Project Proposal - Weather or Not

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1 Introduction

Weather or Not is a weather app for your phone that does more than just tell you the weather. Like other weather apps, this app will allow you to input a location and look at the weather for that location, allowing the user to check daily, hourly, and weekly weather. However, in addition to providing the user with basic weather information, Weather or Not will suggest activities that the user could do based on the current weather, or suggest days and times that the user could do a selected activity based on the weather for the week. This app is designed for people who are planners and want to find the best times during the week to do their favorite activities.

2 Features and Functionality

This app will have five main features. Activity flow for the app is shown in figure 1. The first feature, shown in figure 2, will show weather information for the day at a specified location. This feature will show the current temperature, the high and low for the day, the chance of precipitation, and how sunny it is outside. It will also break the weather up into morning, afternoon, evening, and night. This allows the user to get a detailed but simplistic view of the weather for the day.

The second feature, shown in figure 3, will show the hourly weather information for the day at a specified location. Similar to other weather apps, this activity will show the user all of the weather information for the day broken up by the hour so the user can get a more detailed view of the day. The third feature, shown in figure 4, will show weather information for the week. This will show the user the highs, lows, and chance of precipitation for each day in the upcoming week.

The fourth feature, shown in figure 5, will allow the user to search for or select an activity from a list, such as walking, biking, basketball, etc., and suggest the best days and times that the user could do that activity. This allows the user to plan ahead with their outdoor activities and find the times when the weather is best to do what they want to do. In addition, if the weather is nice but they don't know what they want to do, the user can use the fifth feature. This feature, shown in figure 6, will allow the user to select a day and suggest activities that the user could do on that day based on the weather. This way, if the user wants to do something but doesn't know what, they can get some ideas from the app.

3 Audience

Our product is being catered towards the average active person or someone looking for activities to do. Whatever the weather or day, our application will be able to suggest activities based off the weather in your area. The target demographic for our app will be 16-30 year olds, centering around college age

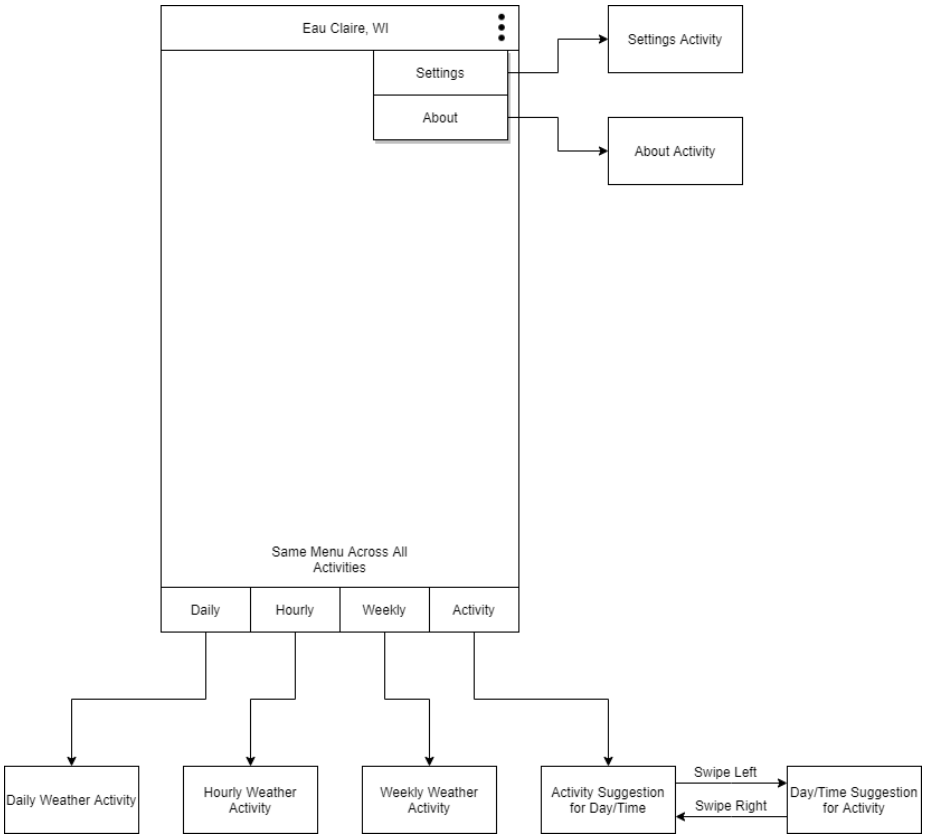


Figure 1: Activity Flow

men and women. This target demographic was picked due to the amount of free time and friends that the average college age individual has. We think that this age demographic will be using our app the most and will greatly influence how we develop our application in the future. Lastly, the application will be free and is expected to work on most Android devices, so it will be accessible to people all over the United States.

