Milestone 4

Group BJBJ

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Study Protocol

Heuristic Evaluation

The experts were given an iPhone with the App loaded to the home screen. The experts were allowed to explore the app for a number of minutes to get acquitted with the app and how the different screens react to touch and to inputs. The Experts were then asked to rate the App on a scale of 0, worst, to 4, best in the following areas:

- Visibility of system status,
- match between system and the real world,
- user control and freedom,
- consistency and standards,
- error prevention,
- recognition rather than recall,
- flexibility and efficiency of use,
- aesthetic and
- minimalist design helps users recognize, diagnose, and recover from errors,
- provide suitable help and documentation.

These ten statements were to give our team an in depth evaluation of the app interface. With these results our team would be able to go back to the design and reconfigure the app to better suit the ten principles that have been described.

Cognitive Walkthrough

In the cognitive walkthrough evaluation, the experts were given an iPhone with the App loaded to the home screen and given the instructions to "convert your country's currency to a Mexican Peso." The experts were given no help unless expressly asking for an idea on how to advance from the current screen to where the instruction can be achieved.

Predictive Evaluation

In the predictive evaluation we decided to do the task of currency exchange, since it is a big part of our application and is more complicated than the rest of the tasks. We decided on the KSLM evaluation, to give us a general idea of how long it would take to complete a task. Without too much hesitation, it can be done very quickly, which is what we wanted because of

the minimalistic design of the app and the need to access this information quickly when in another country.

Retrospective Testing Interview

In the Retrospective Testing Interview, a user was asked to play with our app for a bit, giving them time to try and figure it out. We gave them 5 minutes each to do whatever they wanted with the app. We then analyzed the certain things that they did on the app and noted a few questions to ask them. We had different questions to ask each person and were done right after they had finished with the app. Questions were based on why certain things were done for them, like why they clicked certain areas or why they went directly to the hamburger button. We used Zoom or other video chatting tools, due to the current situation we were all in, but if we were to do this without social distancing, we would meet with the person and do the same things if we could as it would be easier to see what they would be doing.

Think Aloud Evaluation

The think aloud evaluation was conducted by letting the users explore the app on their own while taking notes on their thoughts.We also asked them to focus on the usability and design of the app and to focus less on the information presented. After a couple of minutes we directed them to a questionnaire.

Demographics

Heuristic Evaluation

There were three experts from a different section of CMSI 370 who were able to test for us. They were given the app and a google forms sheet to fill out.

The experts were Joseph Ortiz and Kevin Marinshaw and they completed the form remotely.

Cognitive Walkthrough

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Predictive Evaluation

      Completed by our group who worked on building the application.

Retrospective Testing Interview

      There were three normal people from friends that we all had do the retrospective test of our app. They were given the app, while on video call with a team member. We examined what they did over video call by sharing screens, and then we asked them questions about why they made the task choices that they made.

Think Aloud Evaluation

      We utilized typical travelers that we knew such as friends, family, and classmates to interact with the app.

Task Description

Heuristic Evaluation

      There were three experts from a different section of CMSI 370 who were able to test for us. They were given the app and a google forms sheet to fill out.

Cognitive Walkthrough

      There were three experts from a different section of CMSI 370 who were able to test for us. They were given the app and a google forms sheet to fill out. We chose for them to do the part of the app where you do the currency exchange because of the fact that we wanted them to have a more difficult and complicated task to see what they can do and if they could figure it out. They started on the home screen and were given the task to convert some money into mexico peso. We chose this specifically because this task was shown to be the most challenging out of all the other tasks noted by the developers.

Predictive Evaluation

      We chose to do the KSLM over the other predictive evaluations, because we thought that KSLM was the simplest and most accurate for finding the amount of time taken to complete a task. We thought that this data was more generic, so we could get a rough understanding of how

long each task takes. It is easier to compare this data to other data of KSLM because of the fact that it is very broad in time, meaning it does not give exact time, just a rough idea. It is easy to do KSLM for the other tasks we wanted the currency exchange to be like, so we thought it would be easier to compare.

Retrospective Testing Interview

In the Retrospective Testing Interview, a user was asked to play with our app for a bit, giving them time to try and figure it out. We gave them 5 minutes each to do whatever they wanted with the app. We then analyzed the certain things that they did on the app and noted a few questions to ask them. We had different questions to ask each person and were done right after they had finished with the app. We decided to do this because of the fact that each person is different in why they did certain things within the app and why they click in certain areas. Questions we asked were based on each user's choices and noted whether the user did something that other users also did or if they did something different. This helped us to identify why individuals were getting similar ideas from our designs and why they were missing some functionality we had built-in. Our questions also focused on whether the user. The retrospective tests took at most 20 minutes for each user.

Think Aloud Evaluation

The think aloud evaluation was conducted by giving the users the application while we listened and took notes on their thoughts.We did ask users to focus more on the design and usability of the app and to pretend each page of the app showed the relevant information. After a set amount of time we also linked them to a questionnaire that we had each of them fill out. Afterwards we condensed the notes to the ones that were most insightful towards the useability of the app.

