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Part 1:

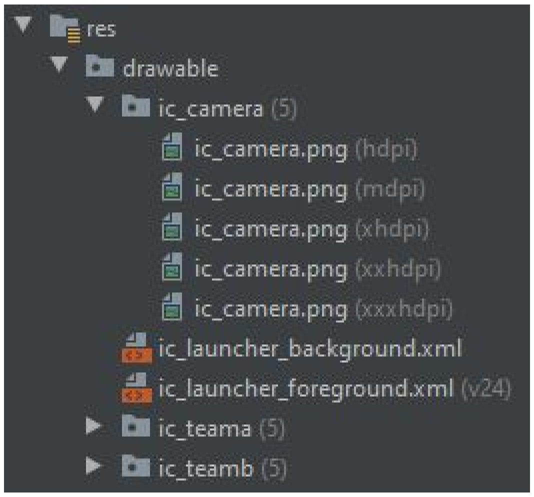
Design Rationale:

For this part, the conversion from what I had in part 4 to what I have here was simple. All I did was add a camera icon button next to the team icon. The camera button was created with the icon creator the professor referred to in her Week 4 videos.

Reflection:

In this chapter I was able to learn about utilizing implicit intents to leverage existing functionality in other apps. In addition, I learned how to ensure that pictures are scaled and oriented correctly using bitmap manipulation and the ExifInterface.

Screenshots:



```
res
  drawable
    ic_camera (5)
      ic_camera.png (hdpi)
      ic_camera.png (mdpi)
      ic_camera.png (xhdpi)
      ic_camera.png (xxhdpi)
      ic_camera.png (xxxhdpi)
    ic_launcher_background.xml
    ic_launcher_foreground.xml (v24)
    ic_teama (5)
    ic_teamb (5)
```

Figure 1-1: Relative Drawables Directory (Camera Icon)

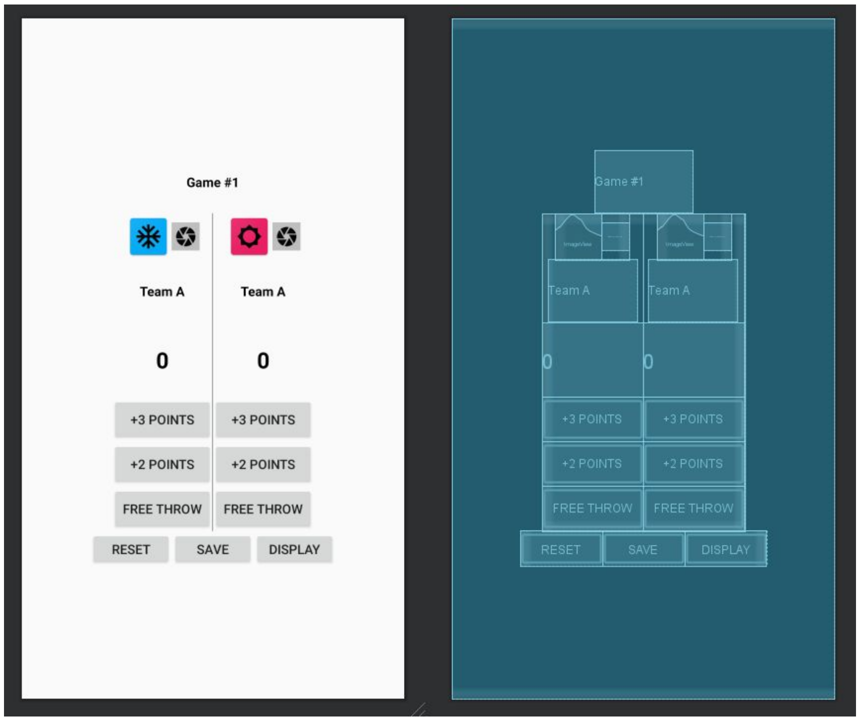
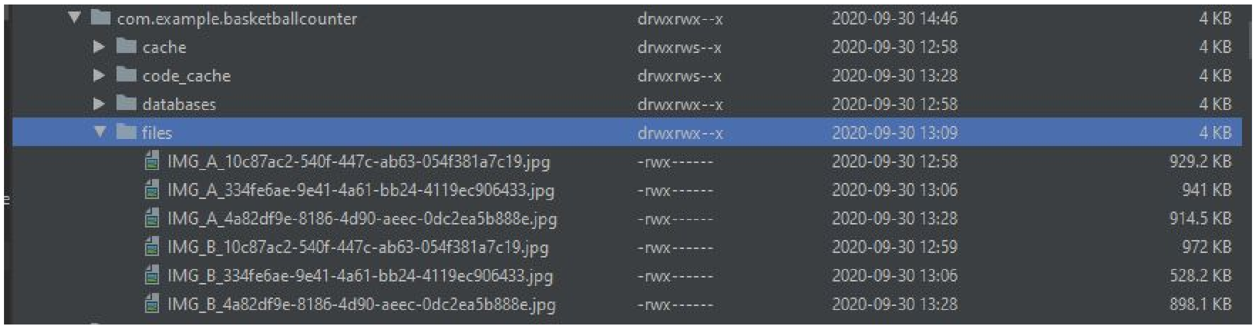