4 Competition

The functionality of this app related to suggesting different activities based on given weather conditions (or optimal days/times given a specific activity) is strongly inspired by the DoINeedAJacket.com[1] service, which suggests what the user should wear based on the current weather conditions in their local area.

[1] `https://doineedajacket.com/`

There do not appear to be any equivalent weather apps for Android in this regard, though many services (such as WeatherBug[2], AccuWeather[3], Weather Underground[4], and the IBM subsidiary The Weather Channel[5]) all offer Android apps with basic functionality available free with ads, but require in-app subscriptions to unlock additional features or remove the ads. As far as open-source weather apps for Android are concerned, two options worth considering are Geometric Weather[6] and Forecastie[7], the latter of which leverages the same API service we plan on using as described below.

5 API

Currently, it is expected that the OpenWeatherMap API[8] will be leveraged as a data source for the project. This specific API will be used because of its relative ease of use in getting a quick check on the current or projected weather conditions using only one API call, rather than the National Weather Service API[9] and its two calls required to get a forecast. Leveraging the OpenWeatherMap API also better equips the app for international use, even though the current scope of the app focuses on users in the United States.

6 Testing

Our app will be developed using test driven development. 1-2 individuals in our group will be creating generic tests that our app will need to pass in order for it to work. Using this method of testing, we can not only iron out the bugs easily and efficiently, but keep our workflow on track and at a steady pace of success. For our test driven development we will be using JUnit testing. Because Kotlin and java are so close in syntax and functionality, we thought that using JUnit testing would be the most beneficial in terms of time to create the tests and competency of these tests. Lastly, as we develop this application and see the need for more or revised tests, we can easily go back and rework or create new JUnit tests as we see fit.

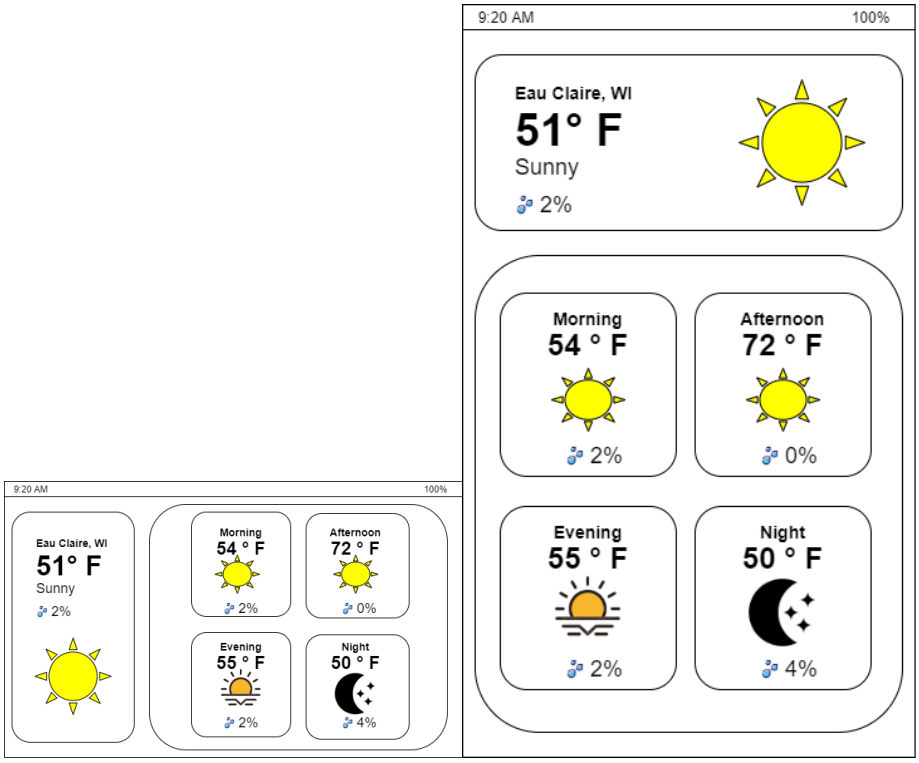
7 Privacy and Permissions

This application revolves around the location of the user. The user will be prompted to allow or deny access to their location. If the user chooses to allow the application to access their location, it will be used to show the weather in the

