



TOUCHLAB

# Kotlin Multiplatform: From "Hello World" to the Real World

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FOSDEM Kotlin Dev Room

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# Kotlin Multiplatform

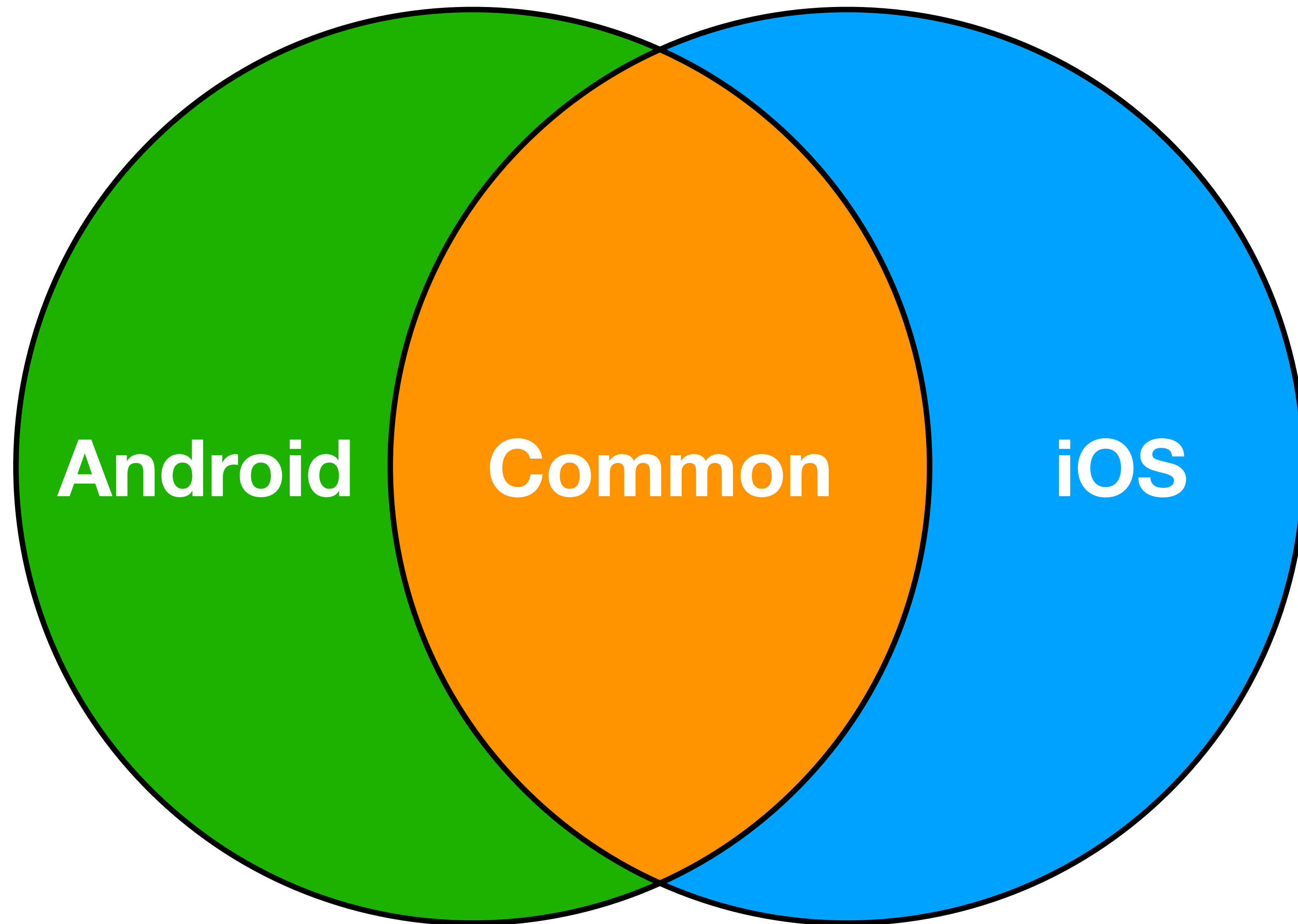
# Kotlin Multiplatform

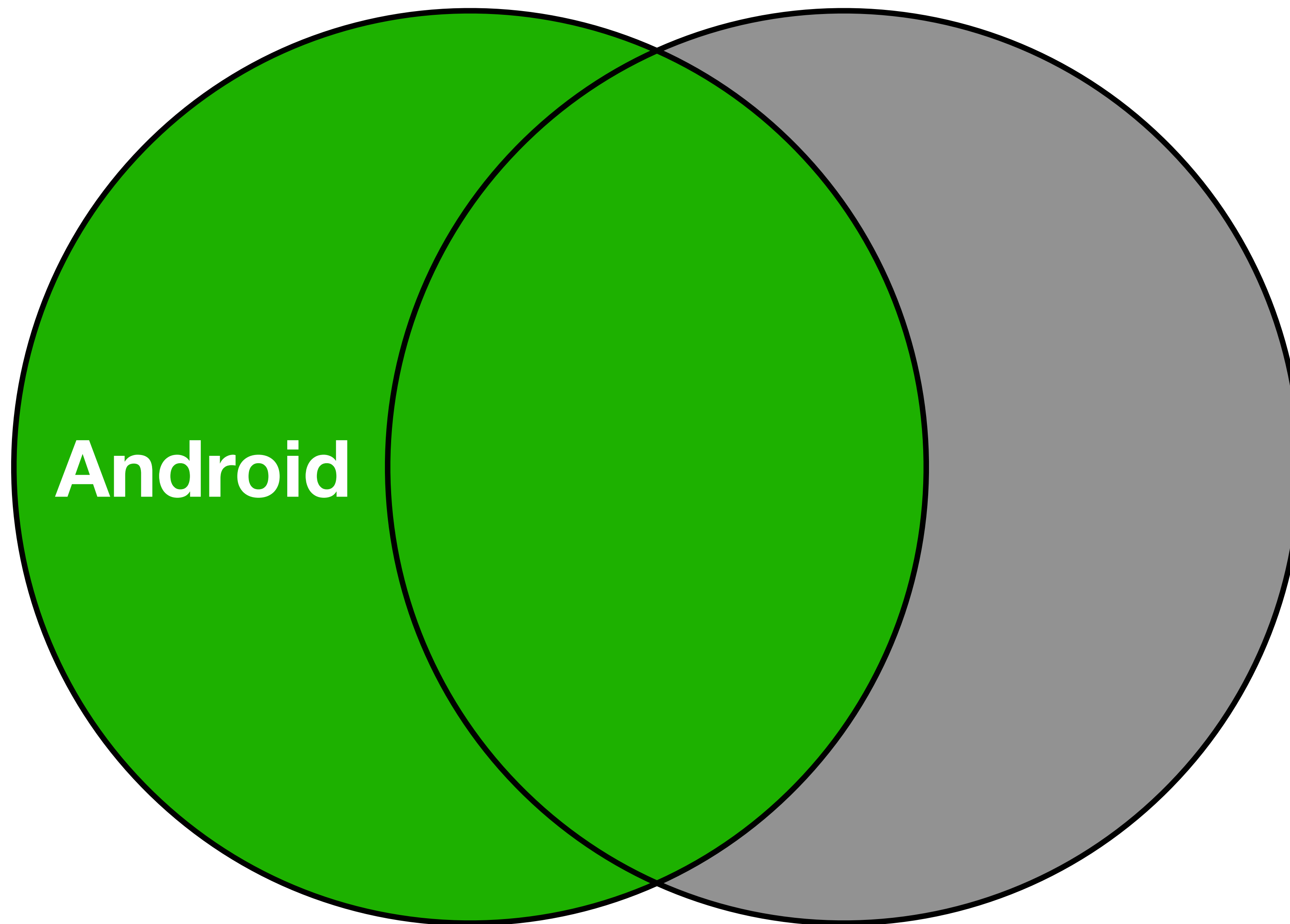


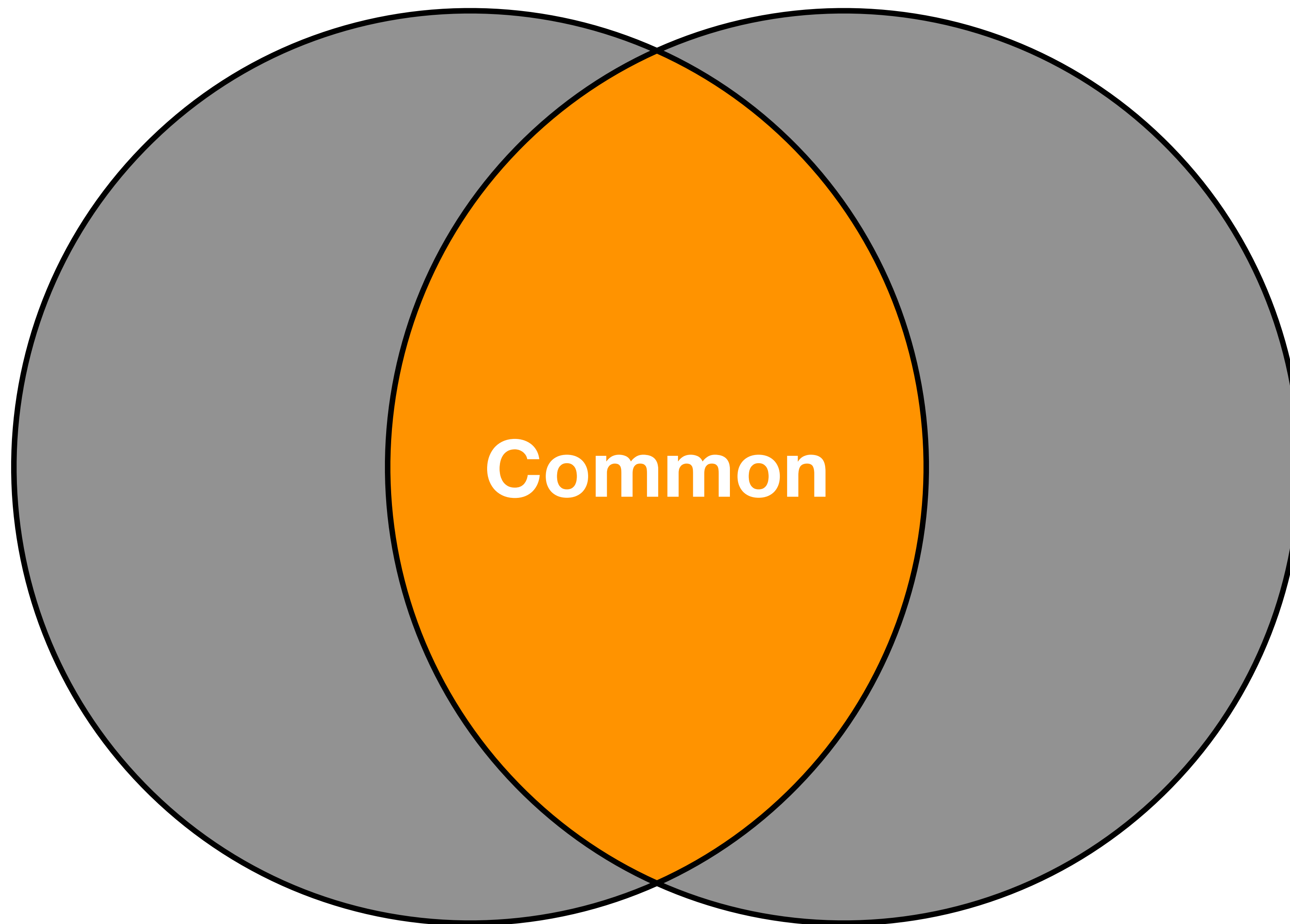
