Remote Unmoderated Usability Testing Report

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Introduction

Overview of System and Current Issues

Our group will be evaluating the website Weather.com. Weather.com is an online resource for users to check the weather, along with various other atmospheric metrics and forecasts. In recent years it has expanded into providing news, health and activities updates, and even integration with Mapbox for a live radar map. With these new offerings, however, it has cluttered each page with too much information, which may be a detriment to users who simply want to use Weather.com to check on the weather; this violates Nielson's Heuristic #8 (aesthetics and minimalist design). Additionally, the site violates Heuristic #2, where there is no match between the system and the real world. There are too many unintuitive paths for the user to accomplish any one task.

Objectives

The objective of this study is to use remote usability testing on behalf of Weather.com to see how people navigate the website when trying to understand the weather. Through this method, we will be able to evaluate users' information search for the weather with different goals, such as location, time, date, and other relevant atmospheric criteria listed in the methods section. This way, we are able to help Weather.com improve its usability so users can more efficiently and more intuitively find the information they are looking for.

Research Questions

The following two research questions are important as they will help guide our data collection and analysis when using remote usability testing:

1. How does Weather.com's current website allow users to find the information they deem important in an efficient manner?
2. How can Weather.com's interface be improved so that users can more quickly and with fewer steps find the information they are looking for?

Methods

Remote usability testing is important for this study as it will allow us to observe users as they navigate the website. When we give them the following tasks listed below, the steps they take to get there and the frustrations they verbalize will help us gain a better understanding of what users actually think about Weather.com's usability. Especially at Weather.com's growth stage where they are trying to expand their product offerings, usability testing becomes more relevant as they are changing the organization and flow of new information.

Recruitment Criteria

Participant Criteria

For remote unmoderated usability testing, we are most interested in understanding whether the website poses a challenge to users who are less familiar with technology yet

have a need to acquire weather information from weather.com. This led to the following main demographic criteria of Generation X (Born before 1980) or older participants. To remain consistent and ensure there are no region-specific features, we will further require our users to be based in the United States. Additionally, since this test is focused on the web interface of Weather.com, we will focus on users who rely on the web version of weather.com instead of other interfaces (ie: mobile applications).

Screening Question

Due to our need for a more specific group of target users that utilize the Weather.com website, the following screening question was developed:

- What is your main method of gathering weather information? [CORRECT ANSWER: Website (On a computer)]
    - Newspaper
    - Website (On a computer) → ***CORRECT ANSWER in order to participate***
    - Website (On a phone)
    - Apps
    - Other

Test Plan

Summary of Test Plan

In order to achieve our objective stated above and help answer our research questions, our team decided it would be ideal to conduct a remote usability test. We will conduct our usability tests on UserTesting.com, where we will have entered the test plan beforehand. The site will then allow 3 testers for each of the 4 researchers to participate in our study. For each of our 12 participants, we conducted the following test plan:

1. Introduction to Users: This introduction serves to explain the activity - including what and why participants are being asked to do this study. (See Appendix B)
2. Tasks for Users: Based on our research questions, we compiled 5 varied tasks - with clear end goals - for users to accomplish. These tasks help us observe users interacting with the current Weather.com interface to test its usability. (See Appendix C)
3. Post-Test Questions: After completing the 5 tasks, we ask each participant to answer 3 post-test questions to help us gain an even more accurate picture of the feelings users have while completing the tasks. (See Appendix D)

Expected Data and Analysis Plan

From UserTesting.com and our test plan, we plan to receive 12 recordings of how the users tried completing each task. From these recordings, we will watch them as they navigate the site, noting down quantitative (ie: time for task completion, ease of navigation rating) and qualitative (ie: interesting quotes or suggestions) data.

From this data, we plan to analyze this by comparing and contrasting all 12 participants' compiled results. We will pick out commonalities as well as outliers in users' frustrations and likings in order to provide recommendations for Weather.com in how to improve the

usability of their website.

