

Final Report

Group: WeatherMan

Project: Weather Web Application

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Course: ITEC 3230 N

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1. Requirements

1.1 Overview

This application's main goal is to make one that is superior to those of rivals and that achieves better results. Stakeholders include developers and weather data providers, while users fall into three categories based on usage frequency: primary, secondary, and tertiary. In connection with the fact that all users regardless of the weather context need the forecasting system to be exact, reliable, and easy to obtain, the frequency or intensity of any weather factor might not relate directly to the level of service quality. The goal is to deliver a user-friendly interface with weather data of the highest accuracy that will help users plan their day. The development team will pay attention to the user-friendliness of the app, and ensure timely and accurate weather data, which will ensure a stable working app ecosystem.

1.2 User Characteristics

Primary Users: Require daily and routine weather forecasts to make informed decisions, their app usage frequency is the highest

- Daily Commuters
- Outdoor workers

Secondary Users: Interaction with the app is occasional, more specifically during certain circumstances

- Local Businesses
- Event Planners

Tertiary Users: Infrequent interaction, just for general curiosity and planning long trips

- Travelers
- Casual Users

Characteristics

- The web application is very user-friendly. Navigating through the app is simple and caters to various types of tech skills from beginner to advanced.
- The main target audience would be 18-50 years old. The app is meant for all people without any exceptions. The nature of this app is to get informed weather forecasts thus everyone has the right to know. Below are the detailed characteristics of the target audience.
 - Accuracy dependence
 - Efficient use
 - Accessibility

1.3 Use Cases

Use Case 1: Viewing Live Weather Data Across Various Cities

Use Case Name:	Viewing Live Weather Data Across Various Cities					
Scenario:	Being able to check and compare weather across different cities					
Triggering Event:	The user wants to view different weather forecasts in other cities					
Brief Description:	Able to manage and view detailed weather information across cities					
Actors:	Users					
Stakeholders:	Development Team Weather Data Providers					
Preconditions:	The user must be logged in to the application to access any features of the app					
Postconditions:	The user has viewed the weather that they desired					
Flow of Activities:	<table><tr><th>Actor</th><th>System</th></tr><tr><td><div>1. Navigate to Live Weather Data</div><div>2. In the search bar pick the desired city</div></td><td><div>1. The system finds the searched city and outputs the forecast</div></td></tr></table>		Actor	System	<div>1. Navigate to Live Weather Data</div> <div>2. In the search bar pick the desired city</div>	<div>1. The system finds the searched city and outputs the forecast</div>
Actor	System					
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Alternative Flows:	System: If the city cannot be found, then an option comes up to add a city which is then checked by the team and added if viable					

Use Case 2: Accessing Thorough Forecasts Weather Data

Use Case Name:	Accessing Thorough Forecasts Weather Data					
Scenario:	The user wants to view more information about the upcoming weather forecasts					
Triggering Event:	The user selects the city to view detailed data					
Brief Description:	The user can view in depth data along with future forecasts					
Actors:	Users					
Stakeholders:	Development Team Weather Data Providers					
Preconditions:	The user must be logged in to the application to access any features of the app					
Postconditions:	Detailed weather is displayed					
Flow of Activities:	<table><tr><th>Actor</th><th>System</th></tr><tr><td><div>1. Navigate to Forecast Weather Data</div><div>2. In the search bar pick the desired city</div><div>3. Click the search icon</div></td><td><div>1. The system outputs a thorough weather data with informed metrics</div></td></tr></table>		Actor	System	<div>1. Navigate to Forecast Weather Data</div> <div>2. In the search bar pick the desired city</div> <div>3. Click the search icon</div>	<div>1. The system outputs a thorough weather data with informed metrics</div>
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Alternative Flows:	In the case that detailed data is not available then, notify the user and check back shortly					