# Flexible Interop



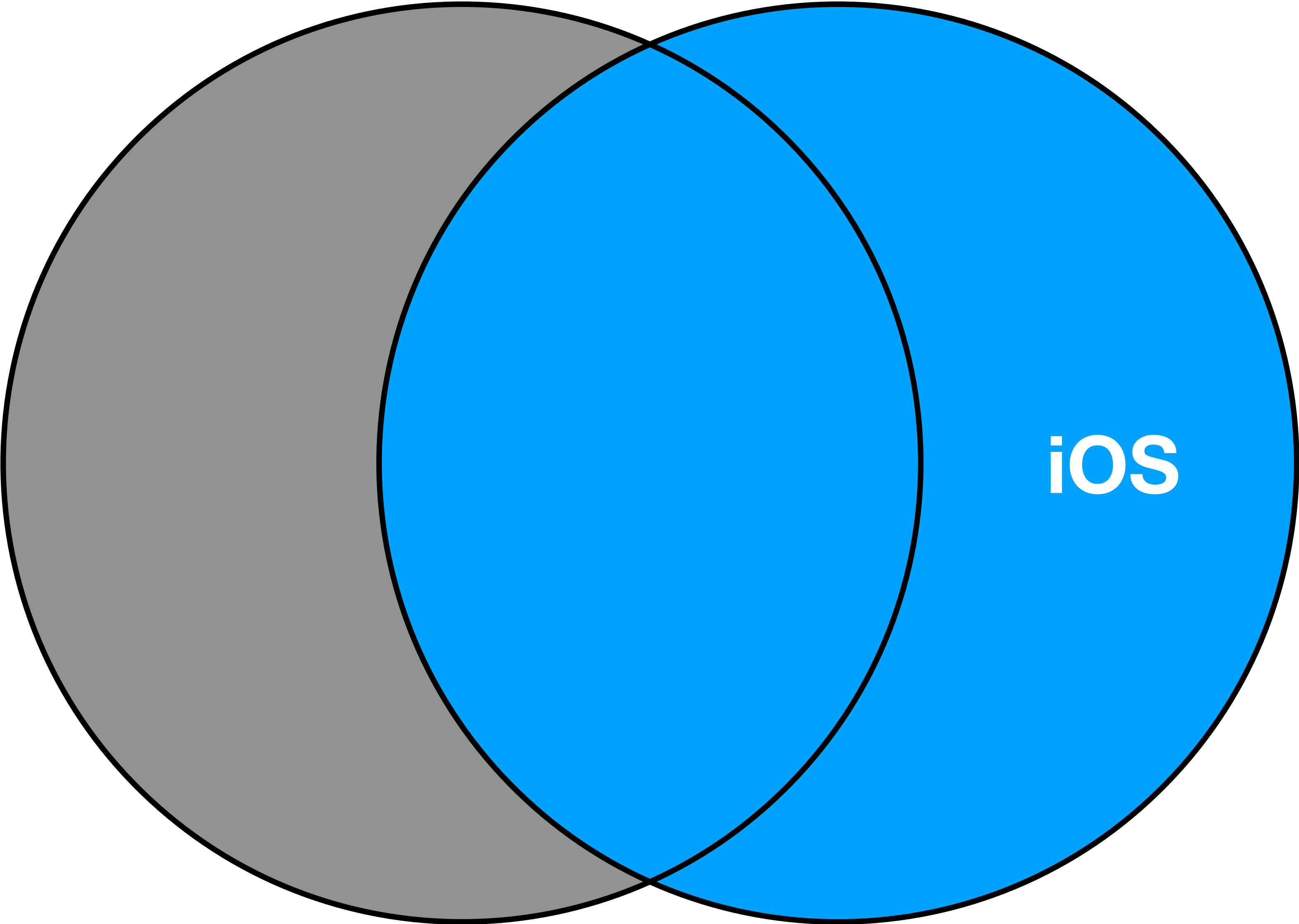
# KMP vs KMM

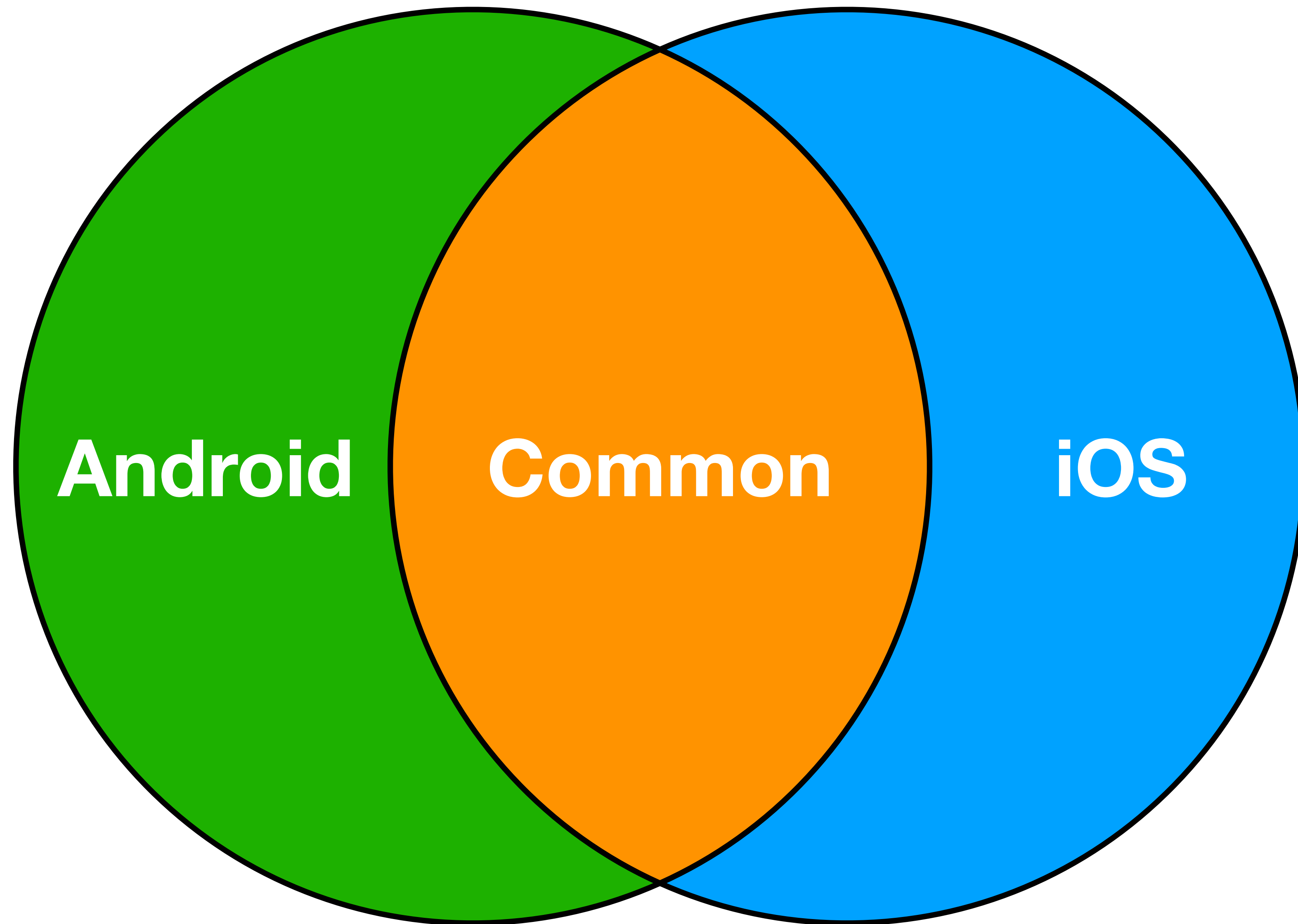








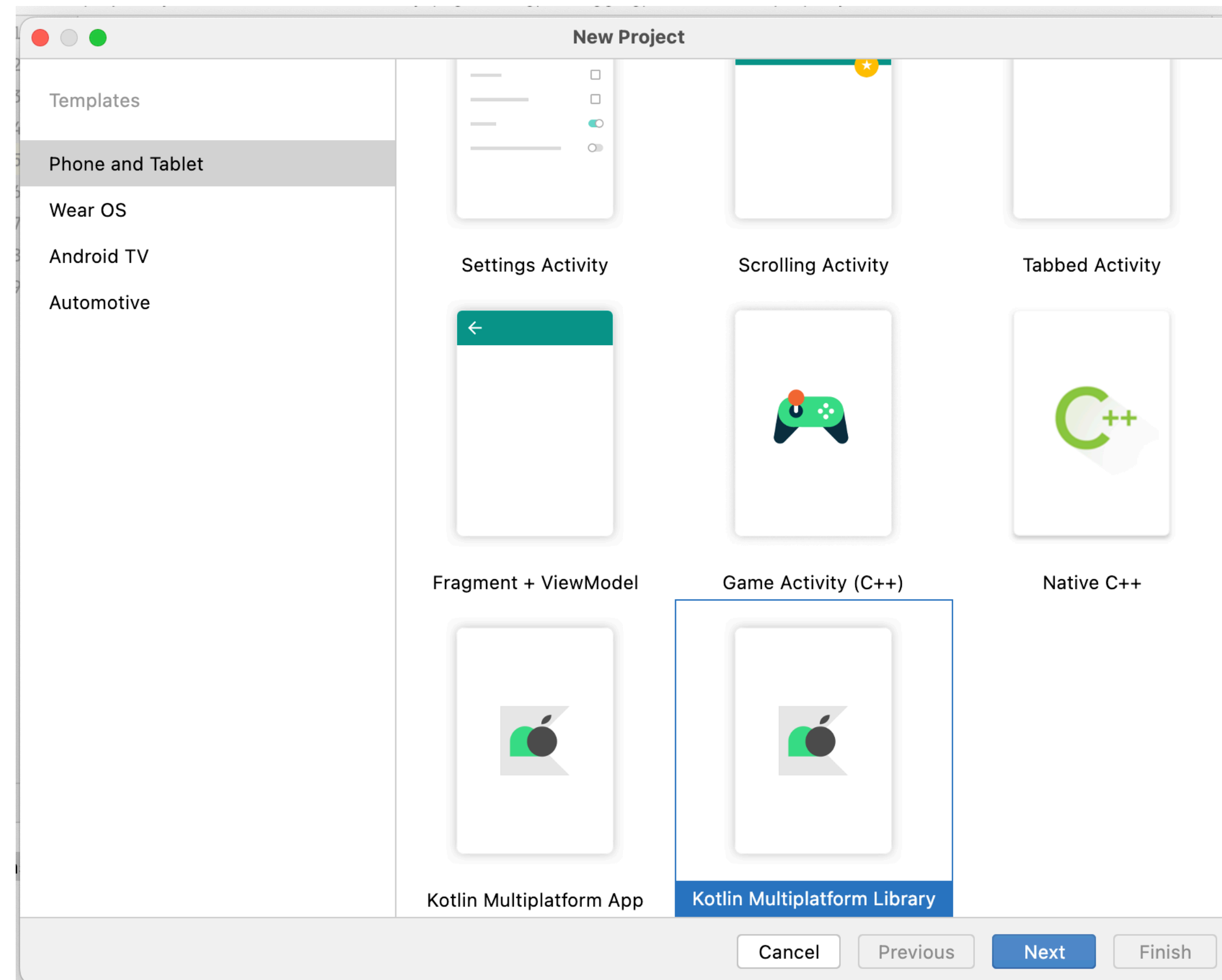




From "Hello World"...

