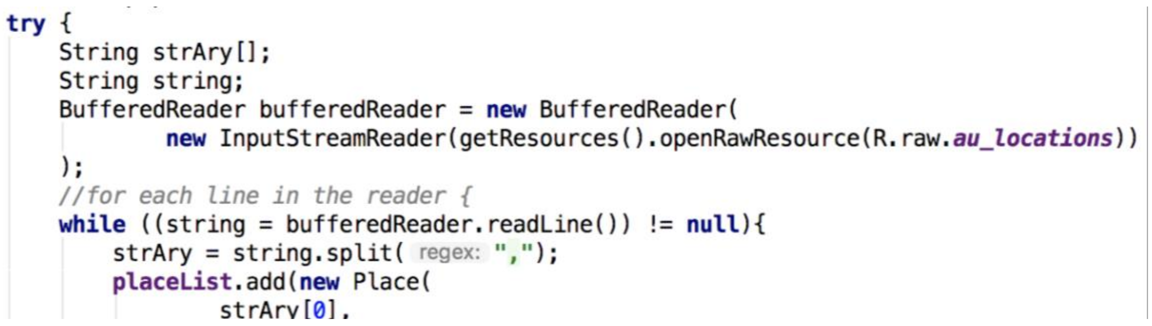
Task 8.1P

Working with Persistent Data

1. Create a List from a file

Code Snippet: How Data is Loaded:

As I ‘recycled’ my recycler view code from 5.1P, I already had a function to build a list of items and display them in the list. This time instead of iterating through a for loop, a buffered reader was used instead:



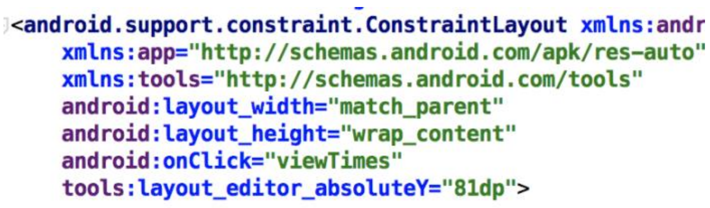
```
try {
    String strAry[];
    String string;
    BufferedReader bufferedReader = new BufferedReader(
            new InputStreamReader(getResources().openRawResource(R.raw.au_locations))
    );
    //for each line in the reader {
    while ((string = bufferedReader.readLine()) != null){
        strAry = string.split( regex: ",");
        placeList.add(new Place(
                strAry[0],
```

Each line was then split by their commas, plugged into an array (a more robust code would ensure the array wasn’t null) and added to the list of places.

Code Snippet: How List Items are Selected

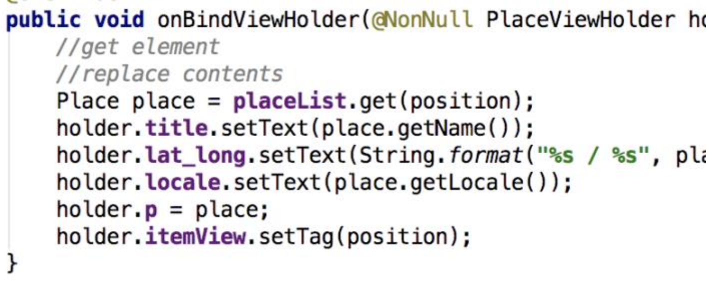
This was the hardest part for me. I knew I wanted to combine two techniques I’d used previously (recycler views and intents) though getting the two to marry up was tricky at first.

