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FINAL REPORT  
D103

# THE WEATHER NETWORK

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# ABSTRACT

The Weather Network's desktop website was chosen for a redesign, in order to improve its aesthetic and organizational design, and to enhance the navigational experience of the user. We began by doing a heuristic analysis, then creating scenarios and personas through demographic research to help us gather the requirements and goals for our redesign, as well as focus and tailor our tasks for testing. After testing the current design with a variety of users, it was found that the website required an improved search function and informational organization, as well as a cleaner design. We designed two prototypes to address these and other issues, taking inspiration from a variety of sources, and keeping our users in mind. By having two alternative prototypes, we were able to test and answer our design questions and hypotheses. With further research and examination with inspirations and the original site, we implemented these prototypes into real web pages that we coded by ourselves. The purpose of this was to have a working prototype that is tailored to what we expect the final prototype to be like. Having working prototypes allowed us to examine real-world and real-time situations and results more accurately than other methods, such as paper prototyping. After testing our newly designed prototypes with old users as well as new users, we found that these changes improved the site's usability, whether by the amount of time or clicks, or the subjective feeling, by making the overall experience of The Weather Network website more streamlined, clear, and functional.

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# **ID-1**

## CH 1: INTRODUCTION

# INTRODUCTION

The screenshot shows the homepage of The Weather Network. At the top, there's a navigation bar with links for Home, Support, Contests, E-mail Subscriptions, Weather Apps, and Français. Below that is a main menu with Forecasts, Severe Weather, Maps, Roads & Travel, News & Information, Photos & Videos, and Outdoors. A search bar allows users to search by location or site. A "POINTCAST" section provides weather info for Canadian POSTAL codes/US ZIP codes. The main content area features a "Current Weather" map of Canada with temperature overlays and weather icons. A legend lists cities with their corresponding symbols. Below the map, there's a "Top Stories" section with several thumbnail images and a "View more stories" link.

Home | Support | Contests | E-mail Subscriptions | Weather Apps | Français

Forecasts Severe Weather Maps Roads & Travel News & Information Photos & Videos Outdoors

POINTCAST Enter a Canadian POSTAL code/US ZIP code to get weather info as close as 1 km/0.6 miles.

Location Search Site Search

Search for location

Alerts in effect for Ontario

Calgary, AB -21  
Charlottetown, PE -27  
Edmonton, AB -12  
Fredericton, NB -7  
Halifax, NS -5  
Hamilton, ON -17  
Iqaluit, NU -16  
London, ON -15  
Moncton, NB -11  
Montreal, QC -6  
Ottawa, ON -19  
Quebec, QC -4  
Regina, SK -9  
Saskatoon, SK -15  
St. John's, NL -17  
Thunder Bay, ON -15  
Toronto, ON -15  
Vancouver, BC -15  
Victoria, BC -15  
Whitehorse, YT -15  
Winnipeg, MB -15  
Yellowknife, NT -15

AB | BC | MB | NB | NL | NT | NS | NU  
ON | PE | QC | SK | YT | USA | International

2/6/2013 2:16 EST  
Data Source

Top Stories

View more stories »

- We have chosen to redesign the Weather Network's desktop website. This website is primarily used to check current global weather conditions, forecasts, and warnings. In addition, the site has a number of other features such as viewing photos, videos, ski reports, and news related to weather. Unique features include a "what to wear" section for elementary and secondary schools that inform you of the current conditions around that area and what you should wear to prepare for school day.

## **PROBLEM STATEMENT AND USER GOALS**

- With this project, we are aiming to create an effective and clutter-free weather web service for quick and direct access to current and future local weather conditions for users from beginner to expert. Many issues have been noticed of the current design of the site, such as the confusing hierarchy of information, the lack of contrast between elements, the lengthy navigation menus, and the overall aesthetic, which we also aim to address, as they all negatively affect the user experience of the site.

## **REDESIGN OBJECTIVES**

- Several major goals have been identified, given the current problems and user goals. We wish to improve the aesthetic and organizational design of the Weather Network in order to enhance the navigational experience for the user, by enhancing the information hierarchy of the overall site, creating a bigger distinction between major features, and user-customizable amounts of information density. Furthermore, we aim to have a consistent brand identity for the Weather Network, especially through the removal of unnecessary internal product names such as PointCast.

## DESCRIPTION OF USER BASE

- The main user base of the Weather Network website consists of users in the median age and above 55 years old. There are also adolescent and adult users, but they are only occasional users. Users are split quite evenly between male and female who have access to both a computer and the internet.

Source : <http://www.nationaltvspots.com/ntvs-networks>, based on demographics for the Weather Channel website.

## PERSONA



Name: Herald Jefferson

Age: 42

Marital Status: Married with one child

Residence: West Vancouver

Occupation: Teaches English Literature at the University of British Columbia

Dr. Jefferson rides his bike to work as much as possible, weather permitting, because he is an environmentally aware individual. He is proficiently at using computers and the internet. His hobbies include hiking and other outdoor activities like gardening at his home on Point Grey.

He often likes to check the weather before he plans outdoor activities, both for himself and for his family. One example where he would check the weather is in the winter, when he would prefer not to ride his bike in the snow, so he would check the weather the night before he goes to work to see if he should get his biking gear ready.

## **CONTEXT OF USE, SCENARIO & TASK**

- It is an overcast morning at the University of British Columbia Vancouver campus, and the sky seems indecisive. Dr. Jefferson is unsure what to wear on his way to work. He must decide real soon, or else he is going to be late, as he bikes to work. He wants quick access to the current weather immediately and would like it to be accurate. Dr. Jefferson searches up his current location for the current weather, and searches the university's location. He does not know the exact address or postal code of the school, therefore he tries typing in the university's name in the search bar. Frustrated by the lack of location on the search database, he resorts to Google to look for the address. He then saves both his work and home location to his bookmarks so he can access it quickly in the future without having to browse around the Weather Network site. Dr. Jefferson checks the weather before heading home, everyday before the end of his work, and occasionally every time he walks around the campus, as the weather in Vancouver constantly changes.

# HEURISTIC EVALUATION

HEURISTIC EVALUATION	HEURISTIC NAME	LOCATION	SEVERITY	RECOMMENDATION
Only one alert at a time	Visibility of System Status	Weather Alerts	Low	Display alerts that apply to your region first, have a popup that shows other regions
3 letters required for search to work	Visibility of System Status	Search Bar	Low	Tell the user "too many results to display"
Which one (C or F) is selected	Visibility of System Status	Current Weather	Low	Show it and have a toggle
Branding is strange	Match btw sys. + real world	Pointcast	Low	Remove the brand
Cannot close popup windows, because they are layered on top of each other	User Control and freedom	Current Weather	High	Arrange the alerts in a way, perhaps vertically, that allows multiple to be shown at once.
Can be mistaken for writing/adding	Consistency and standards	Pencil for Pointcast	Low	More distinct and conventional/real-world icons
Hierarchy is weird (small on top). But colour stands out more	Consistency and standards	NavBar	Low	Make the main menubar be higher in the hierarchy in terms of colour, type size
Weather and news are horizontally listed, video and more news are vertical list	Consistency and standards	Weather Page	Low	Create a more consistent pattern and flow
Two links to upload - one button and one text	Consistency and standards	Upload Photos and Videos	Low	Text on button
Ceiling measurement does not convert to meters instead of feet when metric system is selected	Consistency and standards	City weather pages	Low	Convert all units to their respective metric system when selected to allow familiarity and avoid confusion
Submenus are hard to memorize	Recognition rather than recall	Submenu	Medium	Categorize according to stuff that makes sense and combine/get rid of excess submenus
Not fully customizable	Flexibility and efficiency of use	Customizability	Low	Allow the user freedom to personalize what they want to be shown to them
Clutter	Aesthetic and minimalist	Across the site?	Medium-High	Remove unnecessary elements

## **GOALS OF THIS USER STUDY AND QUESTIONS/HYPOTHESES ADDRESSED**

- The goal of this user study is to help us gain an understanding of the people who will use the Weather Network website, and to get any additional feedback or comments about the Weather Network website design and functionality, specifically regarding the information hierarchy and ease of use. Users who go on the Weather Network, would probably want to see the current weather right away and won't stay on the site for long. We want to know a lot more about what other features they would be interested in and what they don't need so we can strip down our site to its bare essentials, but also keep important features for any expert users. We proposed that users will have a hard time navigating the original site due to the information overload. This study will help us address the question of whether not they agree with the current confusion of the site's layout. The user study is also used as a way to identify recurring patterns and phenomenae so we could develop or reduce occurrences of them from happening. Favourite and frequently used attributes, such as the "What to Wear" feature, were gathered in order for us to emphasize those and make it a prominent feature of the website. The features and sections that are rarely or never used (social media widgets, etc) can be reduced in importance through hierarchy, that is, made less prominent, or taken away fully.

# METHODS & PARTICIPANTS

User 1 was recruited through family connections and User 2, 3, 4 were all friends of the testers. Compensation was given to User 2 and 3.

PARTICIPANT NUMBER	GENDER	AGE	BACKGROUND	REASON FOR SELECTION
1	Female	45	This user checks the weather online on a daily basis out of general interest, as well as to plan outdoor activities.	User was chosen because she was close to the median age of frequent weather website users, and she uses it on a daily basis.
2	Male	19	University student who browses the web frequently, but rarely uses the Weather Network due to better choices to plan trips and outdoor activities.	User was chosen because he was a student who took public transit daily between far destination endpoints (Richmond to SFU Surrey to SFU Burnaby). Potential age group to target while improving the design of the site.
3	Female	20	University student that lives about 30 minutes away from UBC; admittedly poor technological skills, and likes to play sports (ultimate, biking etc.)	Travels daily to and from school, along with constant outdoor sporting activities
4	Male	23	Recently graduated student, working as a insurance clerk; usually checks the long term forecast for planning trips, such as to work	Is a casual user who is fairly busy, and needs only basic weather information to plan his trips.

## MATERIALS AND PROCEDURES

- We used a computer with mouse and keyboard to run the website, and recorded the screen and audio for us to review at a later time. A timer was used to record the amount of time needed to complete individual tasks. This allowed us to gain a sense of which features are troublesome and are less efficient. Notes were taken using paper while the user completed a series of tasks on the website, which included finding different types of weather forecasts for certain cities, setting default locations, using the search function, using the maps and news features, and the “What to Wear” feature. After the series of tasks were completed, a questionnaire was filled out on paper by the user. The questions consisted of general information such as age and gender, to questions about internet and weather website usage, features they like and dislike about the site, and features they look for in a weather forecast website.

