Task 10.1P

not breaking the rules

# Some rules are not to be broken

## ‘Thread. Sleep’ snippet.

As far as I can tell, nothing interesting happens.

Technically the countdown works in that you wait the requisite amount of time, though the app just looks like it’s hanging – the shadow on the button remains ‘pressed’ for a while, until the text changes from the default ‘hello world’ to ‘0’.

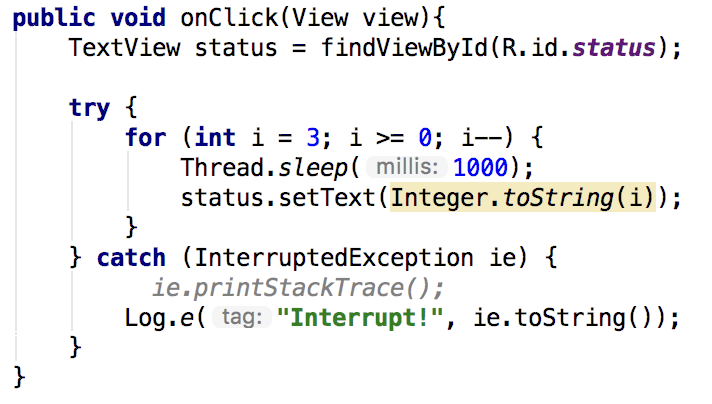
That said, this shows up in Logcat:

5432-5432/com.example.a9726446.a10\_1p I/Choreographer: Skipped 239 frames! The application may be doing too much work on its main thread.

Essentially, it’s breaking one of the rules of Android’s single thread model – it blocks the main thread.

( <https://developer.android.com/guide/components/processes-and-threads> ,last accessed 1/11/18)

This isn’t advised as it prevents all other events from being dispatched, including draw events, giving the hanging effect described above.



## Refactoring with Async Task

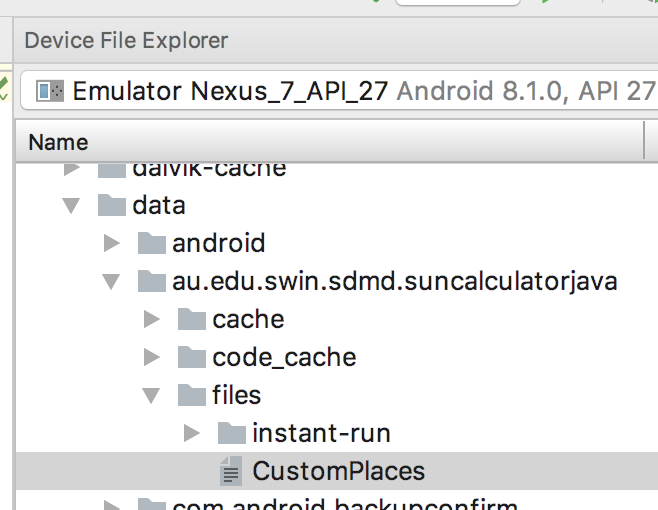
//With references from <https://android-developers.googleblog.com/2009/05/painless-threading.html> (last accessed: 1/11/18)

‘Open file output’ creates a file if one matching the filename isn’t found, which saves some error handling. A ‘Place’ object (Name, Lat, Long, time zone) is then created based on the values in the fields, minor validation is applied and the location is then saved:



…



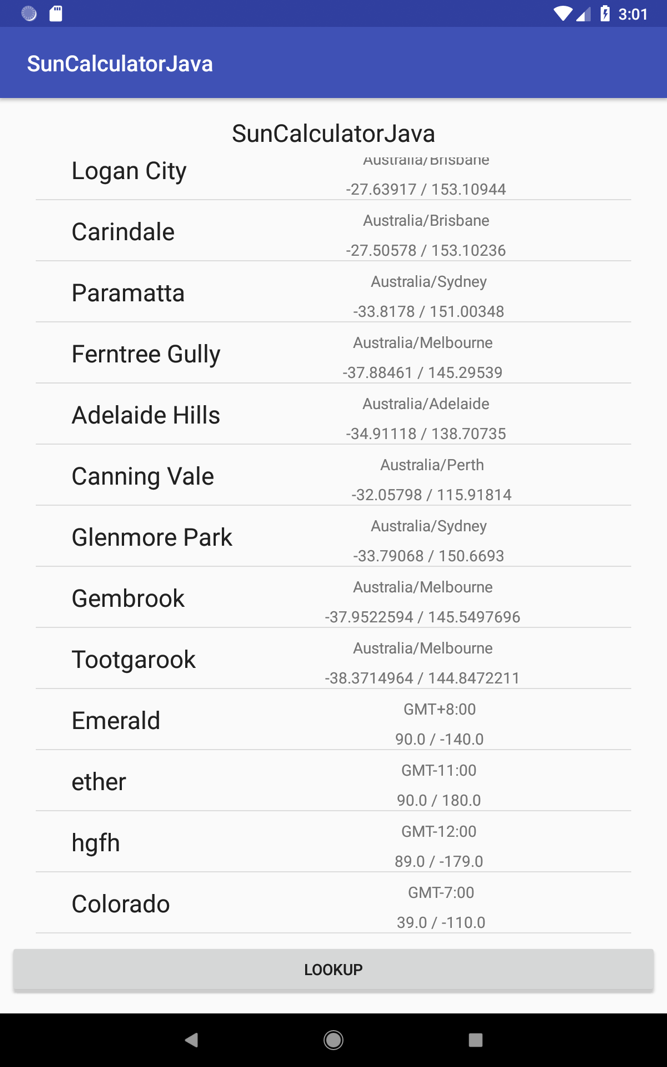
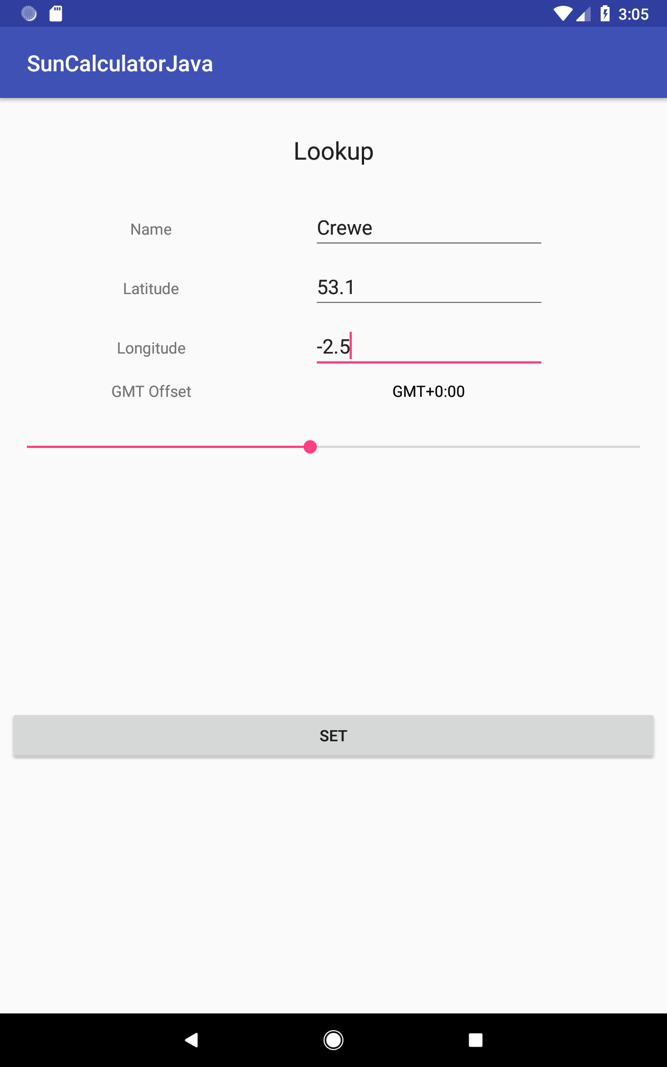


Curiously, I found an issue with the sun time calculator while testing the validation – if one inputs random coordinates that don’t match their time zone, the calculator couldn’t handle it and closes before the user gets to see any visible effect from their tap.

On the other hand, the validation at least prevents the program from stopping if the Latitude is more than +/- 90, or Longitude is more than +/-180.