[2] https://www.weatherbug.com/
[3] https://www.accuweather.com/
[4] https://www.wunderground.com/
[5] https://weather.com/
[6] https://github.com/WangDaYeeeeee/GeometricWeather
[7] https://github.com/martykan/forecastie
[8] https://openweathermap.org/
[9] https://www.weather.gov/documentation/services-web-api

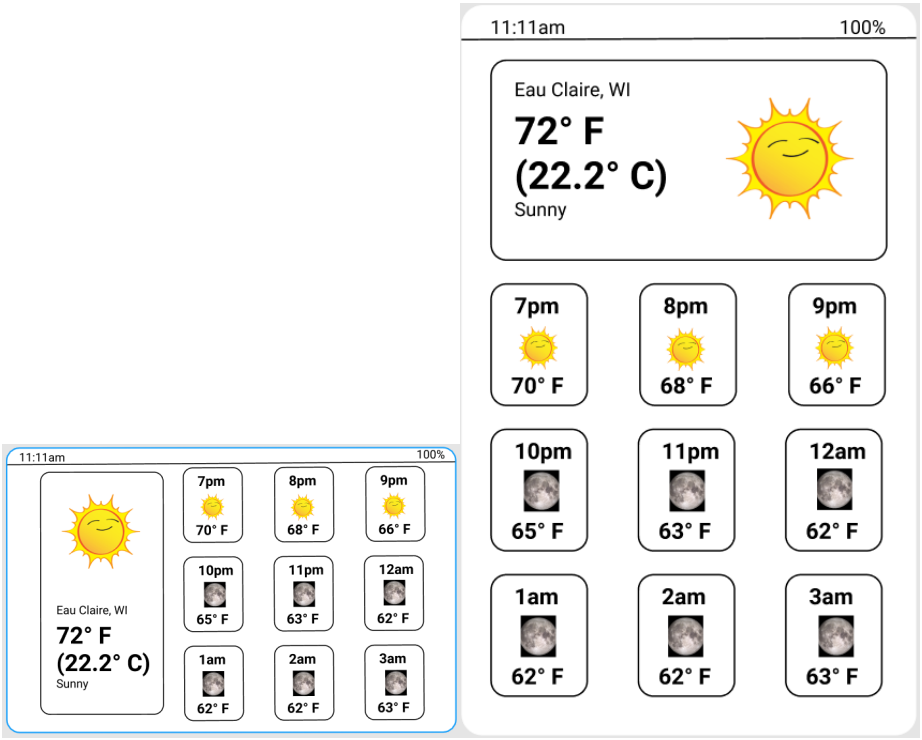
user's specific location. If the user chooses to deny access to location services, they have the option to search for a location to see weather information for instead. The location will be used to show daily, hourly, and weekly weather predictions. It will also be used to show suggested activities depending on the weather. Using the location, the user can search for an activity and the application would output the days that would be best for the activity. For this application, a privacy policy will be created and made available for the user to review.

8 Layouts



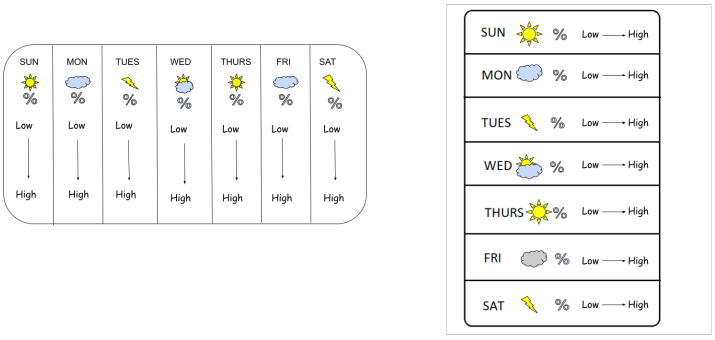
(a) Landscape Daily Weather Layout (b) Portrait Daily Weather Layout