# RESULTS

- ▶ After numerous user studies, there were a number of findings that will be crucial to our redesign process. A common quibble with the website was the search functionality. When asked to locate the city Athens, Georgia, search results lacked organization, and different search entries came up empty (Athens, Georgia did not return desired results). When asked to add a favourite location, the users found it annoying that they could only add their postal code, as opposed to entering a favourite city etc. Some users were not even able to identify the specific feature dedicated to saving locations (Pointcast). A feature that was widely preferred by our users was the “what to wear” function. They thought it would be extremely helpful in an everyday-use setting. However, they all pointed out that the “what to wear” feature was only implemented in the school sections, and would have preferred it to be available throughout the website. Another feature that many people found useful was the variety of forecasts available. This, they pointed out, would be helpful in planning vacations, sporting events, or just a trip to the mall. However, it was pointed out that the information presented could be organized in a more aesthetically pleasing way.

## DISCUSSION AND CONCLUSIONS

- After completing the user study, we were able to identify recurring problems, patterns, and phenomenae from a variety of different user's perspectives. Some of the important, specific findings from our user study include the importance of a well-functioning search bar and the menu system, as well as keeping the user informed as to where they are in the system. We found out that users often turn to the search bar first when navigating the site, so we plan to put emphasis on improving the search functionality. Our users found it extremely difficult and tedious to add their favourite locations on the original design. They couldn't find the button, and most frustrating of all, they couldn't add in points of interest and full addresses. Noticing this major flaw, we decided to make the favourite button more isolated, stand out, and accept Point of Interest and address inputs. The long term forecast and maps were hard to locate, as the buttons were too small and hidden. That said, we plan on allowing the users to view the long term forecast right on the homepage because that is one of the essential features users look for in a weather site. We believe that improving the information hierarchy by creating more organized categories would help users complete tasks, such as finding weather system map much easier.

# REQUIREMENTS STATEMENT

## ► Functional Requirements

The key functional requirement for our redesign of the Weather Network is to allow users to check the current weather and forecasts, in a variety of formats such as hourly, short-term, and long-term. The site should also provide appropriate weather warnings to where the user is, which leads to the next functional requirement, which is to allow the user to check the local weather, and to save their location so they do not have to re-input that information every time they visit the site. In addition, the search bar should be able to search all aspects of the website, effectively and efficiently, so that the user has the ability to search for what they want rather than navigate menus. Finally, from our user testing, we have found that users appreciate the ability to view news and media related to the weather, which is our last functional requirement.

## ► Non-Functional Requirements

Some non-functional requirements for the redesign of the Weather Network include basic website requirements. The site should have a good search algorithm that is able to provide relevant information when users type in search keywords into the search bar. It should also support common search operators like “and” and “or” like the Google search engine. Another non-functional requirement is the performance of the website. The pages should load quickly and as efficiently as possible. While user’s click on certain elements on the website, the page will refresh only certain elements and not the entire page to make browsing more efficient. Furthermore, having clean aesthetic will enable users to quickly navigate and find information they are look for with greater efficiency and ease. Without the clutter of many current weather websites, the redesign will remove any extra unnecessary content, and the information that is needed will be brought out.

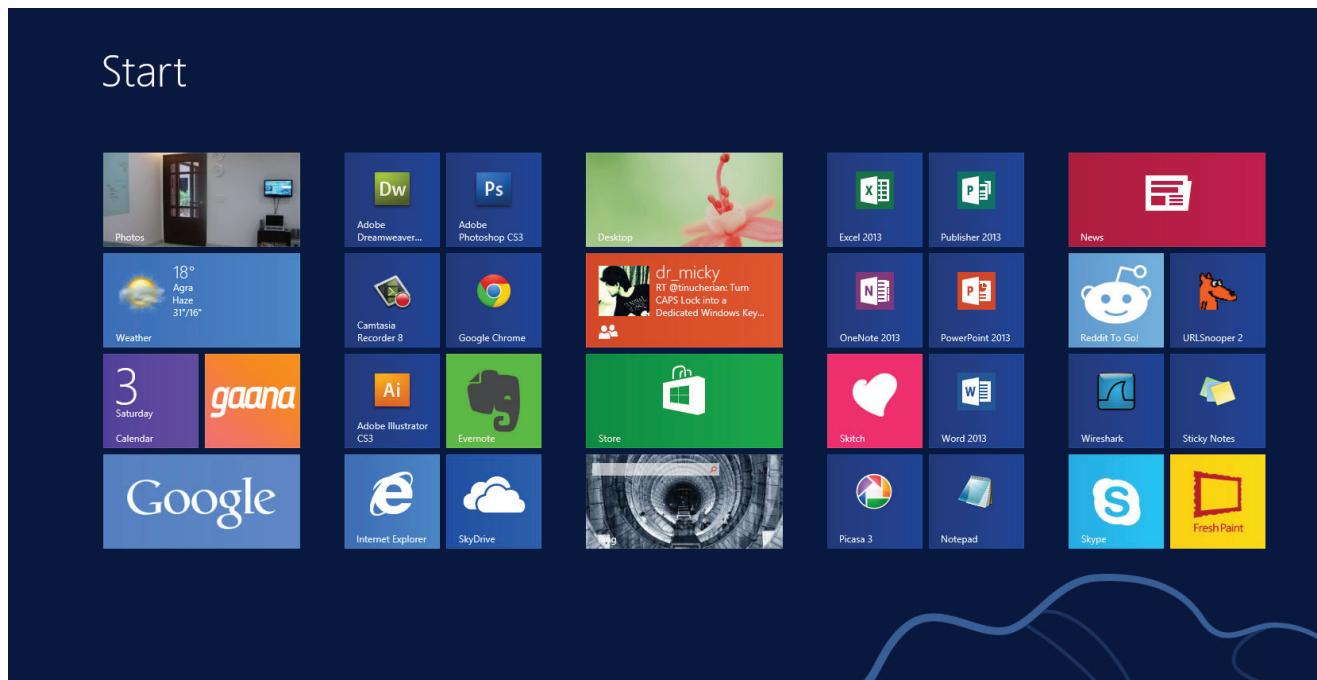
# **ID-2,3**

## CH 2: DESIGN

# PRIORITIZATION WORKSHEET

ITEM	DESCRIPTION	BUSINESS IMPORTANCE	USER IMPORTANCE	TECHNICAL FEASIBILITY	RESOURCE AVAILABILITY
QUICK ACCESS	ABILITY TO VIEW THE WEATHER AS EFFICIENTLY AS POSSIBLE	HIGH	HIGH	HIGH	HIGH
SEARCH	ABILITY TO EFFECTIVELY SEARCH THE WEBSITE FOR LOCATIONS AND CONTENT.	HIGH	HIGH	INTERMEDIATE	LOW
LOCATION SAVING	ABILITY FOR THE USER TO SAVE DEFAULT OR FAVOURITE LOCATIONS	INTERMEDIATE	INTERMEDIATE	INTERMEDIATE	INTERMEDIATE
ORGANIZED INFO	IMPROVED INFORMATION HIERARCHY	HIGH	HIGH	HIGH	LOW
NAVIGATION	IMPROVED NAVIGATION THROUGH THE FEATURES OF THE WEBSITE	HIGH	INTERMEDIATE	HIGH	HIGH

# WINDOWS 8 TILES



- The Windows 8 tile interface is good because it is clean and simple, and allows the user to customize their information density and hierarchy by rearranging the tiles. In addition, it displays essential information quickly and effectively. These are some of the features we would like to integrate into our system. However, the customizable hierarchy is limited as the size and colours of the tiles cannot be changed, only the position.

# BOOTSTRAP COMPONENTS

## MENU SYSTEM

Home   Get started   Scaffolding   Base CSS   Components   JavaScript   Customize   Bootstrap

### Breadcrumbs

Dropdowns >  
Button groups >  
Button dropdowns >  
Navs >  
Navbar >  
**Breadcrumbs >**  
Pagination >  
Labels and badges >  
Typography >  
Thumbnails >  
Alerts >  
Progress bars >  
Media object >  
Misc >

### Examples

A single example shown as it might be displayed across multiple pages.

Example

Home  
Home / Library  
Home / Library / Data

```
1. <ul class="breadcrumb">
2.   <li><a href="#">Home</a> <span class="divider">/</span></li>
3.   <li><a href="#">Library</a> <span class="divider">/</span></li>
4.   <li class="active">Data</li>
5. </ul>
```

- This webpage uses a menu system that is always on the left hand side of the screen, wherever the user is on the page. This allows viewers to know where they are at all times within the page, and lets them quickly jump to the sections they want, which we think would be very useful for our users. The disadvantage of this is that it takes up screen real estate, so we would make the sidebar smaller.

# SNOWBIRD

The screenshot shows the homepage of the Snowbird website. At the top, there's a navigation bar with links for WINTER, SUMMER, LODGING, DINING, CLIFF SPA, EVENTS, GROUPS, and SHOP, along with a search icon. Below the navigation is a large image of a snowy mountain peak with a ski lift. To the right of the image is a weather widget showing "CURRENTLY 18°" with a sun icon. Below the temperature are statistics: 24hr, 48hr, Depth, YTD, with values 1", 1", 80", and 299" respectively. A "FULL REPORT" button is also present. On the left side, there's a section for "APRIL PACKAGES!" with a small image of people. In the center, there's a "PHOTO OF THE DAY" section with a photo of a person in a green hat. On the right, there's a "APRÉS SKI SPECIALS" section with a small graphic of a drink and a "BUY ONLINE" sidebar with a list of links.

## APRIL PACKAGES!

Snowbird is the place for April and May riding. Book your spring package today!

## PHOTO OF THE DAY

Happy St. Patrick's Day!

## APRÉS SKI SPECIALS

Get your Aprés Ski all week long at a variety of Snowbird restaurants.

