

# Newsletter 5 July 2021

## Billing library

### Introduction

Google recently released the third version of its API for Google Play Billing, with the usual deadlines for new and existing apps. I duly upgraded the Android client app, as one of the changes included in the recent round of beta testing. However, since then it has stopped working altogether. The reason for this is complicated, but I believe there is a solution.

### Android and the SIQ

Like most modern operating systems, Android uses a single input queue (SIQ) for the display. The SIQ is attached to the main thread, and asynchronous processes use callbacks to communicate with it. In Java, the callbacks always run in the main thread. But in the latest version of the API, they run as coroutines. These run in a separate thread, so it is hardly surprising that the display is no longer being updated.

### Kotlin to the rescue

Java is not designed to handle coroutines, but Kotlin is. This is confirmed by the sample code that Google provides. The two Kotlin projects are reasonably tractable, but the only Java one is a complete mess. Kotlin is intended as a replacement for java, and is meant to have a high degree of interoperability with it. So it should be relatively easy to code the Store screen in Kotlin, while leaving the rest of the code untouched.

### Summary

These changes are driven by security concerns, and by the desire of every new generation of programmers to do things differently. Using Kotlin is the least disruptive option, and should augur well for the future. It will however take another week or so to implement.