

Phunware Interview Project Weather App

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Project Requirements

US Zip Code List

List-Detail Navigation

Zip Code Weather Detail

Add a Zip Code

Error Handling and Validation

Android API to Interact with Weather API

Zip Code List & Navigation

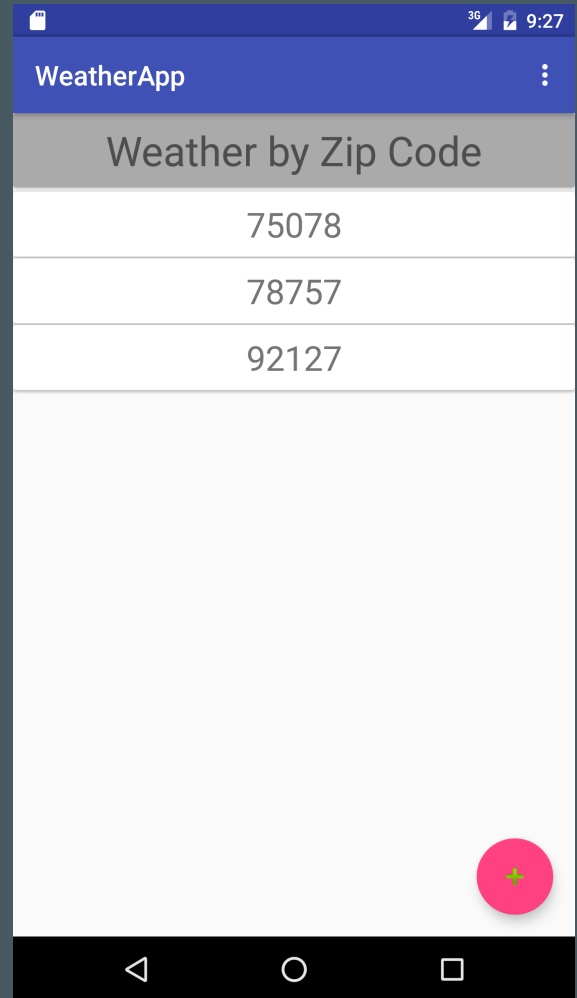
Pre-populated with at least 3 entries

Selecting zip code list item takes the user to weather detail

Sorted zip code set

List data stored in Shared Preferences
(available across app sessions)

RecyclerView



Weather Detail

Cached weather data

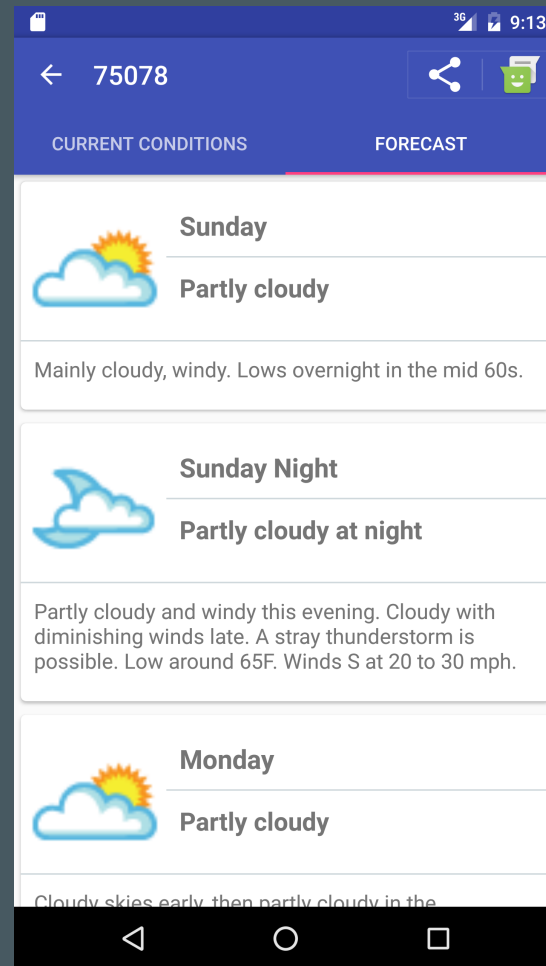
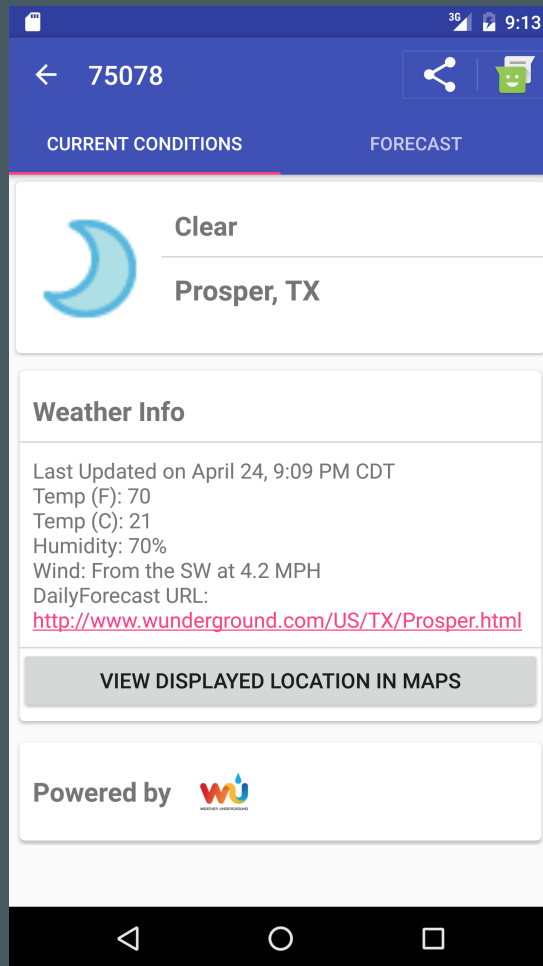
Eviction after 1 minute