Findings

Through analyzing the 12 recordings from UserTesting.com, we have developed 6 significant findings that will help shape our final recommendations. To view completed participants' demographics, recordings, questionnaire responses, and our raw notes from videos, please see Appendix E, F, G and H.

Summary Results

Overall, users reported a net positive experience with Weather.com's usability. 11 out of the 12 users were able to complete all 5 tasks. Furthermore, the average usability scores were 7 on a scale of 10 for ease of navigation. However, specific, niche tasks proved more difficult than others, and participants noted common frustrations with the information organization and interface that could be improved upon.

Key Findings

The key findings below are analyzed through the lens of answering the research questions.

How Users Navigate the Current Website

1. ***Observe Visible Tabs, then Click Three Dot Drop Down Menu for Additional Info:*** When faced with Task 1, users wandered around each page to get familiar with the site. For subsequent tasks after users located the specific city, they tended to look at the visible information located at the top of the page to help find the information they were tasked to find. The red highlighted boxes in Figure 1 show the locations users navigated to first when trying to complete the task. If something wasn't in this top-level view, they would click the hamburger icon in the top right corner to expand into additional information, shown in Figure 2. Users navigated to this hamburger icon intuitively, as it maintains consistency with industry standards.

Figure 1. illustrates the most immediately visible locations users tended to navigate to when starting out each task.

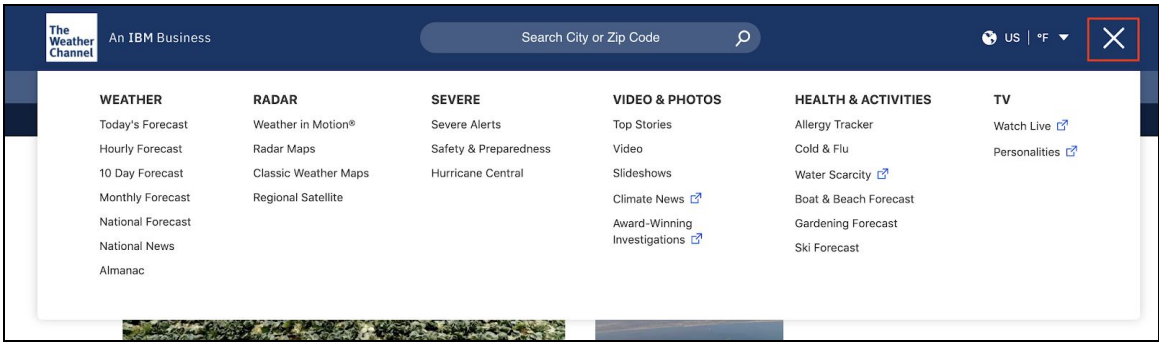

Figure 2. illustrates the information contained in the 3 Line Hamburger menu icon once clicked on, showing additional options for users to navigate to.

2. ***Scrolling Down to Bottom of Page for Information:*** If users did not know where else to find the relevant information, they would navigate all the way to the bottom of the page. As User 1 states, "Sometimes I go down to the bottom, where I find a sitemap. That usually helps me navigate a site a lot, but Weather.com doesn't seem to have one." While wanting a sitemap was unique to User 1, other users also noted going to the bottom of a site for additional organizational information. On Weather.com, however, many users noted that the bottom did not provide any valuable information for site users.

Potential Points of Improvement

3. ***Increase Clarity of Layout:*** Almost all participants noted how unclear the layout of the site was. While gathering basic weather data (Task 3) was relatively easy, users struggled with more niche tasks, such as Task 1 in identifying tree pollen levels and Task 4 changing to the Spanish language. Although these are more unique tasks, they still involve obtaining information that is expected of a weather site. To remedy this unclarity, users would navigate to the bottom of the site, where a sitemap is typically present. Figure 3 shows the bottom of Weather.com's pages, with the red highlighting the most important content for users; figures 4 and 5 show Weather.com's competitor weather information providers AccuWeather and Weather Underground, both of which have similar site structures as Weather.com but have a sitemap to help users navigate better.