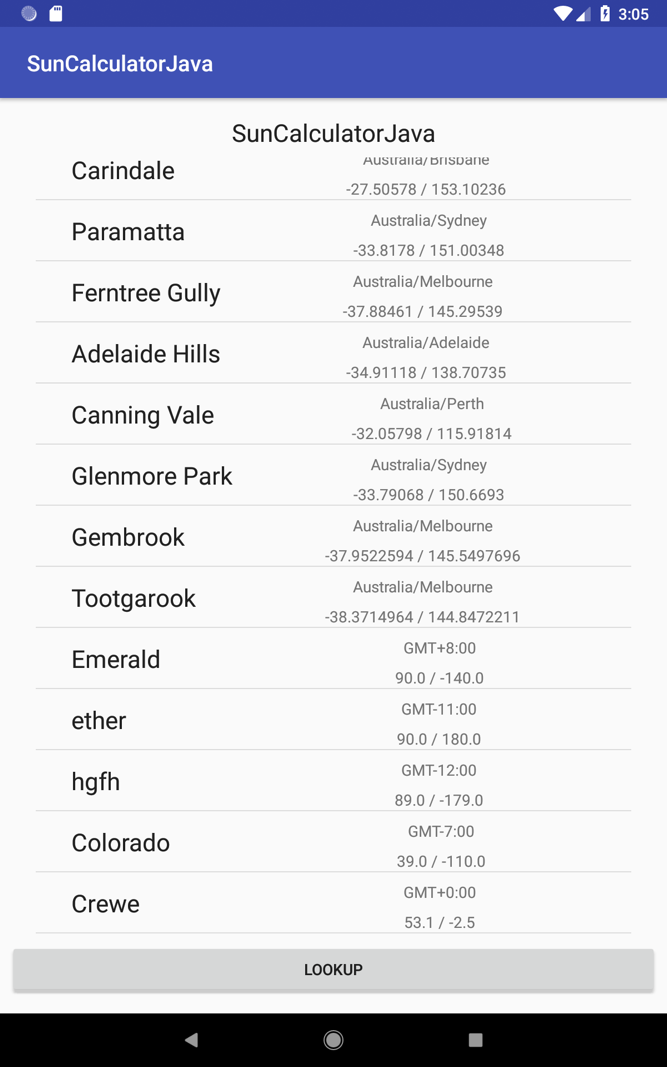
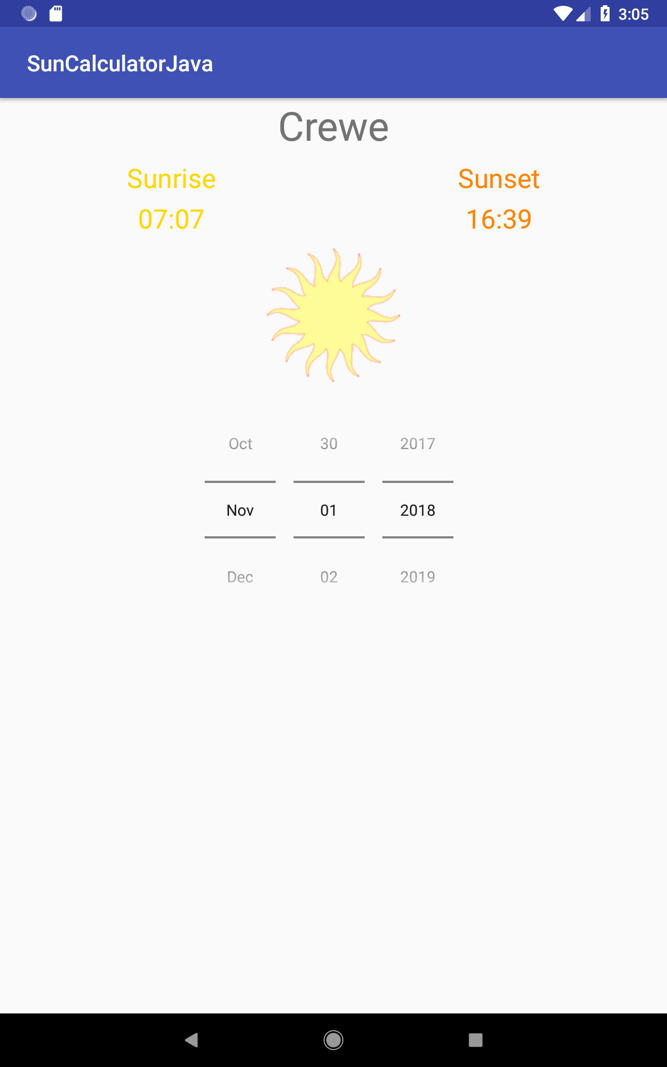
# Appendix: Screenshots:

Let’s add the English city of Crewe to the calculator:

*Left: Crewe isn’t on our list. (Some test cities are, they can be ignored for now)*

*Right: Google Maps tells us it’s at about 53.1 Latitude and -2.5 Longitude. Still within GMT+0.*

* *

*Left: Pressing ‘Set’ takes us back to the main screen, and there’s Crewe!*

*Right: And the local sunrise/set times.*