Figure 1-2: Part 1 Layout



```
▼ com.example.basketballcounter                    drwxrwx--x   2020-09-30 14:46      4 KB
  ▶ cache                                          drwxrws--x   2020-09-30 12:58      4 KB
  ▶ code_cache                                     drwxrws--x   2020-09-30 13:28      4 KB
  ▶ databases                                      drwxrwx--x   2020-09-30 12:58      4 KB
  ▼ files                                          drwxrwx--x   2020-09-30 13:09      4 KB
      IMG_A_10c87ac2-540f-447c-ab63-054f381a7c19.jpg   -rwx------   2020-09-30 12:58  929.2 KB
      IMG_A_334fe6ae-9e41-4a61-bb24-4119ec906433.jpg   -rwx------   2020-09-30 13:06    941 KB
      IMG_A_4a82df9e-8186-4d90-aeec-0dc2ea5b888e.jpg   -rwx------   2020-09-30 13:28  914.5 KB
      IMG_B_10c87ac2-540f-447c-ab63-054f381a7c19.jpg   -rwx------   2020-09-30 12:59    972 KB
      IMG_B_334fe6ae-9e41-4a61-bb24-4119ec906433.jpg   -rwx------   2020-09-30 13:06  528.2 KB
      IMG_B_4a82df9e-8186-4d90-aeec-0dc2ea5b888e.jpg   -rwx------   2020-09-30 13:28  898.1 KB
```

Figure 1-3: Device File Explorer with Full-sized Pictures

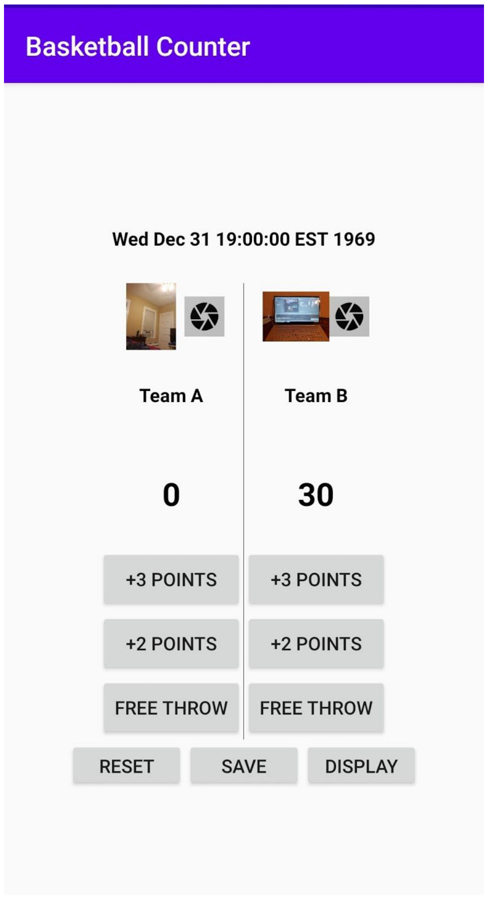


Figure 1-4: Game Fragment with Properly Oriented Photos

Part 2:

Design Rationale:

For this section, the only change in design I included was a wide microphone button below the logo and camera icons. The large button includes a microphone icon which was created with the same free program used to create the camera button for part 1.

