

Something old, something new

Adding Jetpack Compose to a large open source app

A cautionary tale

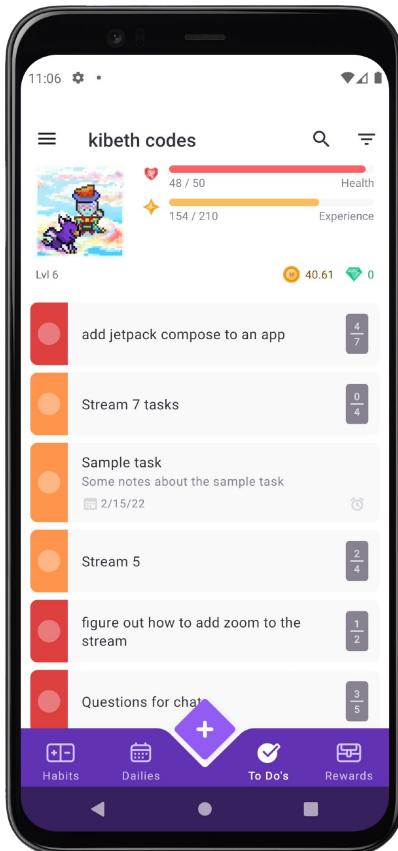


Maia Grotewall



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What and Why?