# Hello World

## KMM Plugin - Kotlin Multiplatform Library/Application



# Hello World

## KMM Plugin - Kotlin Multiplatform Library/Application

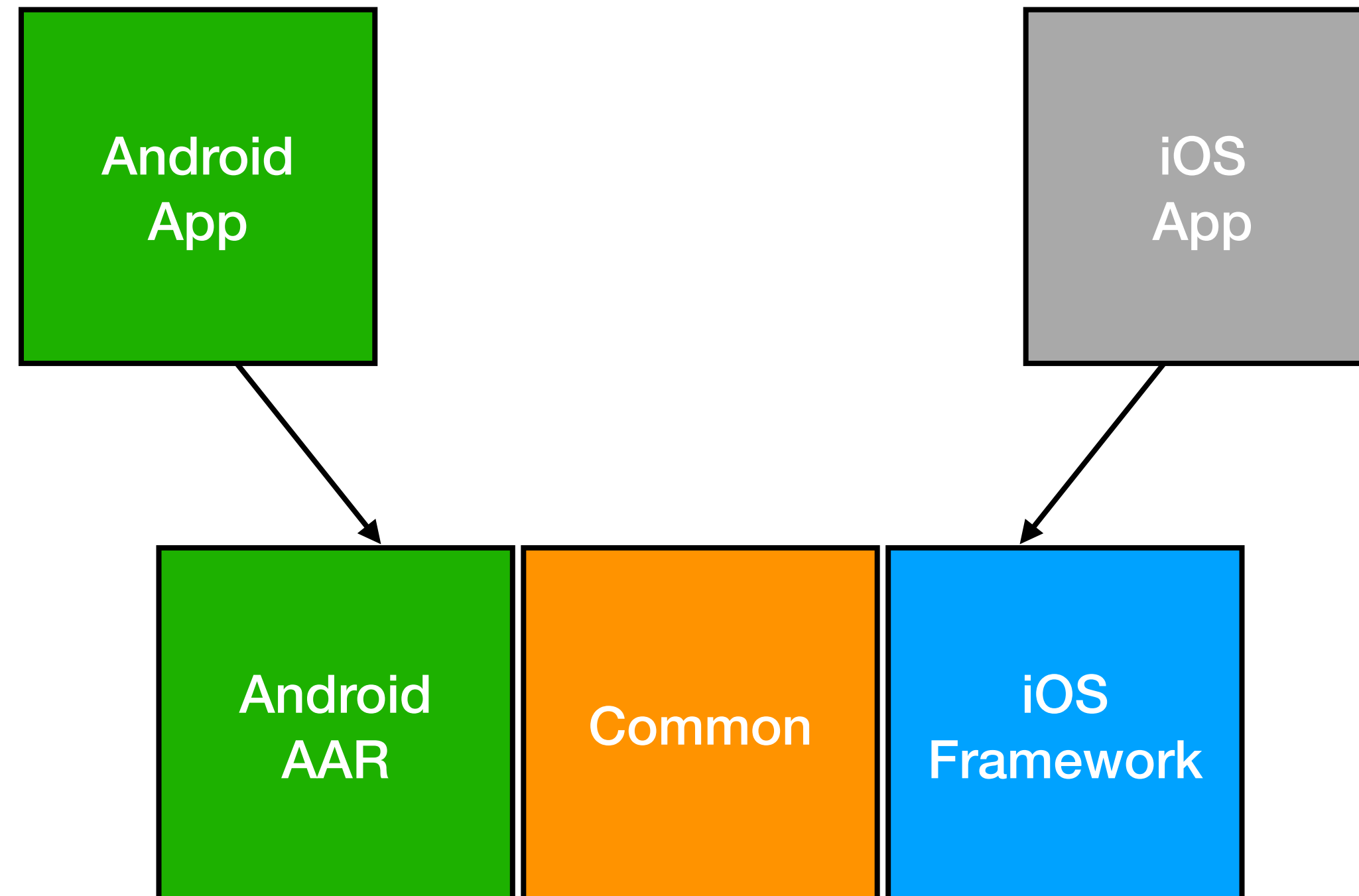
```
class AndroidPlatform : Platform {  
    override val name: String =  
        "Android $  
        {android.os.Build.VERSION.SDK_INT}"  
}
```

```
actual fun getPlatform(): Platform  
= AndroidPlatform()
```

```
interface Platform {  
    val name: String  
}  
  
expect fun getPlatform(): Platform
```

```
class Greeting {  
    private val platform: Platform  
    = getPlatform()  
  
    fun greet(): String {  
        return "Hello, $  
        {platform.name}!"  
    }  
}
```

```
class IOSPlatform: Platform {  
    override val name: String =  
        UIDevice.currentDevice.systemName()  
        + " " +  
        UIDevice.currentDevice.systemVersio  
        n  
}  
  
actual fun getPlatform(): Platform  
= IOSPlatform()
```



# KaMPKit



<https://github.com/touchlab/KaMPKit>

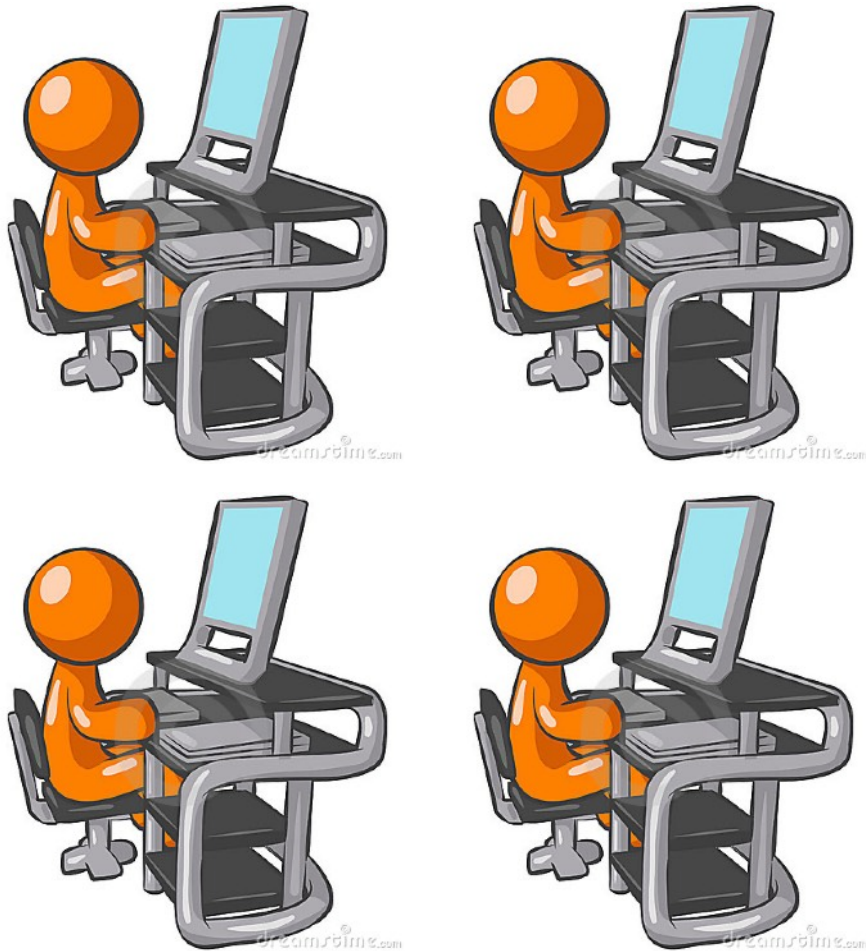
# Common Themes

- Most of Codebase is Shared
- Monorepo
- Xcode Gradle Build Step
- Single Module

