Overall Map Activity
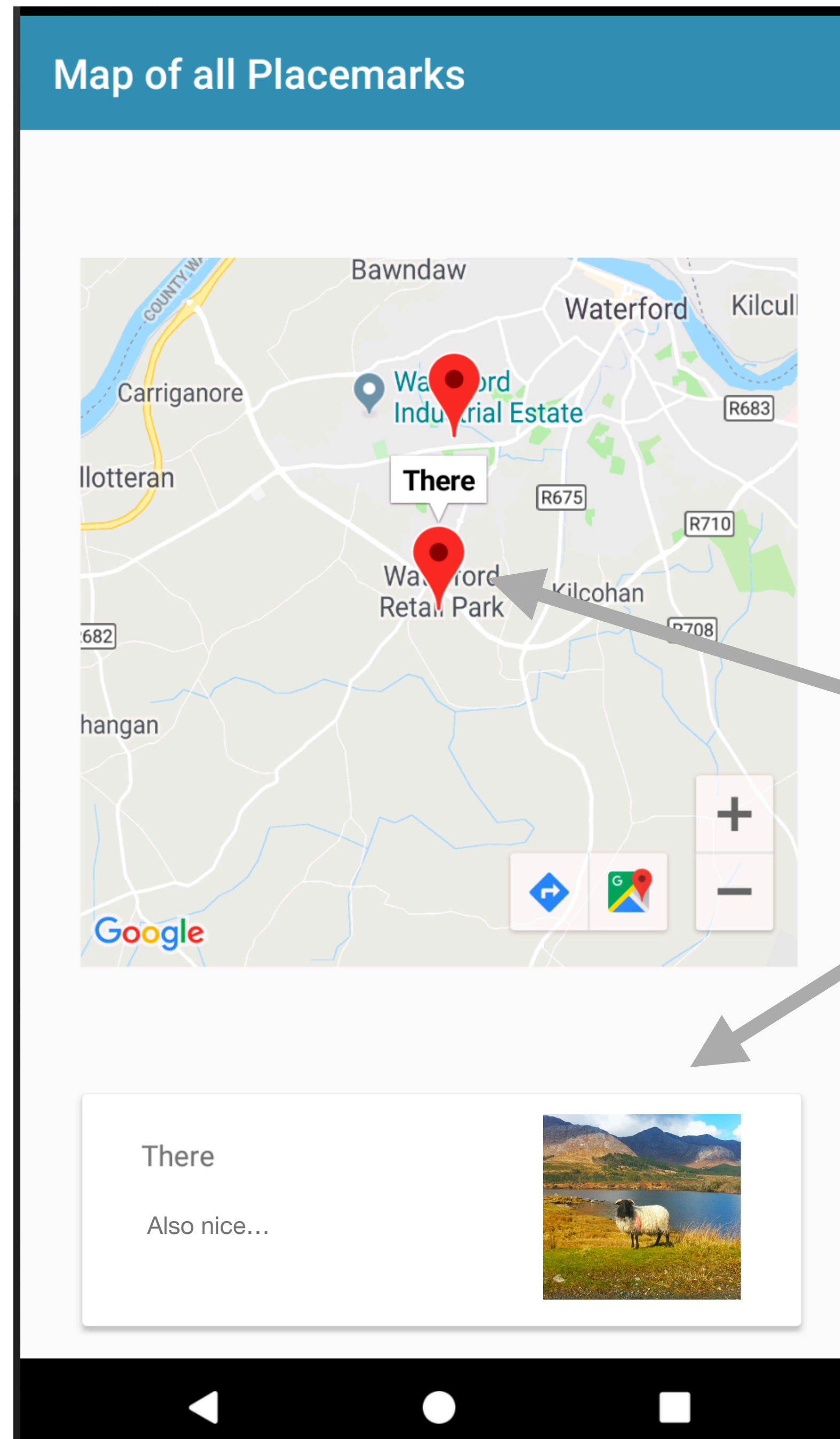

Overall Map Activity

Introduce an activity to display all placemarks on a single map.
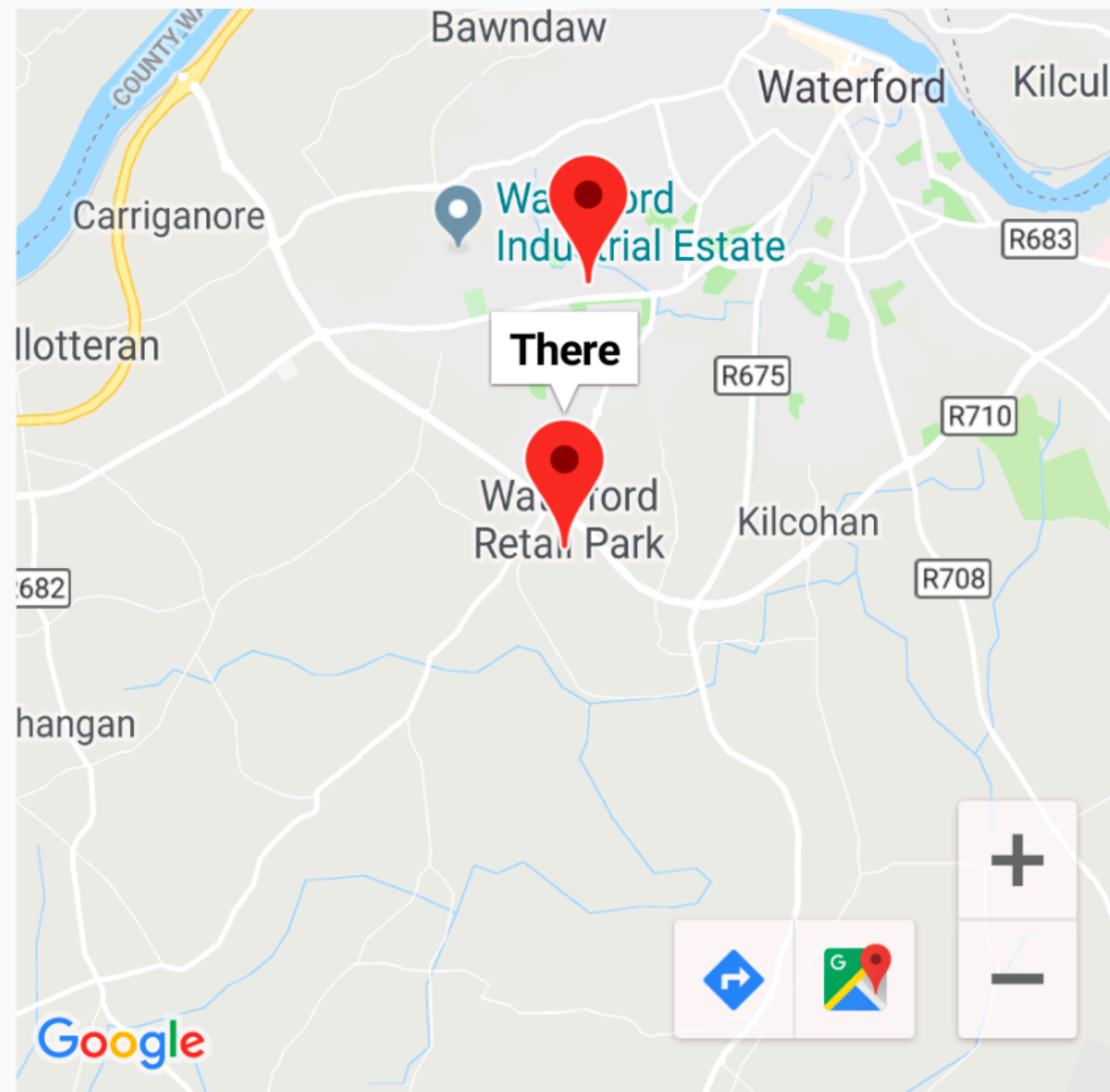
PlacemarkMapsActivity