## BUY ONLINE

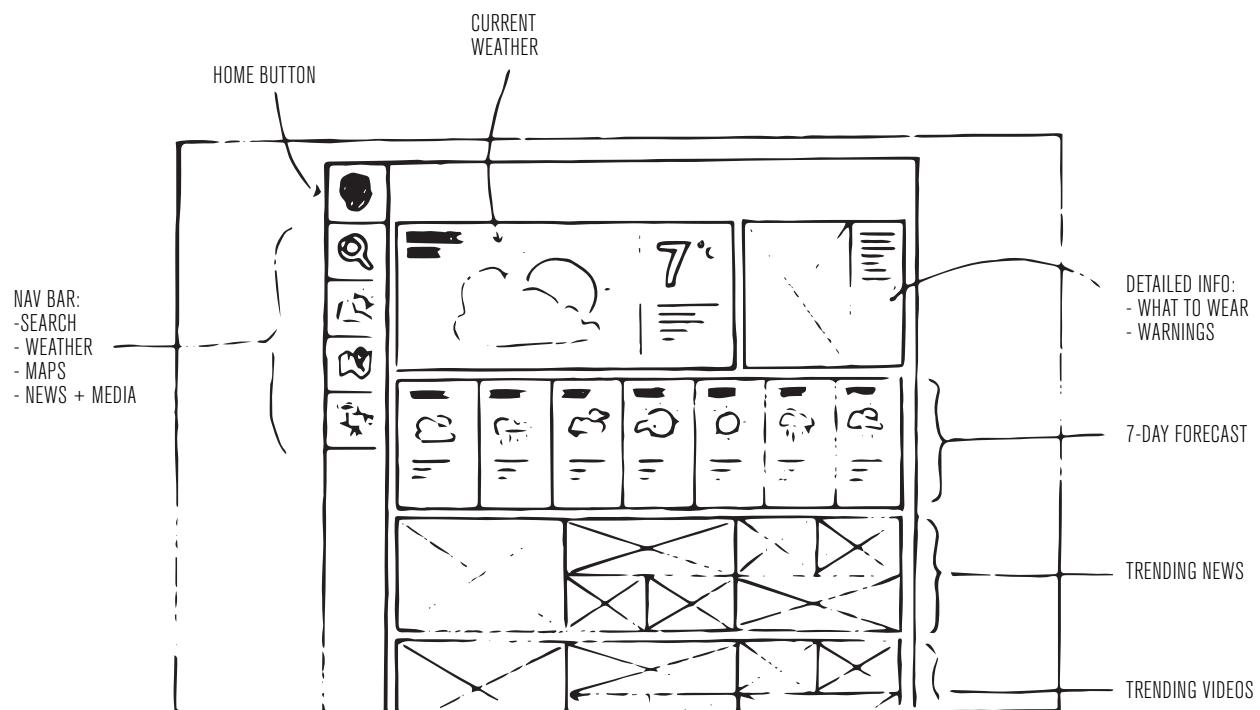
- ▼ Day Tickets
- ▼ Season Passes
- ▼ Mountain School
- ▼ Lodging
- ▼ Cliff Spa
- ▼ Ground Transportation
- ▼ Apparel & Gifts
- ▼ Gift Cards

► The design of this website is clean and minimalist, which provides an easy reading and navigation experience for the user. For example, it has a persistent sidebar with important links and weather statistics, while the rest of the page content updates when links are clicked. This creates constant easy access to the important information and navigation elements. The website also creates a fun and interesting user experience through sleek animations and graphics. One bad thing is that there are some inconsistent pages such as the ticket order form, which some links lead to, which detracts from the overall experience.

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# DESCRIPTION & OVERVIEW



► This interface design is based on user-customizable information hierarchy and density, on a single web page layout. The main page has a variety of rearrangeable panels that display different information, including weather, related news, photos, and maps of weather systems. By having panels, the types information will be more easily distinguishable, and the fact that the user can move them around lets the user determine the hierarchy of the information based on what they believe is most important.

This conceptual design also has all the panels on a single scrolling page, with a persistent sidebar. The sidebar allows the user to quickly navigate the sections of panels on the page, and view where they are in relation to these sections. It also contains a search bar so the user can search for specific locations or content on the Weather Network page, which would be loaded in a new page, and a home button which takes the user back to the main page.

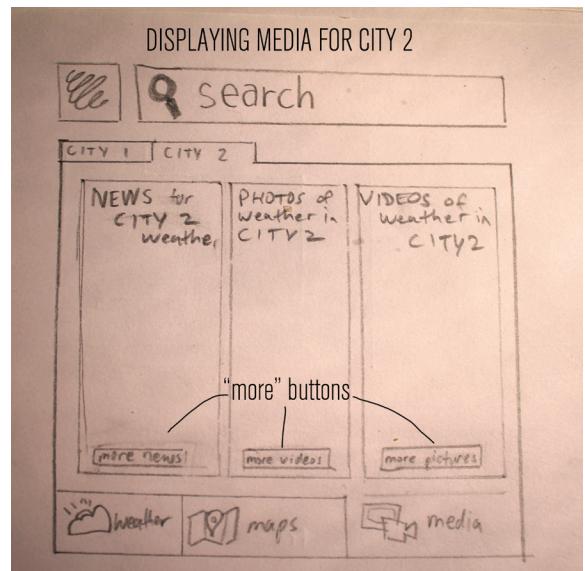
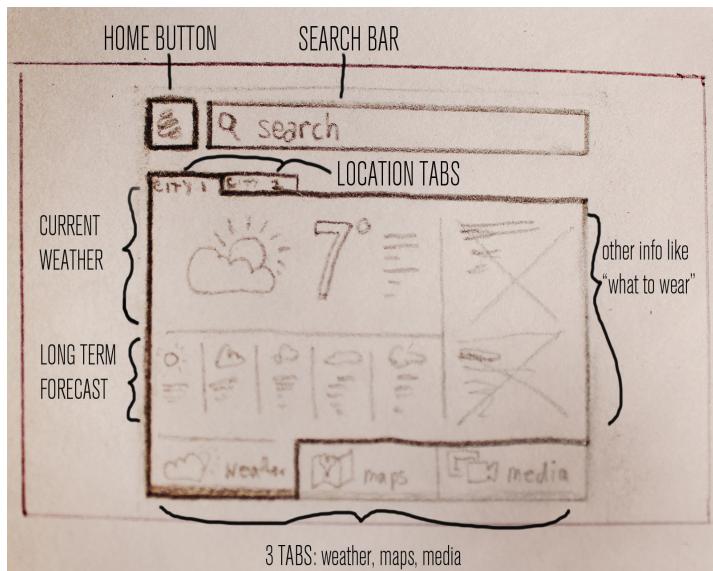
## PROTOTYPE A HYPOTHESES: QUICK GLANCE

- + If we have tiles, then users will have a clear differentiation of information.
- + If we implement a floating sidebar, then users will always have navigation access to various features, and not get lost within the webpage.
- + If we design a customizable interface with user-controllable information density, the users will have an easier time understanding the hierarchy
- + If we make a section jump feature, then users will know where they are spatially in relation to the rest of the page efficiently.
- + If we have the [smiley face design], then users will have a quick glance of the current weather, and 7 day trend which is the most important.

## INTERACTION PARADIGM & INTERFACE METAPHORS

- + The interaction paradigm for this design is heavily influenced by WIMP interfaces. In our case, the “windows” are equivalent to the tiles or panels, icons are seen on the sidebar, which is also a menu, and all of it is manipulated through mouse interaction.
- + The interface metaphor for this interface a set of tiles or cards arranged on a grid system. Each section contains a specific type or set of information, such as the weather or news, and arrangement on the grid can be manipulated by the user.

# DESCRIPTION & OVERVIEW



- The design of this conceptual interface is meant to facilitate quick access to the most important information people look for when they go to the Weather Network website: the weather. Weather information is placed clearly and concisely on the main page, and supports multiple locations if the user sets them, which can be selected using a tab system. The design also has larger tabs with icons to quickly access news, maps, or media related to the weather in the user's currently selected region.

The rest of the website, that is, the news, media and map sections, are more traditionally page based. They can be navigated to by clicking "more" buttons within their respective home page sections, or on the tabs.

## **PROTOTYPE B HYPOTHESES: QUICK GLANCE**

- + If we have a search bar on top, then users will see it first because it is in a conventional location.
- + If we have a more organized and minimalistic presentation, the user will not be overloaded with information.
- + If we put the current weather for the user's favourite locations on the homepage, the user will be able to have access to the most important feature first.
- + If we have large iconic buttons, the user will be able to easily recognize and click them.
- + If we have a separate search bar that is specific to each section, the user will be able to search for more relevant and particular information.

## **INTERACTION PARADIGM & INTERFACE METAPHORS**

- + The major interface metaphor being used in this design is the idea of "tabs," like you would find in a physical file folder system, or in a web browser. There are tabs that the user uses to select the current city, and then what information they would like to view about that current city. The tabs simultaneously act as a menu and as an indicator to what the user is looking at on the page.

# COMPARISON OF DESIGNS A & B

ASPECT TO COMPARE	CONCEPTUAL DESIGN A	CONCEPTUAL DESIGN B
QUICK ACCESS	Everything is quickly accessible within the homepage; driven by 'sections' of main categories of information, which is thus driven by scrolling	Basic, essential information is available; tab-driven, organizing different categories of available information
SEARCH	General search bar that is accessible at all times from floating menu bar on left side	One general search bar, available on landing page, with more specific search options within tabs
LOCATION SAVING	Emphasized largely on landing page, as it is one of the main things that a user comes to the website to see	Emphasized largely on landing page, as it is one of the main things that a user comes to the website to see
ORGANIZED INFO	Landing page; categories (weather, maps, news/media); specific pages	Landing page; everything is on one page, no new pages; everything 'flips' through on bottom panel

- Both designs A and B have a search function at the top of the layout, which hopefully allows users to see and access it easily, because it is conventionally found there. Both websites also incorporate functions for automatically detecting the users location, and using it, if the user allows it, as well as the ability to save multiple locations. In addition, we designed both prototypes to have simple, minimalistic, and conventional icons, which we hope the users can quickly identify and remember, even if they are non-English speakers.

# REFLECTION: DESIGNING FOR HUMANS

## ► Conceptual Design A

For Conceptual Design A, we used the Gestalt laws of proximity and similarity to group elements with similar information and functions. For example, each specific type of information (weather, forecasts, news headlines etc.) is grouped into a panel. We also used the sidebar to assist people in their spatial awareness of the site; it indicates where they are in relation to the rest of the page, and where to find other types of information they might be looking for. Icons are made to pop-out through contrast against the plain backgrounds. We also plan to use colour in order to make these stand out even more. This is used to assist users in quickly perceiving the key information about the weather.

