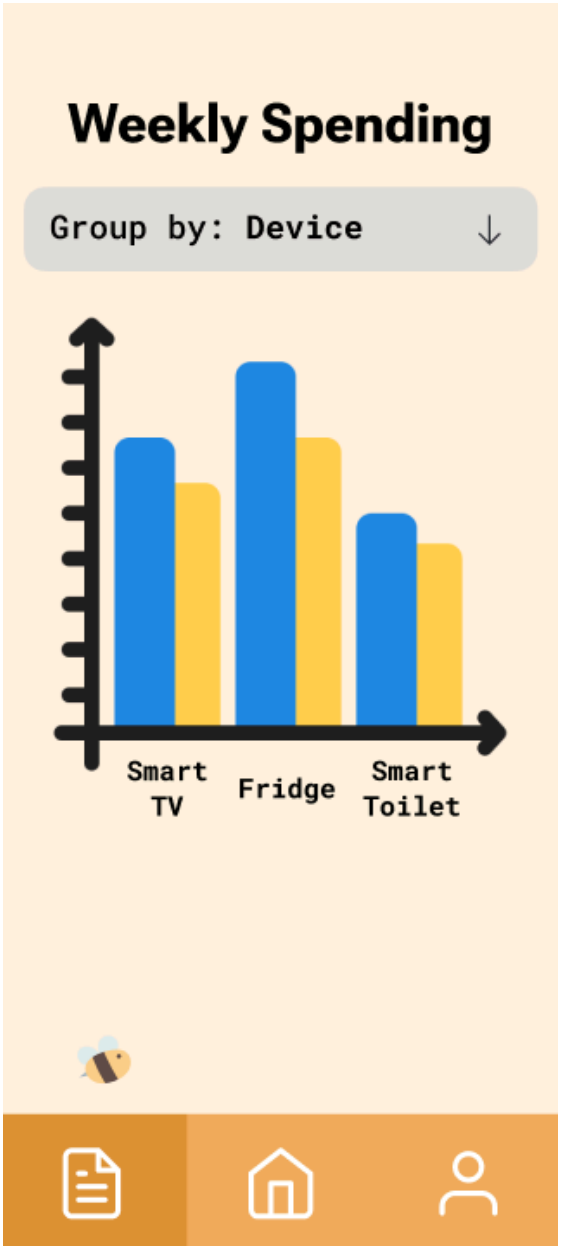
- **Task #2**

1. Click on the reports page.
2. Click on the drop down bar “Group by”.
3. Click on the “Device” option.



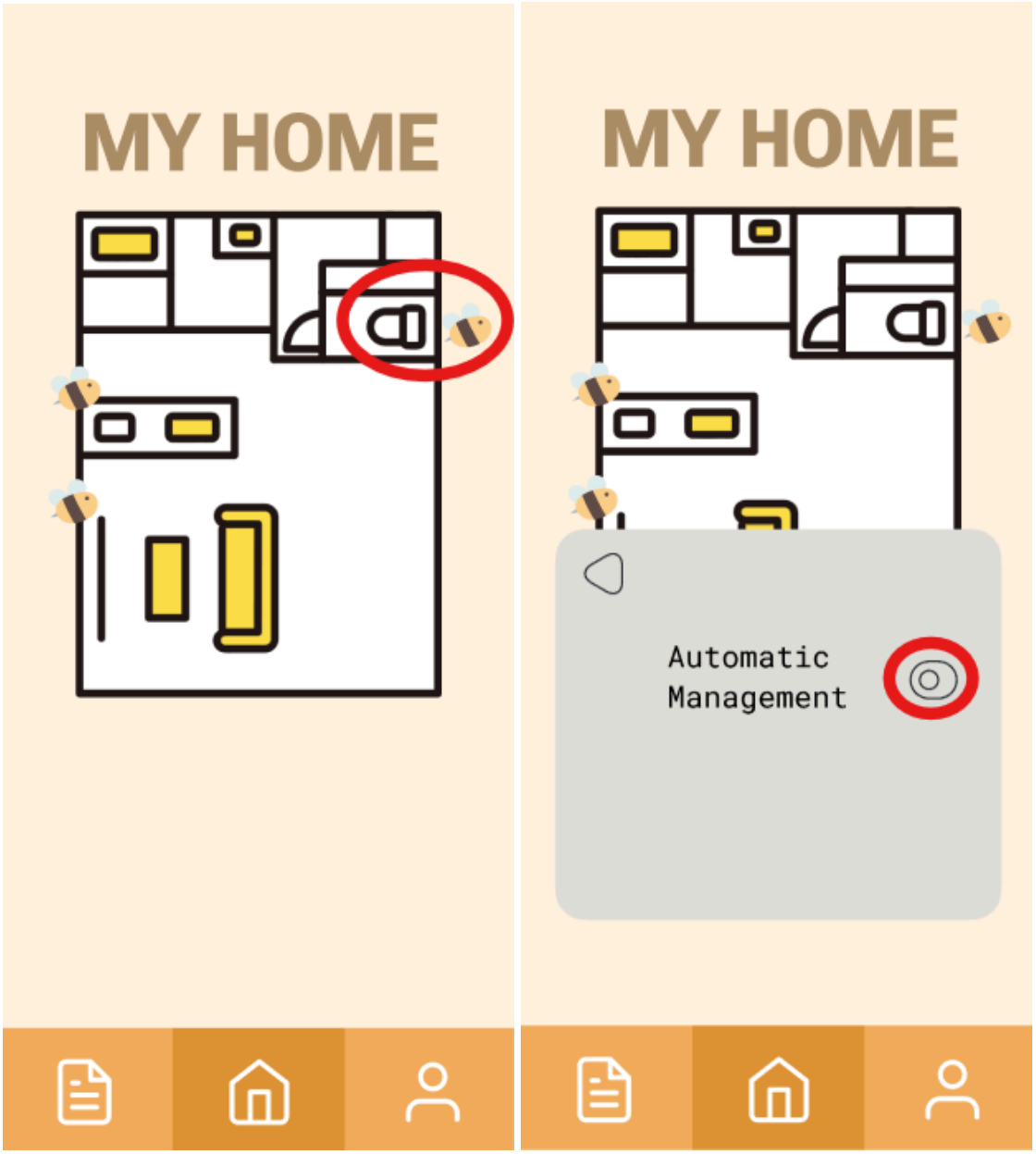


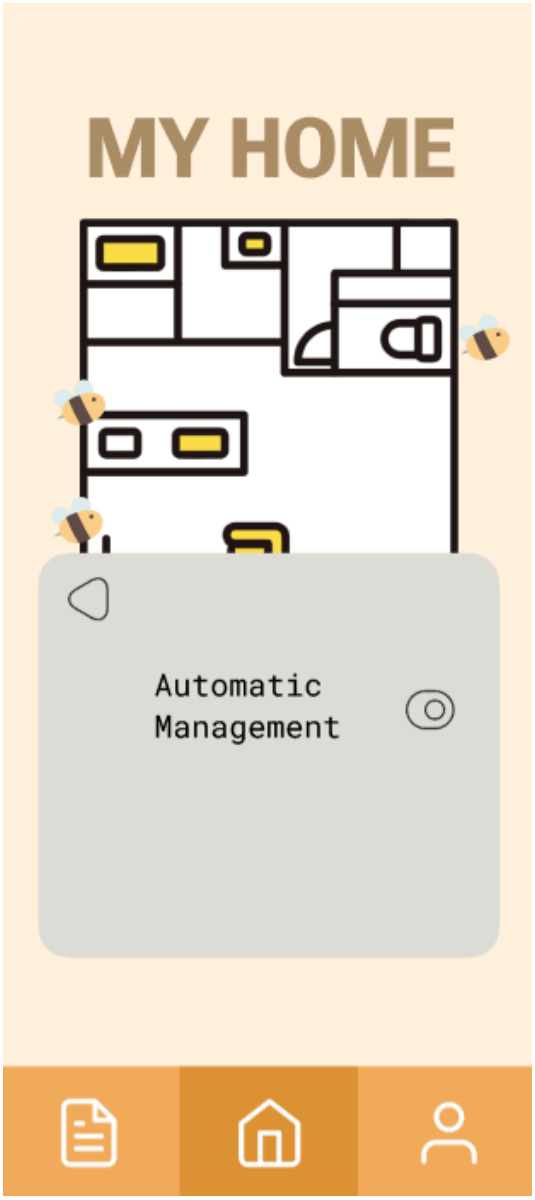

Group by: Division
Division
Device
Floor


Weekly Spending
Group by: Device
Smart TV
Fridge
Smart Toilet

- **Task #3**

1. Click on the home page.
2. Click on the bee corresponding to the toilet.
3. Turn on the automatic management.




MY HOME
Automatic
Management

Digested Heuristic Evaluation Results

Our prototype was tested by Group 5 and by Group 6 by one member of each group. 7 problems were pointed by each group, making a total of 14 issues pointed out. Each issue was associated with one of the 10 Nielsen's Usability Heuristics and a severity level from 1 to 4. Issues that were pointed by both groups are listed in the same entry and its severe level is averaged. The noted issues we received are listed under, accompanied by a note with our opinion on it.

1 - " On the home page, it's hard to understand which device is which" - Group 5
Heuristic: 7 / Severity: 4

This issue refers to the bee icons located in the home page. We understand and agree with the problem, we believe that this problem came with the wrong use of a template houseplant that wasn't created specifically for this type of application.