4,3
★★★★★

21 497 total

Installs

1,000,000+

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Contributor

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5



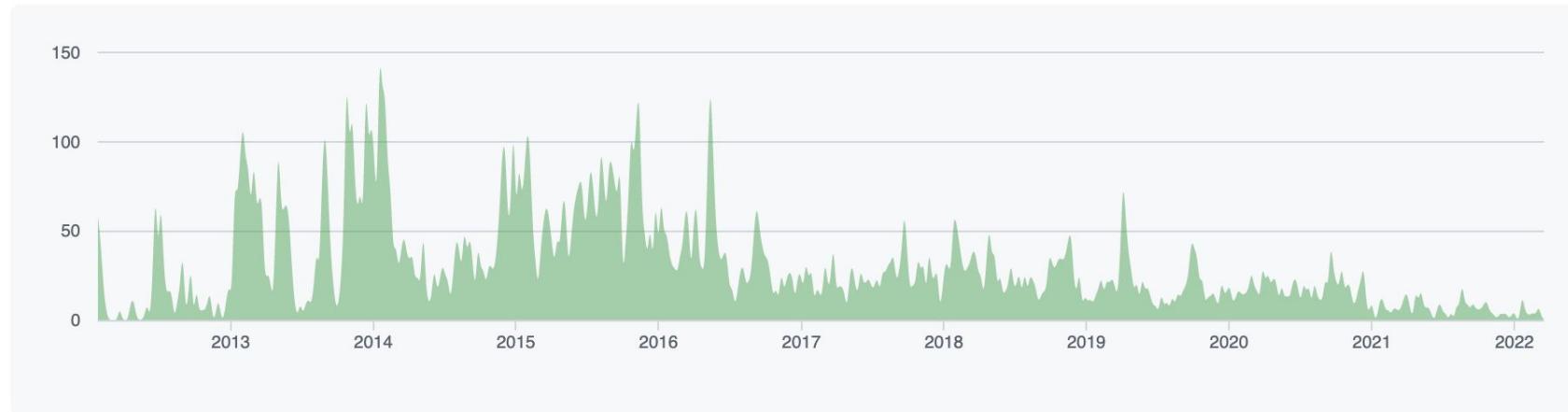
Old yet active

26 activities
33 fragment
12 Repositories
7 viewModels 😬
13 viewHolders 😢

Jan 29, 2012 – Mar 20, 2022

Contributions: Commits ▾

Contributions to develop, excluding merge commits and bot accounts



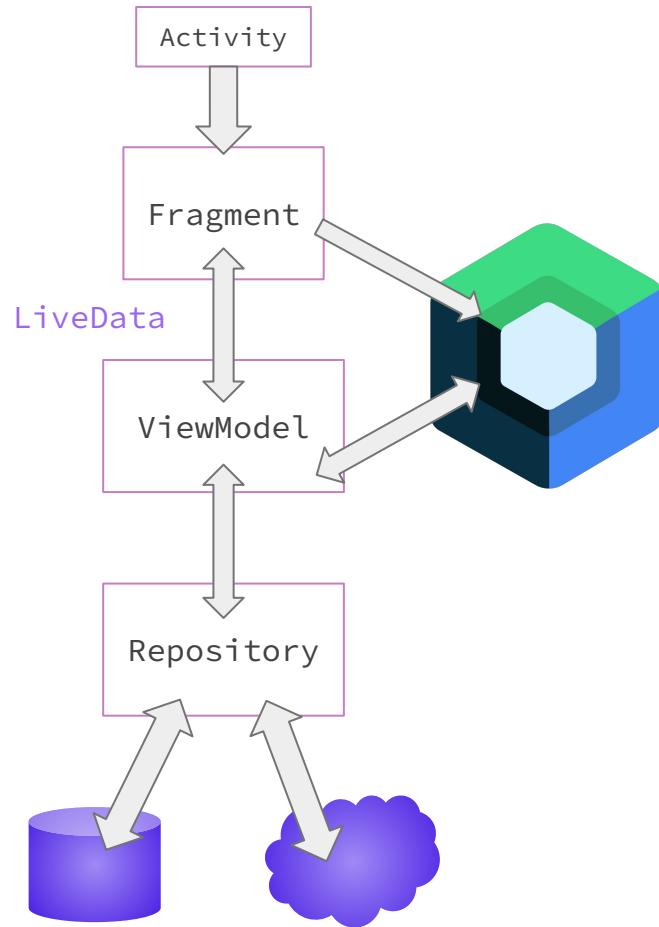
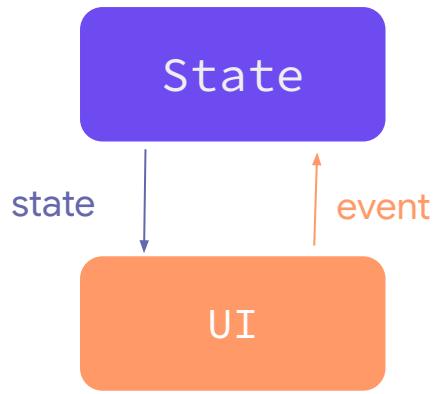
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It's gonna get messy



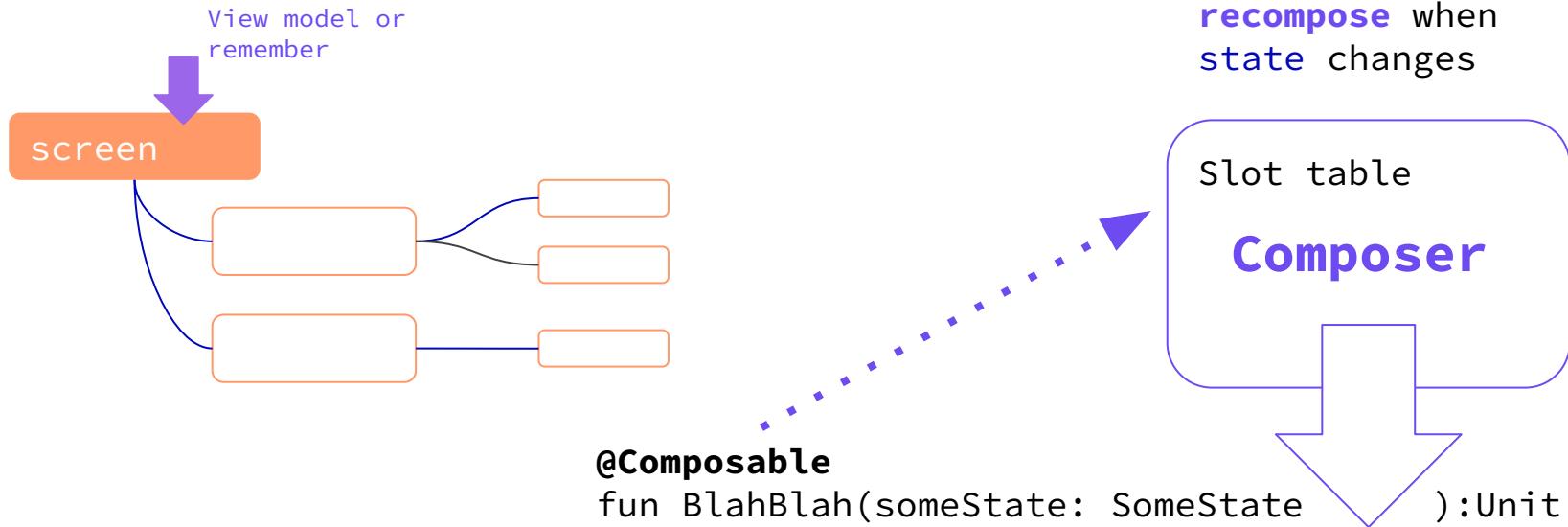
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Basics of Compose