SoundPool Integration:

To incorporate the SoundPool, I took the steps the textbook recommended. First, I created a Sound class to hold an id, path, and name of a sound. I then made a SoundManager class which includes a list of sounds and a SoundPool object. When the manager is initialized, it attempts to grab all sounds it can from the assets folder. For every sound it can grab, it adds the sound to the running list of sounds and loads it into the SoundPool object. Finally, when the user hits a microphone button, we tell the SoundManager to call the SoundPool to play the sound.

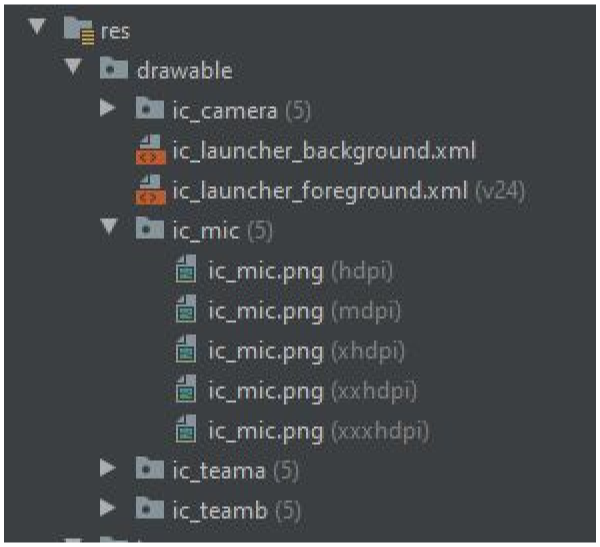
MediaPlayer Integration:

To integrate the MediaPlayer, I took three steps. First, I moved one of the sound files involved in the SoundPool to the res/raw directory. Second, in onCreate(), I created a MediaPlayer and pointed it to the res/raw sound file. And third, when the user hits the Team A microphone button, I make a call to mediaPlayer.start().

Reflection:

In this section I was able to learn how to use SoundPools and MediaPlayers to play .wav files stored in my app's res/raw and asset directories. I also learned about the differences in both the creation and functionality of SoundPools and MediaPlayers, and where you may want to use one over the other.

Screenshots:



```
▼ res
    ▼ drawable
        ▶ ic_camera (5)
          ic_launcher_background.xml
          ic_launcher_foreground.xml (v24)
        ▼ ic_mic (5)
              ic_mic.png (hdpi)
              ic_mic.png (mdpi)
              ic_mic.png (xhdpi)
              ic_mic.png (xxhdpi)
              ic_mic.png (xxxhdpi)
        ▶ ic_teama (5)
        ▶ ic_teamb (5)
```

Figure 2-1: Drawable Resources (Microphone Icon)