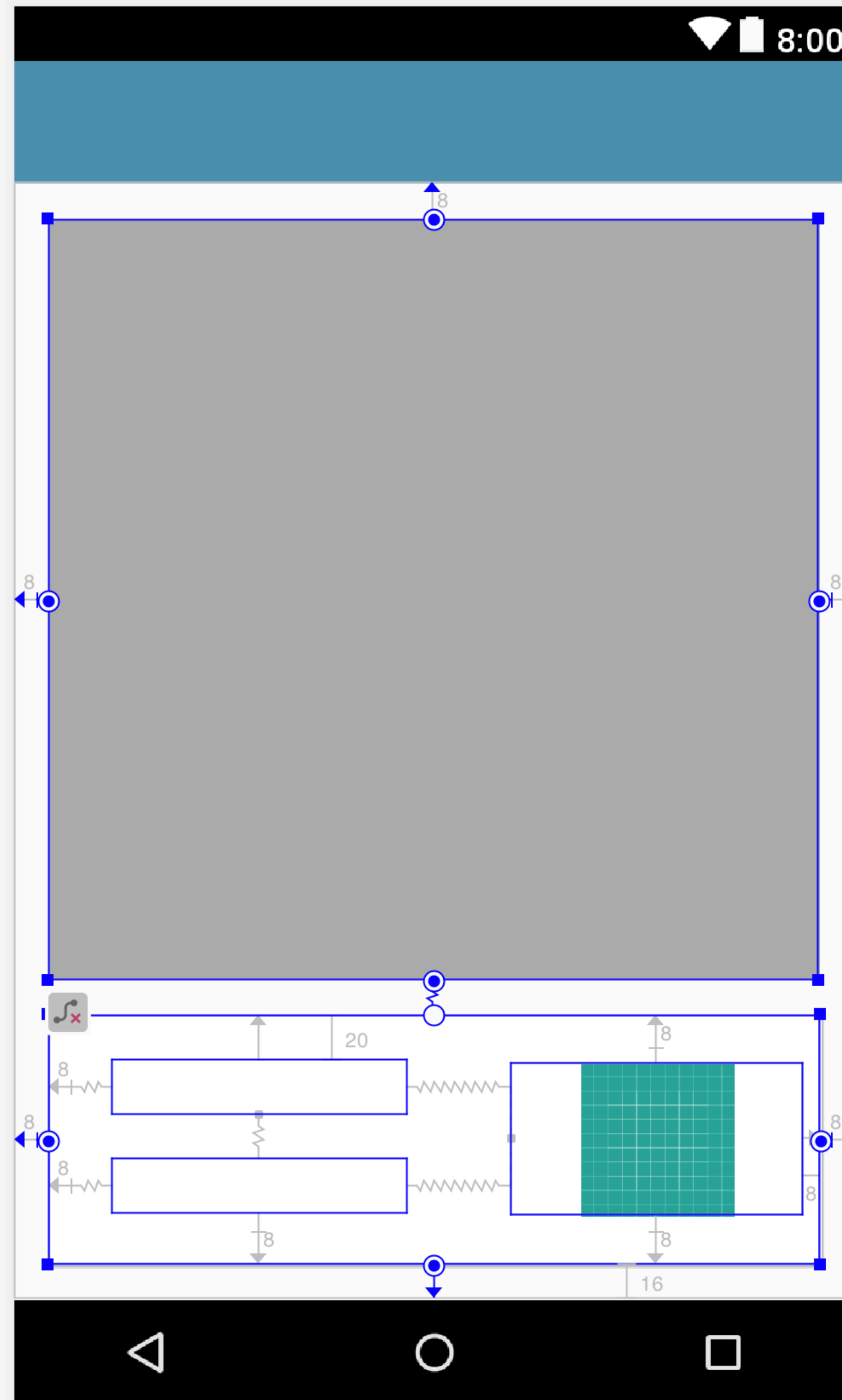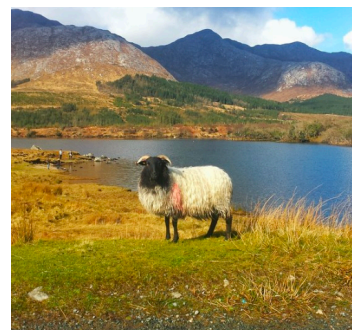Introduce new Activity to display all Placemarks on Map