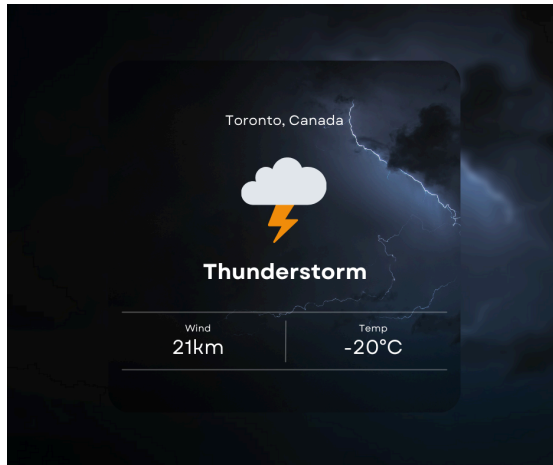
2. High Fidelity Prototype

Due to the nature of the software used to build this prototype, some limitations were encountered, and time constraints further restricted our work:

1. Adding an API to retrieve weather data and outputting live data on the prototype
2. Adding a drop-down feature in the search bar that would auto-detect cities around the world
3. Integrating notification systems was not added due to time restrictions. An external hand would be needed to develop this complex task to push notifications based on certain triggers.
4. A toggle button that would enable the user to select a light or dark theme background.

Solutions

1. Within the “Forecast Weather Data” page the user will be shown their current location’s 7-day forecast. With options of selecting hourly, 36 hours, and weekend tabs that will redirect them to an external page produced by the weather networking showing detailed forecasts.
2. The prototype contains two predefined sample cities named “Toronto” and “Paris” to emulate the app's usage with the intended functionality.
3. Wanted to integrate a notification system. The purpose would be to capture attention fast and inform the user