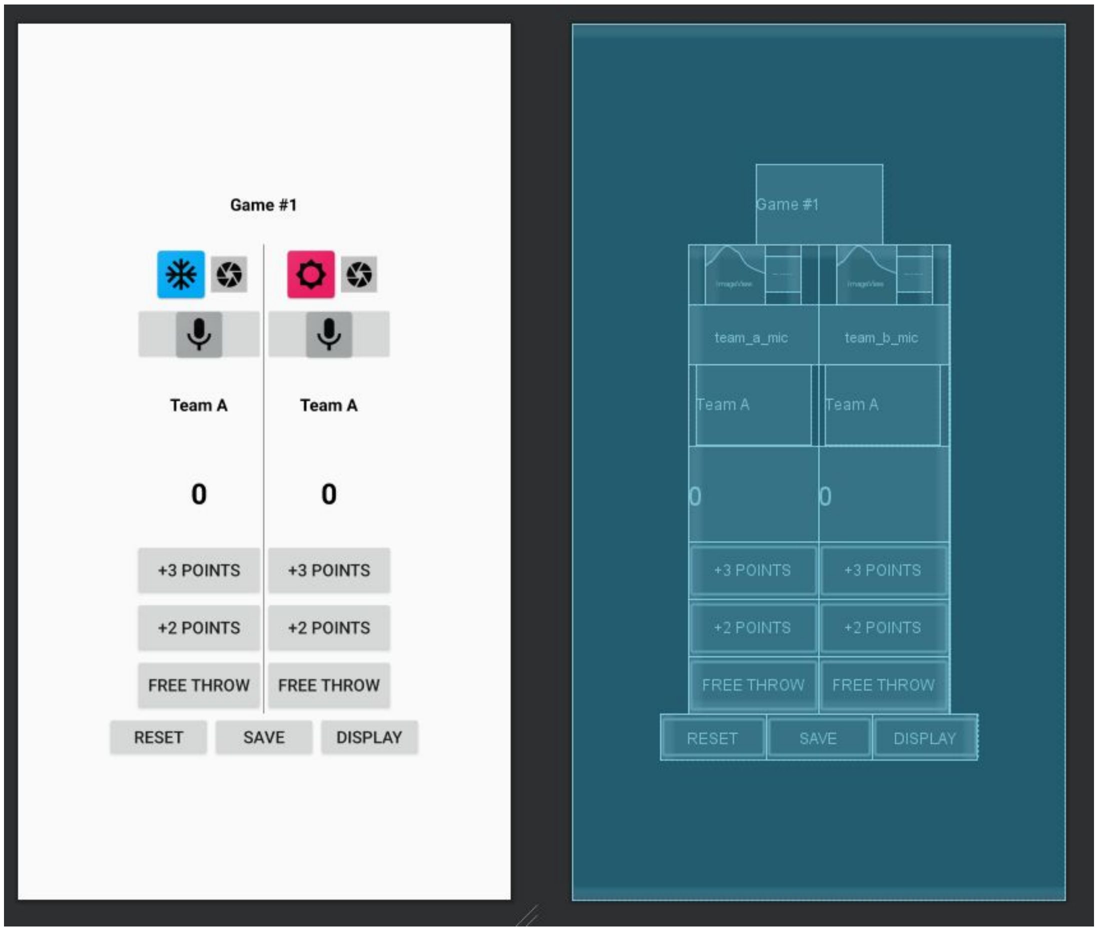


Figure 2-2: Layout Design

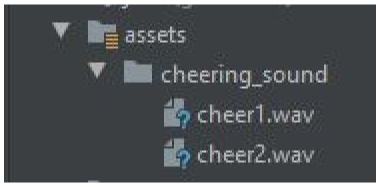


Figure 2-3: SoundPool Assets

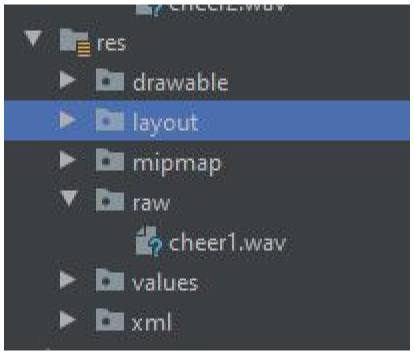


Figure 2-4: MediaPlayer Raw Files

Part 3:

Design Rationale:

For this part, I added a TextView above the team logos that displays the current weather.