## ► Conceptual Design B

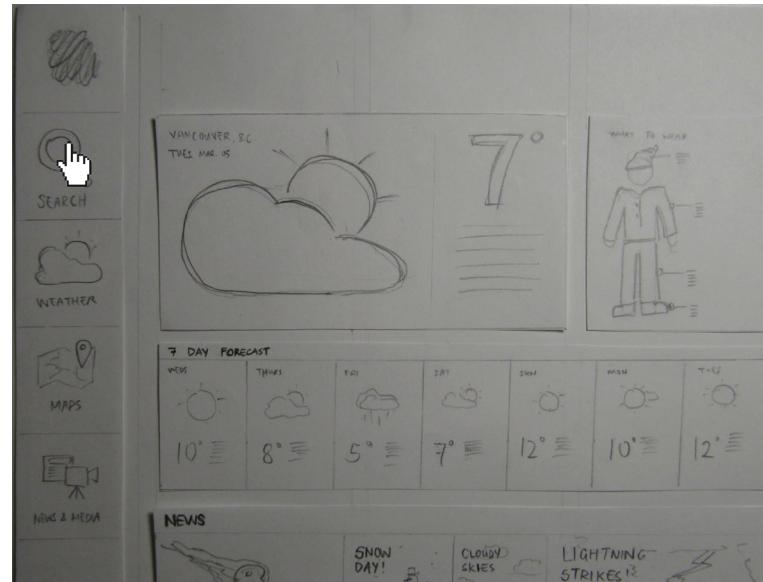
In Conceptual Design B, we incorporated various principles with the intent to improve the user experience, and lessen their cognitive load. This concept minimizes cognitive cost, as most of the activities are centralized at the same location, avoiding scrolling long pages. This allows for quick and efficient access and navigation, thus reducing the large cognitive load from the original design of the Weather Network Website. There is a figure-ground relationship between the active tab and inactive tabs of the site. The active tab appears at all times to be on top of the other tabs, in addition to a coloured band, which further highlights its status as “active.” The layout displays only the bare essentials allowing them to focus their attention on the tasks they wish to complete, like viewing the forecast.

# ID-2,3

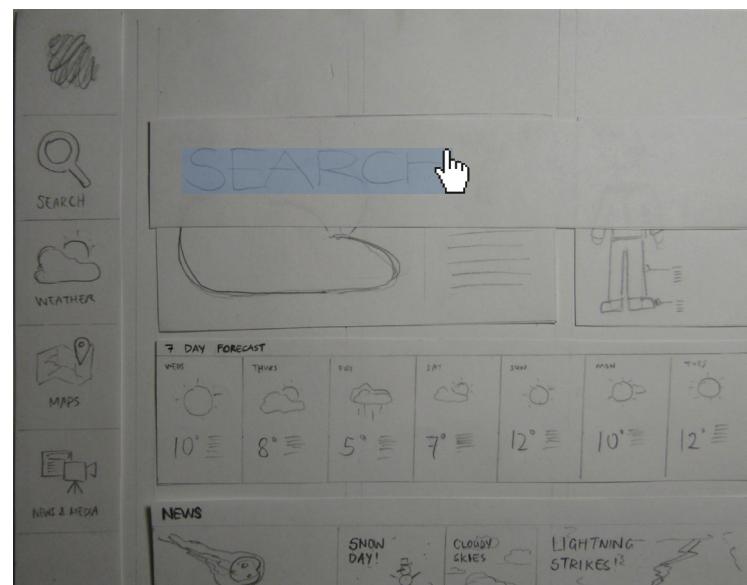
## CH 3: PROTOTYPING

# PROTOTYPE A

- The main task pursued with these two prototypes is to view photos from Athens, Georgia.

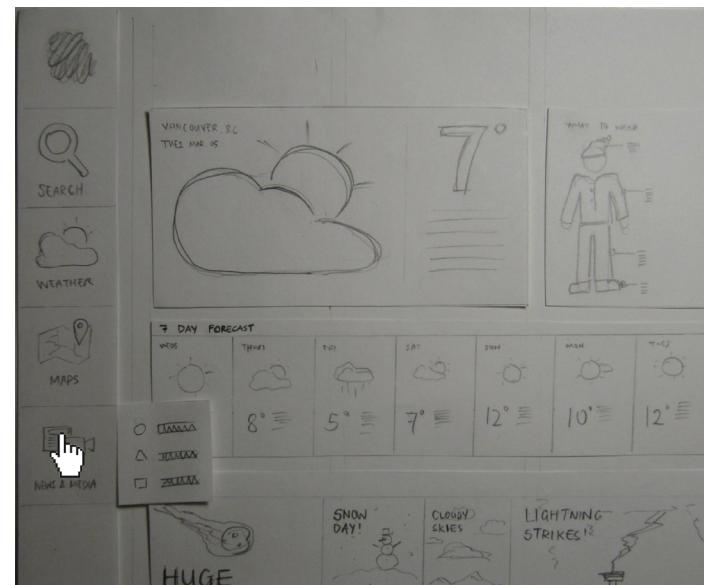


- 1 The home page now features panels of weather, news, media all visible at a glance.



- 2 Typing into the search bar to find a city is alike the original design, with an autocomplete feature. In addition, there is an option to add this search entry as a saved location.

# PROTOTYPE A

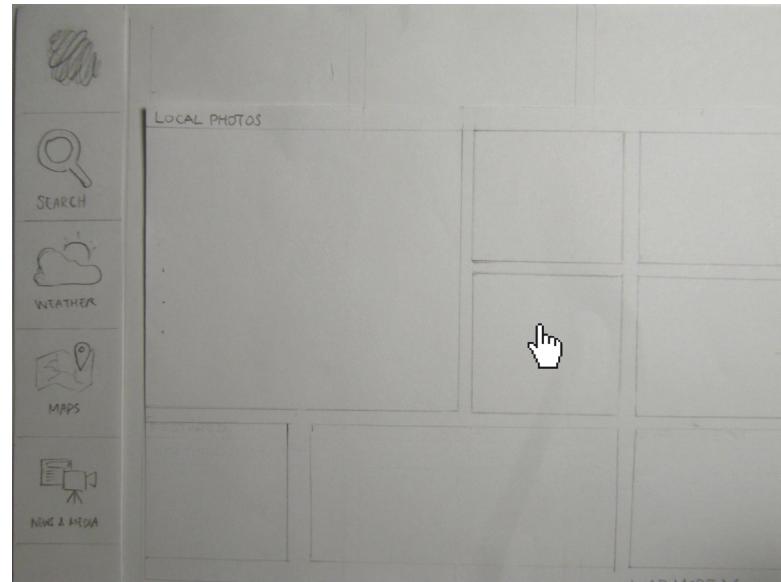


**3** The main page is organized into clear panels. Note that weather, news, and media is sorted separately. Additional panels may be selected by user preference.

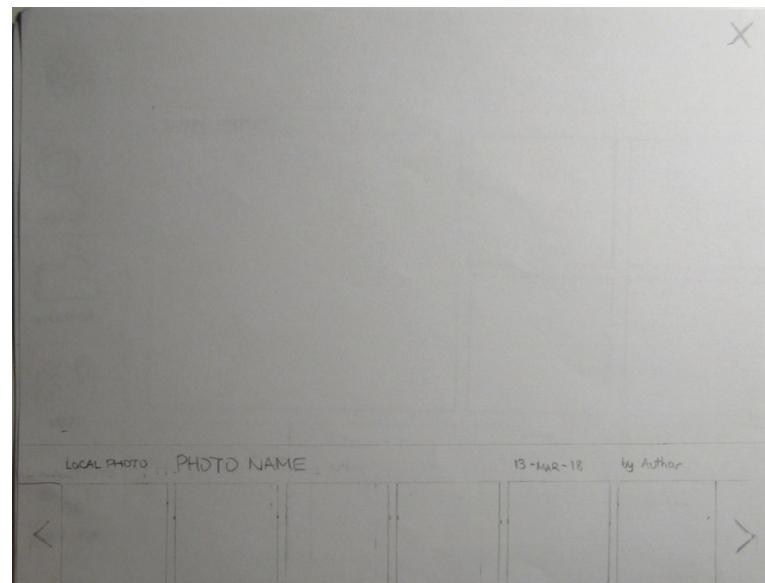


**4** Clicking the sidebar's "News/Media" button scrolls down to its respective section.

# PROTOTYPE A



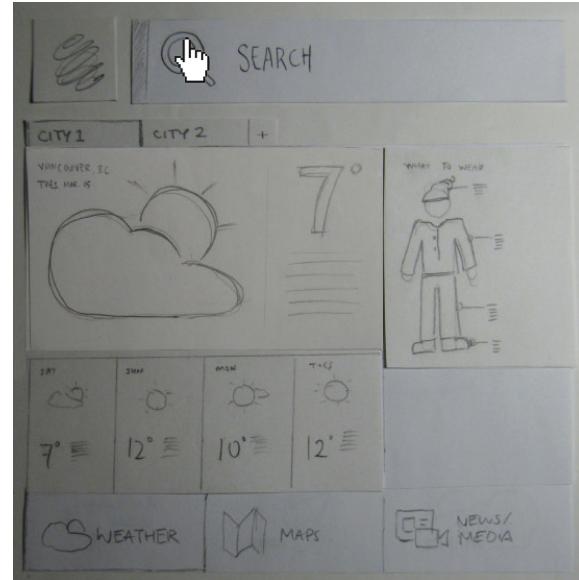
- 5** Clicking “View More” leads you to the photos page, which shows photos according to Local, Popular, Featured, and Editor’s Picks sections, as well as other categories.



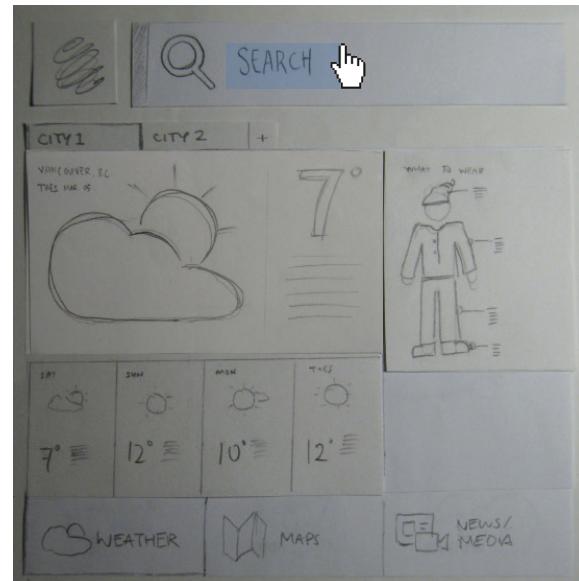
- 6** When selecting a photo, a lightbox appears, which allows for easy browsing, using the available screen space.

## PROTOTYPE B

- The main task pursued with these two prototypes is to view photos from Athens, Georgia.



- 1 The home page now features tabs that display weather, maps, media individually, to achieve minimalism, and increase focus on one task.