2 - "Home page, design poorly balanced, too much empty space" - Group 5
Heuristic: 8 / Severity: 2

This is a problem we were hoping to solve in the next version of the prototype with the addiction of a slider for looking through other different house plants for different floors that the user may have in the application. We agree that it is a problem in design for this version of the prototype, but we were already aware of this since the beginning.

3 - "Bee icons in home page too small and not intuitive" - Group 5
Heuristic: 3 / Severity: 2

We believe the buttons are the needed size, but we do agree that they are not intuitive as they are in the prototype. A level of 2 in severity is appropriate

4 - "Pop-up pages for the devices have no labels" - Group 5/Group 6
Heuristic: 6 / Severity: 2.5

This problem was pointed out by both groups, it was given a fair severity value, and, as it is easy to fix, it will be corrected for Phase 3.

5 - "Buttons for editing profile name and picture are too small and not consistent with the rest of the app's design" - Group 5
Heuristic: 8 / Severity: 3

We do not believe this problem deserves a severity level of 3. There are other design and visual problems throughout the prototype that ruin consistency and do not look appealing, but we do not think it is the case for this.

6 - "Bee in the corner of the Reports page looks clickable, however, it does nothing" - Group 5
Heuristic: 3 / Severity: 1

This bee would be the button used to start the AI Assistant in the final version of the app. As of now, it does nothing.

7 - "In the Reports page, the page that slides down, used to group the graphs, isn't able to be closed unless an option that isn't the current one is picked" - Group 5/Group 6
Heuristic: 3 / Severity: 2.5

This is an inconvenience that bothers the flow of the application during tasks. It is a functionality issue that was missed by us when making the prototype and a limitation of the tool we used to make the prototype, it will be fixed in the future. We agree with the severity levels given by both groups.

8 - "Button home in the navigation bar already identifies the home page. It would be better to identify the app itself (BeeSmart)" - Group 6
Heuristic: 6 / Severity: 1

We agree that it is unnecessary to have the label "MY HOME" in the home page, however, we disagree with the solution suggested by Group 6.

9 - "The reports lack clarity. "Weekly spending" does not make it clear what is being spent and on what." - Group 6
Heuristic: 10 / Severity: 2

The lack of information and clarity will not be a problem in the next version of the prototype, as it is now, it is impossible to know what and how much a device is truly spending.