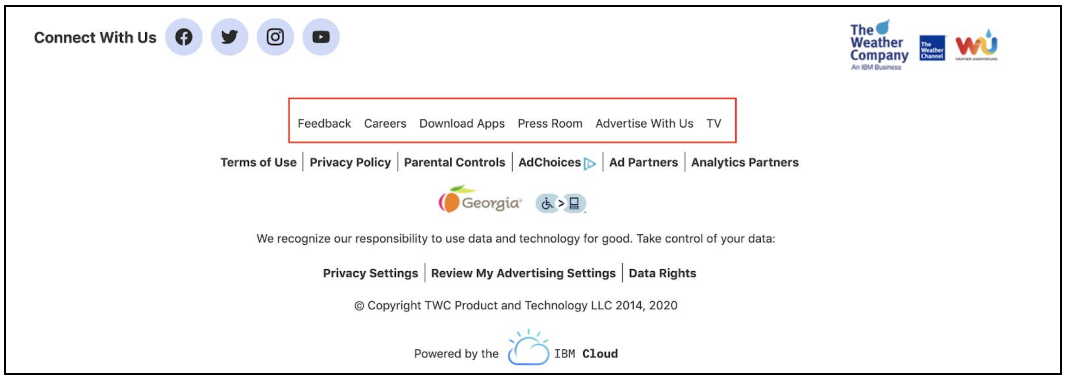

Figure 3. illustrates the bottom of Weather.com's site. The red highlighted box shows the most important content for users; however, information such as "Feedback", "Careers", and "Advertise with Us" is still not as helpful as a site layout would be.

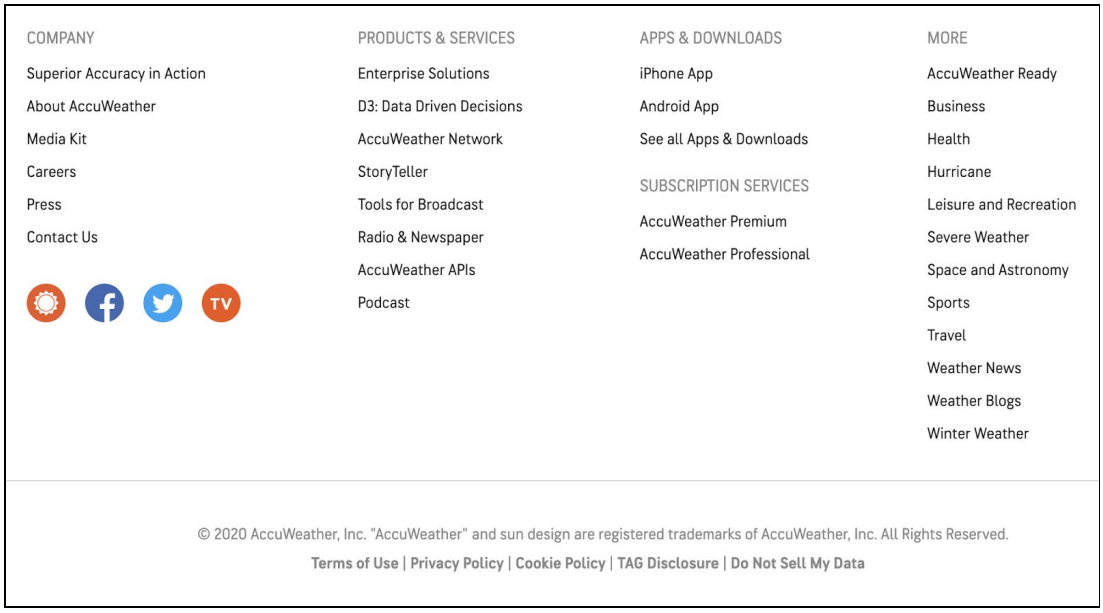

Figure 4. illustrates AccuWeather's sitemap located at the bottom of their site. It provides users another channel of obtaining the organizational structure of the site for simpler navigation.