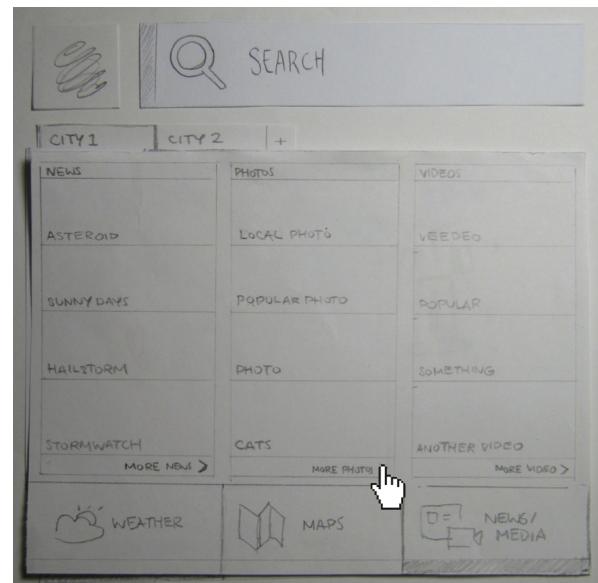


- 2 Akin to Prototype A, the search bar features autocomplete and adding locations.

## PROTOTYPE B

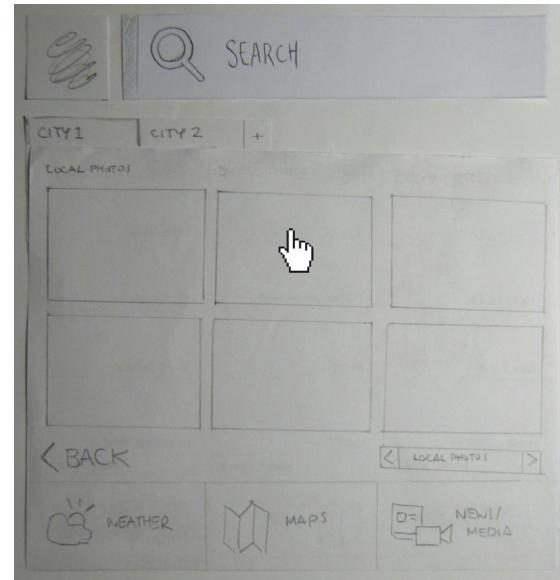


3 The weather tab features current weather conditions.



4 Clicking the tab "News/Media" switches to its respective section

## PROTOTYPE B



**5** Clicking “More Photos” displays all the photos, with an option to change between categories like Local, Popular, Featured, and Editor’s Picks, as well as other categories.



**6** When selecting a photo, a lightbox appears, similar to Prototype A.

## INSIGHTS FROM USER TESTING, FEEDBACK & DISCUSSION

- After completing our user study, we discovered that it was difficult for users to save default locations. We addressed this in our prototypes by adding automatic location detection.

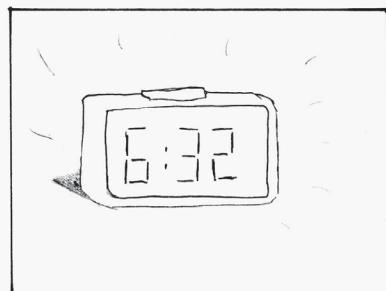
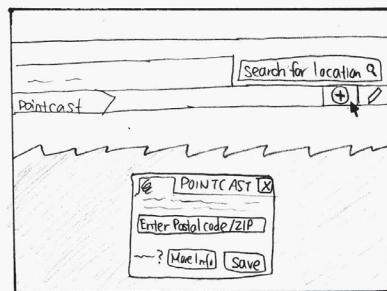
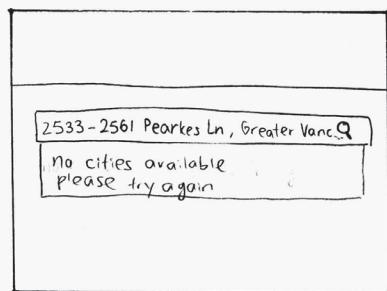
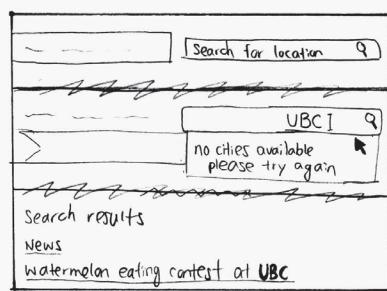
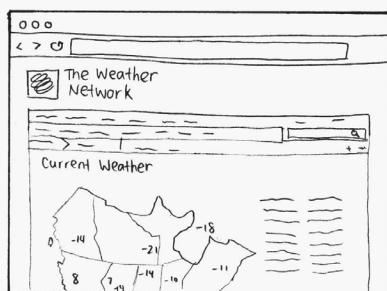
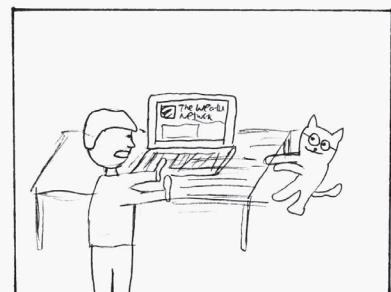
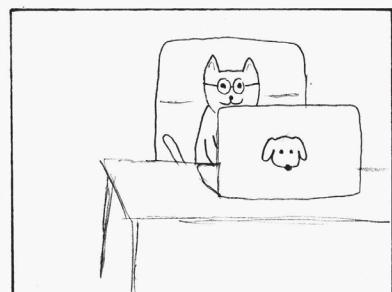
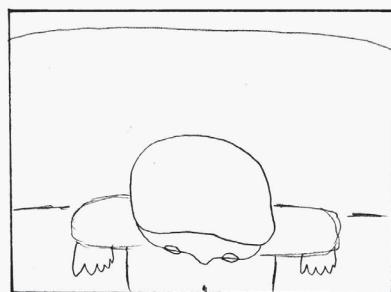
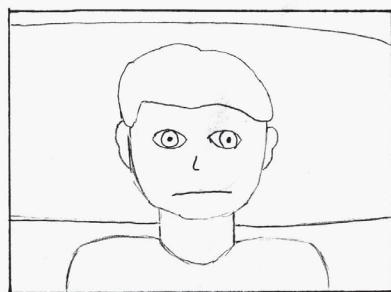
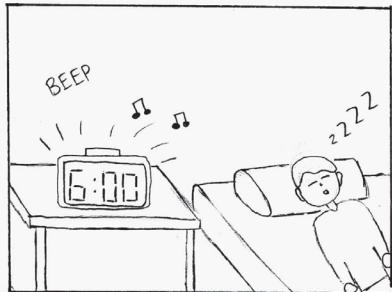
Users also liked other features such as the “What to Wear,” that suggests type of clothing that would be suitable to the current weather, but this feature was hard to find. We made it more easily accessible to users by making it an information tile in in our Conceptual Design A, while it can be found in the main weather page of Conceptual Design B.

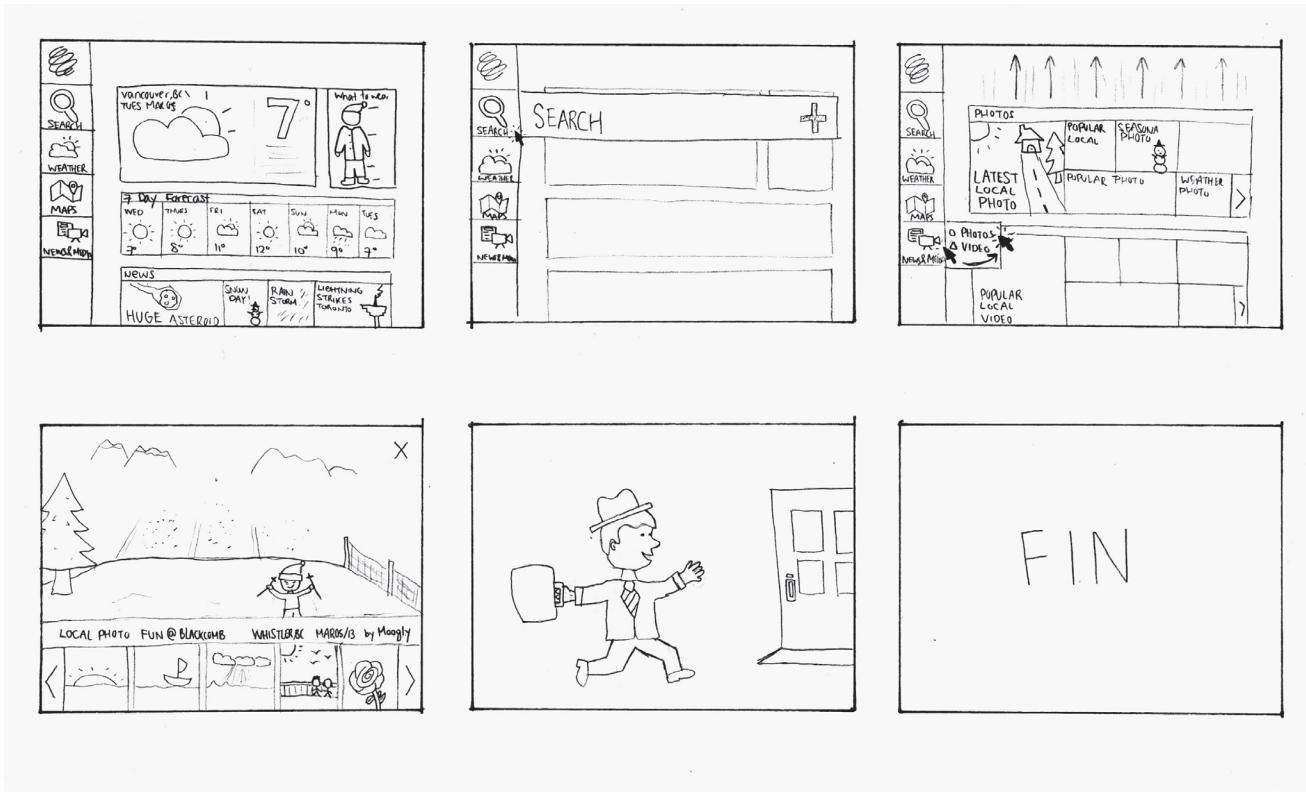
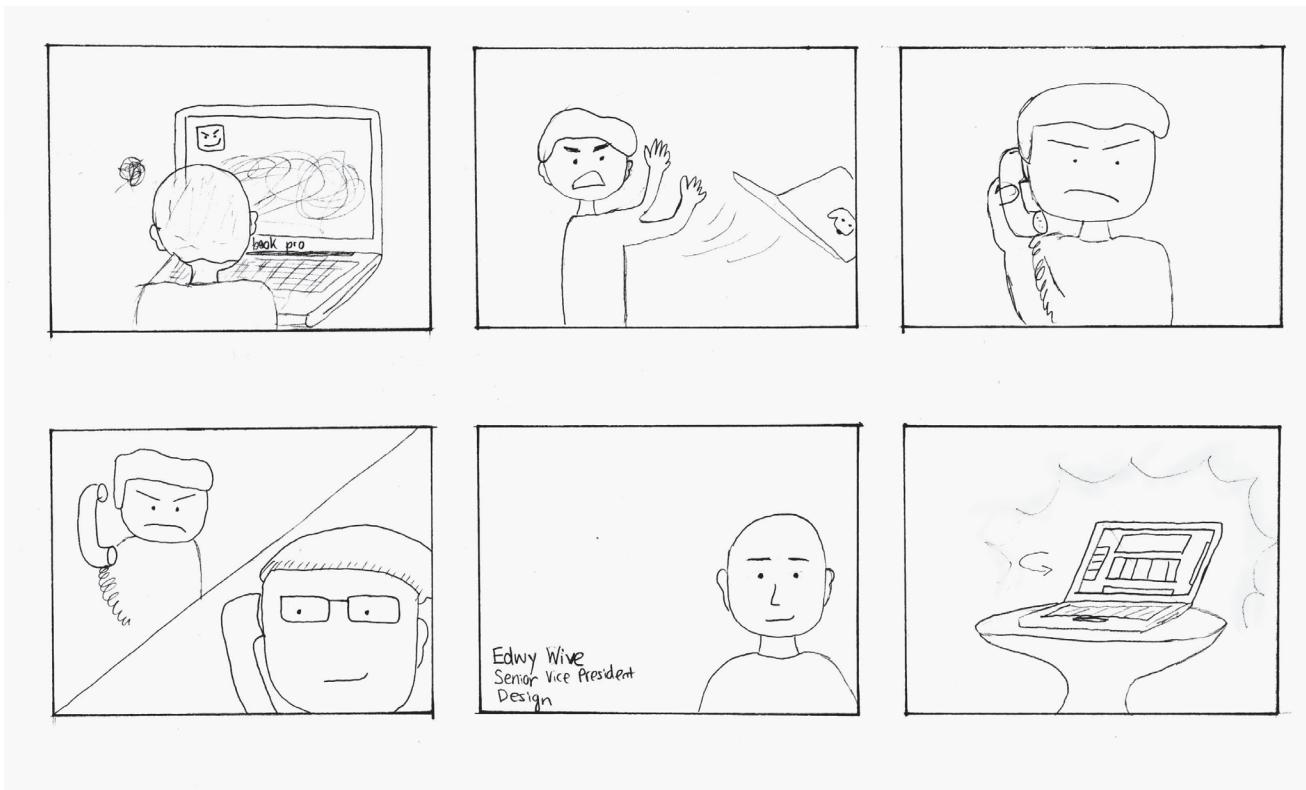
Another thing found from our testing was that experienced users enjoyed being able to view media related to the weather, especially photos. We aimed to address this with both our designs by making them clearly accessible on the main page. Conceptual Design A lets the user place information like photos where they want, while Conceptual Design B puts media access in a large tab that is clearly connected to their current city.