10 - "Navigation bar is unnecessarily large in relation to the other application elements." - Group 6
Heuristic: 8 / Severity: 1

Although we might tend to agree with this opinion, the proportions of the navigation bar are a bit larger than what it should be because we didn't know in the beginning how much space we would need to fit every category, and it is useful to support possible future addictions to this bar. We understand this being pointed out by Group 6 but we don't agree.

11 - "Font properties and icons' colors are irregular throughout the app. A single cohesive theme for icons and fonts would probably be better." - Group 6
Heuristic: 4 / Severity: 3

We agree with the suggestion given by the colleague who evaluated us, a cohesive theme throughout the application will make for a more professional and appealing look.

12 - "A single edit button or another edition format for the whole profile would probably be better. Can't make multiple changes at a time." - Group 6
Heuristic: 8 / Severity: 1

We disagree with the critic, we currently have 2 ways of editing the profile (either the picture or the name) and we do not believe this makes the app less functional or less appealing.

Corrections to Perform in Phase 3

Our project's main focus is to make the application as user friendly as possible. To achieve this we tried to use more icons and less text to identify and organise the Pages. This backfired, as we realized through the heuristic evaluations made by our colleagues that some labels or texts and descriptions are needed and don't really make the application less user friendly. Here are listed the changes and updates we have planned to make to the next prototype, for Phase 3:

- Increasing the size of the bee buttons in the home page; Alternatively changing the idea of using bee icons and instead using icons that represent whatever device the button is on, like a small TV icon or a lamp icon.
- Increasing the size of the buttons used for editing the profile information in its page; Alternatively, we could make all information be editable through one button and a subsequent page;
- Adding labels to popups for the smart devices chosen;
- Adding the ability to swipe through different floors, as well as adding labels for such under the house plant;
- Uniformize the font, colour and size of certain text to maintain a more consistent look;
- Making it so the page that slides down in the Reports page is closable;
- Adding AI assistant for reports page, which gives advice based on current week report;
- Readjusting bottom bar's size and button functionality, currently only the icon is clickable, not the whole box;
- Adding labels and values to graphs in the Reports page, currently it has no numbers or clarification of what each bar is.

A lot of these changes come from problems that come from the fact that our prototype is still in its Lo-Fi form and due to lack of time and some being in a low priority, like lack of side smaller features. However, problems related to design and functionality do not fit in this regard and must be changed.

Annexes

Sent Heuristic Evaluation Reports

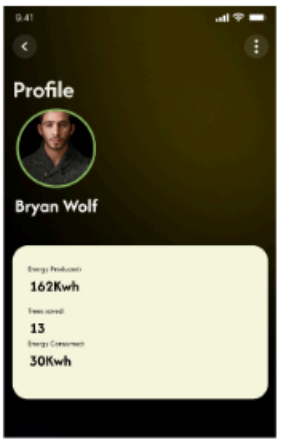
HCI Winter Semester 2024 - 2025

Heuristic Evaluation Report

Class Nr.: LEIC09 - 13/11/24 - Nuno Guimarães
Group evaluated: 02 - SolarStream
By group: 01

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Cannot change device's name. The tool used by the group to build the prototype does not allow to correct typos (backspace does not work).	3	3
2	Cannot add multiple devices. The way the group has built the prototype does not allow the addiction of more than one device.	7	3

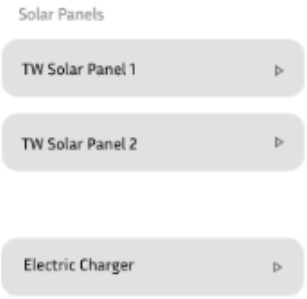
3	Can be considered a not minimalist homepage for a lofi prototype. The user can become overwhelmed with a lot of information at the homepage. 	8	1
4	Design inconsistency space between lines on the profile screen that does not compromise the prototype.	4	1