Picasso loaded images

Auto web-link for url

Open location button

Weather API logo



Add a Zip Code

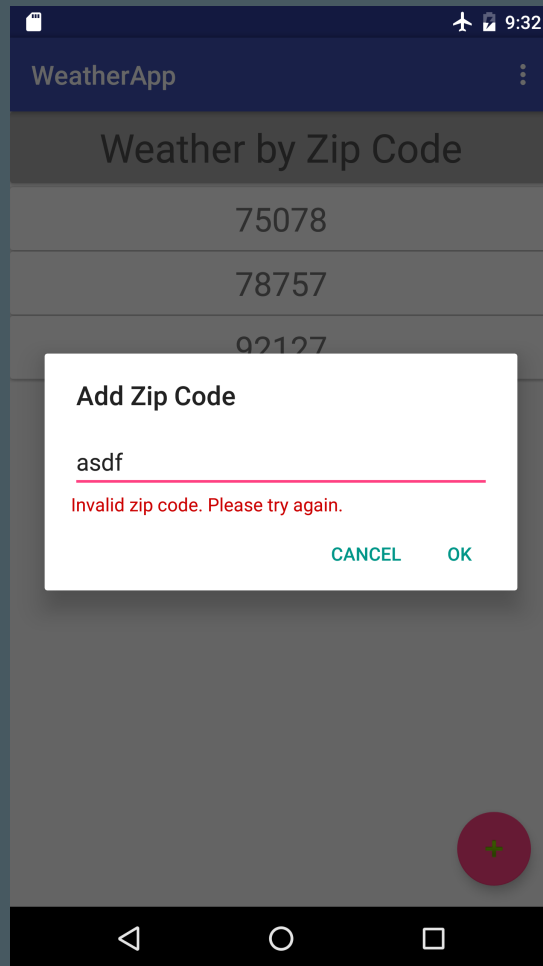
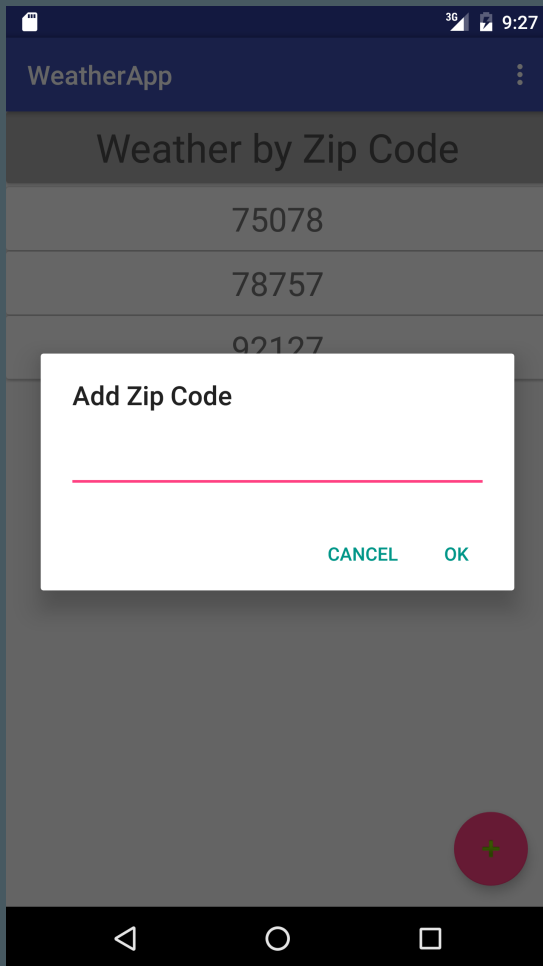
Zip code added to cache
and Shared Preferences