## INSIGHTS FROM PROTOTYPING

- We began the prototyping process using whiteboard drawings, which was quick for sharing ideas, but did not allow us to move certain elements of the design around, so we started using paper prototypes instead. These let us move and swap out elements of the design in order to see which ones were most effective and worked best with the various design heuristics and principles we had learned. For example, it allowed us to play with the Gestalt principles of proximity and similarity, and grid structures in order to make the web pages more readable and navigable for the user. In addition, it allowed us to simulate loading pages, and even moving tiles around for Conceptual Design A, without actually building a web application or prototype, as well as studying how the interactions like clicking with the website would work. However, we could not simulate more specific, technical details that come along with building a web application, such as screen dimensions, pixels, and scrolling.

# STORY BOARD





# **ID-4**

## CH 4: EVALUATION

## GOALS OF THIS EVALUATION STUDY

- With our user study, we wanted to find out if our prototypes were successful in being an improvement over the original design, based on studying the efficiency of use, user experience, and functionality. Specifically, we wanted to focus on analyzing various users' feedback overall layout and hierarchical organization, search functionality, information density and usability, and aesthetics.

## QUESTIONS AND HYPOTHESIS ADDRESSED BY THE EVALUATION

- One of the key questions we wanted to answer with this study was whether or not our organization, layout, and information density of the website's content was an improvement over the original design. Particularly, we wanted to find out if Prototype A's tile format and navigational sidebar, as well as Prototype B's minimalistic and tabbed approach had improved the functional efficiency and overall user experience. For Prototype A, we also wanted to investigate whether the user customizable layout made it easier for the users to prioritize and utilize the content of the site that they valued most.

Another point we wanted to look into was whether the users were able to access and save their preferred locations. We wanted to see if putting the user's favourite locations right on the homepage, allowed them to be easily accessed.

Some other questions we wanted to answer were whether having the search bar on top helped users to see it quickly, because it is in a conventional location, and if we having large iconic buttons to help the user easily recognize and click them.

# PARTICIPANTS

## **User 0**

Age 15, high school student

We selected this user as an edge case, as he never checks the weather, and is an expert computer user.

## **User 1**

Age 45, bookkeeper

We selected this user because she is representative of the median age of frequent weather website users, and uses it on a daily basis.

## **User 2**

Age 23, clerk

We selected this user because he represents the user that needs basic weather information for trips quickly.

## **User 3**

Age 19, university student studying business, environmentalist (old study)

We selected this user because he depends on transit for commuting long distances especially to and from school. He also cares about supporting environmental movements.

## **User 4**

Age 20, university student

We selected this user because she is fairly active in outdoor activities, and thus is dependent on knowing weather conditions.

## **User 5**

Age 19, university student

We selected this user because he represents a potential age group to target in the future.

## **User 6**

Age 20, university student

We selected this user because he represents a potential age group to target in the future.

## **User 7**

Age 19, university student

We selected this user because he was an expert user, who has had experience with weather related apps and websites.

## MATERIALS

- We used a single laptop to run the prototypes and original website for our users. We also used Quicktime Player to record the screen and voice of the participants' during the user study, so we could review them later. We also used a stopwatch to record each task, and a notebook to jot down notes, recurring patterns, phenomenae, and the user's time data.

## INSTRUCTIONS & TASK DESCRIPTION

1. Look for the long term forecast of your current location (pretending you're in Vancouver, BC).
2. (For Prototype A) You want to prioritize the "EXTRA INFO" feature, because you find the "what to wear" information very useful. Find and move the panel to the top, so it's easy to access next time you visit the site.  
(For Prototype B) Find the "What to Wear" recommendation for your current location.
3. (For Prototype A) Look for the video/media section and play a video.  
(For Prototype B) Look for the media section and find a picture of a rainy day for Athens.
4. Add the University of British Columbia as another one of your default or "favourite" locations.
5. Find the long term forecast for Athens, Georgia, but don't add it to your favourite locations.
6. Find the map of the current weather systems for Athens.

# OBSERVATION TABLE

This is an example of the observation table we used for collecting the times for each task performed for a particular prototype. Additional notes about patterns/phenomenae were also recorded alongside the tables. Refer to above section for more information about each task.

Observations	User 1	User 2	User 3	User 4	User 5	User 6	User 7
Task 1							
Task 2							
Task 3							
Task 4							
Task 5							
Task 6							

# **EXPERIMENTAL DESIGN & PROCEDURE**

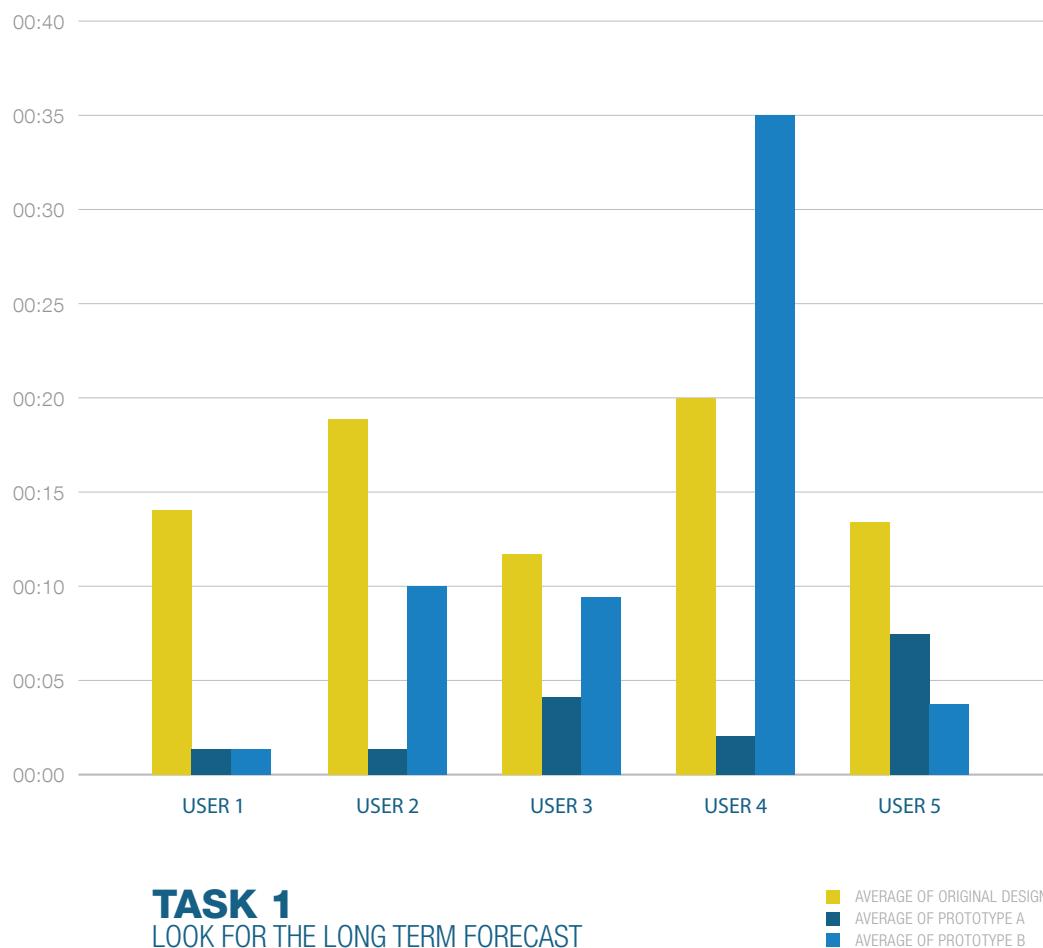
- Most of the user testing was conducted at SFU Surrey, with a few done in our own homes. These were conducted on a laptop computer, and a mouse was provided to avoid any delays, errors, or unfamiliarities with the touchpad. Danny and Edward conducted the prototype user studies, while Danny, Edward, and Gilbert took turns recording the user's times for each task, and notes. Individual tasks were explained and given to the participants.