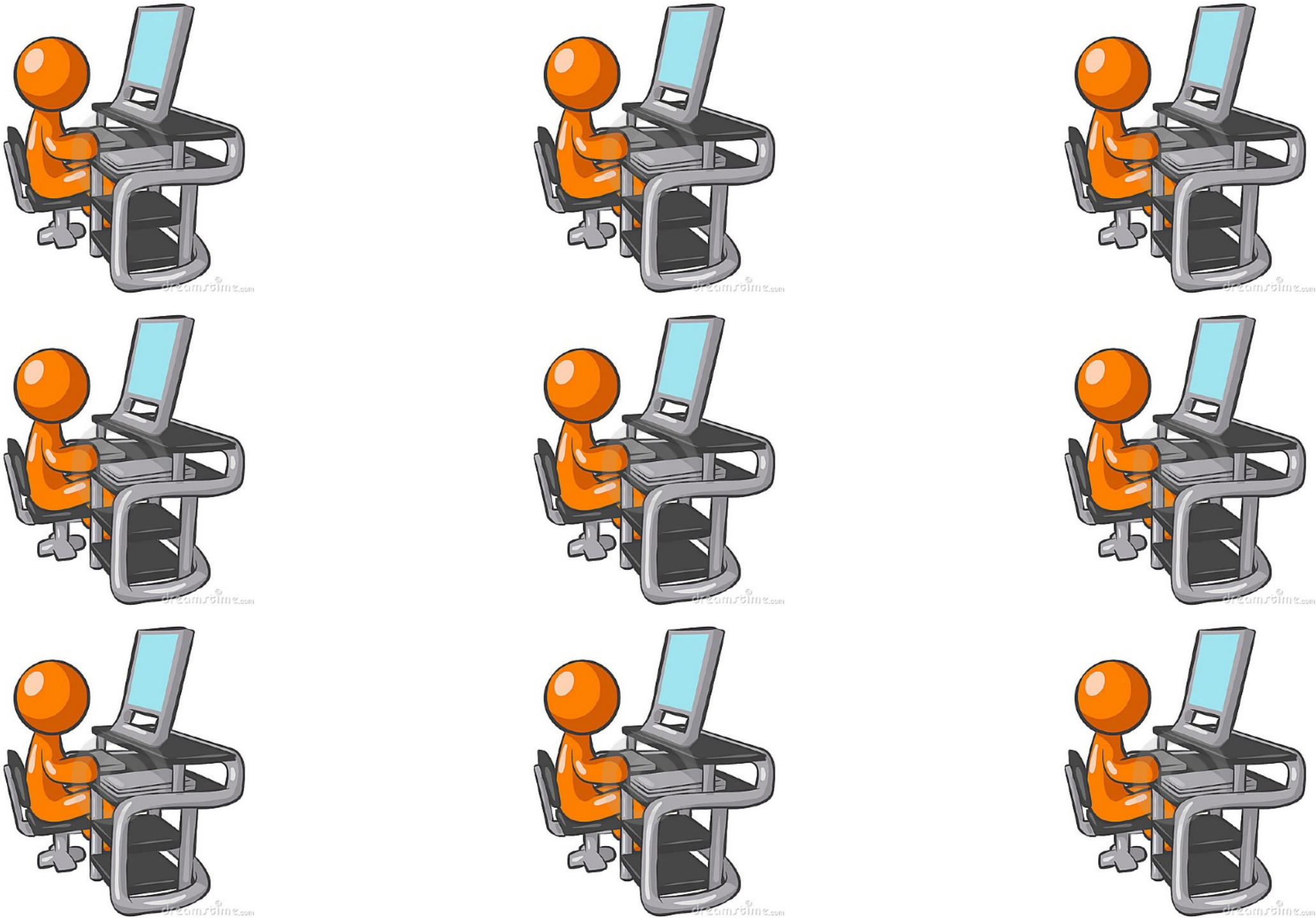


...to the Real World