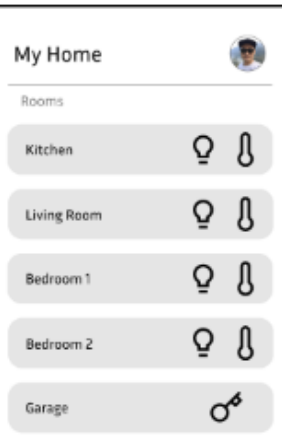
			
5	Small font on devices page, can become a problem for old people or people with vision problems, for example. I consider it to be a major design flaw that must be corrected. 	8	3

Evaluation Made by: Guilherme Rego

Heuristic Evaluation Report

Class Nr.: LEIC09 - 13th of November 2024 - Nuno Guimarães
Group evaluated: 03 - ZéNergy
By group: 01

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Navbar deslocada em alguns frames.	4	1
2	Icons podiam ser mais intuitivos principalmente navbar.	6	2
3	Whitespace em algumas páginas da preview. 	4	2
4	Usar um slider horizontal em vez de circular para controlo da temperatura para representar melhor qual direção corresponde a aumentar ou diminuir a temperatura.	2	1

5	Usar toggle/cadeado para a garagem como representação visual de se está trancado ou não.		6	2

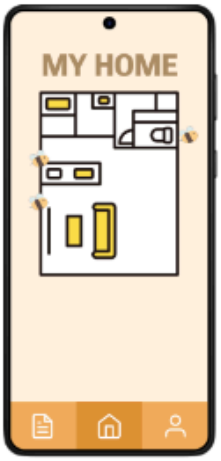
Evaluation Made by: Gabriel Braga

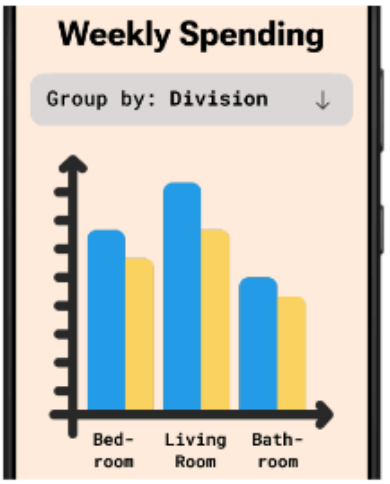
Received Heuristic Evaluation Reports

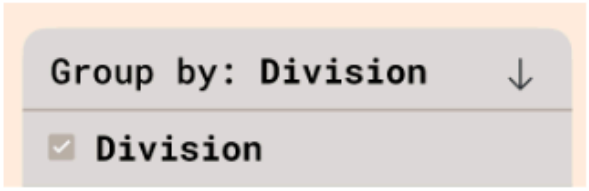
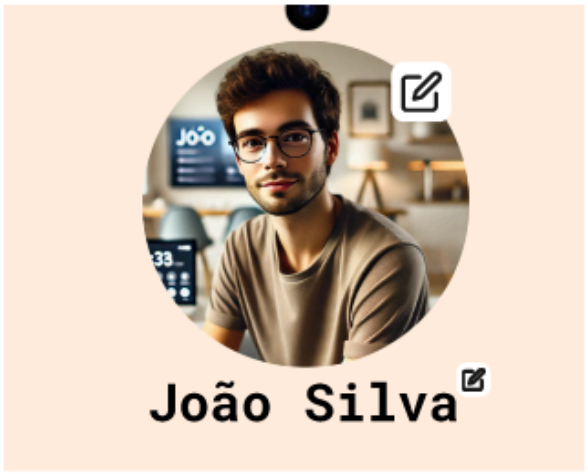
HCI Winter Semester 2024 - 2025

Heuristic Evaluation Report

Class Nr.: LEIC09 - 13.11.24 - Nuno Guimarães
Group evaluated: 01 - BeeSmart
By group: 06