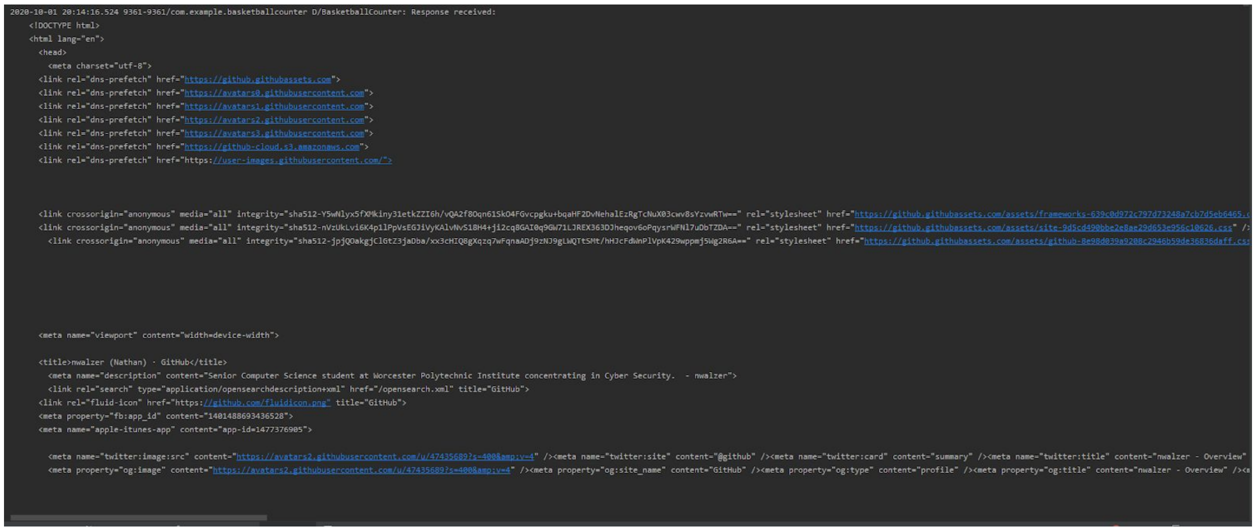
Data Class Design:

Before I made the data classes I had to identify which fields were necessary to keep. I decided on keeping the “name” and “temp” fields from the API response. To start, I made a data class called WeatherResponse, it includes a name field and a main field. The main field is the key used to identify the temp. The main field was of type Main, which is another data class I created that has one property: a double called temp.

Reflection:

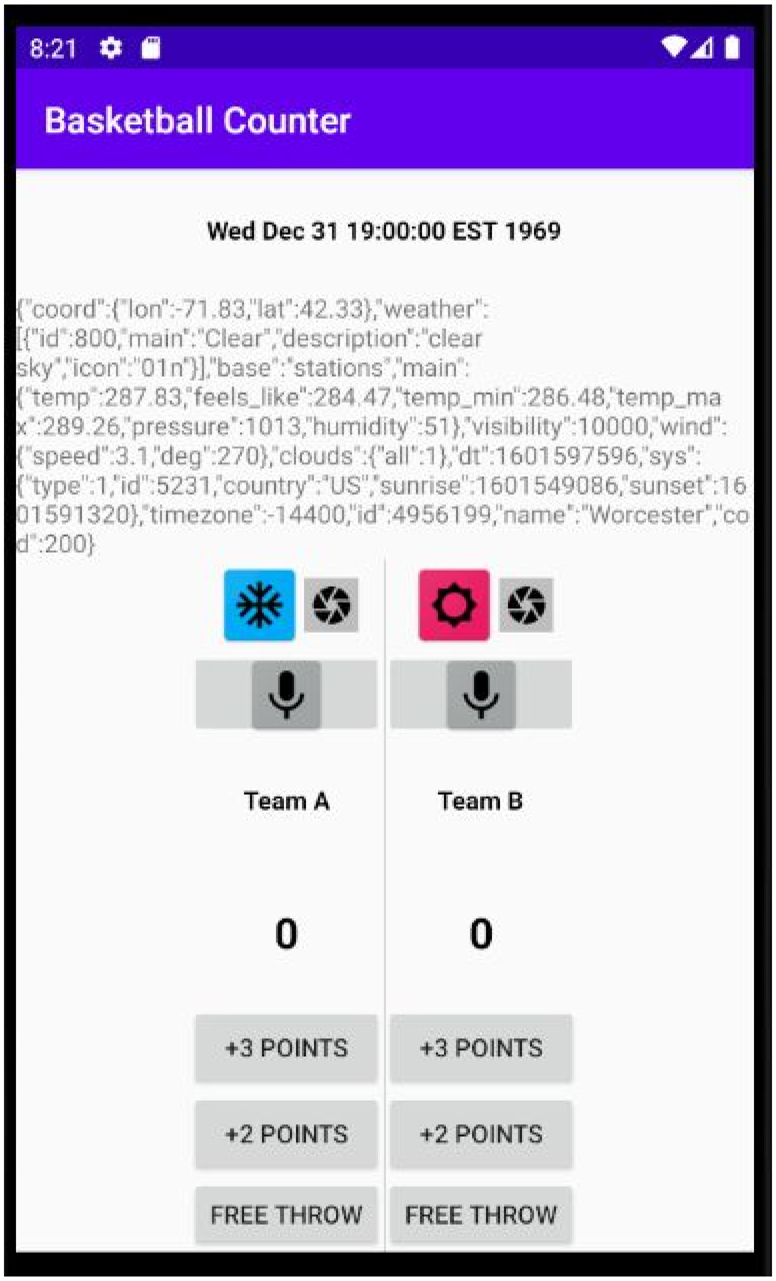
In this section, I learned how to use Retrofit to make simply HTTP requests. I also learned how to use GSON to parse JSON objects into data classes.