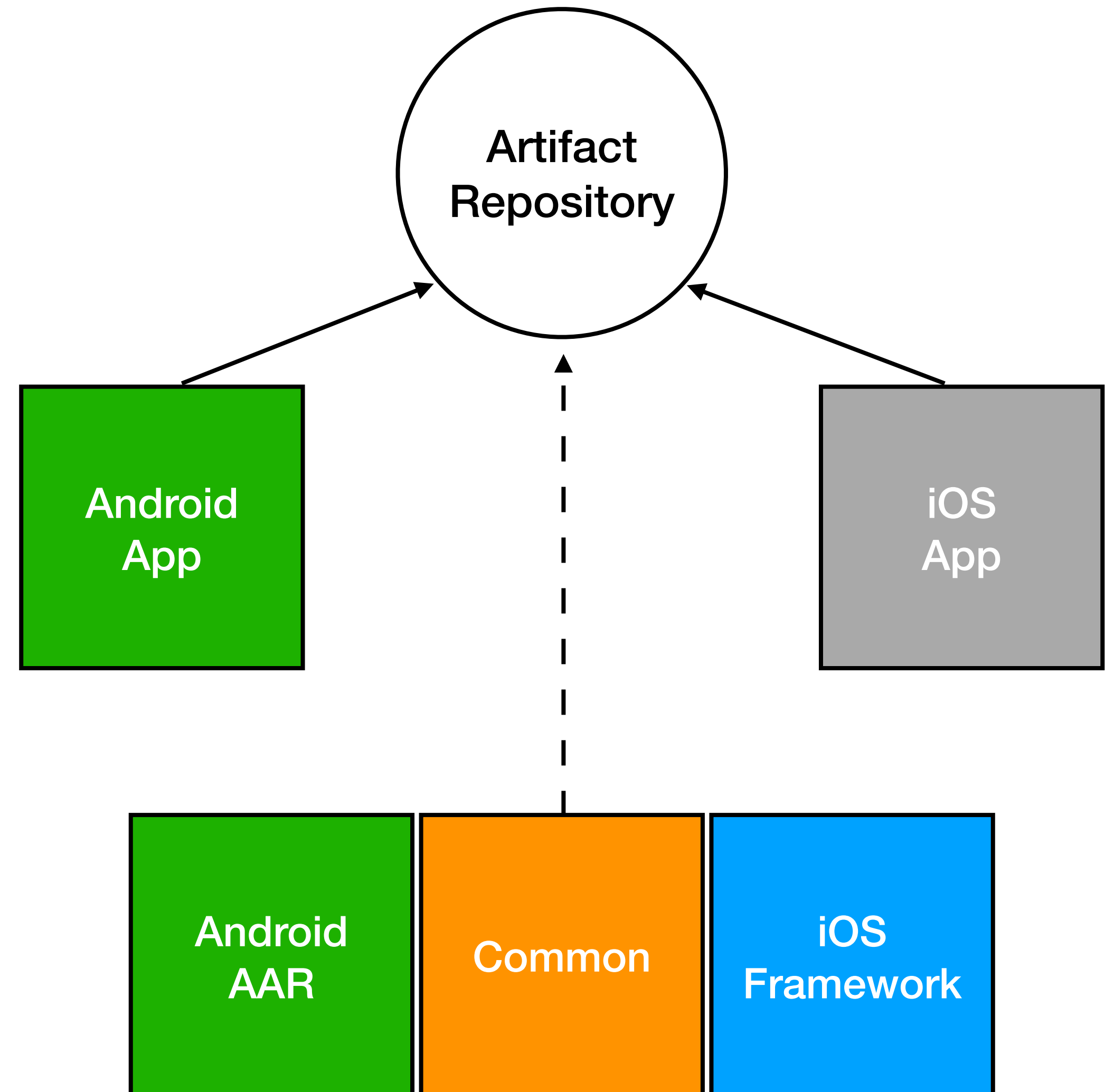
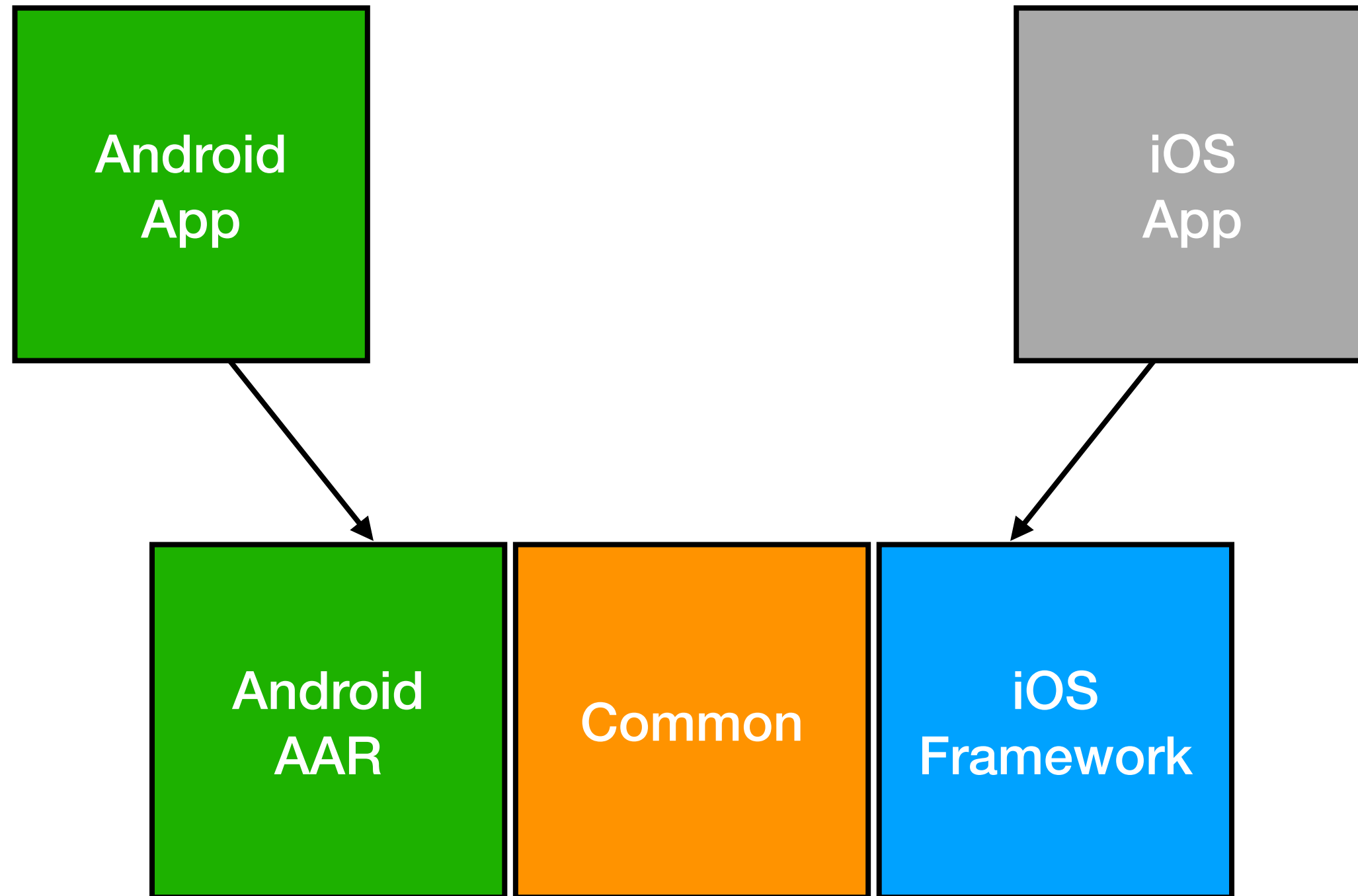
# Team Structure