Observer pattern on
cache to update list

Invalid user input error

Flow to weather detail

Handles duplicates

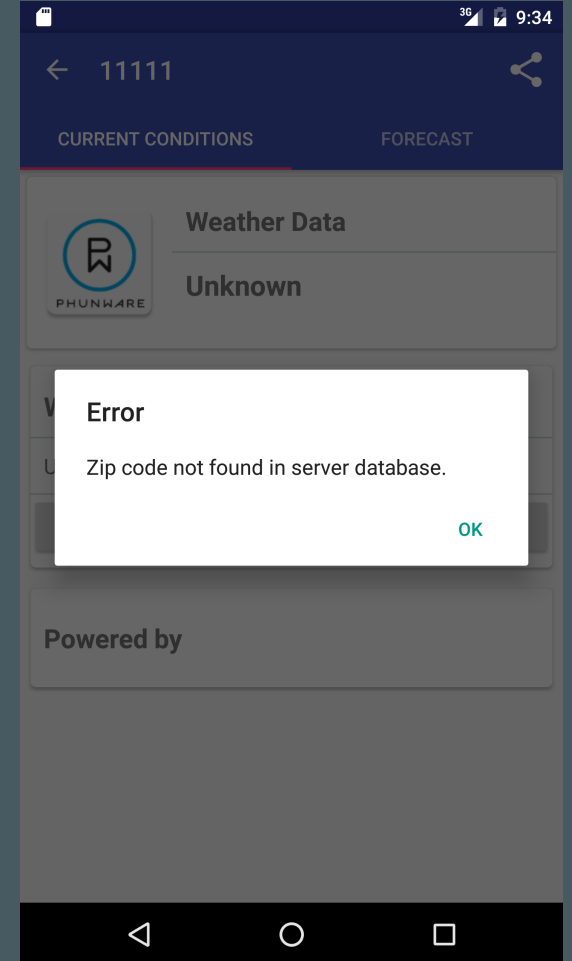
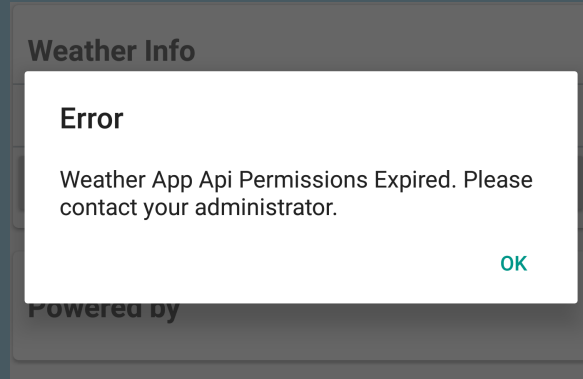
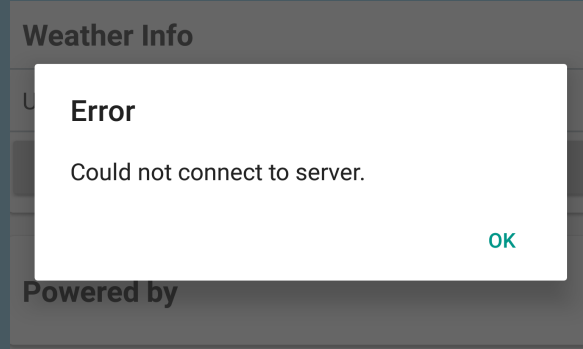