We instructed the users to navigate within the site and use whatever method they could to complete the task, after asking if the participants were ready. We then started timing with a stopwatch, and after the participant had finished a task, we stopped the timer and proceeded to explain the next task. This process was repeated for all of the tasks.

After all tasks had been completed, we asked them to fill out a physical paper copy of our customized questionnaire, to obtain their demographics and opinion about our prototypes, and ways to improve it.

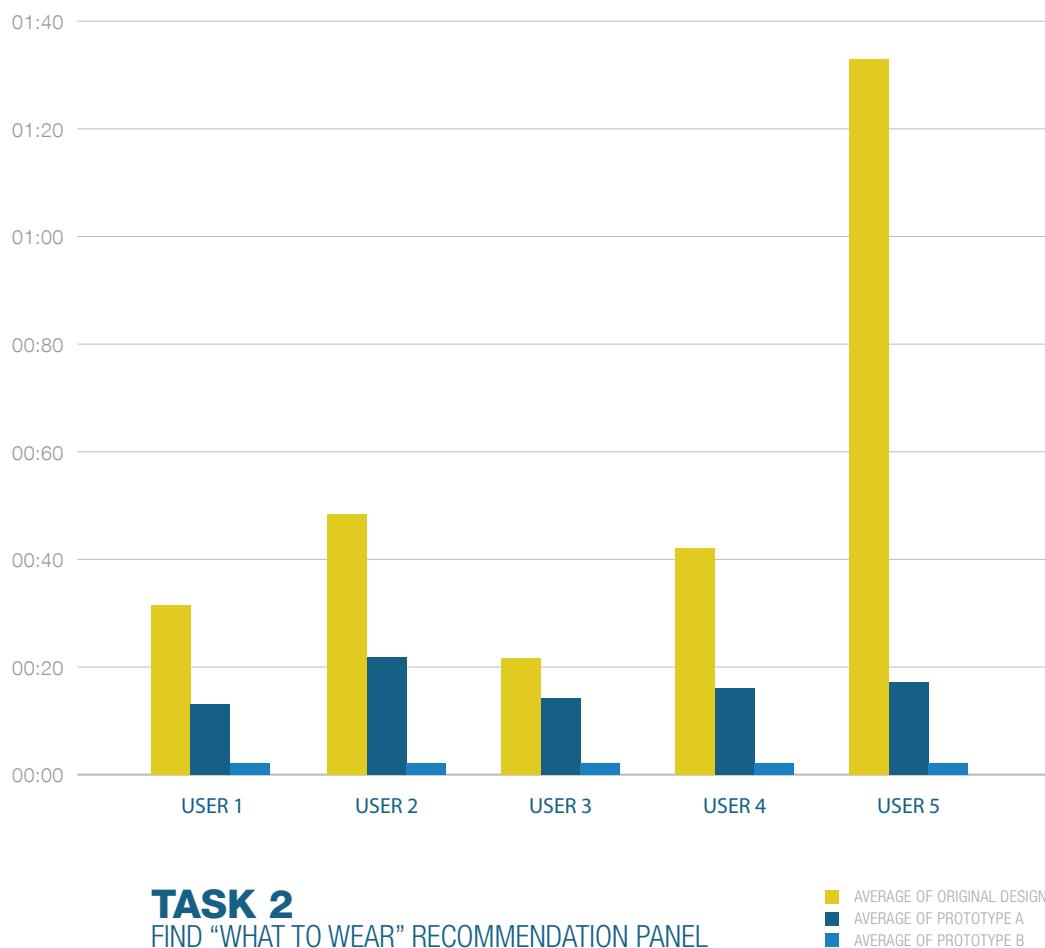
# RESULTS

## QUANTITATIVE DATA



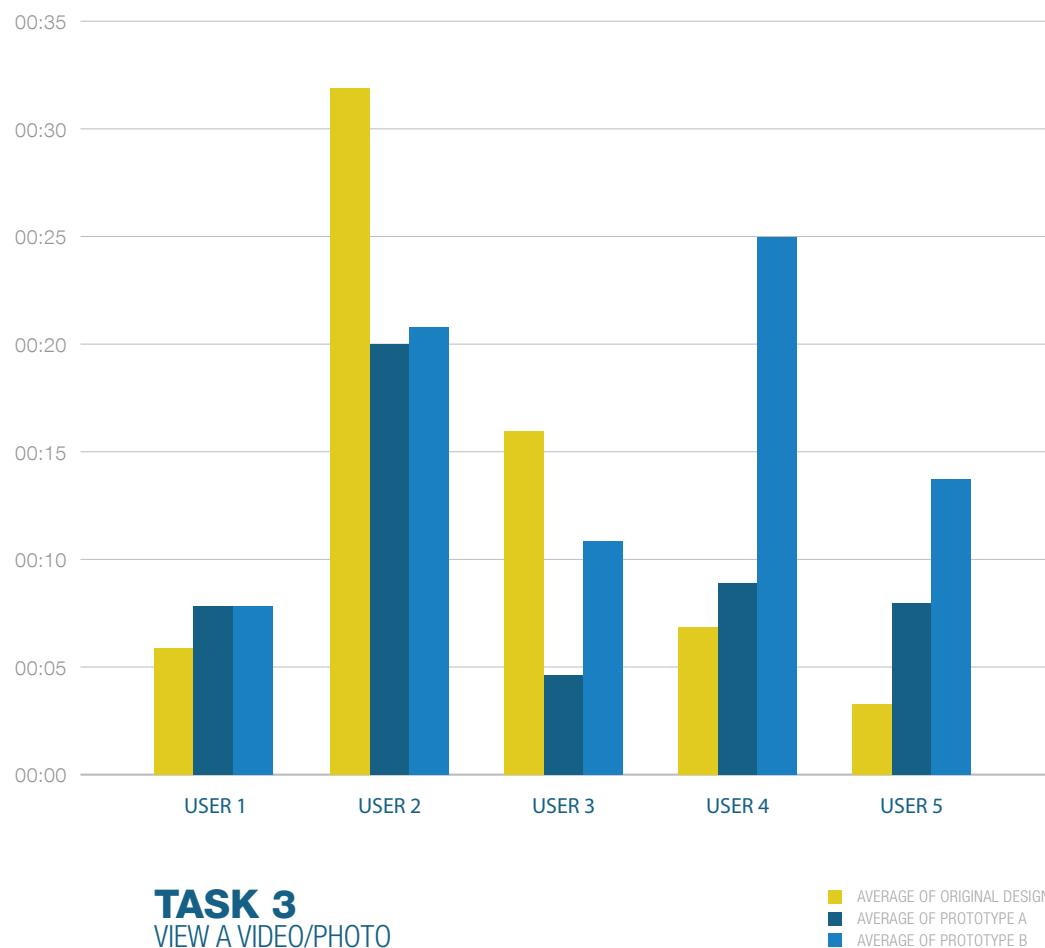
# RESULTS

## QUANTITATIVE DATA



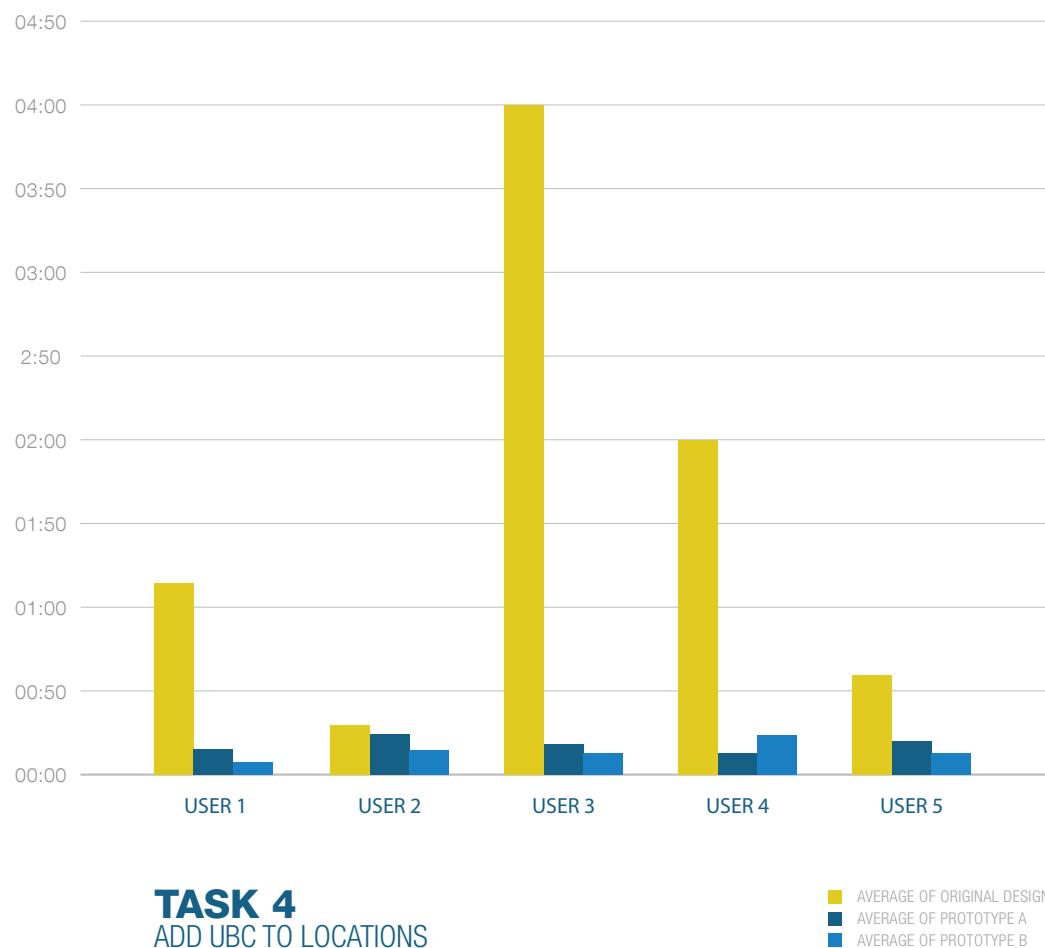
# RESULTS

## QUANTITATIVE DATA



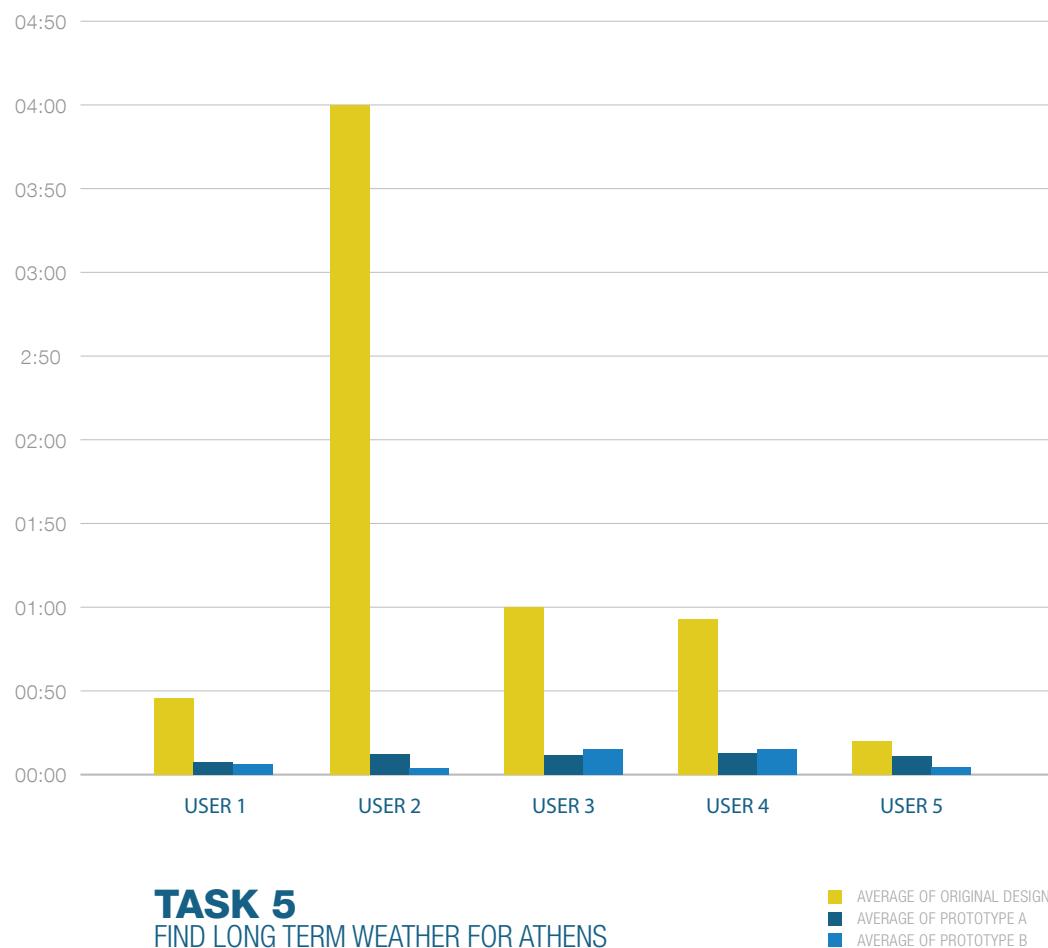
# RESULTS

## QUANTITATIVE DATA



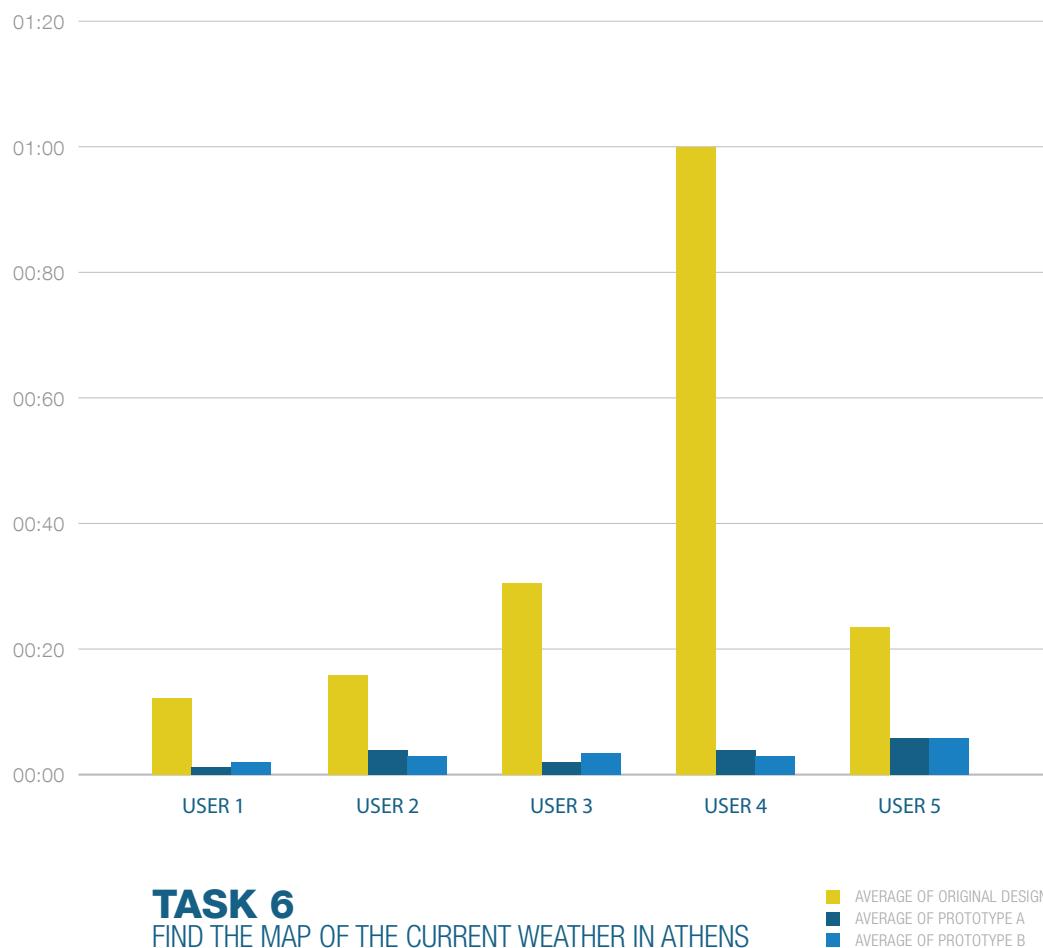
# RESULTS

## QUANTITATIVE DATA



# RESULTS

## QUANTITATIVE DATA



**TASK 6**  
FIND THE MAP OF THE CURRENT WEATHER IN ATHENS

# RESULTS

## QUALITATIVE DATA

- Based on the results of our user testing and questionnaires, the majority of participants preferred prototype A over B, with the main reason being its customizability. However, they found that this prototype lacked the affordance for users to customize by dragging. On the other hand, other users liked prototype B's clarity of information, and how it allowed for easy navigation between sections, but there was not enough weather information being displayed at a time. Adding a favourite location was quicker on B, but still problematic on A, as the link was unapparent for many. A common occurrence for both prototypes was that users tended to visit the weather page of the location first, before adding the favorite from that specific page. The ambiguity of the phrase "add a location" also contributed to this issue. Both prototypes featured an improved search database, which users found very helpful in finding the locations they were looking for.

After using the original design, the participants felt that the "what to wear" feature was much quicker to access in the prototypes, and for prototype A, users were able to view and move the panel quicker than finding and locating it in the original design.

# DISCUSSION AND CONCLUSIONS

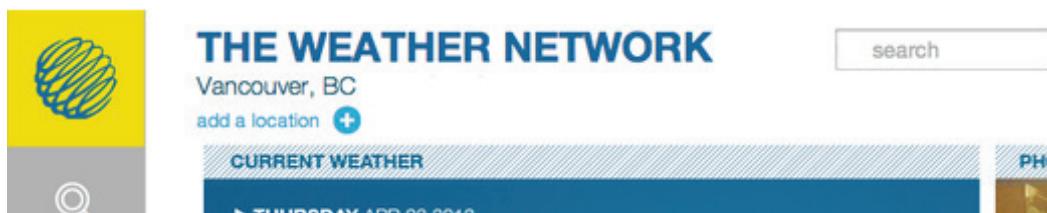
## IMPLICATIONS FOR FUTURE INTERACTION DESIGN

- As a result of this study, we were able to find the ways in which our design was effective in improving the user experience and efficiency of The Weather Network website, but also the flaws our designs had. We also had opportunity to consider how these weaknesses might be improved in a final version of the system.