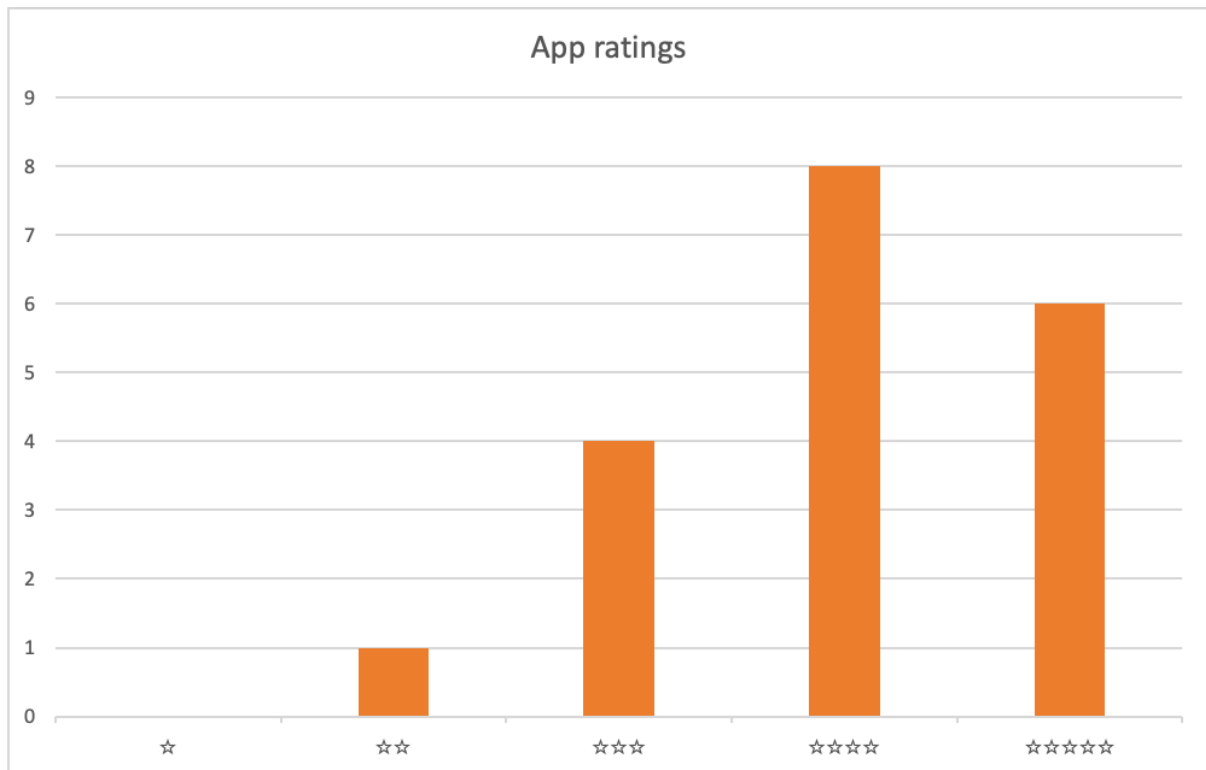


3. Phase 1 Evaluation

Q&A from Audience

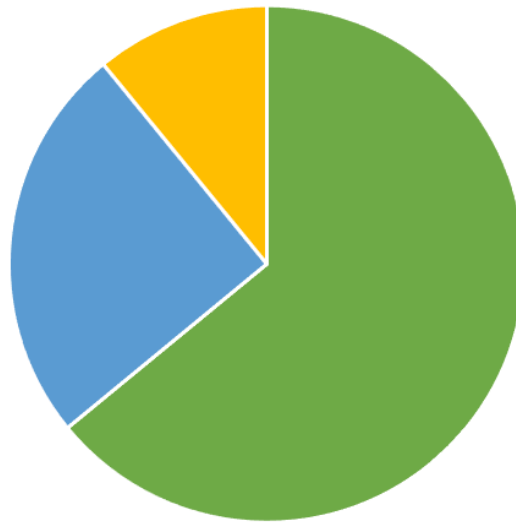
Quote	Nielsen Category	Response
"Sign-up button doesn't look like it's a button"	Recognition rather than recall	Created a visual button for sign-up to be a distinct clickable element.
"History Weather Data tab in the ribbon is confusing as it could have a different meaning"	Match between system and real-world	Created a weather forecast page and ribbon.
"Login button doesn't look like it's a button"	Recognition rather than recall	Created a visual button for login to be a distinct clickable element.
Clicking the tab button does not go to the correct ordered field	Consistency and standards	Clicking the tab bar now takes users to the next field.

Quantitative Data



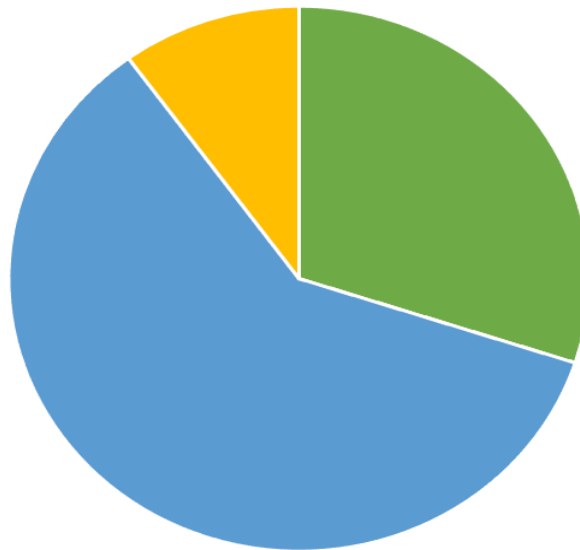
Overall, we received positive feedback from the questionnaires that were sent out to WeatherMan application users. We have created a couple of pie charts based on our feedback so that they can be visualized better.