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Button home in the navigation bar already identifies the home page. It would be better to identify the app itself (BeeSmart). 	6	1
2	Help buttons exist but there is nothing to identify the smart device name or type. No icon or name in the popup that opens and the back button is confusing.	6	2
3	The reports lack clarity. “Weekly spending” does not make it clear what is being spent and on	10	2

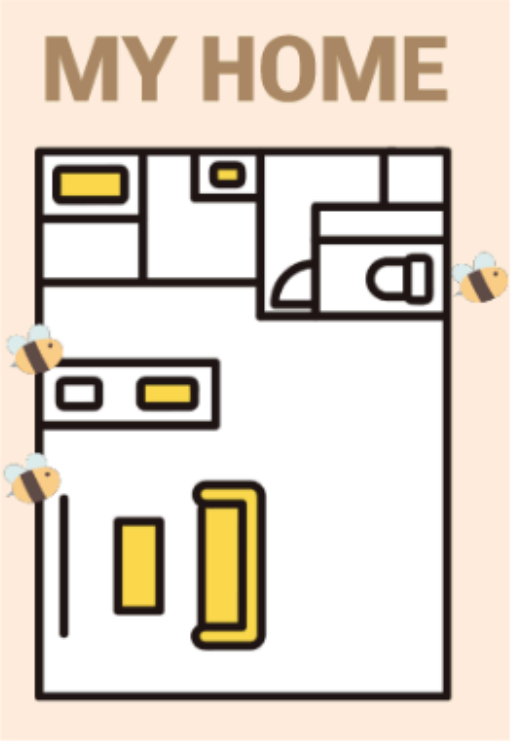
	what. 		
4	Navigation bar is unnecessarily large in relation to the other application elements. 	8	1
5	Font properties and icons' colors are irregular throughout the app. A single cohesive theme for icons and font would probably be better. 	4	3

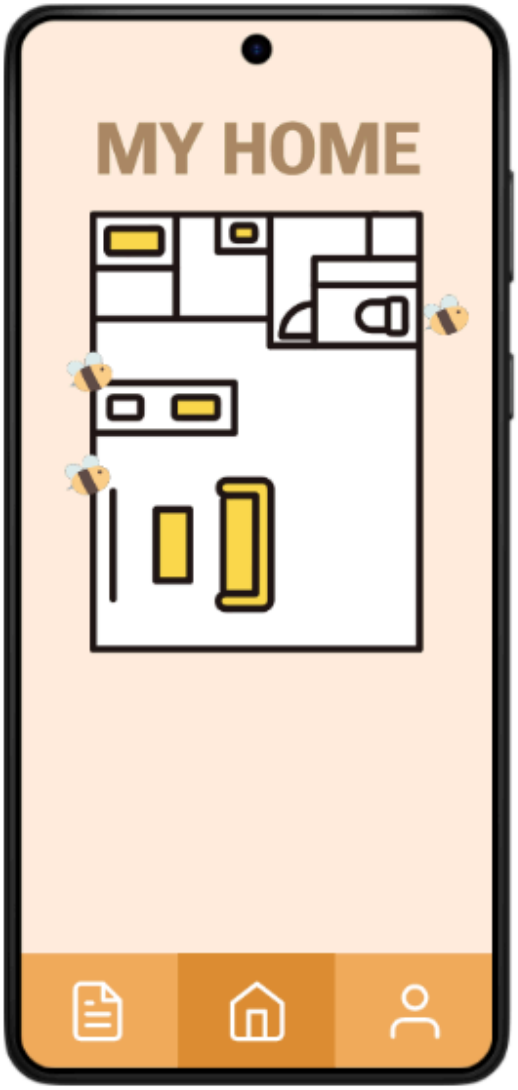
6	Filter of the report lacks user control (no back button, forced to click in the checkbox) and the title of the filter is shown twice. 	3	3
7	A single edit button or another edition format for the whole profile would probably be better. Can't make multiple changes at a time. 	8	1