Currently Selected Placemark Details

Map of all Placemarks

There
Also

activity_placemark_maps.xml
+
content_placemark_maps.xml

activity_placemark_maps.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.design.widget.CoordinatorLayout ...
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context="org.wit.placemark.activities.PlacemarkMapsActivity">

  <android.support.design.widget.AppBarLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="@color/colorAccent"
    android:fitsSystemWindows="true"
    app:elevation="0dip"
    app:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar">

    <android.support.v7.widget.Toolbar
      android:id="@+id/toolbarMaps"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      app:titleTextColor="@color/colorPrimary"/>

  </android.support.design.widget.AppBarLayout>

  <include layout="@layout/content_placemark_maps" />

</android.support.design.widget.CoordinatorLayout>
```

Layout 'Includes' an internal layout

content_placemark_maps.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout ...
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  app:layout_behavior="@string/appbar_scrolling_view_behavior"
  tools:context="org.wit.placemark.activities.PlacemarkMapsActivity"
  tools:showIn="@layout/activity_placemark_maps">

  <android.support.v7.widget.CardView
    android:id="@+id/cardView"
    android:layout_width="353dp"
    android:layout_height="114dp"
    android:layout_marginBottom="16dp"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.533"
    app:layout_constraintStart_toStartOf="parent" >

  ...

</android.support.constraint.ConstraintLayout>
```

activity_placemark_maps.xml

```
Component Tree                                    ⚙▾  ⊩←
  ▼  ▦ CoordinatorLayout
     ▼  🖿 AppBarLayout
           🖿 toolbarMaps
        ↘ <include> - @layout/content_placemark_maps
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.design.widget.CoordinatorLayout ...
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context="org.wit.placemark.activities.PlacemarkMapsActivity">

  <android.support.design.widget.AppBarLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="@color/colorAccent"
    android:fitsSystemWindows="true"
    app:elevation="0dip"
    app:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar">

    <android.support.v7.widget.Toolbar
      android:id="@+id/toolbarMaps"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      app:titleTextColor="@color/colorPrimary"/>

  </android.support.design.widget.AppBarLayout>

  <include layout="@layout/content_placemark_maps" />

</android.support.design.widget.CoordinatorLayout>
```
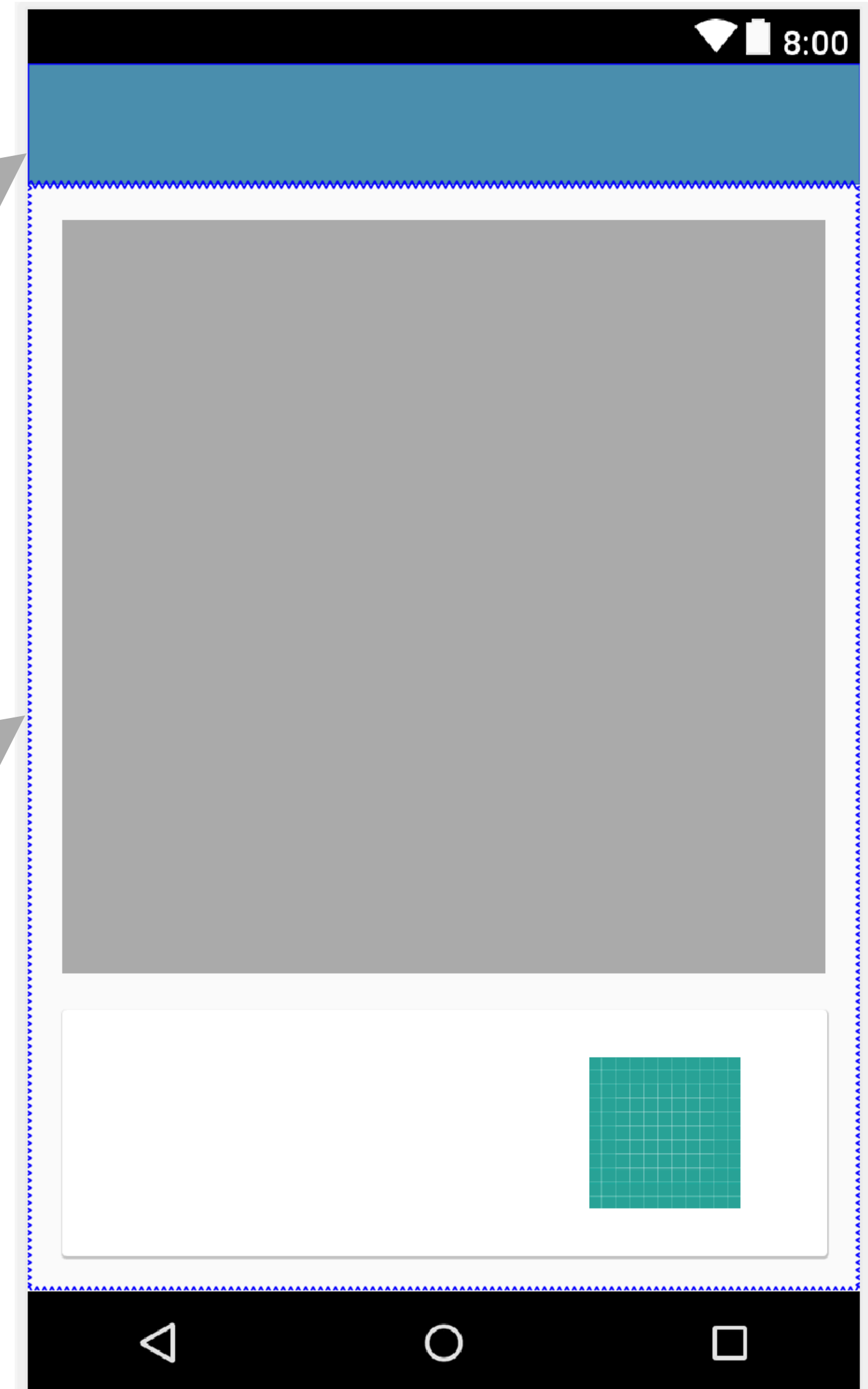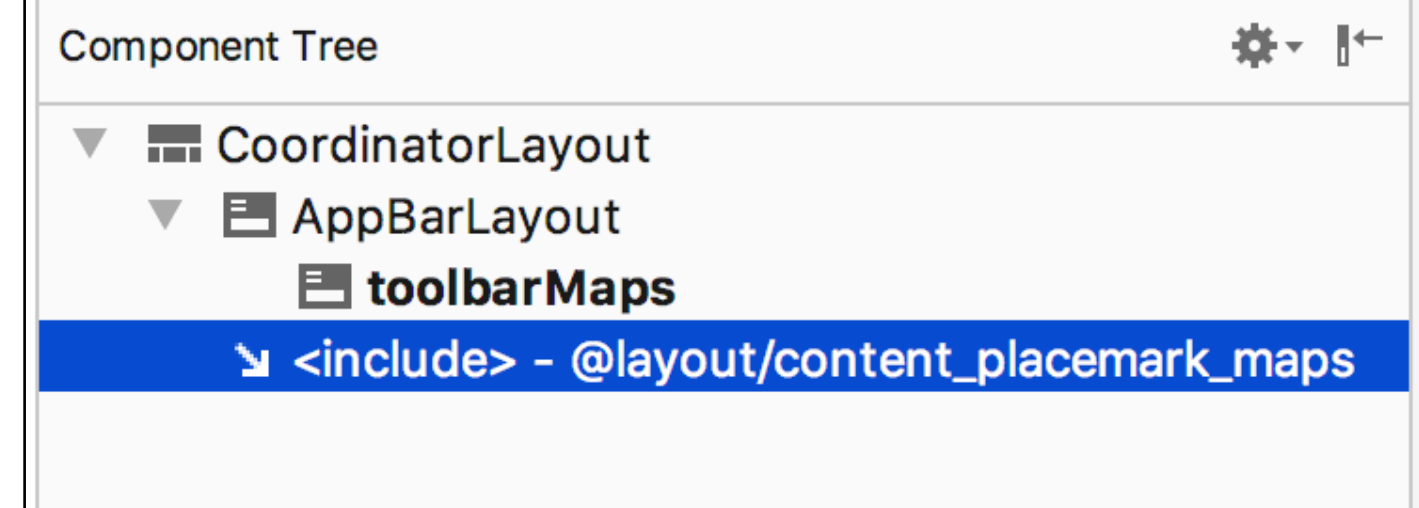
content_placemark_maps.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:layout_behavior="@string/appbar_scrolling_view_behavior"
    tools:context="org.wit.placemark.activities.PlacemarkMapsActivity"
    tools:showIn="@layout/activity_placemark_maps">