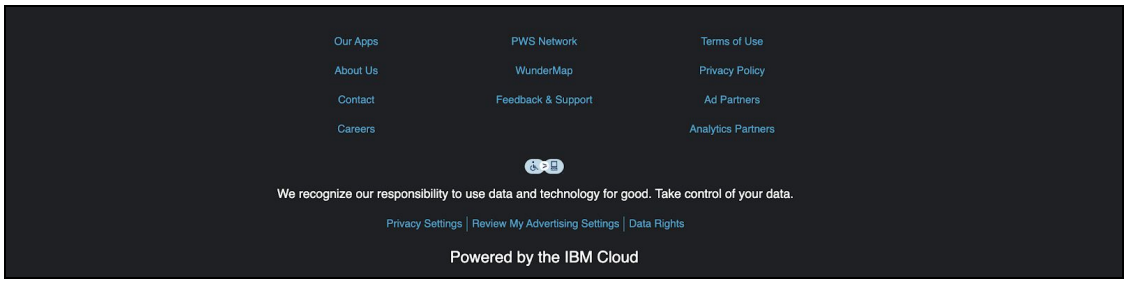

Figure 5. illustrates Weather Underground's (WU) sitemap located at the bottom of their site. It provides users another channel of obtaining the organizational structure of the site for simpler navigation.

4. ***Rename or reconfigure "More Forecasts" section:*** When faced with Task 1, users struggled with finding pollen-related weather information. There were two different paths to complete this task: one on the home page with a "pollen alert" warning box and the second under the "More Forecasts" tab. While effective, the first option would not exist if there wasn't a pollen warning in the chosen location. For people who want pollen allergy information, or other forecasts under "More Forecasts" such as skiing and farming, the "More Forecasts" tab proved unintuitive. User 11 stated "it would be nice if the pollen information had its own main tab or they named the "More Forecasts" tab something else".

5. ***Decrease Visibility of Ads and Sponsored Items:*** As stated earlier, when users struggled they tended to scroll down the page in search of additional information. Many looked >10 seconds at the advertisements and sponsored content shown in Figure 6 trying to decipher if it was relevant to accomplishing their task. After some time, they would move on, noting "it looks like the majority of the rest of the page is ads" and that there were "too many ads" on the page to discern important from unimportant information.

Figure 6. shows an example of the sponsored content that clutters Weather.com's site, presenting a barrier to users trying to accomplish their tasks.

6. ***Revamp Search Bar Functionalities and Accuracy:*** At its current state, the Search Bar is only capable of being used to search for specific cities or zip-code. Our analysis concluded that most users intuitively try to use the search bar first when trying to complete the tasks. Instead of the limitations presented by the current search bar, the users would like to see the ability to do simple searches such as pollen information directly in the search bar. The search bar also proved to be inaccurate for some participants. In one test, the search bar failed to provide the correct location for the user even after the user correctly typed in the city name. This is most likely due to the fact the search bar requires case-matching of cities in order to switch to desired locations. A simple fix that allows the search bar to auto-correct searches to present the closest match, similar to what Google does with their "did you mean" searches, would address this pain point.

Recommendations

The following recommendations were devised based on our findings in order to answer the research questions and overall objective.

Recommendation	Finding Connection	Next Steps
1. Decrease number of paths to complete a task	Observe Visible Tabs, then Click Three Dot Drop Down Menu for Additional Info (2), Scrolling Down to Bottom of Page for Information (3), Increase Clarity of Layout (4)	1. Identify main user tasks (ie: checking 5-day weather, hourly weather forecast, changing location). 2. Identify niche user tasks (ie: checking pollen levels, ski forecast). 3. Conduct usability testing for each identified task, with the objectives of (a) observing how many different paths users take, (b) how intuitive each one was, and