Accessibilty



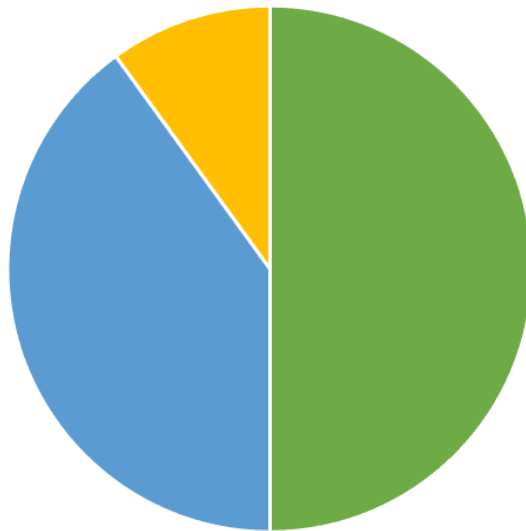
■ Easy ■ Medium ■ Hard

Useability



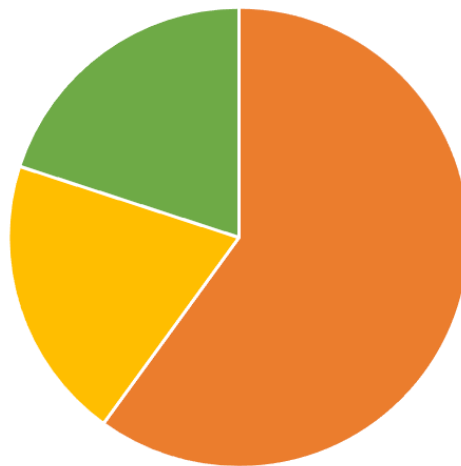
■ Easy ■ Medium ■ Hard

Quality



■ Excellent ■ Average ■ Poorwhat

Efficiency



■ Quick ■ Slow ■ None

4. Overall Evaluation Design

4.1 Criteria for Testing

- **Learnability:** As the application was designed to be simple, users will be tested on performing tasks targeting their intuition, where guidance is not given
- **Accuracy:** Measure the accuracy of the data provided
- **Efficiency:** Each task given to the user would be measured in the time it takes for completion
- **Effectiveness:** How well the application helps users plan and prepare for weather conditions
- **Satisfaction:** The functionality provided should leave users feeling they are well informed about the weather of their chosen destination

4.2 (Hypothetical) Field Study

- i. What you are evaluating (taken from 4.1)
 - **Learnability:** Users will be given tasks to locate where they would find specific information without giving any instructions. This will target their intuition and will measure in time how long it will take to complete each task.
 - **Field study:** Users will be observed in a home setting to observe how they naturally interact with the app and if simplicity really does lead to intuitive use
 - **Accuracy:** Application weather data will be compared with actual weather data from 3 sources to measure similarity and accuracy
 - **Field study:** Data will be collected during specific times of the day (where application is mostly utilized)
 - **Efficiency:** Measure the time it takes for users to complete each task within the application.
 - **Field study:** Observe users using the application in their daily routine to see if it provides the information they need quickly and informatively
 - **Effectiveness:** data will be gathered through a specific section in our survey that aims to assess how well the apps help users plan and prepare for weather conditions
 - **Field study:** In the setting of the users choosing as what matters is how they incorporate the data provided in decision making
 - **Satisfaction:** Our survey will provide feedback on how well the application's functionality best meets their weather needs.
 - **Field study:** Feedback will be collected in the setting of their choosing as the application is intended to be used at any given moment, no matter the location of use.
- ii. Where/how it would be conducted.
 - The field test will be conducted at York University in high-traffic areas (i.e. vari hall, student center building) where the majority of primary users will be found.
- iii. Who would participate?
 - Student and Faculty members will be asked to participate in the field test at random

- iv. How long would it take?
 - The study will take 5 -10 minutes, per user assessed, in which tasks and questions will be asked.
- v. What data would you collect and how? Talk about specific data acquisition technique(s) and how they fit to criteria you derive in 4.1. 4-5 sentences here.
 - Firstly, create a neutral environment where the users can follow instructions on a computer. Data being collected are from frequently used functionality, where time will be collected from each field test. The techniques that will be used are checking the load time and responsiveness of the application along with any errors and crashes the user faces(subtly stopping). Tracking the time it takes the user to complete each task with observation of facial expressions to gauge their ease of use. Finally comparing the accuracy of our forecast compared to that of other competitors with actual conditions reported.
- vi. What analysis would you do with the data?
 - The data collected will help compare the application to its competitors, also giving insight into users' navigation patterns, user behavior and the time taken to complete specific tasks to examine usability. Seeing actual load times, responsiveness, crash reports and error occurrences to fix the overall performance of the application.