



Faculty of Mathematics

Human Computer Interaction

Usability Test Plan

| | |
|-----------------------------------|-----------|
| Introduction | 2 |
| Usability Test Plan | 3 |
| 3. Results | 9 |
| 4. Analysis and Conclusion | 11 |

1. Introduction

The next document is with the objective to detail, explain, execute and analysis of the usability tests.

Throughout the document, the specific tasks/activities to be carried out are detailed. Also, the people responsible for executing usability tests. All this with the objective to guarantee compliance with the requirements, specifically those of usability of the software project.

| Type of Test | Definition |
|----------------|--|
| Usability Test | Usability tests assess the degree to which the system can be used by specific users with effectiveness, efficiency, and satisfaction in a specific context of use. |

2. Usability Test Plan

The following table intends to carry out usability tests with expert users in the project, with the results obtained it is intended to develop the corresponding metrics for user usability tests.

| Type of User | Name |
|--------------|-------------|
| Expert | Iván |
| Expert | Jose Manuel |
| Expert | Steven |

| Activity/Task | Metric | Type of user |
|--|-----------------------|--------------|
| Make a comparison of 2 career from the log-in screen | Number of clicks made | Expert |
| Make a comparison of 2 career from the log-in screen | Time taken | Expert |
| Make a comparison of 3 career from the log-in screen | Time taken | Expert |
| Make a comparison of 3 career from the log-in screen | Number of clicks made | Expert |
| Perform race test from the log-in screen | Number of clicks made | Expert |
| Perform race test from the log-in screen | Time taken | Expert |
| Make a career selection from the home screen | Time taken | Expert |
| Make a career selection from the home screen | Number of clicks made | Expert |

To catalog users, there are 2 users:

- rookie
- with previous knowledge about the system

Novice user refers to a user/person who has no prior knowledge of the system with basic technological knowledge.

On the other hand, we have the user with prior knowledge of the system project, this refers to a user who has notions/knowledge of the project's web application. The choice of these 2 users is based on having a better notion of creating the metrics to later carry out the usability tests of the web application.

Finally, with the following table, it is intended to test rookies users and users with previous knowledge to be able to execute usability tests and with this carry out a subsequent analysis with the results obtained.

| Activity/Task | Metric | Type of user |
|--|-----------------------|---|
| Make a comparison of 2 career from the log-in screen | Number of clicks made | With previous knowledge about the system 6 |
| Make a comparison of 2 career from the log-in screen | Time taken | Rookie 00:31 |
| Make a comparison of 3 career from the log-in screen | Time taken | Rookie 1:18 |
| Make a comparison of 3 career from the log-in screen | Number of clicks made | With previous knowledge about the system 13 |
| Perform race test from the log-in screen | Number of clicks made | With previous knowledge about the system 15 clicks |
| Perform race test from the log-in screen | Time taken | Rookie 21 secs |
| Make a career selection from the home screen | Time taken | Rookie 19 secs |
| Make a career selection from the home screen | Number of clicks made | With previous knowledge about the system 7 clicks |

Below is an extended guide on the web application, it gives a first look at the functionalities of the system and for the user who is considered to have previous knowledge of the system.

- Firstable we have the log-in screen, if you have an account created it is time to enter the data to log in, if you don't have an account, it is time to create it thanks to the create account button



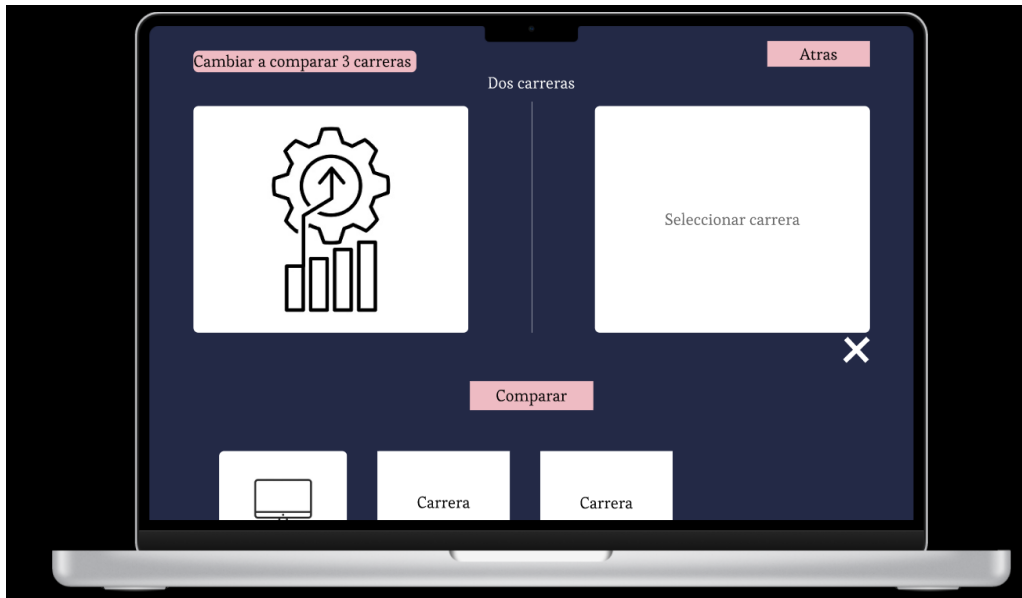
- Once logged in, we have access to the main page, here we can see all the functionalities that the system offers.