    <android.support.v7.widget.CardView
        android:id="@+id/cardView"
        android:layout_width="353dp"
        android:layout_height="114dp"
        android:layout_marginBottom="16dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.533"
        app:layout_constraintStart_toStartOf="parent" >

        <android.support.constraint.ConstraintLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent">

            <TextView
                android:id="@+id/currentTitle"
                android:layout_width="135dp"
                android:layout_height="25dp"
                android:layout_marginEnd="8dp"
                android:layout_marginStart="8dp"
                android:layout_marginTop="20dp"
                app:layout_constraintEnd_toStartOf="@+id/imageView"
                app:layout_constraintHorizontal_bias="0.35"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent" />

            <TextView
                android:id="@+id/currentDescription"
                android:layout_width="135dp"
                android:layout_height="25dp"
                android:layout_marginBottom="8dp"
                android:layout_marginEnd="8dp"
                android:layout_marginStart="8dp"
                android:layout_marginTop="8dp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toStartOf="@+id/imageView"
                app:layout_constraintHorizontal_bias="0.35"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toBottomOf="@+id/currentTitle"
                app:layout_constraintVertical_bias="0.425" />

            <ImageView
                android:id="@+id/imageView"
                android:layout_width="134dp"
                android:layout_height="70dp"
                android:layout_marginBottom="8dp"
                android:layout_marginEnd="8dp"
                android:layout_marginTop="8dp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:srcCompat="@drawable/ic_launcher_background" />
        </android.support.constraint.ConstraintLayout>
    </android.support.v7.widget.CardView>