Figure 2



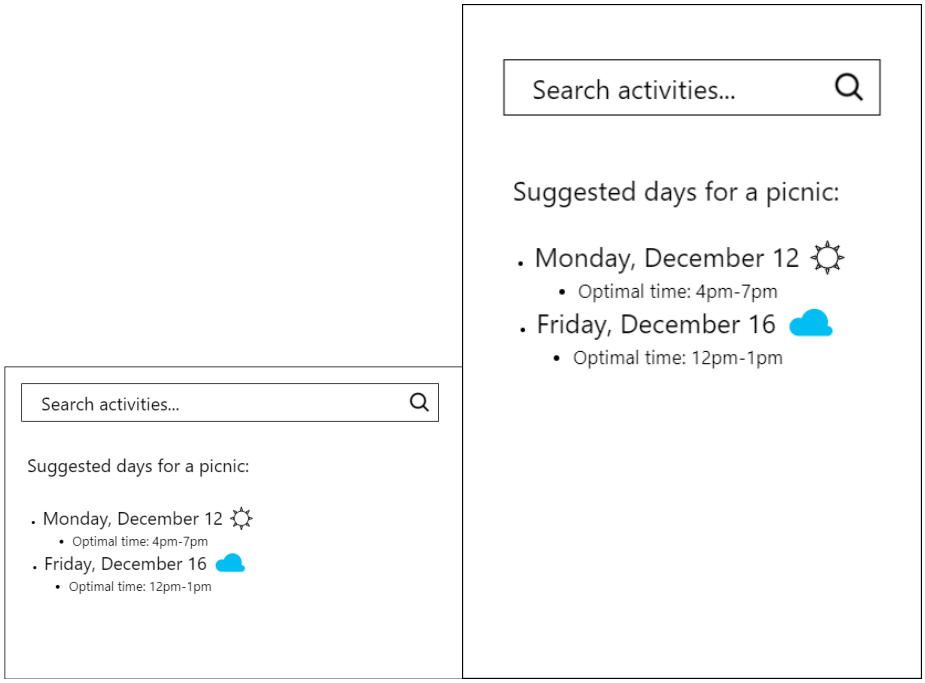
(a) Hourly Weather Layout Landscape (b) Hourly Weather Layout Portrait

Figure 3



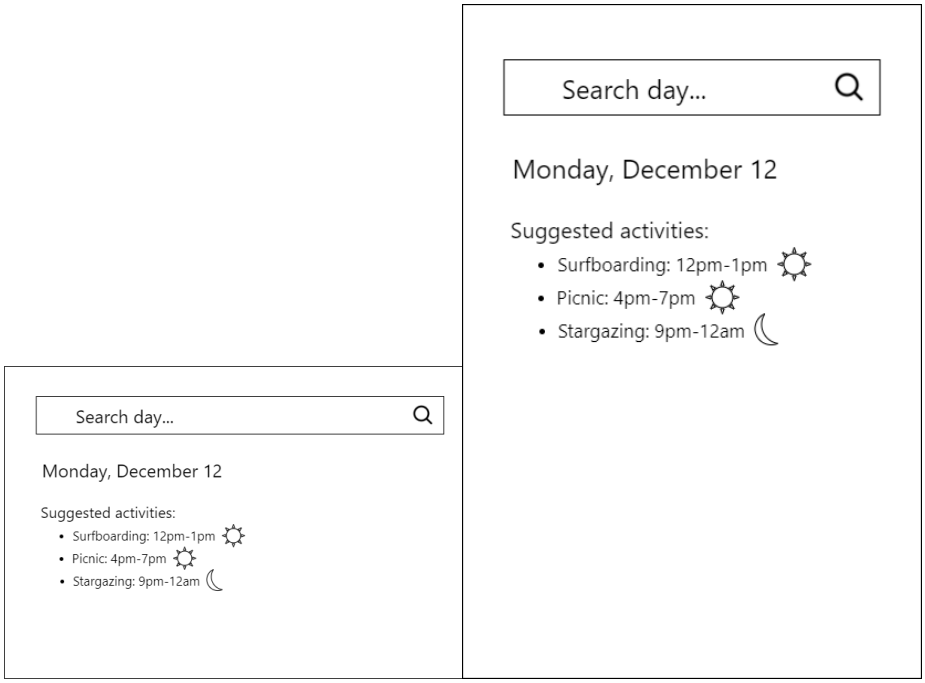
(a) Landscape Weekly Weather Layout (b) Portrait Weekly Weather Layout

Figure 4



(a) Time Suggestion by Activity - Landscape (b) Time Suggestion by Activity - Portrait

Figure 5



(a) Activity Suggestion by Day - Landscape (b) Activity Suggestion by Day - Portrait

Figure 6

9 Gantt Chart