NOVA NOVA SCHOOL OF SCIENCE & TECHNOLOGY

Interação Pessoa-Máquina

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Transit Pass Application

Stage 6: Evaluation Results

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1. Heuristic Evaluation from G17

Nº	Problem	Heuristic	Description	Severity	Solution	Screenshot
1	Need to write the station names completely.	Flexibility & Efficiency of use	In the tab "Trajeto", the user has to write the name of the origin and destination stations completely. This makes the user waste time, and could lead to errors.	3	Auto-complete mechanism.	https://i.imgur.com/RB0XnjR.jpg
2	It is possible to insert incorrect information, for example, incorrect NIF.	Error Prevention	On the "User" tab, when clicking on "edit" there are several fields that do not prevent the user from placing invalid elements there (NIF size, for example).	2	Have checks that prevent this from happening.	https://i.imgur.com/TqyKR1O.jpg
3	Use of Android's back button may generate unexpected behaviour	Consistency and Standards	When pressing the back button for example after logining we are presented with an empty page instead of either closing the app or being taken back to the login screen as expected.	3		https://i.imgur.com/gruDkC6.jpg
4	Excessive vibration	Visibility of system status	On the "History" tab, when clicking on "Select Date", when the date is changed, the cell phone vibrates excessively.	1	Since there is already visual feedback, it is not necessary to include vibration.	https://i.imgur.com/MsXfsnL.jpg
5	Lack of information in "Estatuto Especial" page	Recognition	On the "Estatuto Especial " page, in the "Utilizador " tab, there is no information on what type of document the user needs to submit in order to get his/her "estatuto" validated or renovated.	2	Explain the different types of documents a user can use to get the statute validated.	https://i.imgur.com/Rz2rwpB.jpg

6	Login button and text links overlapping	Aesthetic and minimalist design	Performing the login in, when the keyboard pops up, in order to insert the credentials, the login button and the text below become overlapped.	1	Test the application with multiple devices of different screen sizes,and make sure the app adjusts itself to each size.	https://i.imgur.com/xbtvkxc.png
7	Several pages to buy a ticket	Flexibility & Efficiency of use;Consistency & standards	To buy a ticket, the user must choose the origin in one page, the destination in another page, and pay in another one. It would be more efficient to do it like in the tab "Trajeto".	1	Single page where you can pick the origin, the destination, and pay the ticket.	https://i.imgur.com/ySR9c6P.png
8	The existence of dots being one of the darker than the others in the bottom of the ticket purchase page	Consistency & Standards	When a mobile device user sees these symbols he is expecting he can swipe horizontally to change screens, which here needs to be done using the green button on top of it.	1	Remove the 3 dots.	https://i.imgur.com/yb5vfFp.png
9	Alerts tab location isn't obvious	Consistency & Standards; Recognition	The alerts tab is hidden away behind the bell icon, while being hidden away is not a problem as this is information users would only check in the event of public transport being very late, the chosen symbol does help the user to figure out the alerts are placed there.	3	Creating an alerts tab at the bottom or changing the icon to an alert icon the users can recognize (" ⚠ ").	https://i.imgur.com/o03xBTe.png

2. Proposed solutions and justifications

- **Problem nº 1 - Need to write the station names completely**
  - The functionality's purpose isn't to search for stations but instead to search for locations. The critic is still valid and, to solve this issue, we would implement an auto-complete mechanism that shows a drop-down with suggestions of locations that complete what was already typed.

- **Problem nº 2 - It is possible to insert incorrect information, for example, incorrect NIF**
  - The NIF is the only field which can receive incorrect information. It was a slip up and it can be fixed by limiting the input size, like we did with all the other fields.

- **Problem nº 3 - Use of Android's back button may generate unexpected behavior**
  - This was a known problem that was detected last minute and a warning was added to the report in the Startup instructions sections.

- **Problem nº 4 – Excessive vibration**
  - The date picker component used in the app was provided by the library of the platform we used for the development of the app and, as such, the vibration already came implemented and it was not added by us. We think it makes sense to vibrate given the nature of the input type, as it is an input where you select the date by scrolling and putting the selected value in the middle position, having resemblance to something like a combination lock where you rotate de dials and put the selected value in the middle position. In something like the lock you would have some kind of physical feedback whenever you rotate the dials and the vibration in this input type tries to mimic that.

- **Problem nº 5 - Lack of information in "Estatuto Especial" page**
  - To fix this problem we could add a small text that explains which document is necessary to be uploaded for each special profile.

- **Problem nº 6 - Login button and text links overlapping**
  - This problem can be resolved by having the keyboard overlap the bottom text instead of pushing it up, which causes the overlap between the login button and the text links.

- **Problem nº 7 - Several pages to buy a ticket**
  - We think less information in each page makes the process less confusing. Besides, because of the dots at the bottom of the page, the user has feedback about which step they're in and the amount of steps that remain – this makes for good visibility of the process. In addition, when selecting the destination, the user knows which origin they previously selected as it is shown in the page in a lighter color.

In this way it's also possible to have a full list of the train stations in order, which can help a user remember the name of the station they want to select, instead of having to remember the name of every station and their order like they would have to if we used the suggested implementation of making it work like the "Trajeto" tab.
The pages were designed with visibility and feedback considerations in mind and we think this process is much better than implementing it like suggested.

- **Problem nº 8 - The existence of dots being one of the darker than the others in the bottom of the ticket purchase page**
  - The dots at the bottom are very important for visibility as they give the user the knowledge of where they stand in the process of buying a ticket. Because there are only three steps, no step can be skipped (cannot go forward in the process) and it's easy to go back with the back button, we don't think it's necessary for the dots to be clickable.

- **Problem nº 9 - Alerts tab location isn't obvious**
  - The alerts tab, which can be accessed through any of the main pages is, in our opinion, correctly positioned and of intuitive access. The position and the used symbol are the standard for notifications – it wouldn't feel right to add a warning sign as an icon as it would seem like an application error and adding it to the bottom would also make the tab bar cluttered and the icons too small.