		(c) determining how to consolidate paths into one best path. 4. Sort paths in order of # people used and qualitative data (ie: comments noting ease and intuitiveness). 5. Implement the best path based on the accumulated analysis in order to increase clarity in an information overload setting.
2. Include a sitemap in the footer of each page	Scrolling Down to Bottom of Page for Information (3), Increase Clarity of Layout (4)	1. After recommendation 1's consolidated site, take inventory of site resources (including but not limited to weather tabs, news reports, and COVID-19 statistics). 2. Organize resources into logical categories based on input from usability testing and competitive analysis. 3. Post final sitemap on the footer of each page, referencing competitors' footers like those represented in Figures 4 & 5.
3. Rename or reconfigure "More Forecasts" tab	Increase Clarity of Layout (4), Rename or reconfigure "More Forecasts" section (5)	1. During recommendation 1's identification of niche tasks, determine which forecasts users demand. 2. Conduct A/B testing to determine optimal niche forecast placement on-site to aid users in accomplishing their tasks.
4. Conduct a cost-benefit analysis of ad value	Increase Clarity of Layout (4), Decrease Visibility of Ads and Sponsored Items (6)	1. Determine the benefits of ads on Weather.com. 2. Determine costs, both explicit and implicit, of ads on Weather.com. 3. Weigh benefits against costs, choosing the option that leads to most value for Weather.com. 4. In the case ads come out more beneficial to Weather.com, they should implement A/B testing to determine optimal ad placement on site so as to not detract from users accomplishing tasks.

5. Reprogram search bar capabilities and purpose	Revamp Search Bar Functionalities and Accuracy	1. Implement the option to search for things other than city names and zip codes in the search bar. Common searches might include certain days, special information like pollen or COVID-19 levels, and other types of searches. 2. Automatically correct user typos and errors on the search result page as opposed to the current case-sensitive search result page that shows no results for simple capitalization mistakes.

Discussion

Possible Limitations and Sources of Bias

One of the greatest limitations of our report is the sample size. We only had a sample size of 12 people due to the limitations of the website we chose to conduct the research in. The smaller sample size means that our participants may not be representative of the great Generation X or older users of Weather.com. Also, since we did not limit our participants other than needing to be over 40 years old, in the United States, and mainly gather information about the weather from a browser on a computer, we had an uneven ratio of participant gender, income, and exact age. Among our participants, 75% were male and 25% were female, the average income between 80K and 99.9K, and the average age was around 56 years old. This means that there is a possibility the results from our participants were highly skewed and bias towards the experience of higher-than-average income males around 56 years of age. This bias may have led to incomplete findings and recommendations that are not addressed to the main pain points of older generations who use Weather.com.

Conclusion

Conducting usability testing with our intended audience allowed us to gain insights about pain points associated with the current interface of Weather.com. These findings revolved around increasing the clarity of the layout, renaming the “More Forecasts” section, decreasing visibility of ads, and reconfiguring search bar functions. As a result of these findings, we have recommended that Weather.com consolidate task paths, create a sitemap, reorganize the “More Forecasts” tab, reanalyze ad value, and revisit search bar abilities. All of these in tandem will help decrease uncertainty to Weather.com’s users, particularly the older generation who are more likely to be using Weather.com through the web browser.

Appendices

Appendix A. Team Collaboration

Name	ANALYSIS *Each group member's individual analysis*
Katie Xu	- Edited part 7A based on feedback given - Wrote Findings 1, 3 - Wrote Recommendation 1 - Added to Appendix with relevant data
Kelvin Chang	- Wrote Findings 2, 6 - Wrote Recommendation 2, 5 - Wrote Discussion - Added to Appendix with relevant data
Leo (Liyang) Luo	- Wrote Finding 4 - Wrote Recommendation 3 - Added to Appendix with relevant data
Priyanka Kheterpal	- Wrote Finding 5 - Wrote Recommendation 4 - Wrote Conclusion - Added to Appendix with relevant data

Appendix B. Introduction to Users

“

Thank you for agreeing to participate in this study. Our team is interested in how people use Weather.com to find the weather, along with other atmospheric metrics, for a location of interest. Specifically, we are interested in seeing how users interact with this website to accomplish certain tasks.