vs



# Shared Code as Published SDK







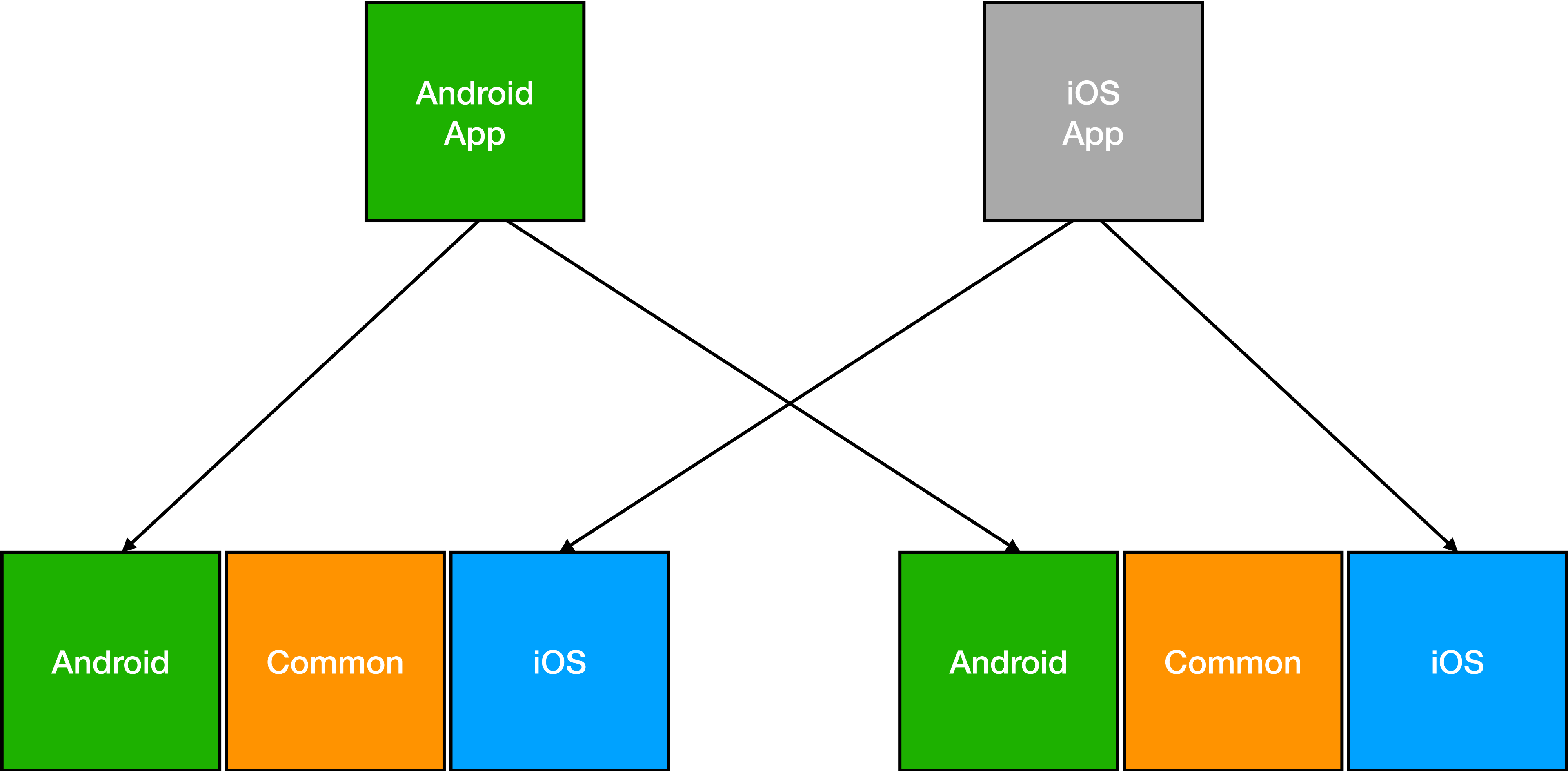
# Introducing KMMBridge For Teams

<https://github.com/touchlab/KMMBridge>

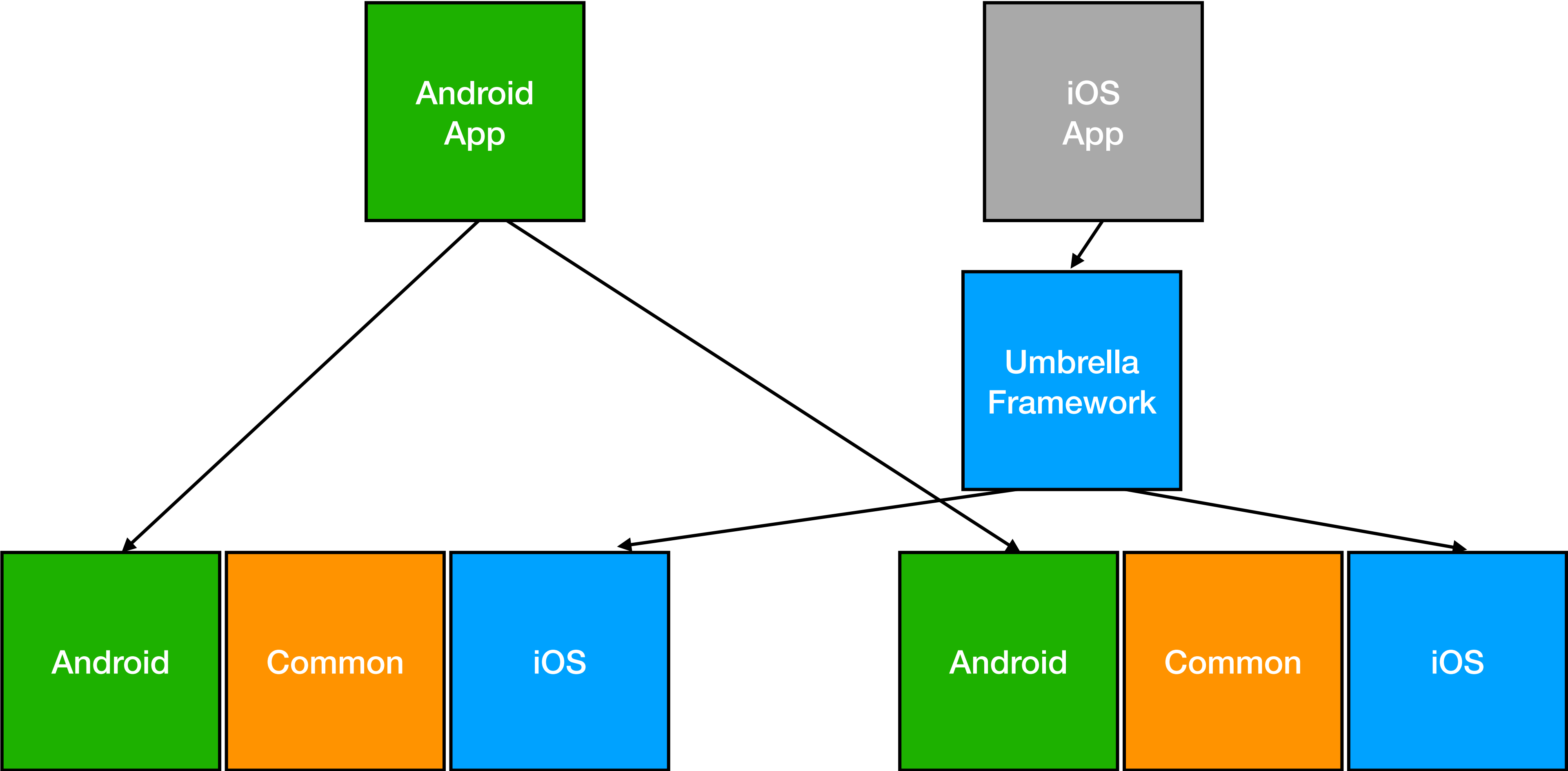
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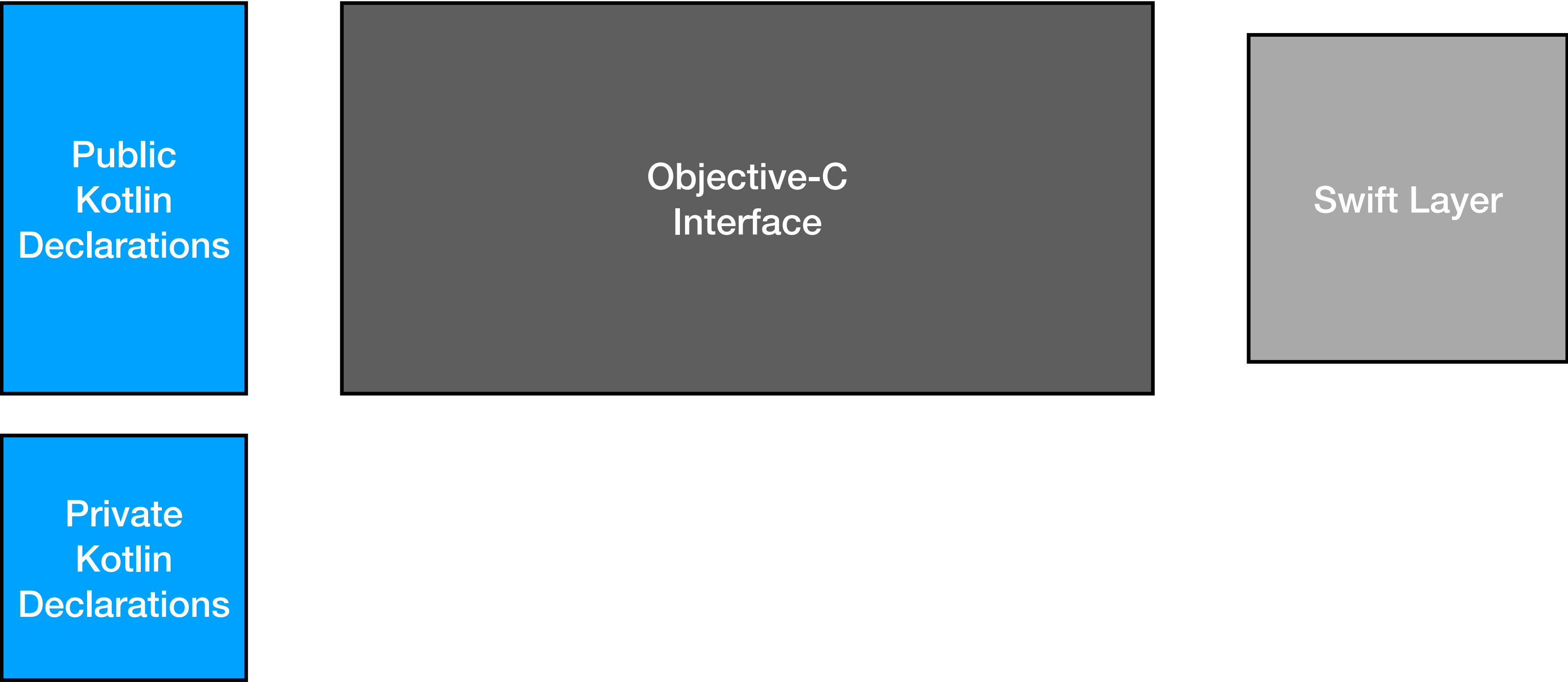
# Modularization