We have 4 functionalities in the web application, they are the following:

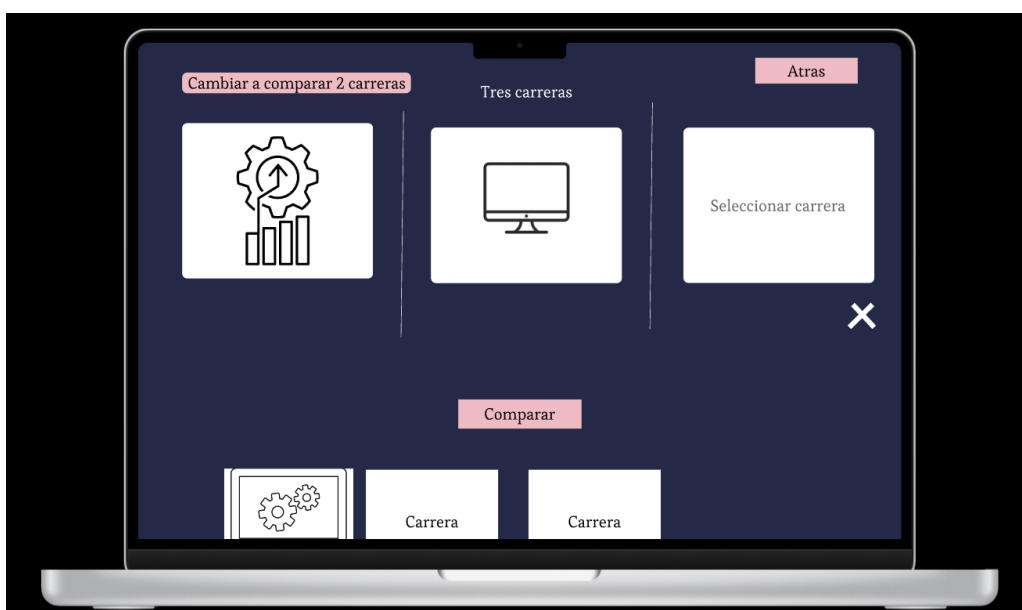
1. Compare 2 careers
2. Compare 3 careers
3. See the list of career to choose to see the information of any
4. Take a computer preferences test

- Let's start by looking at the career comparison



Here we have as a first functionality, compare 2 careers, it is observed that below we have the 3 different careers that are offered, when clicking on one of them, the system drags it up to later enable the comparison button and observe the information

- Now in the interface of the comparison of 2 careers, at the top left we have the second functionality, the comparison of 3 careers



At this point, in the same way that we compare 2 careers, we select the 3 careers to later observe the information



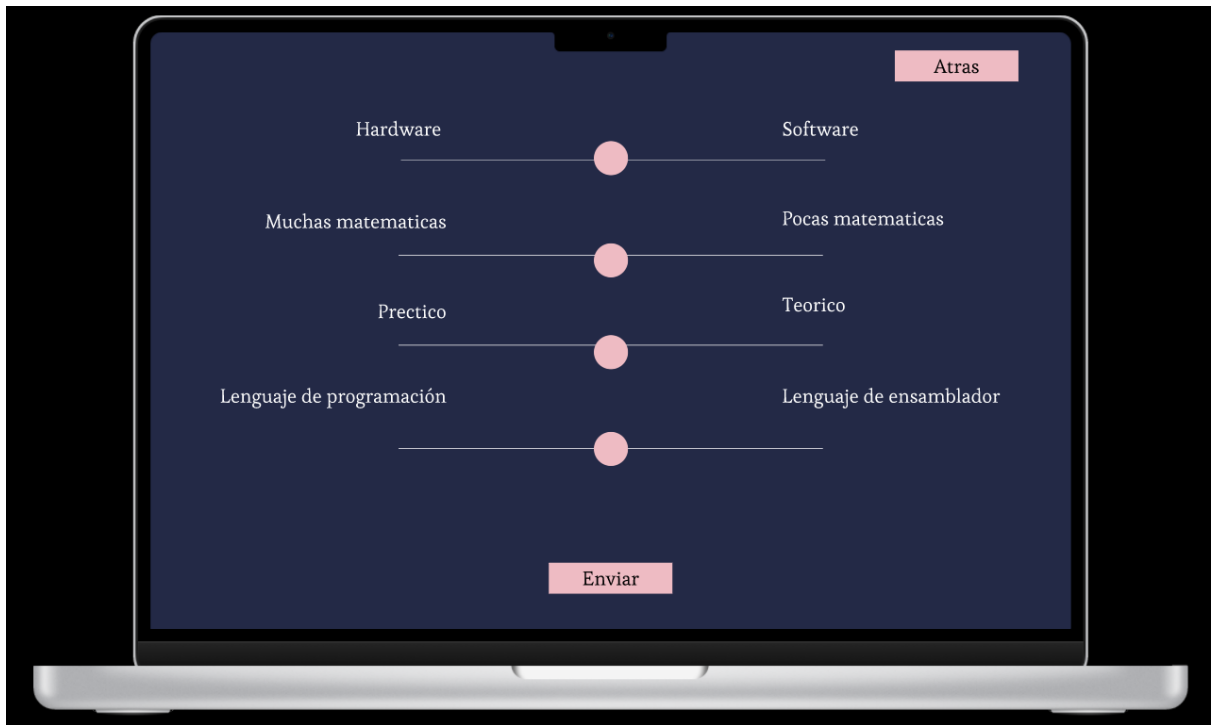
An example of the comparison of 3 careers

