

IN GOD WE TRUST
MOBILE PROGRAMMING COURSE
1398-1399 SECOND SEMESTER

HW01

Weather Forecasting Android Application

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1 Introduction

This android application is a simple application to get weather statue for next seven days. You can find your location by searching or using your mobile location.

This application target SDK version is 29 and it's minimum SDK version is 16.

This app needs fallowing permissions.

```
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
```

Figure 1: App's permissions



2 The app's features and user guide

2.1 Application Review

First of all, when you open the main activity, it checks your internet connection status. If you are disconnected, it will run no internet mode.

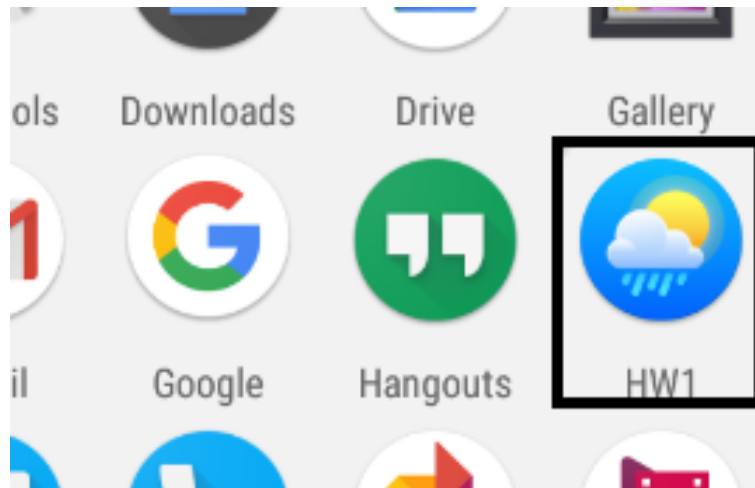


Figure 2: App's icon

Then in no internet mode it toasts a message and runs the second activity and it will use the previous data of the user. Every time we call onPause in second activity, we will save the json data on file so that we can access our last data in disconnected mode.

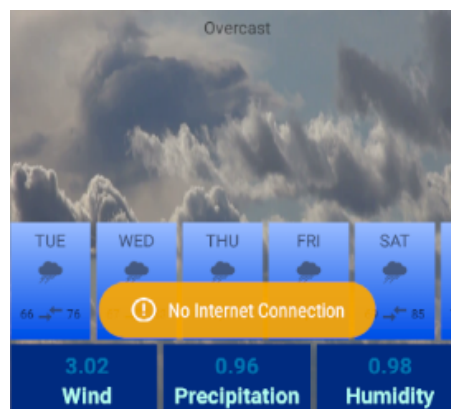


Figure 3: Show previous data in no internet mode



When we have internet, you should first choose your location. You can do this in two ways. First you can search a location, it will search it and show some results. Then by choosing one of them, the app will get data and show it to user. You can always come to first page and search another location. Check the app's APIs in resource section.

You can also get your location just by clicking on navigation icon. The important thing is that you should give location permission to the app. If you don't give it the permission, then the app will toast an error and wait till you give it the permission or choose your location by searching.

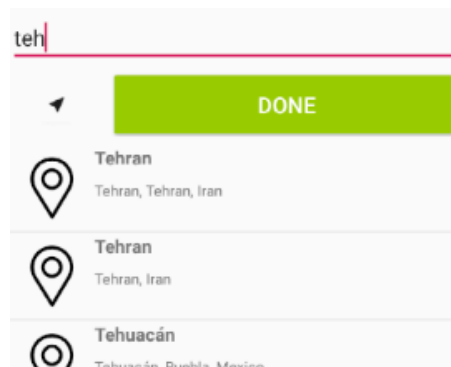


Figure 4: Search a location in the first page



2.2 First page implementation

The first page layout contains a progress bar that appears after pressing the search button or location button and during getting data of your location. The handler will get the data and show it in a recycler view.

The first page has a `ActionProcessButton` for its button. It has `LottieAnimationView` from `airbnb` for location button.

After showing the search results, then by touching one of the items you will go through the second activity.

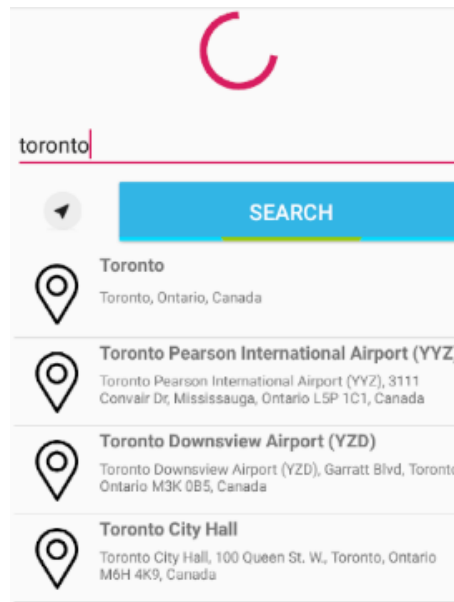


Figure 5: First page during finding the location

2.3 Second page implementation

In the second page, first we get the location coordinate and then the handler gets a data from Dark Sky API and put it in a json. By using this data we will fill the icons in the layout.

In disconnected mode it will use the data in the saved file and if it is a first user experience of the app and there is not any previous data, the application will toast a notification to the user.



Figure 6: Rainy day



Well at the bottom of the screen there is a linear view that contains data of wind(in mile per hour), perception, and humidity. The temperature and summary of that day is on the middle of the page.

There is also a scroll view that contains 8 days. It shows minimum and maximum temperature, each day's weather icon and the name of that day.

The onBindViewHolder is implemented for each adapter so by touching each of them, all data will reset. The background also refresh based on that day's weather condition.



Figure 7: Sunny day



2.4 Some other features of the application

The application contains all required features. It uses Volley to send request to the APIs and uses handler to communicate with UI Thread. It has progress bar in both pages. In all files we tried to avoid using any hard code. We also tried to handle all of the exceptions and provided a wide range of toasts for different situations.

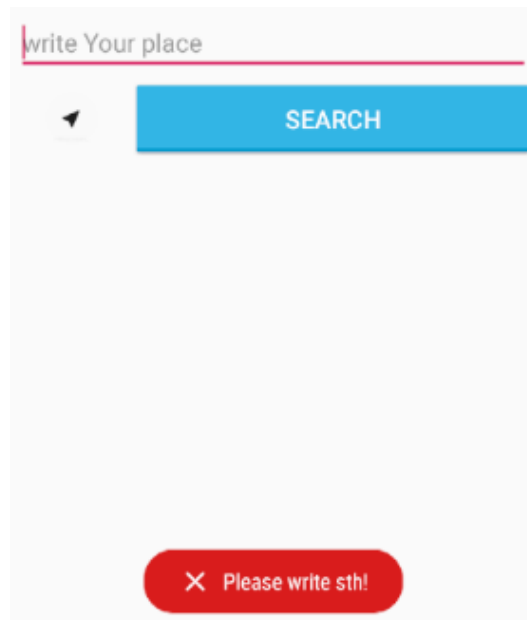


Figure 8: Toasting error when the edit text field is empty

One good feature of the application is that you can check your current location weather just by a tap.

Both pages also has good visualized items. For example in first page, when you click the search button, the soft keyboard will disappear automatically.

Another feature for example is that the back button will not work when you are not connected to the Internet.



3 Resources

This application uses following APIs to get your location and get the weather condition:

- Mapbox API
- Dark SKY API