Error Handling and Validation

Connection errors

Invalid app key for
weather API

Zip code not found



Challenges

Best Practices for Background Network Calls

Best Practices for Safe UI Updates

Detail Cache Eviction

Saving Zip Code List

Creating a Generic Service API / Response Listener

Extra Features

Clear the Zip Code List Option

Weather Detail Tab Navigation

Sharing Weather Data

Phunware Icon and Splash Screen

Activity Instrumentation Tests

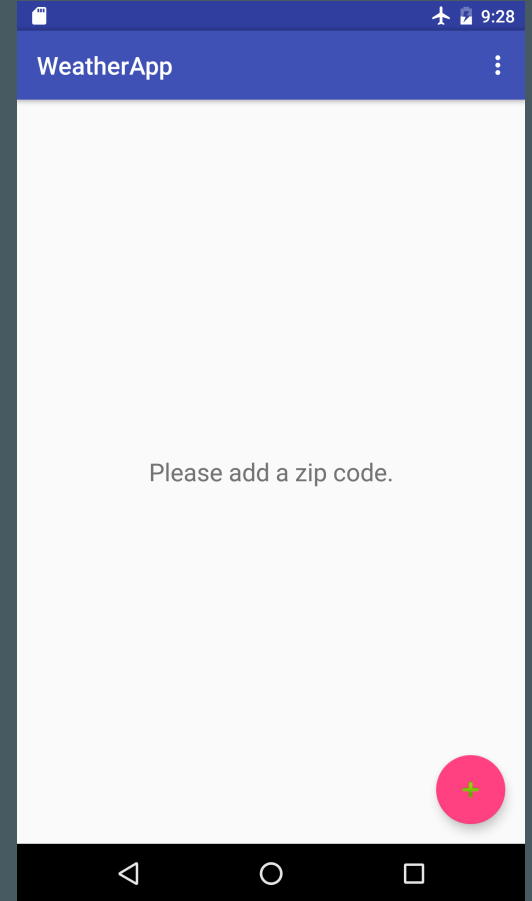
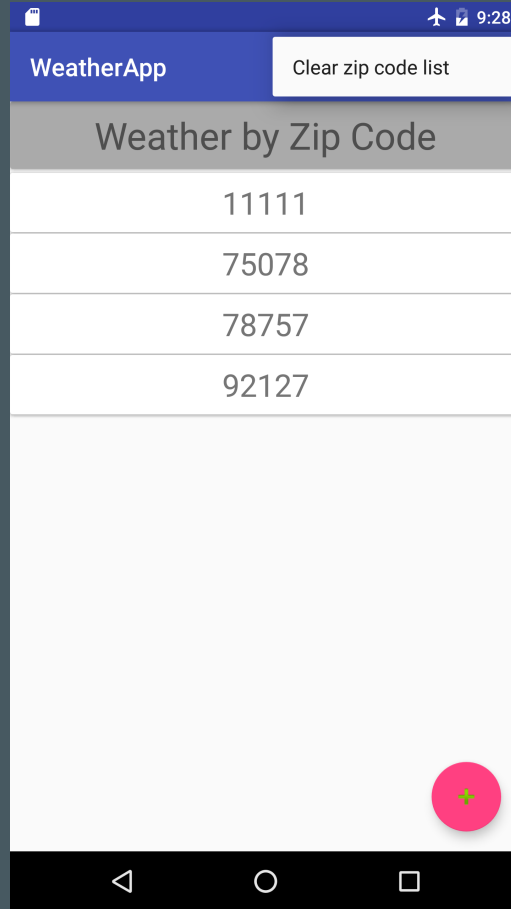
Zip Code Cache Unit Test