- The next functionality is to see the list of information of the different careers, we can see that we can return to the main page by clicking on the back button to later select List Career



Here it is enough to select one by clicking on the view button

- In the same way, returning to the main page we have the latest functionality, perform the computer preferences test



In this test, we have the option of dragging the ball to the direction where it is closest to our preferences, as a suggestion, the balls can be in any direction, this is because the system detects it as a certain percentage of preference and gives a more personalized result to our preferences.

3. Results

Carrying out the tests for expert users we have the following results:

| Activity/Task | Metric | Results of test |
|--|-----------------------|-----------------|
| Make a comparison of 2 career from the log-in screen | Number of clicks made | 4 clicks |
| Make a comparison of 2 career from the log-in screen | Time taken | 6 secs |
| Make a comparison of 3 career from the log-in screen | Time taken | 8 secs |
| Make a comparison of 3 career from the log-in screen | Number of clicks made | 6 clicks |
| Perform race test from the log-in screen | Number of clicks made | 7 clicks |
| Perform race test from the log-in screen | Time taken | 18 secs |
| Make a career selection from the home screen | Time taken | 9 secs |
| Make a career selection from the home screen | Number of clicks made | 3 clicks |

As a metric to use for usability tests we have that it would be twice the time taken by the expert user and twice the number of clicks by the expert user, this is as a guideline to determine the success or failure of the tests taking into account the following:

- If the user takes twice the time and twice the number of clicks it is acceptable so success is obtained
- If the user takes triple or more time and triple or more number of clicks this is considered a failure

In the following table we can see the results of the tests applied to rookie users and with previous knowledge of the system:

| Activity/Task | Metric | Result of test |
|--|-----------------------|---|
| Make a comparison of 2 career from the log-in screen | Number of clicks made | With previous knowledge about the system 6 clicks |
| Make a comparison of 2 career from the log-in screen | Time taken | Rookie 00:31 secs |
| Make a comparison of 3 career from the log-in screen | Time taken | Rookie 1:18 secs |
| Make a comparison of 3 career from the log-in screen | Number of clicks made | With previous knowledge about the system 13 clicks |
| Perform race test from the log-in screen | Number of clicks made | With previous knowledge about the system 15 clicks |
| Perform race test from the log-in screen | Time taken | Rookie 21 secs |
| Make a career selection from the home screen | Time taken | Rookie 19 secs |
| Make a career selection from the home screen | Number of clicks made | With previous knowledge about the system 7 clicks |

4. Analysis and Conclusion

In the following table we can see the results of the usability tests of rookies / with previous knowledge about the system users compared to the metric obtained from the usability tests by expert users:

| Activity/Task | Metric | Expected results | Results obtained | Final score |
|--|-----------------------|------------------|------------------|-------------|
| Make a comparison of 2 career from the log-in screen | Number of clicks made | 8 clicks | 6 clicks | success |
| Make a comparison of 2 career from the log-in screen | Time taken | 12 secs | 00:31 secs | success |
| Make a comparison of 3 career from the log-in screen | Time taken | 16 secs | 1:18 secs | failure |
| Make a comparison of 3 career from the log-in screen | Number of clicks made | 12 clicks | 13 clicks | success |
| Perform race test from the log-in screen | Number of clicks made | 14 clicks | 15 clicks | success |
| Perform race test from the log-in screen | Time taken | 36 secs | 21 secs | success |
| Make a career selection from the home screen | Time taken | 18 secs | 19 secs | success |
| Make a career selection from the home screen | Number of clicks made | 6 clicks | 7 clicks | success |

We can see that in the 8 tests executed to the various users, we had an 87.5% success rate.

In other words, 7 tests out of 8 were successful, however, we observed that the test of measuring the time it takes the user to compare 3 races was a failure.

As a conclusion, the high-fidelity prototypes developed for the web application were successful, however, it is intended to improve the functionality of comparing 3 races for a better reliability in the usability of the web application.