Screenshots:



```
2020-10-01 20:14:16.524 9361-9361/com.example.basketballcounter D/BasketballCounter: Response received:
    <!DOCTYPE html>
    <html lang="en">
      <head>
        <meta charset="utf-8">
      <link rel="dns-prefetch" href="https://github.githubassets.com">
      <link rel="dns-prefetch" href="https://avatars0.githubusercontent.com">
      <link rel="dns-prefetch" href="https://avatars1.githubusercontent.com">
      <link rel="dns-prefetch" href="https://avatars2.githubusercontent.com">
      <link rel="dns-prefetch" href="https://avatars3.githubusercontent.com">
      <link rel="dns-prefetch" href="https://github-cloud.s3.amazonaws.com">
      <link rel="dns-prefetch" href="https://user-images.githubusercontent.com/">



      <link crossorigin="anonymous" media="all" integrity="sha512-Y5wNlyx5fXMkiny31etkZZI6h/vQA2f8Oqn61SkO4FGvcpgku+bqaHF2DvNehalEzRgTcNuX03cwv8sYzvwRTw==" rel="stylesheet" href="https://github.githubassets.com/assets/frameworks-639c0d972c797d73248a7cb7d5eb6465.c
      <link crossorigin="anonymous" media="all" integrity="sha512-nVzUkLvi6K4p1lPpVsEGJiVyKAlvNvS18H4+ji2cq8GAI0q9GW71LJREX363DJheqov6oPqysrWFNl7uDbTZDA==" rel="stylesheet" href="https://github.githubassets.com/assets/site-9d5cd490bbe2e8ae29d653e956c10626.css" />
        <link crossorigin="anonymous" media="all" integrity="sha512-jpjQOakgjClGtZ3jaDba/xx3cHIQ8gXqzq7wFqnaADj9zNJ9gLWQTtSMt/hHJcFdWnPlVpK429wppmj5Wg2R6A==" rel="stylesheet" href="https://github.githubassets.com/assets/github-8e98d039a9208c2946b59de36836daff.cs





      <meta name="viewport" content="width=device-width">

      <title>nwalzer (Nathan) · GitHub</title>
        <meta name="description" content="Senior Computer Science student at Worcester Polytechnic Institute concentrating in Cyber Security.  - nwalzer">
        <link rel="search" type="application/opensearchdescription+xml" href="/opensearch.xml" title="GitHub">
      <link rel="fluid-icon" href="https://github.com/fluidicon.png" title="GitHub">
      <meta property="fb:app_id" content="1401488693436528">
      <meta name="apple-itunes-app" content="app-id=1477376905">

        <meta name="twitter:image:src" content="https://avatars2.githubusercontent.com/u/47435689?s=400&amp;v=4" /><meta name="twitter:site" content="@github" /><meta name="twitter:card" content="summary" /><meta name="twitter:title" content="nwalzer - Overview"
        <meta property="og:image" content="https://avatars2.githubusercontent.com/u/47435689?s=400&amp;v=4" /><meta property="og:site_name" content="GitHub" /><meta property="og:type" content="profile" /><meta property="og:title" content="nwalzer - Overview" /><m
```