Clear the Zip Code List

List dropdown option

Clears Shared Preferences
and cache

Empty list view

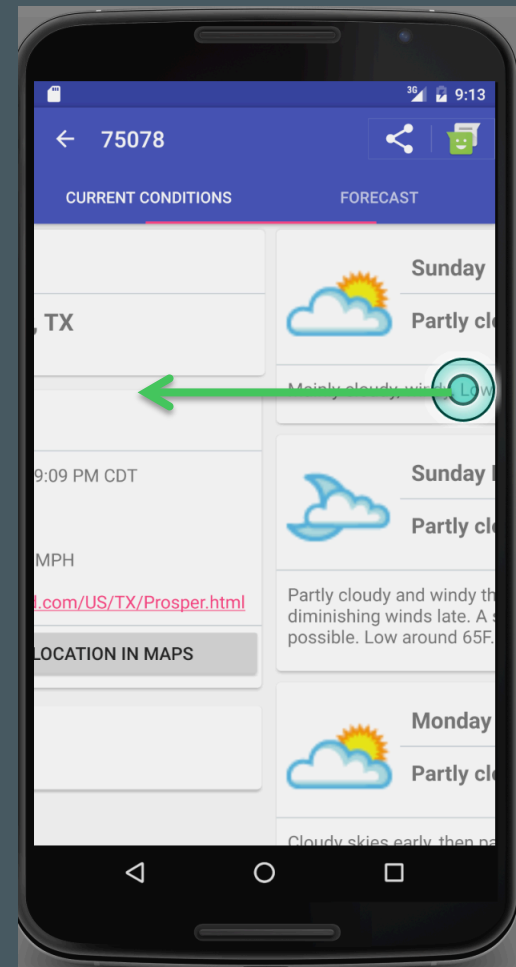
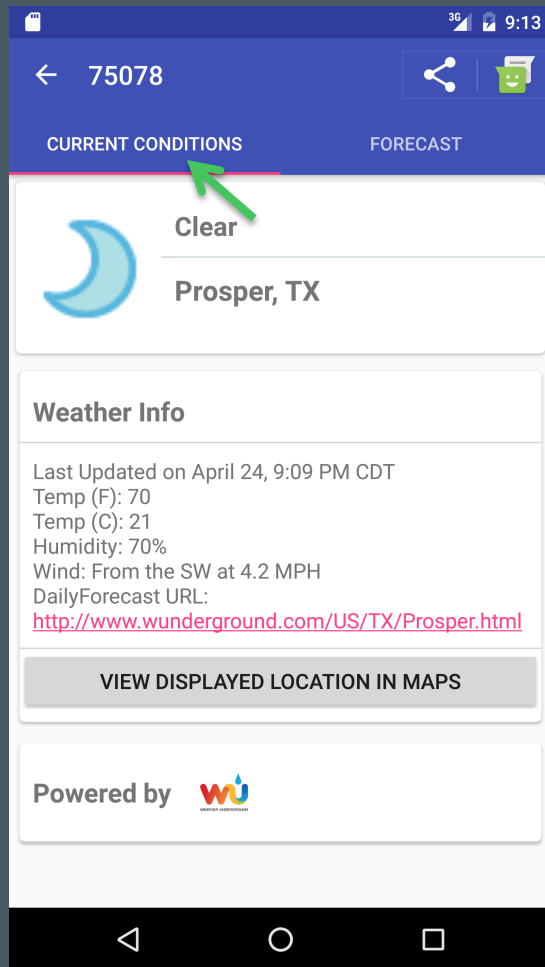


Weather Detail Tab Navigation

ViewPager + TabLayout

Switch detail options :
(select tab, swipe detail)