    <com.google.android.gms.maps.MapView
        android:id="@+id/mapView"
        android:layout_width="352dp"
        android:layout_height="348dp"
        android:layout_marginBottom="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        app:layout_constraintBottom_toTopOf="@+id/cardView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</android.support.constraint.ConstraintLayout>
```
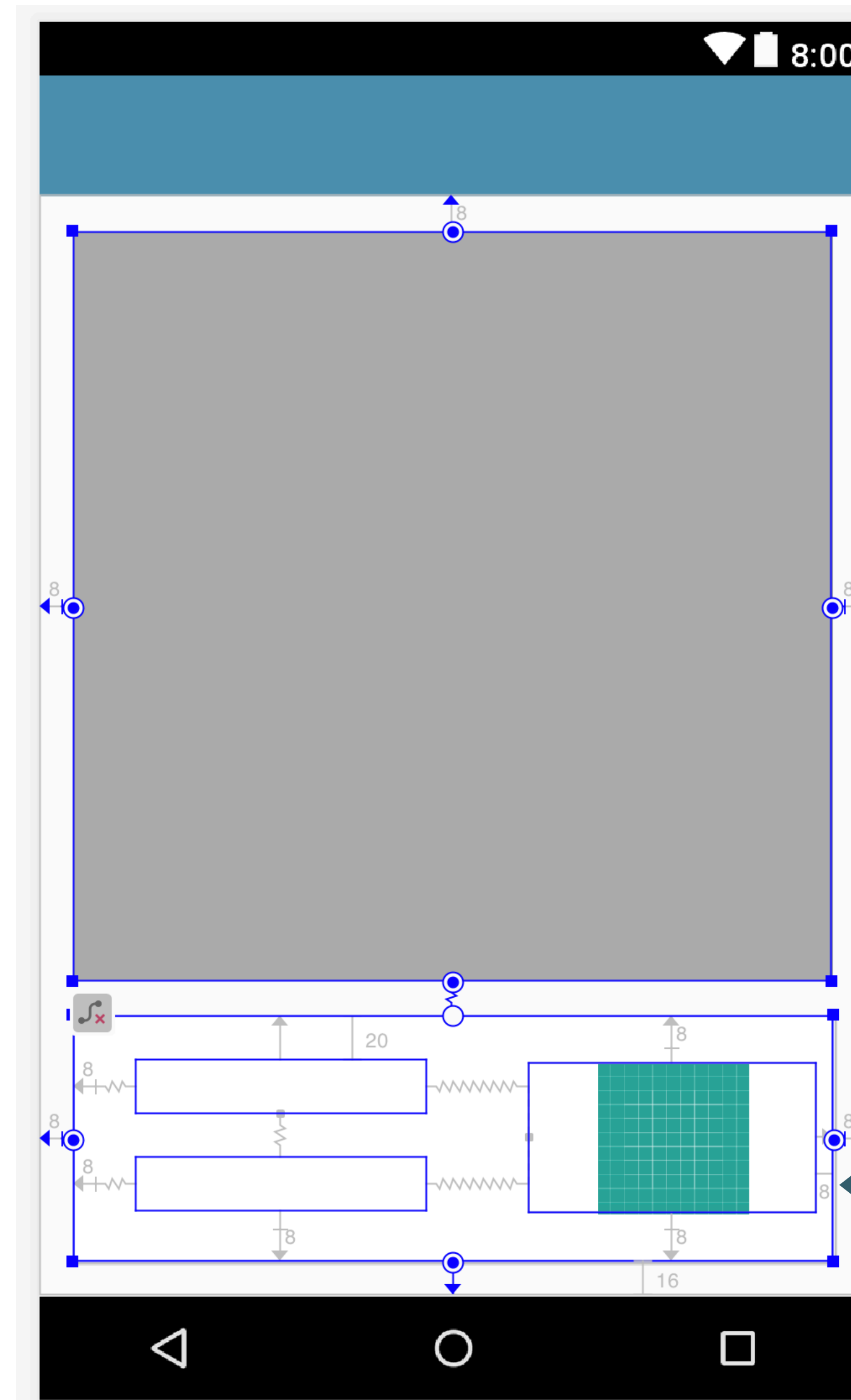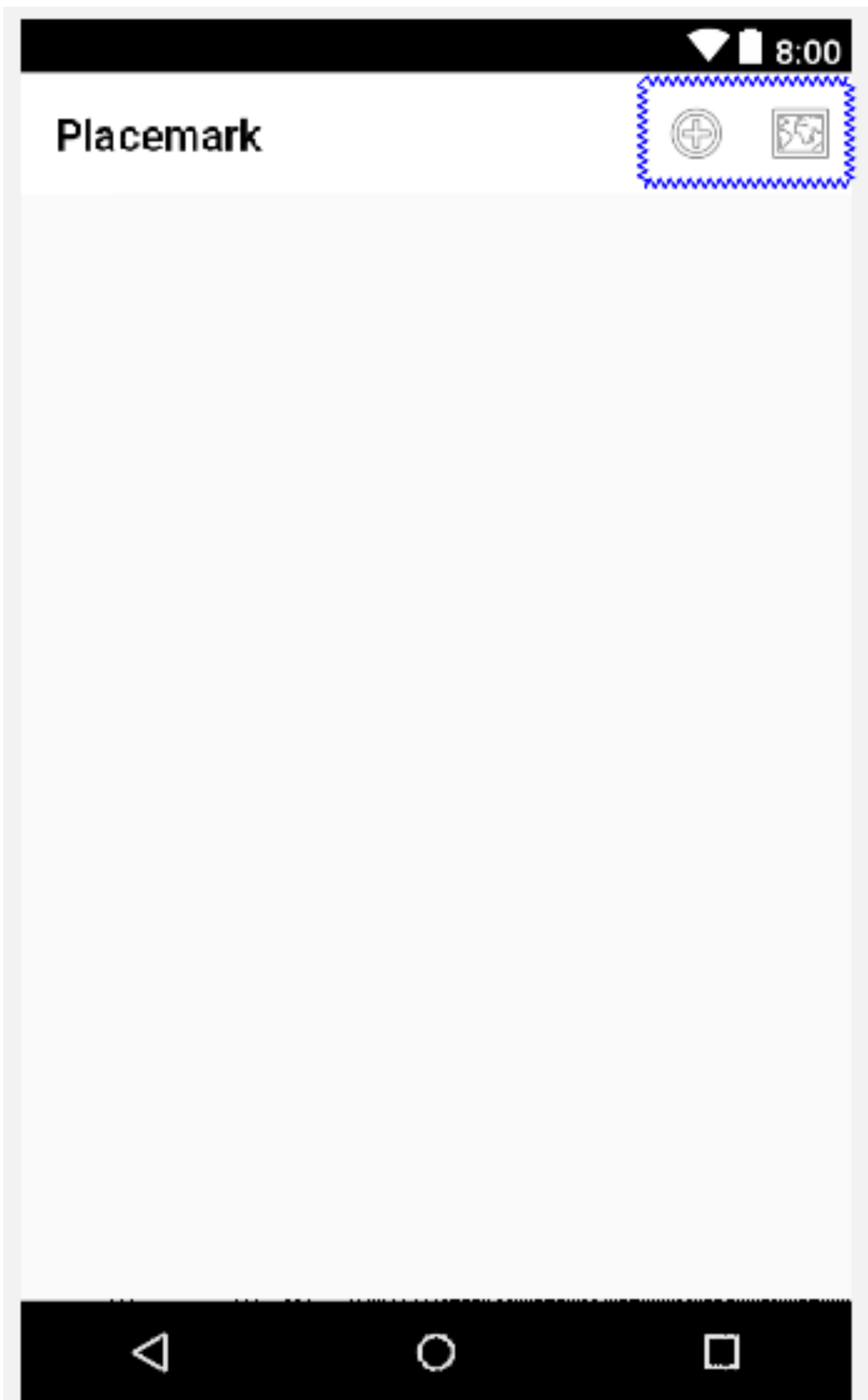
Top Level Constraint Layout

Constraint Layout nested within carView

Component Tree

- ConstraintLayout
  - cardView
    - ConstraintLayout
      - currentTitle (TextView)
      - currentDescription (Text
      - imageView
  - mapView

res/menu/menu_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
      xmlns:app="http://schemas.android.com/apk/res-auto">

  <item
    android:id="@+id/item_add"
    android:icon="@android:drawable/ic_menu_add"
    android:title="@string/menu_addPlacemark"
    app:showAsAction="always"/>

  <item
    android:id="@+id/item_map"
    android:icon="@android:drawable/ic_menu_mapmode"
    android:title="@string/menu_addPlacemark"
    app:showAsAction="always"/>

</menu>
```
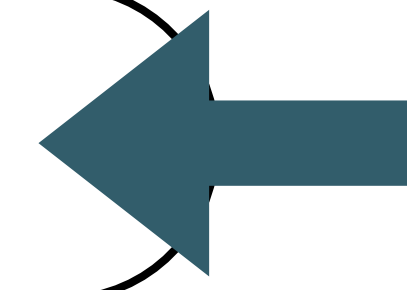
PlacemarkListActivity

```kotlin
override fun onOptionsItemSelected(item: MenuItem?): Boolean {
  when (item?.itemId) {
    R.id.item_add -> startActivityForResult<PlacemarkActivity>(200)
    R.id.item_map -> startActivity<PlacemarkMapsActivity>()
  }
  return super.onOptionsItemSelected(item)
}
```