You will complete a series of 5 tasks using the Weather.com website on your computer, imagining that you are using the site to plan a trip in the near future to a location different than where you currently are. You are going to be using and navigating weather.com in order to gain information on various environmental conditions for different locations and dates.

Thanks - before we start, I want to remind you of thinking out loud. Thank you in advance again for participating in this study! (:

“

Appendix C. Tasks for Users

#	Task
1	Identify the tree pollen levels (allergen tracking) in Arizona City, AZ for this upcoming week.
2	For Oakland County, Michigan, what is the number of confirmed COVID-19 cases?
3	For Los Angeles, California, what metrics can you find regarding the weather for the next 36 hours? (list metric name and the measurement itself)
4	Change the language to Spanish while staying in the US region
5	Find the highest temperature of Ann Arbor, Michigan for April 25th in Celsius.

Appendix D. Post-Test Questions

#	Post-Test Question
1	Compared to what you expected, how quickly did the tasks go (on a scale of 1-10; 1 being lowest and 10 being fastest)?
2	How easy was it to navigate the site in general(on a scale of 1-10; 1 being hard and 10 being super easy)?
3	What was the most confusing or difficult part of the user interface?

4	[We will use one post-test question from the default question bank of UserTesting .com, per the assignment instructions]

Appendix E. Recruiting Criteria and Participant Demographic.

Per our recruitment criteria, these users have passed the screener of obtaining their weather information mainly from computer means. Additionally, these participants are all Gen Xers (40-65+-year-olds) and reside within the United States.

User	Tester	Gender	Age	Income
User 1	Katie	Male	65	$20K-$39.9K
User 2	Katie	Male	72	$125K-$149.9K
User 3	Katie	Male	66	$20K-$39.9K
User 4	Kelvin	Male	45	$150K-$174.9K
User 5	Kelvin	Male	67	$60K - $79.9K
User 6	Kelvin	Female	53	$40K-$59.9K
User 7	Leo	Female	58	$40K-$59.9K
User 8	Leo	Female	56	$20K-$39.9K
User 9	Leo	Male	54	$100K-124.9K
User 10	Priyanka	Male	40	$100K-124.9K
User 11	Priyanka	Male	50	$100K-124.9K
User 12	Priyanka	Male	43	Less than $19K

Appendix F. Usability Test Recordings from UserTesting.com

Test	Video File Links
User Test 1	https://app.usertesting.com/v/a7f9f508-4ff2-423b-a2d6-9da878c18eec?encrypted_video_handle=df0b9d5b-5f93-4e9e-8bf6-86a5fdeef461&shared_via=link
User Test 2	https://app.usertesting.com/v/49f848e2-0ee8-4a28-b855-154ce

	4c78d9b?encrypted_video_handle=6c38b431-537e-4fbd-a1c4-904a2af6b0b9&shared_via=link
User Test 3	https://app.usertesting.com/v/e6de0149-b1f5-40ed-98c1-4c9ce8766020?encrypted_video_handle=bad1c94d-ef94-43b8-a206-ec2ead48dfd3&shared_via=link
User Test 4	
User Test 5	https://app.usertesting.com/v/0e823d11-0930-4448-b680-0839cd88f2c1?encrypted_video_handle=024fa9c8-1189-4bf5-9751-2c98a968bbb7&shared_via=link
User Test 6	https://app.usertesting.com/v/77324c78-aaa3-46c7-a8f0-0d07d940e3c1?encrypted_video_handle=d3cf5116-d411-4ecd-bd59-aa2e49518e02&shared_via=link
User Test 7	https://app.usertesting.com/v/2d4ecfa5-0ed0-4485-a005-cd7383e85e40
User Test 8	https://app.usertesting.com/v/7726ef58-6e61-45a1-b88d-40106b1c8574
User Test 9	https://app.usertesting.com/v/97353f11-0739-4a3c-afa6-f2ddf4d1a3fc
User Test 10	https://app.usertesting.com/v/7b1d01a9-52bc-46e0-9b34-42c802ec8dbf?encrypted_video_handle=08a73418-b6dd-4230-8397-a80bd09f0909&shared_via=link
User Test 11	https://app.usertesting.com/v/10363d10-06fc-4cd9-bc51-d90a201d82e6?encrypted_video_handle=a6f9206b-011b-4575-a2ad-dcc05252e056&shared_via=link
User Test 12	https://app.usertesting.com/v/295686ba-65d2-4d23-bbef-4e6adf5143c1?encrypted_video_handle=910d10cf-75df-4da4-afc6-e30d5f062b48&shared_via=link