Figure 3-1: Response body from www.github.com/nwalzer



Wed Dec 31 19:00:00 EST 1969

```
{"coord":{"lon":-71.83,"lat":42.33},"weather":
[{"id":800,"main":"Clear","description":"clear
sky","icon":"01n"}],"base":"stations","main":
{"temp":287.83,"feels_like":284.47,"temp_min":286.48,"temp_ma
x":289.26,"pressure":1013,"humidity":51},"visibility":10000,"wind":
{"speed":3.1,"deg":270},"clouds":{"all":1},"dt":1601597596,"sys":
{"type":1,"id":5231,"country":"US","sunrise":1601549086,"sunset":16
01591320},"timezone":-14400,"id":4956199,"name":"Worcester","co
d":200}
```

Figure 3-2: Unfiltered Weather API Response

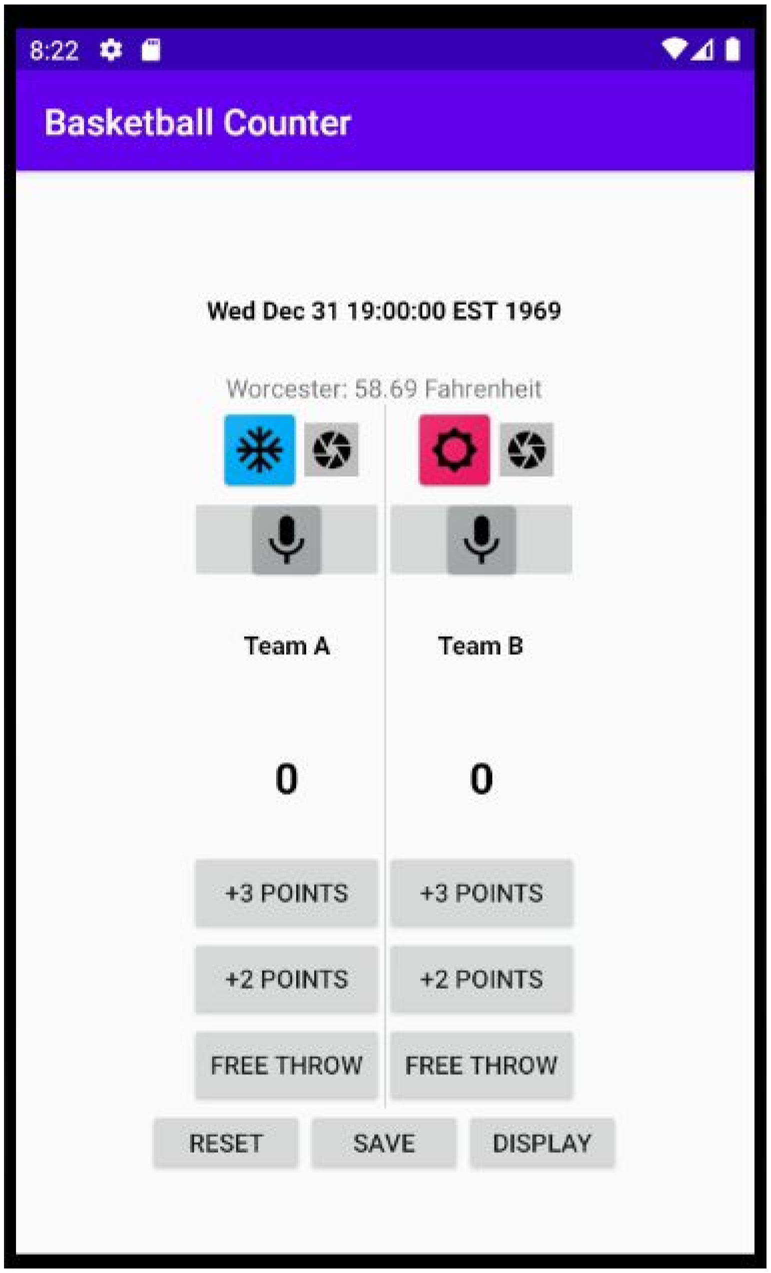


Figure 3-3: Filtered Weather API Response