As the list of places could vary, I used an ‘on click’ event in the XML of the recycler view’s row:



```
<android.support.constraint.ConstraintLayout xmlns:andr
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="viewTimes"
    tools:layout_editor_absoluteY="81dp">
```

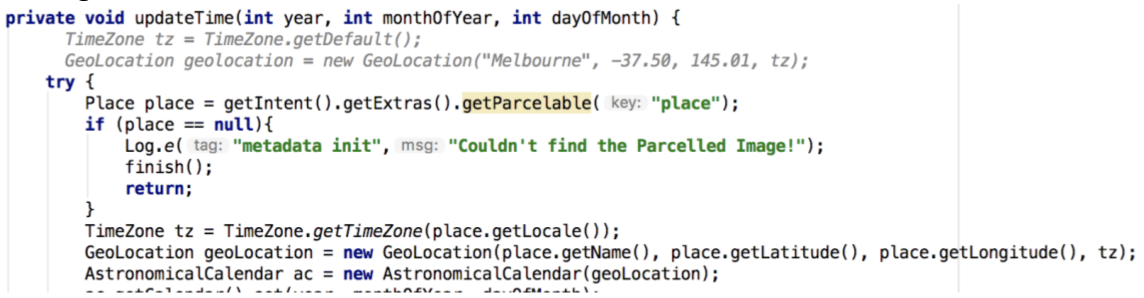
My plan was to then assign a tag to each element as it was created, though researching where this could be done took longer than expected. At least until I realised I was overthinking it and called the ‘item View’ of the view holder.



```
public void onBindViewHolder(@NonNull PlaceViewHolder h
    //get element
    //replace contents
    Place place = placeList.get(position);
    holder.title.setText(place.getName());
    holder.lat_long.setText(String.format("%s / %s", pl
    holder.locale.setText(place.getLocale());
    holder.p = place;
    holder.itemView.setTag(position);
}
```

Code Snippet: How data is shown (Sun rise/set times)

Since I knew I'd need to be passing a custom class between activities, I made a 'Place' implement the parcelable protocol, then recycled code from another exercise to get the following:

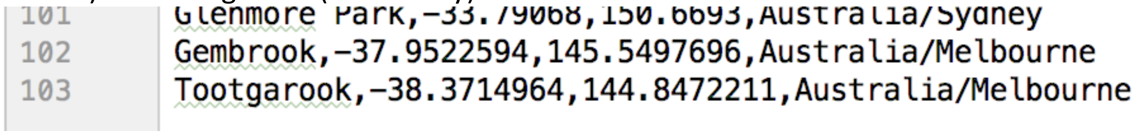


```
private void updateTime(int year, int monthOfYear, int dayOfMonth) {
      TimeZone tz = TimeZone.getDefault();
      GeoLocation geolocation = new GeoLocation("Melbourne", -37.50, 145.01, tz);
    try {
        Place place = getIntent().getExtras().getParcelable( key: "place");
        if (place == null){
            Log.e( tag: "metadata init", msg: "Couldn't find the Parcelled Image!");
            finish();
            return;
        }
        TimeZone tz = TimeZone.getTimeZone(place.getLocale());
        GeoLocation geoLocation = new GeoLocation(place.getName(), place.getLatitude(), place.getLongitude(), tz);
        AstronomicalCalendar ac = new AstronomicalCalendar(geoLocation);
```

Instead of defaulting to Melbourne, the app now retrieves the name, latitude, longitude and time zone from the parcel.

Additional locations:

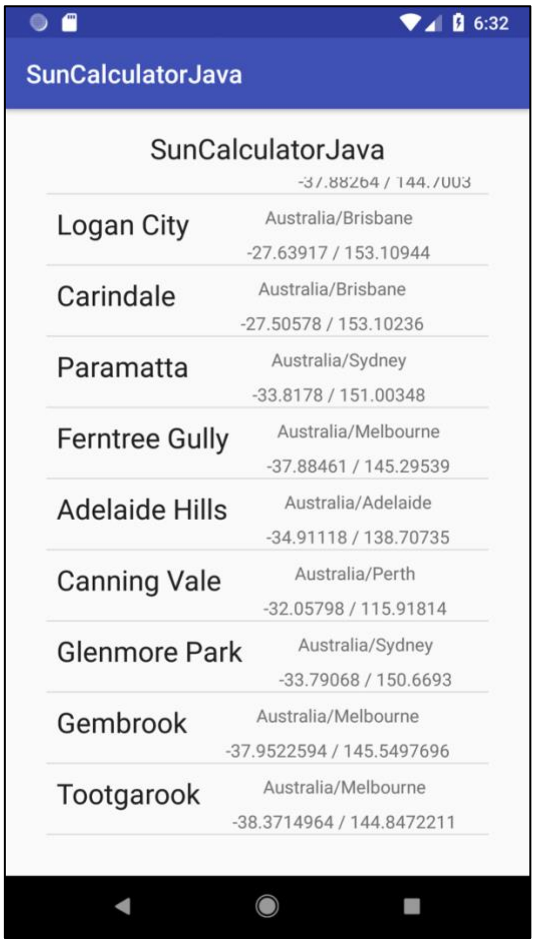
Since Ferntree Gully made the list and isn't a city, I figured I'd be okay to add Gembrook (in the hills) and Tootgarook (on the bay).



```
Glenmore Park,-33.79068,150.6693,Australia/Sydney
Gembrook,-37.9522594,145.5497696,Australia/Melbourne
Tootgarook,-38.3714964,144.8472211,Australia/Melbourne
```

Please Refer Appendix for further Screenshots

Appendix: Screenshots:

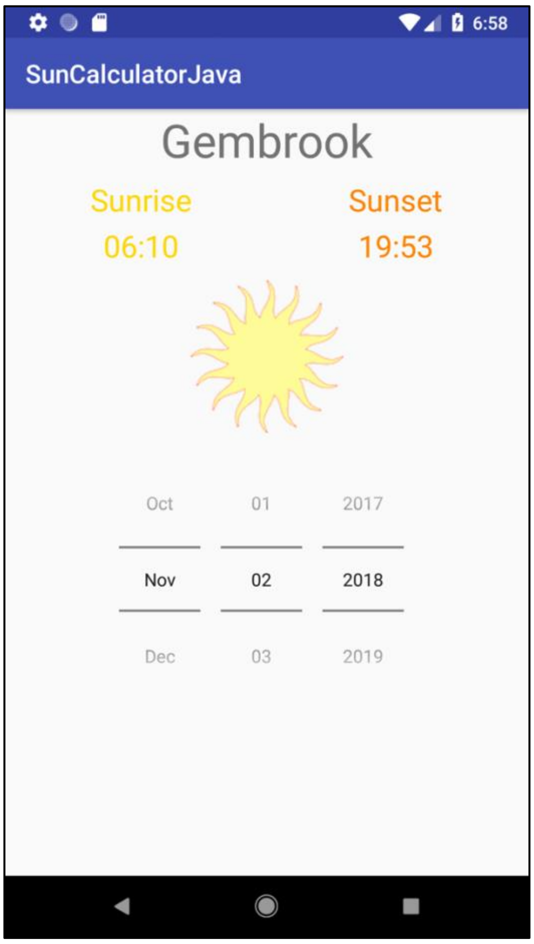

6:32

SunCalculatorJava

SunCalculatorJava

-37.88264 / 144.7003

Logan City	Australia/Brisbane -27.63917 / 153.10944
Carindale	Australia/Brisbane -27.50578 / 153.10236
Paramatta	Australia/Sydney -33.8178 / 151.00348
Ferntree Gully	Australia/Melbourne -37.88461 / 145.29539
Adelaide Hills	Australia/Adelaide -34.91118 / 138.70735
Canning Vale	Australia/Perth -32.05798 / 115.91814
Glenmore Park	Australia/Sydney -33.79068 / 150.6693
Gembrook	Australia/Melbourne -37.9522594 / 145.5497696
Tootgarook	Australia/Melbourne -38.3714964 / 144.8472211


6:58

SunCalculatorJava

Gembrook

Sunrise 06:10

Sunset 19:53

Oct	01	2017
Nov	02	2018
Dec	03	2019

***Left:** Selection screen showing additional locations for Gembrook (Dandenong Ranges, Vic) and Tootgarook (Mornington Peninsula, Vic).*
***Right**: Upcoming Sunrise and Sunset times for Gembrook, on November 2nd.*