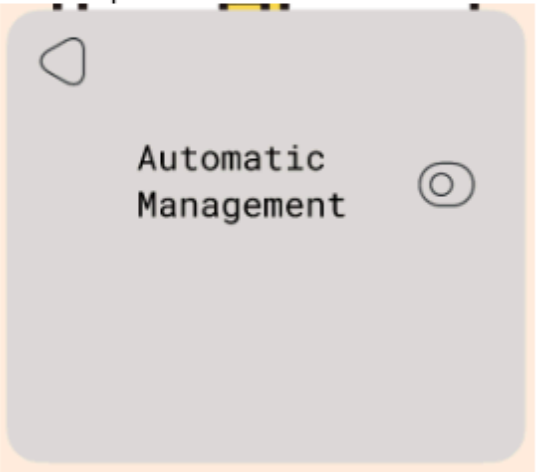
HCI Winter Semester 2024 - 2025

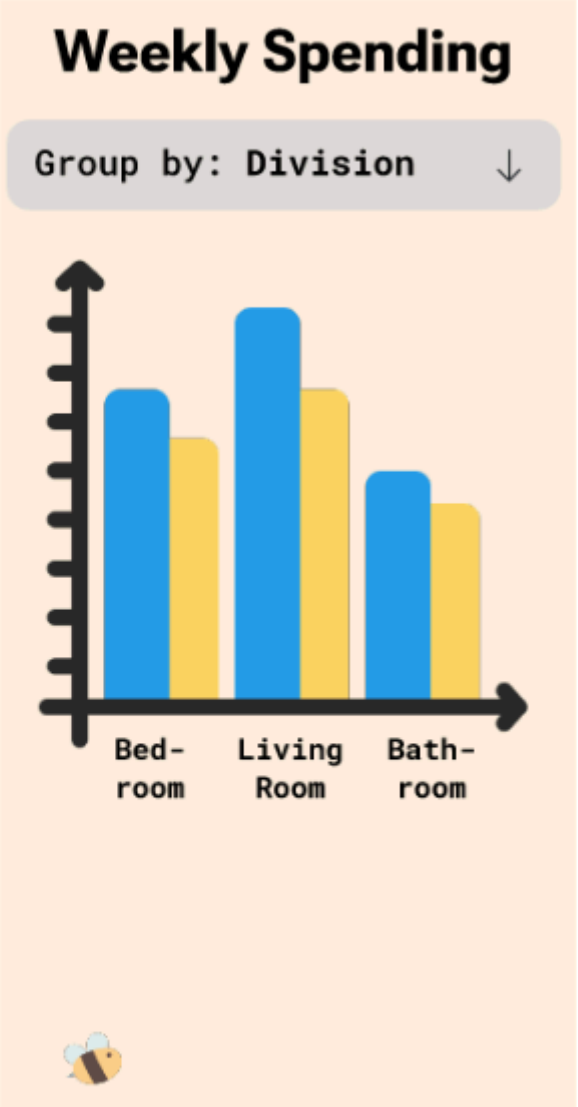
Heuristic Evaluation Report

Class Nr.: LEIC09 – 13/11/2024 – Nuno Guimarães
Group evaluated: 01 - BeeSmart
By group: 05 - Heima

Problem #	Issue (include screenshot)	Heuristic(s)	Severity (1-4)
1	Na homepage é difícil de perceber qual é o elemento a controlar. 	7	4
2	Homepage com design pouco equilibrado, espaço vazio.	8	2

			
3	Botão com ícone de abelha pequeno e pouco intuitivo. 	3	2
4	Popup de automatic management é preciso colocar uma *label*, caso contrário não se	6	3

	entende qual foi o elemento escolhido. 		
5	Página de visualização do perfil com botões de edição pequenos e pouco consistentes com o restante design. 	8	3
6	Abelha na página de gráficos dá a entender que	3	1

	é mais um botão do estilo dos que estão presentes na homepage. No entanto, este botão nada faz. 		
7	Página dos gráficos, quando algo for escolhido não dá para voltar atrás, tem de se voltar a escolher o dropdown e dar scroll por todas as divisões.	3	2