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```

Reference to Map + App objects

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```

Initialisation Methods

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```

Map Marker Click
Event Handler

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```
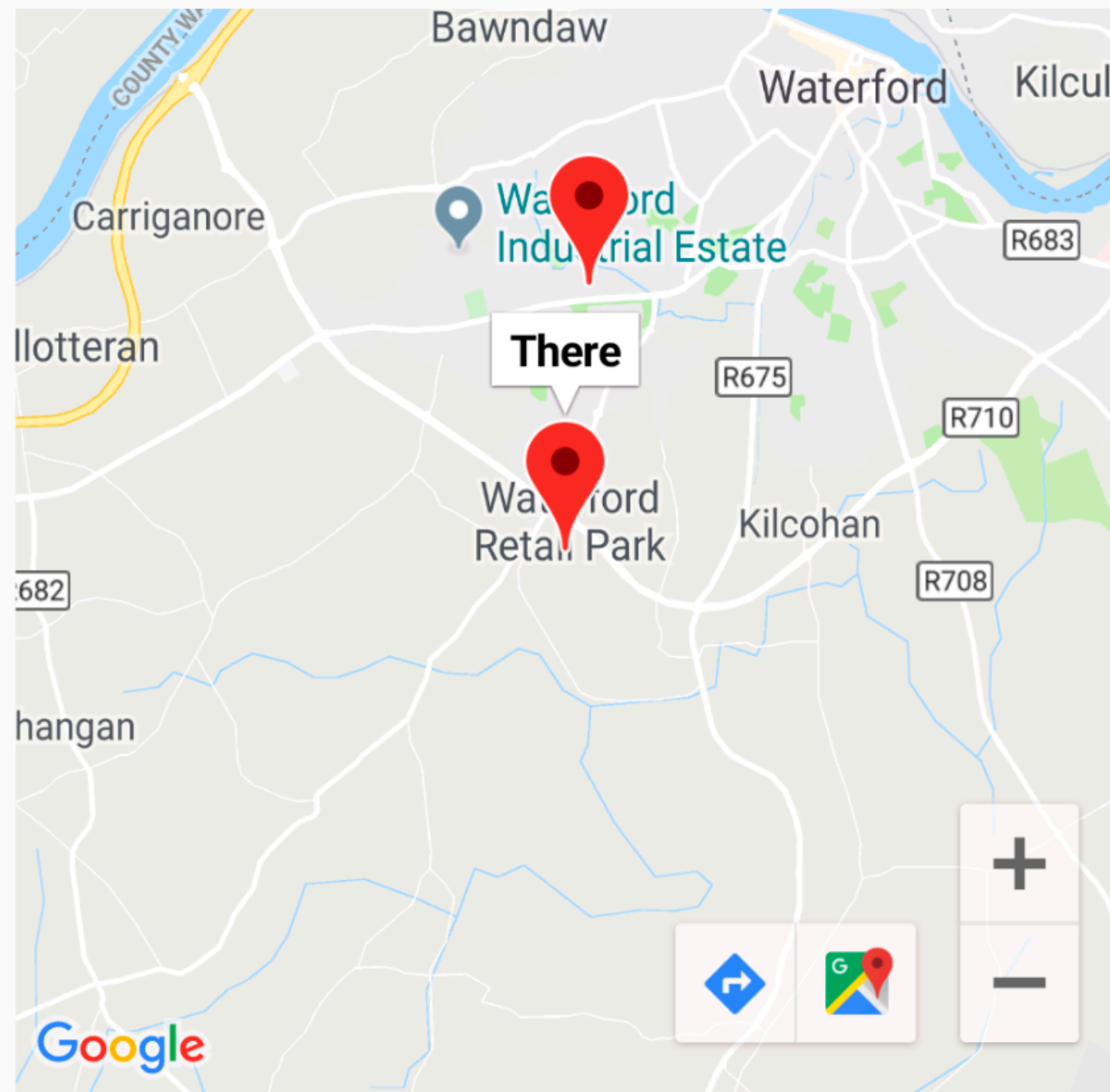
Additional
Lifecycle Methods

```kotlin
class PlacemarkMapsActivity : AppCompatActivity(), GoogleMap.OnMarkerClickListener {

    lateinit var map: GoogleMap
    lateinit var app: MainApp

    override fun onCreate(savedInstanceState: Bundle?) {...}

    fun configureMap() {...}

    override fun onMarkerClick(marker: Marker): Boolean {...}

    override fun onDestroy() {...}

    override fun onLowMemory() {...}

    override fun onPause() {...}

    override fun onResume() {...}

    override fun onSaveInstanceState(outState: Bundle?) {...}
}
```

