Coding Exercise: Mobile

Safe-to-Fly Android Weather App

Quickly determining if the weather in the field is suitable for a drone flight is important to commercial and hobbyist drone operators. For that reason, we're using the "stoplight protocol", a visual indicator of how suitable the weather is via red, yellow, and green colors.

Use the latest Android language (Kotlin preferred) to write an application to be run in native Android that uses the user's current location to find their local weather data through the DarkSky api (https://darksky.net/dev), then give a simple indication of the level of risk involved due to the current weather.

The user should get a visual cue, by way of a green, yellow, or red indicator, of whether the current local weather is suitable, risky, or not recommended for the flying of a drone. The app should display the important aspects of the local weather shown in the mockup below.

We anticipate spending only a few hours on this exercise. Please be prepared to talk about your code, show how it works, and discuss any architecture decisions you made, and how testing is performed.

User Stories

As a Drone Pilot, I want to determine if the weather conditions are suitable for flying so that I can ensure safe operations of my mission.

Acceptance Criteria:

1. Red/Yellow/Green should be shown for each category.
2. An overall Red/Yellow/Green should be shown as a combination of the below statuses.
3. The most severe category should be shown if there are multiple items that may match. For example, if an area matches both yellow and red, red should be shown.

4. The following Weather conditions should be used to determine the red/yellow/green status:

Visibility:
- > 3 statute miles | Green
- = 3 statute miles | Yellow
- < 3 statute miles | Red

Cloud Ceiling:
- > 900 ft AGL (Above Ground Level) | Green
- = 900 ft AGL | Yellow
- < 900 ft AGL | Red

Time of Day:
- After sunrise and greater than 1 hour from sunset | Green
- Less than 1 hour before sunset | Yellow
- 30 min before sunrise to sunrise | Yellow
- Less than 30 minutes after sunset | Yellow
- 30 min after sunset and 30 minutes before sunrise | Red

Wind Speed:
- <= 10 mph | Green
- > 10 and <=20 | Yellow
- > 20 | Red

Temperature:
- > 50 and <= 80 F | Green
- >= 37 and <= 50 F | Yellow
- > 80 and < 95 F | Yellow
- < 37 F | Red
- >= 95 F | Red

Precipitation:
- <= .33 | Green
- > .33 and <= .66 | Yellow
- > .66 | Red

Attached is a reference UI mock-up of a possible end product. Your final production does not need to look as polished.

Camas, 98607 WA

2m ago from Dark Sky

55°F
Thunderstorms
50%

15 MPH
SW (220°)
Gusts: 25 MPH

500’ AGL
50% cloud cover

3 SM
Visibility

0:21
Daylight remaining

6:22 am	**8:13 pm**
Sunrise	Sunset