Data call starts when tab
is viewed

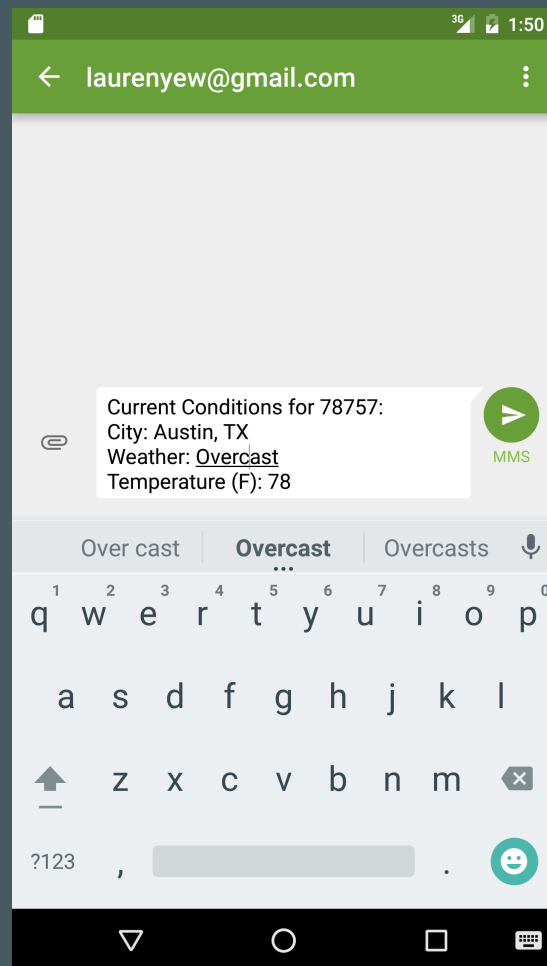
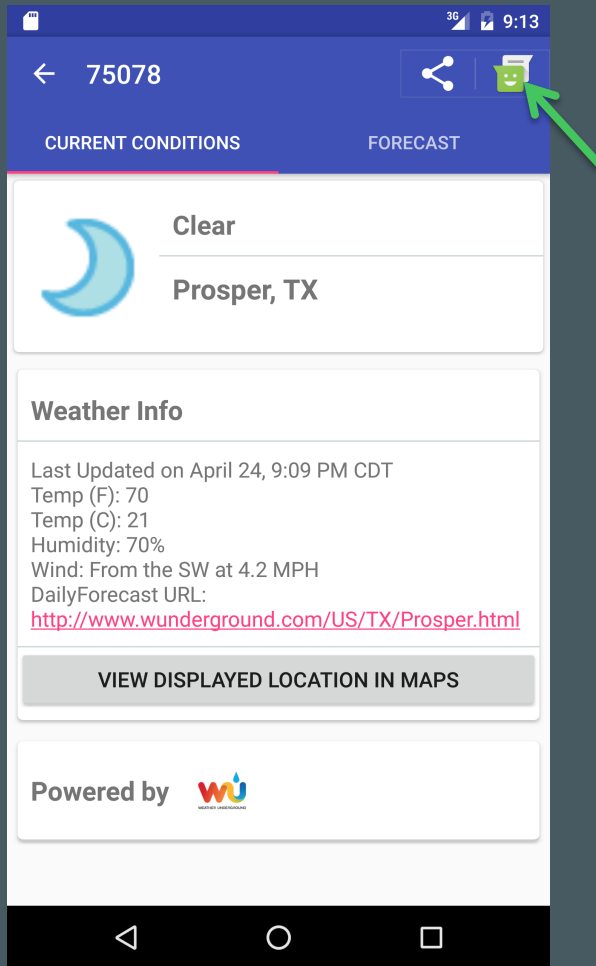


Sharing Weather Data

ShareActionProvider

Share weather detail page information

Weather API error handling

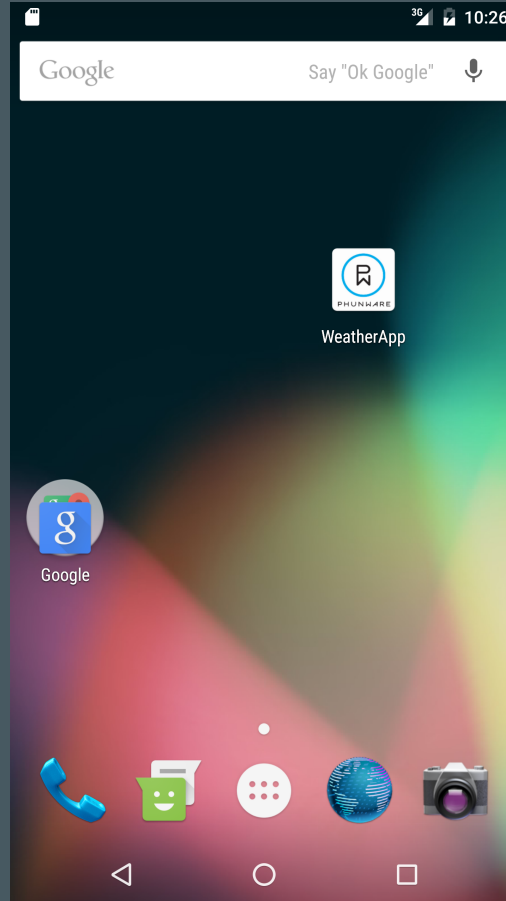


Phunware Icon & Splash Screen

Customized icon from logo

Splash screen is a suggested best practice for initial startup responsiveness

Android Developers: Keeping Your App Responsive



Future Improvements

Swipe to delete a location entry

Map/Satellite feature

Notifications on extreme conditions for subscribed zip codes

Set default location list based on phone location

Update UI look and feel (initial screens, progress indicators)

More location options (world-wide weather)

Service API unit tests / Eviction cache unit test

DEMO

Code Walkthrough

Acknowledgements

Original requirements for this project provided by Phunware, Inc.

Used weather API from Weather Underground, Inc.

<http://www.wunderground.com>

Phunware icon: <http://i.stack.imgur.com/vZvvQ.png>

Phunware splash logo:

http://cdn2.phunware.com/wp-content/uploads/2015/03/pw_logo_HD.png