Reference to Map + App objects

Initialisation Methods

Map Marker Click Event Handler

Additional Lifecycle Methods

Initialisation Methods I


```kotlin
override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContentView(R.layout.activity_placemark_maps)
    setSupportActionBar(toolbarMaps)
    app = application as MainApp

    mapView.onCreate(savedInstanceState);
    mapView.getMapAsync { it: GoogleMap!
        map = it
        configureMap()
    }
}
```

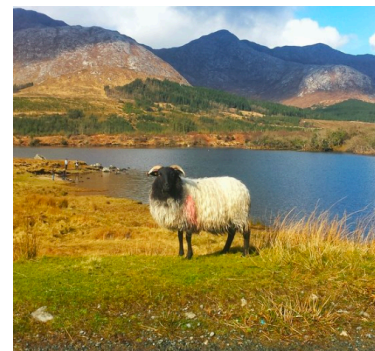Inflate view + Initialize Map Component

Initialisation Methods - II


```kotlin
fun configureMap() {
    map.uiSettings.setZoomControlsEnabled(true)
    map.setOnMarkerClickListener(this)
    app.placemarks.findAll().forEach { it: PlacemarkModel
        val loc = LatLng(it.lat, it.lng)
        val options = MarkerOptions().title(it.title).position(loc)
        map.addMarker(options).tag = it.id
        map.moveCamera(CameraUpdateFactory.newLatLngZoom(loc, it.zoom))