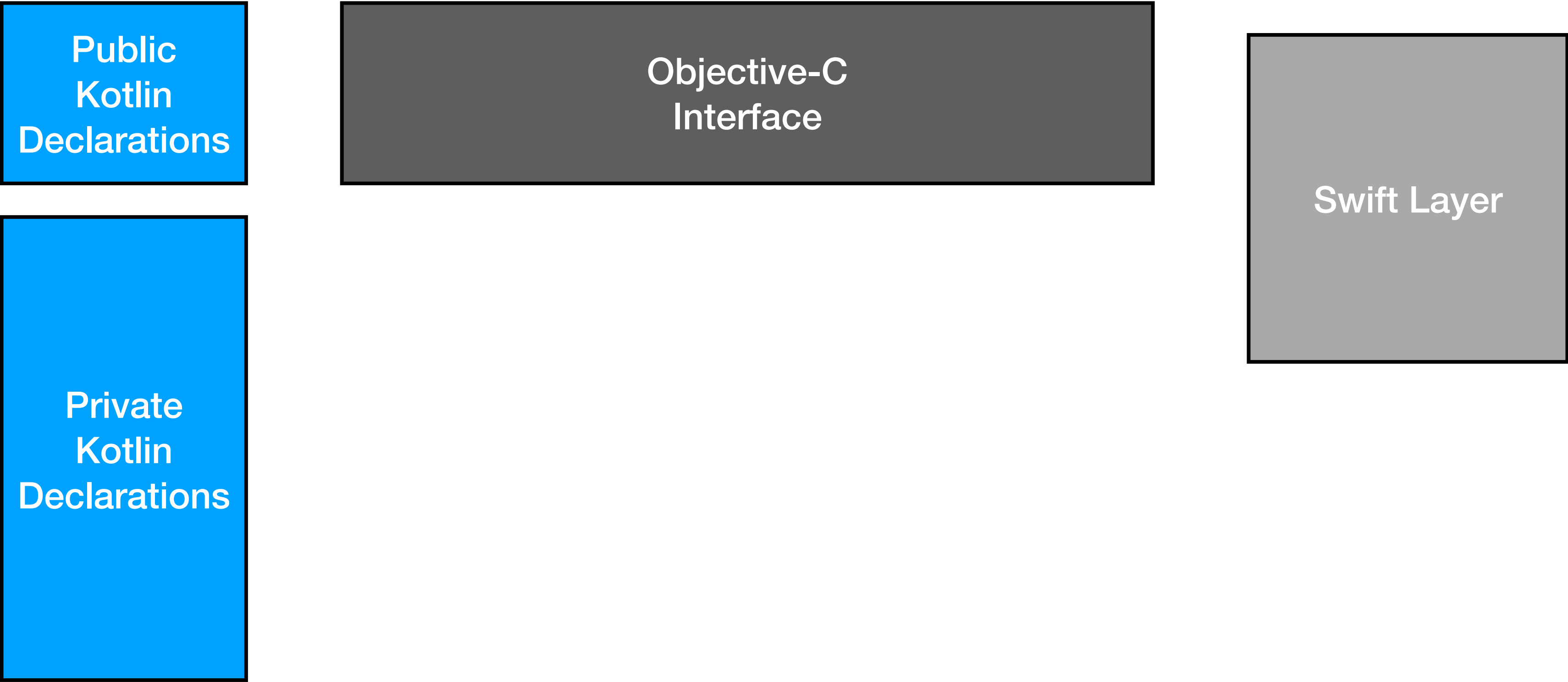
# Modularization



# Binary Size



# Binary Size





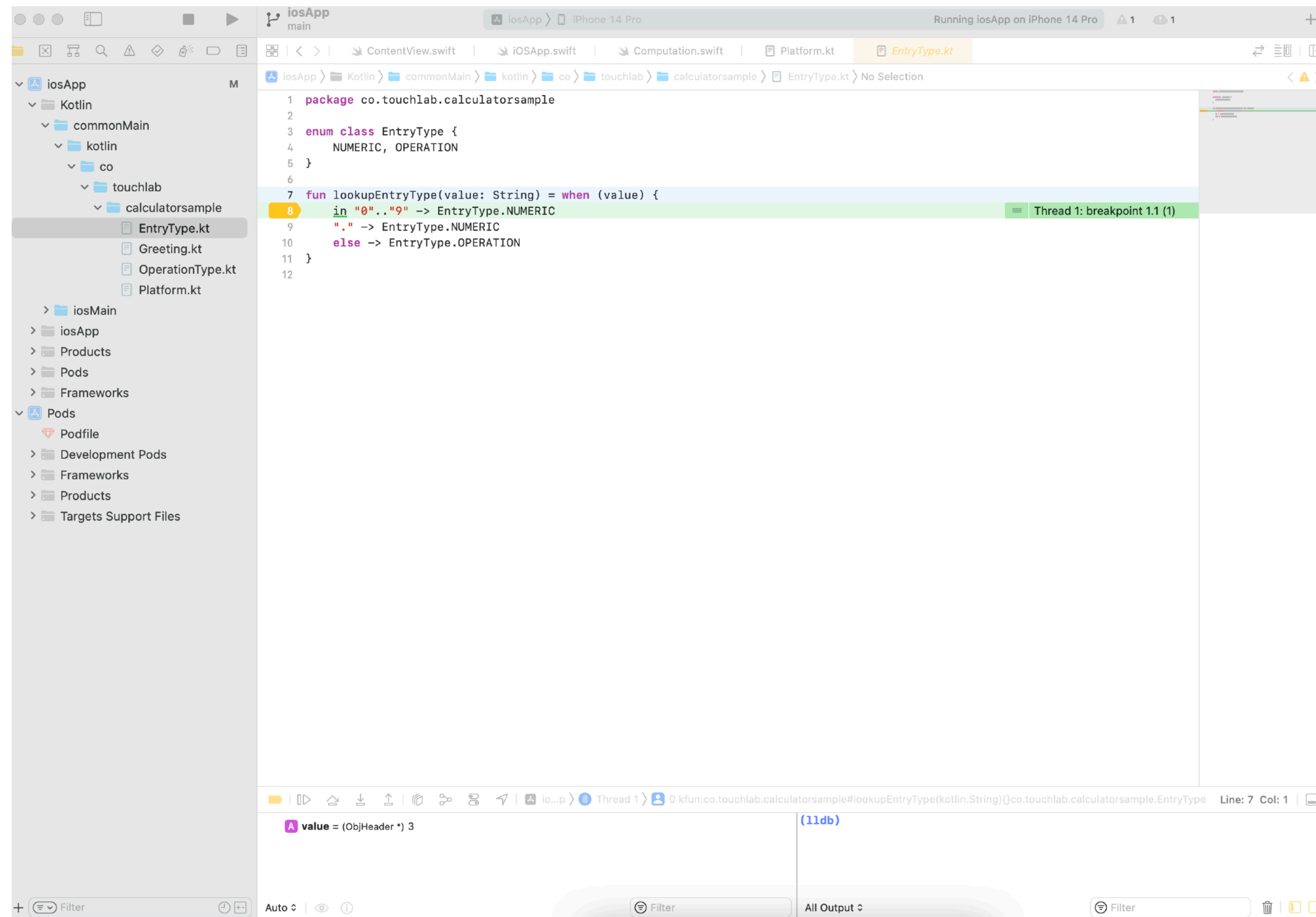
# CrashKiOS

Crashed: com.apple.main-thread SIGABRT ABORT 0x00007fff513782c6		
0	libsystem_kernel.dylib	__pthread_kill + 10
2	libsystem_c.dylib	abort + 120
3	Crashy App Test	konan::abort() + 9
4	Crashy App Test	TerminateWithUnhandledException + 14
5	Crashy App Test	Kotlin_ObjCExport_trapOnUndeclaredException + 97
6	Crashy App Test	<compiler-generated> - Line 1 objc2kotlin.49 + 1
7	Crashy App Test	ContentView.swift - Line 39 closure #7 in closure #1 in ContentView.body.getter +

Non-fatal Exception: Exception Nap time ...		
0	Crashy App Test	Throwable.kt - Line 22 kfun:kotlin.Throwable.<init>(kotlin.String?)kotlin.Throwable + 22
1	Crashy App Test	Exceptions.kt - Line 23 kfun:kotlin.Exception.<init>(kotlin.String?)kotlin.Exception + 23
2	Crashy App Test	Samplelos.kt - Line 147 kfun:sample.CrashBot.moreLayers#internal + 147
3	Crashy App Test	Samplelos.kt - Line 143 kfun:sample.CrashBot.wtfCrash2() + 143
4	Crashy App Test	Samplelos.kt - Line 124 kfun:sample.CrashBot.goCrash4() + 124
5	Crashy App Test	Samplelos.kt - Line 41 kfun:sample.CrashBot.internalDispatch#internal + 41
6	Crashy App Test	Samplelos.kt - Line 99 kfun:sample.CrashBot.goCrash() + 99
7	Crashy App Test	<compiler-generated> - Line 1 objc2kotlin.56 + 1

<https://github.com/touchlab/CrashKiOS>

# Xcode-Kotlin Debugger



<https://github.com/touchlab/xcode-kotlin>







# Interop Layer

## ViewModel Example

```
class MyAndroidViewModel :  
    ViewModel() {  
  
    private val viewModel =  
        MyViewModel()  
  
    fun getDisplayData():  
        LiveData<String> =  
            viewModel  
                .getDisplayData()  
                .asLiveData()  
}
```

```
class MyViewModel {  
  
    fun getDisplayData():  
        Flow<String> =  
            flowOf(  
                "one", "two", "three"  
            )  
}
```

```
class MyCallbackViewModel {  
    private val viewModel =  
        MyViewModel()  
    private val scope =  
        CoroutineScope(...)  
  
    fun getDisplayData(  
        onNext: (String) → Unit,  
        onError: (Throwable) → Unit  
    ) {  
        viewModel.getDisplayData()  
            .onEach { onNext(it) }  
            .onCompletion {  
                if (it ≠ null)  
                    onError(it)  
            }  
            .launchIn(scope)  
    }  
}
```

# Lessons?

**"It Depends"**

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# Thanks!

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