Results

Heuristic Evaluation

	Joseph O	Kevin M
Visibility of system status	4	4
Match between system and the real world	2	3
User control and freedom	1	2
Consistency and standards	3	4
Error prevention	3	3
Recognition rather than recall	2	2
Flexibility and efficiency of use	3	3
Aesthetic and minimalist design	4	4
Help users recognize, diagnose, and recover from errors	3	4
Provide suitable help and documentation	1	3

Cognitive Walkthrough

Kevin M

- You type in a country, then you go to the hamburger button, which brings up the area to convert your currency. You can press on the button that says currency. You then click type in the currency to convert, then you select the country you are from. Press the submit to submit.
- It was a bit difficult to get to the currency exchange page. I did not put in a country at first, but luckily it informed me that I needed to. After that it was hard for me to understand the exchange of what to what, but I was able to figure it out. Overall simple to use and was eventually able to figure it out.

Joseph O

- First the I must press start, then type Mexico into the country. Then I navigated to the currency converter and put USA into my country.

- It isn't intuitive to the user that the user must input the country to get a currency conversion and that you must put in your country of origin. Maybe changing this system to make it more simplistic would be better.

Predictive Evaluation

KSLM evaluation (Currency Exchange)

1. Press Start (K, 0.35 sec)
2. Press Country Search Bar (K, 0.35 sec)
3. Type in country with average typist (K, 0.28 sec)* (Average Country Name Length = 10)
4. Click on Hamburger SideBar (K, 0.35 sec)
5. Finding where the currency exchange is (P, 1.10 sec)
6. Clicking on the currency exchange (K, 0.35 sec)
7. Click on amount to fill in (K, 0.35 sec)
8. Type in amount only numbers, so skilled typist (K, 0.22 sec)
9. Click on home country to fill in (K, 0.35 sec)
10. Type in home country with average typist (K, 0.28 sec)
11. Press on screen to get rid of keyboard to see submit button (K, 0.35 sec)
12. Press submit button (K, 0.35 sec)

Total Time = 7.83 sec to complete currency exchange task..

Retrospective Testing Interview

<u>Test Case 1</u>
Q: Why did you go straight for the hamburger button instead of the search bar in the beginning?
A: I honestly was not drawn to the search bar on the top, now that I see it I would go straight for it, but since the hamburger button was big and blue, it was easy to spot and was my first instinct to press.

Q: Why did you choose to search for the country rather than select the country on the map?
A: I did not know that you could select the country on the map.

Q: Why did you choose to click on transportation first?
A: I felt like if I were in another country, it would be the most beneficial for me.

Test Case 2

Q: Why led you to the hamburger button first?

A: I honestly am not sure why I went to the hamburger button, I definitely saw both, but I guess I just wanted to hit the button in the right corner because it was closer to my hand.

Q: Why did you move the map around and try clicking in certain areas?

A: Once I saw the map could move I think I assumed you could pinpoint things and the country just popped up, so I thought that was easy and cool.

Q: Why did you not use the search bar at all?

A: I thought about using it to try it, but the pin pointing something made it way easier than typing out the entire country, so I guess it was cooler.

Test Case 3

Q: Why did you choose to search for the country rather than select the country on the map?

A: I didn't realize that you could use the map, it just looked like a background image to me.

Q: Why did you pause after you had entered the country name and hit submit?

A: The black text on the map isn't super visible so I almost didn't notice at first that my country had been selected except I did notice the pin appeared at one point.

Q: Why was your first choice to select the Points of Interest option in the menu?

A: Whenever I'm travelling somewhere new that's usually what I'm trying to figure out first. I look for where in that place I want to go, what's going to be interesting, and then I look for information about whether it's safe and how to get there and everything else.

Think Aloud Evaluation

The think aloud evaluation was conducted by getting the users to get the application up and running on their phone. Users reported the following:

- One user noted they'd rather have the app auto detect the location and choose it as their destination
- One thought our Loading/start screen was unnecessary

- One user noted that when he travels, it's more important to read about the city they are going to than the country. So he would have preferred an app that has more city specifics in it.
- Another user would of liked the menu to auto popup after searching for country
- One user thought a tutorial might have been helpful, but conceded it would not help *too* much.
- One user thought the submit button was too far right, and would have liked the country search bar to just be a box at the top of the screen, instead of overlaying the map.
- One user would have liked to have seen less space b/w search bar and submit button.
- One user noted our hamburger button menu location was more friendly to right handed users.
- One user would have liked the menu icons to have been closer together.
- Another user noted that the menu being on the right was hard for her as a lefty
- One user also noted that it wasn't clear the map could be utilized and looked more like just a background so it would be helpful to have some initial instructions.

Summary / Lookback

Given the different evaluation methods that we conducted, our team thought that we could have modified the interface better to make it easier for new users. The main area of improvement would be to potentially display the country that is currently selected in all screens to reduce recall. The currency conversion tool could also be modified so there is more text help to aid the users or change the way the home country is imputed.

In addition to this our results clearly show a need for overall instructions. Either prompts for what action to take (ex: type in your country of travel or select it on the map) or a help icon of some kind to provide a tutorial will help guide future users through our design.

Materials Used

Heuristic Evaluation/Cognitive Walkthrough

https://forms.gle/eNHvGJ52xRR3yr7d9

Think Aloud Evaluation

https://forms.gle/pWxyUCU7CUcVrU5m9