    }
}
```
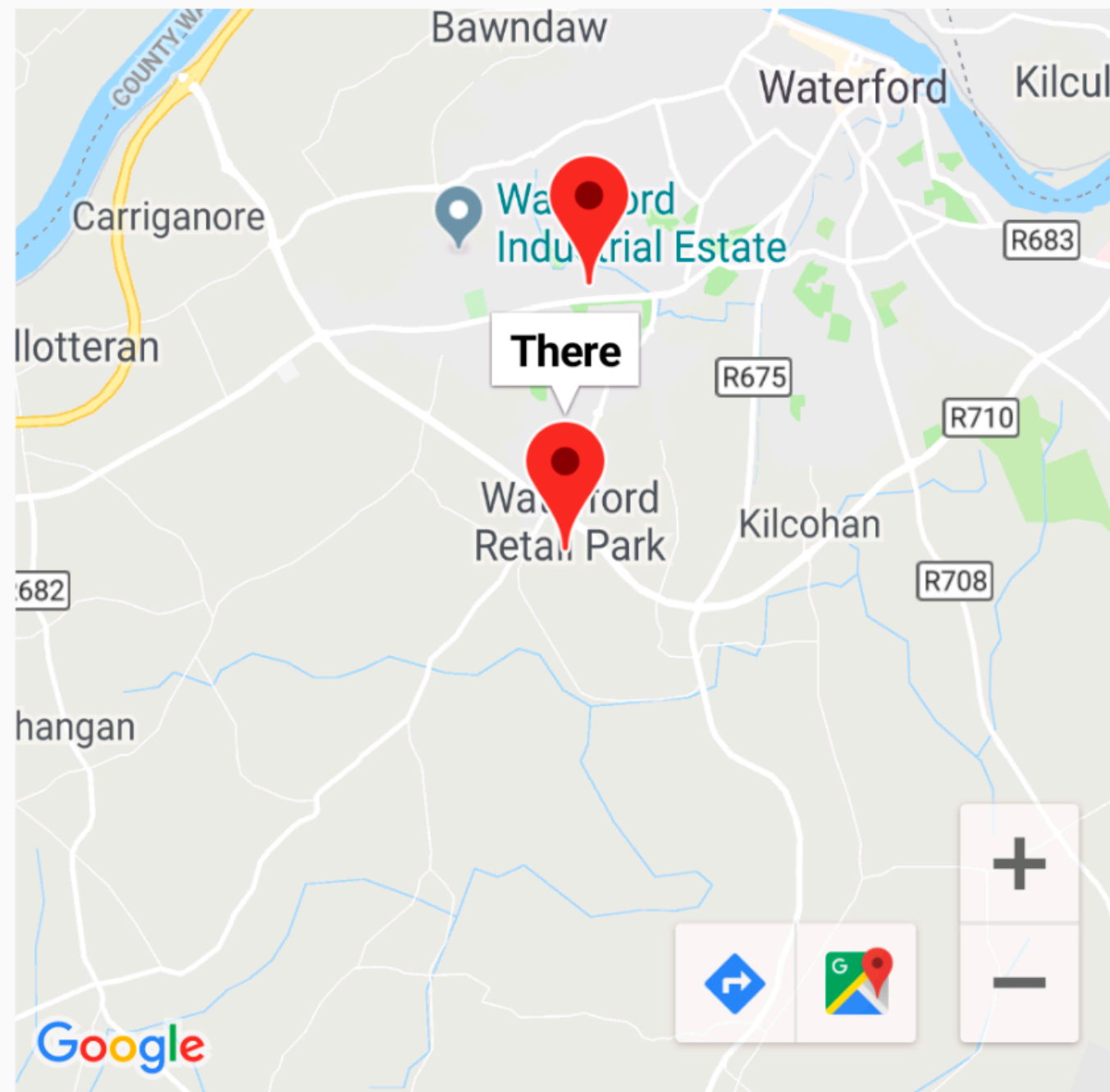
Create a Marker for each Placemark
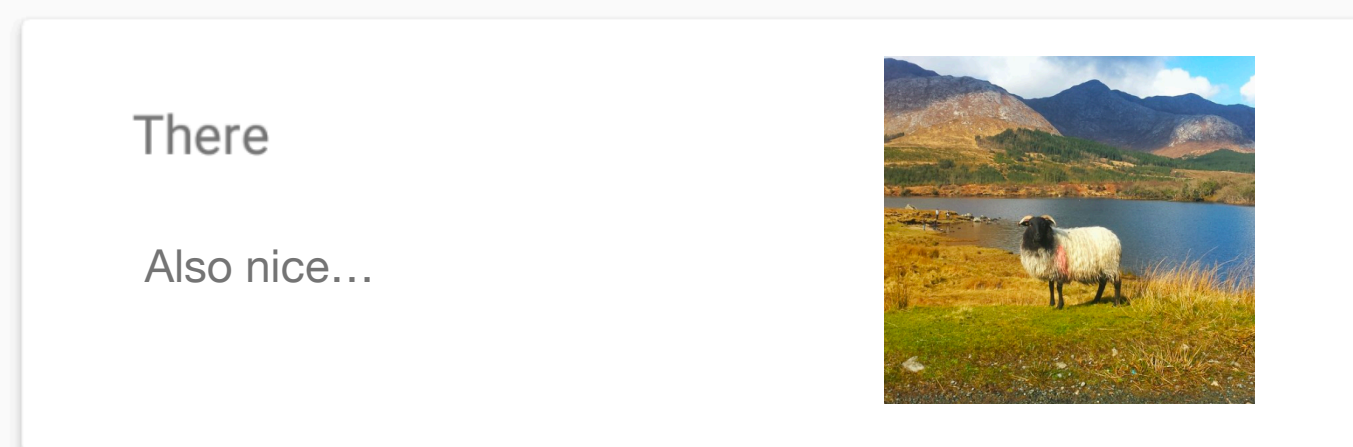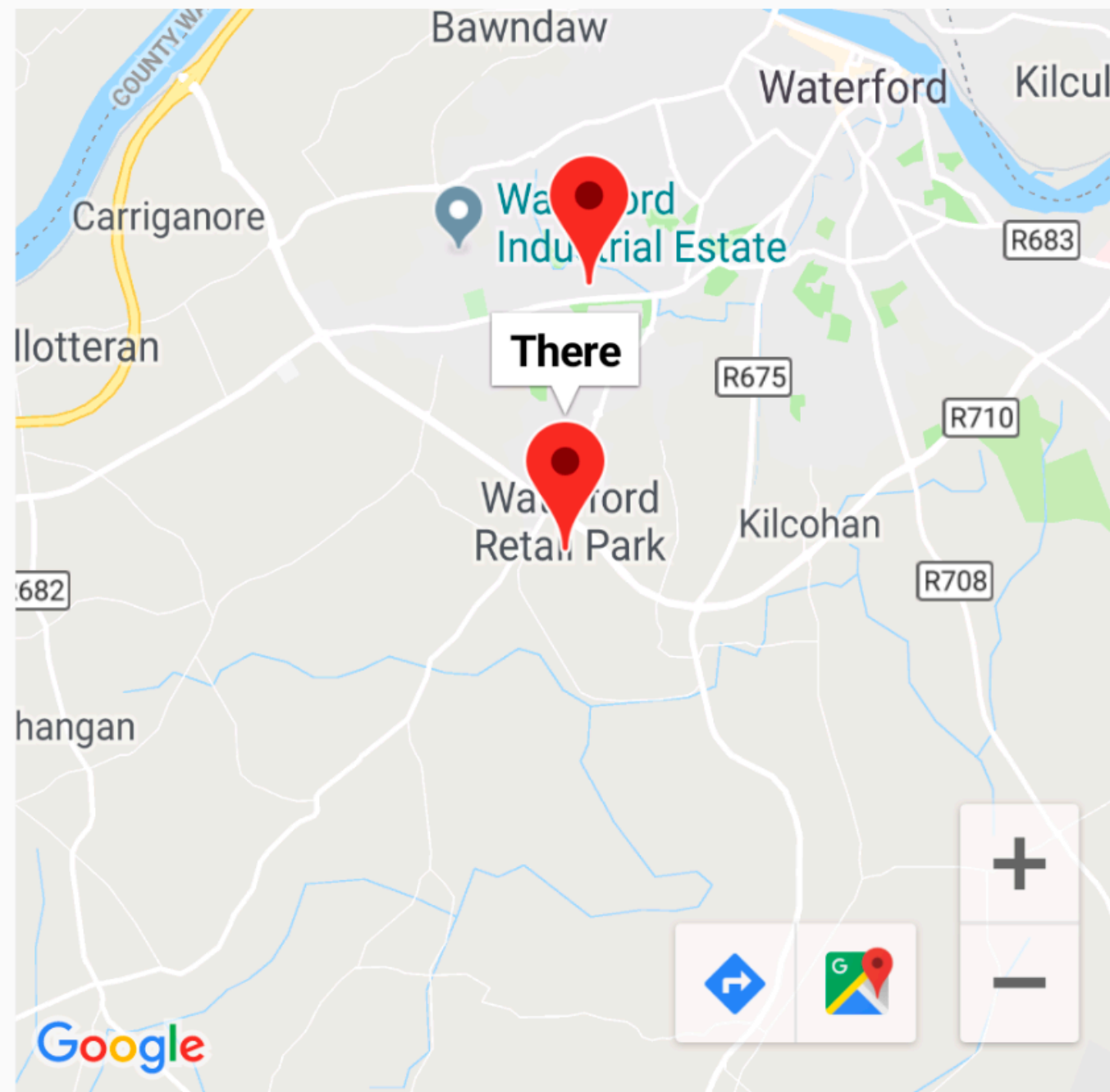
Map Marker Click Event Handler

Update card whenever a Marker is clicked

```kotlin
override fun onMarkerClick(marker: Marker): Boolean {
    currentTitle.text = marker.title
    return false
}
```
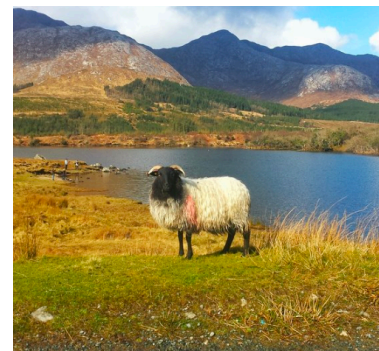
Additional Lifecycle Methods

```kotlin
override fun onDestroy() {
  super.onDestroy()
  mapView.onDestroy()
}

override fun onLowMemory() {
  super.onLowMemory()
  mapView.onLowMemory()
}

override fun onPause() {
  super.onPause()
  mapView.onPause()
}

override fun onResume() {
  super.onResume()
  mapView.onResume()
}

override fun onSaveInstanceState(outState: Bundle?) {
  super.onSaveInstanceState(outState)
  mapView.onSaveInstanceState(outState)
}
```

The lifecycle of the Map component must be synchronised with the Activity