Appendix G. Questionnaire responses

Question	**Q1**: Compared to what you	**Q2**: How easy was it to navigate the site	**Q3**: What was the most confusing or	**Q4**: How likely are you to recommend

	expected, how quickly did the tasks go (on a scale of 1-10; 1 being lowest and 10 being fastest)?	in general(on a scale of 1-10; 1 being hard and 10 being super easy)?	difficult part of the user interface?	this site to a friend or colleague (0=Not at all likely, and 10=Very Likely)?
User 1	4	6 -- For most of what I would usually seek from a weather site, navigation was mostly, easy. Changing language was a stumbling block, though.	Unless I missed it, there was no direct menu to set personal preferences. I think that a menu choice like that would be great to have at the header (perhaps, anchored in the header for all the subsequent pages).	7
User 2	6	7	changing the language. i wouldn't have guessed to click the globe to change the language.	9
User 3	8 - pretty intuitive site	10 I got where requested fairly easily	for it was finding the Spanish version	10
User 4	3	3	More clickable dropdowns, more differentiation between clickable regions in the UI is needed.	**If you had a magic wand, how would you improve this site?** As mentioned, clickable UI
User 5	8	8	Having to read through the individual data points instead of having a chart showing the fluctuations in the	**If you had a magic wand, how would you improve this site?** Have the data displayed in chart format and have

			metrics.	the language and temperature format menus in closer proximity to the data they affect and have more obvious links for the language in the language that you want to change to instead of the language you want to change from.
User 6	8	8	Getting to where you change the language	**If you had a magic wand, how would you improve this site?** Site looks good, I'd try to design the changing the language somehow.
User 7	8	8	Changing to Spanish	10
User 8	8	10	Finding the Spanish option	10
User 9	9	10	The “36 hours” option was hard to find	10
User 10	They actually went really fast, the only issue I ran into was really my own fault. The site was simple to use	10- really simple and easy to navigate. No issues!	Really nothing. I’m not even sure I have anything negative to say. It was really easy to navigate and use.	**What did you like about the site?** I didn’t have to think hard to get the information I was asked for. Everything was essentially located where I thought it should

				be.
User 11	9	9	Finding where I could change the language	no answer
User 12	9	10	Figuring out how to language but keep the region	**What did you like about the site?** General Layout easy to use

Appendix H. Links to Notes from Videos (Assignment 7B)

Name	Link to Notes from Videos (7B)
Katie Xu	https://docs.google.com/document/d/1jQLET321Tubh0uRTfdQmzu_3foBKT_-jJ0Jprwj8oUU/edit?usp=sharing
Kelvin Chang	https://docs.google.com/document/d/1YCBBuG6sitv2WMJDsgNfuARjKHCaZOw9h4muokVRm2g/edit?usp=sharing
Leo (Liyang) Luo	https://docs.google.com/document/d/1HJeOPSJYDzSYuavqQkdRt22842U-gOPPhOXbFZW5tqg/edit?usp=sharing
Priyanka Kheterpal	https://docs.google.com/document/d/1D8o7UzlOvwrSVJwiH_TPc1Vx07w2y0INNYE-F0i5Fg8/edit?usp=sharing