Overall, our prototypes were more efficient for the users, less cluttered, and the information displayed were well received. The tasks we assigned took much less time and clicks than the original site. Basic features such as viewing weather and maps for various cities were quicker to use, and required less clicks in our prototypes versus the original design. For example, finding the weather in both prototypes was faster by around 5 seconds. Both our prototypes were more organized and had better information density and hierarchy, preventing users from being overloaded with information. Users liked the overall aesthetics of the designs, and appreciated the customizability of Prototype A, but liked the simplicity of Prototype B better.

The implementation of our fixed sidebar was beneficial, allowing the users to find and navigate the sections more efficiently. Knowing that users would like to see the current weather right away, our designs allowed the users to view the most important features such as current weather immediately on the front page. Many users told us that they liked the “What to Wear” feature that we emphasized on our front page as they found it extremely useful and did not know existed before. We noticed in our previous user studies that users had a hard time searching for locations especially points of interest. Taking that into consideration, we stored points of interests and full addresses into our database so that the users can have an easier time using the search functionality.

While our prototypes had many improvements over the original site, users still found some things lacking. For example, the task of adding a favourite location was still a bit difficult for some users. The wording “add a location” was not clear enough; it was suggested that it be changed to “add a favourite location” instead. Furthermore, the current city was not emphasized enough, so users could not easily identify what city they had currently selected. Users proposed that the current city name be made bigger, or bolded, in order to emphasize it somehow, and to decrease the emphasis on “The Weather Network” heading.



In conclusion, we would try to improve the user awareness of what city they are in, and the saving location feature, by emphasizing them and integrating the adding feature into the search function. We would try to maintain some user customizability but simplify the design by hiding some elements, because users found it to be a bit busy and overwhelming. We would probably allow them to add more elements if they desired, or access them in a different part of the site.

# APPENDIX

► **THE WEATHER NETWORK**

<http://www.theweathernetwork.com/>

► **PROTOTYPE A**

<http://dannyblackstock.com/weathernetwork/html/gridster.html>

► **PROTOTYPE B**

<http://dannyblackstock.com/weathernetwork/html/prototype-b.html>

## LIST OF CHANGES

- + Added user base source link [ID-1]
- + Made “goals of user study and questions/hypotheses addressed” more specific [ID-1]
- + Made “discussion and conclusions” more specific [ID-1]
- + Elaborated on the video storyboard
- + Finished Abstract [ID-1]