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Basics of Compose



Research



Classic
Android
Views

ComposeView
setContent

@Composable

AndroidView
factory

ViewModel ✓

Theme converter ✓

Plan

To Do's 6

Active Scheduled Complete

Add a To Do

add jetpack compose to an app

4/7

- get the repo and fork
- sort out the build
- figure out how the themes work
- add composable
- tests
- pr up
- get badges



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Laziness and vice

To Do's 6

Active Scheduled Complete

Add a To Do

add jetpack compose to an app

4/7

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OFFLINE

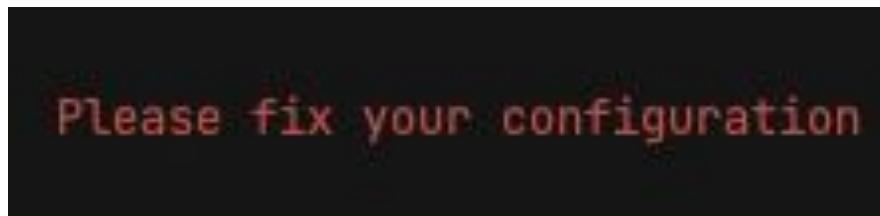
kibethcodes made a highlight of a recent Science & Technology stream

Turn on Notifications

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Setup

e: This version (**1.1.1**) of the Compose Compiler requires Kotlin version **1.6.10** but you appear to be using Kotlin version 1.6.0 which is not known to be compatible.



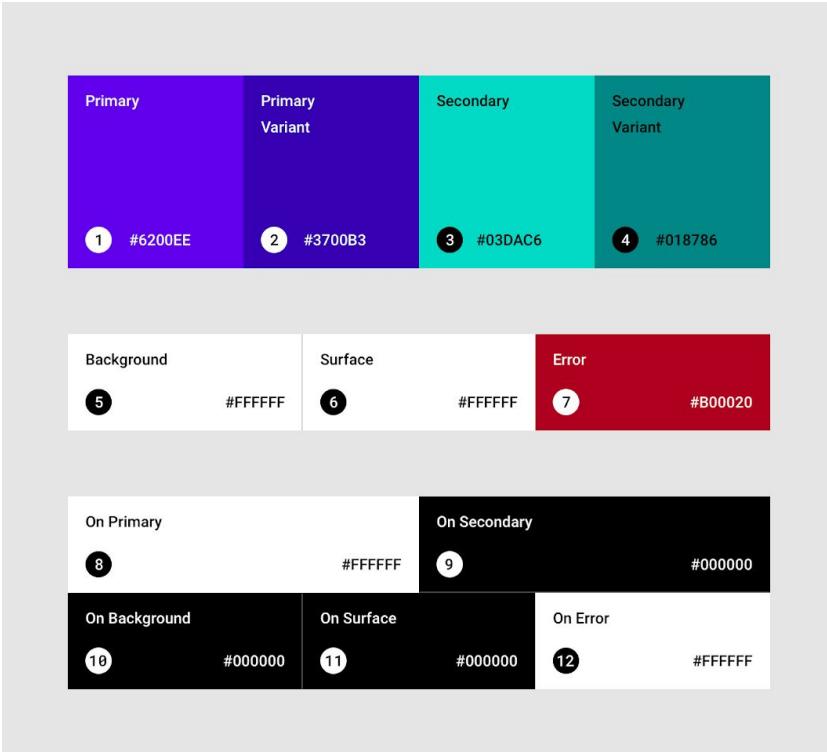
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Theme - single source of truth

```
MdcTheme {  
    // MaterialTheme.colors,  
    // MaterialTheme.shapes,  
    // MaterialTheme.typography  
    // will now contain copies of the Context's theme  
}
```



Theme - material theme



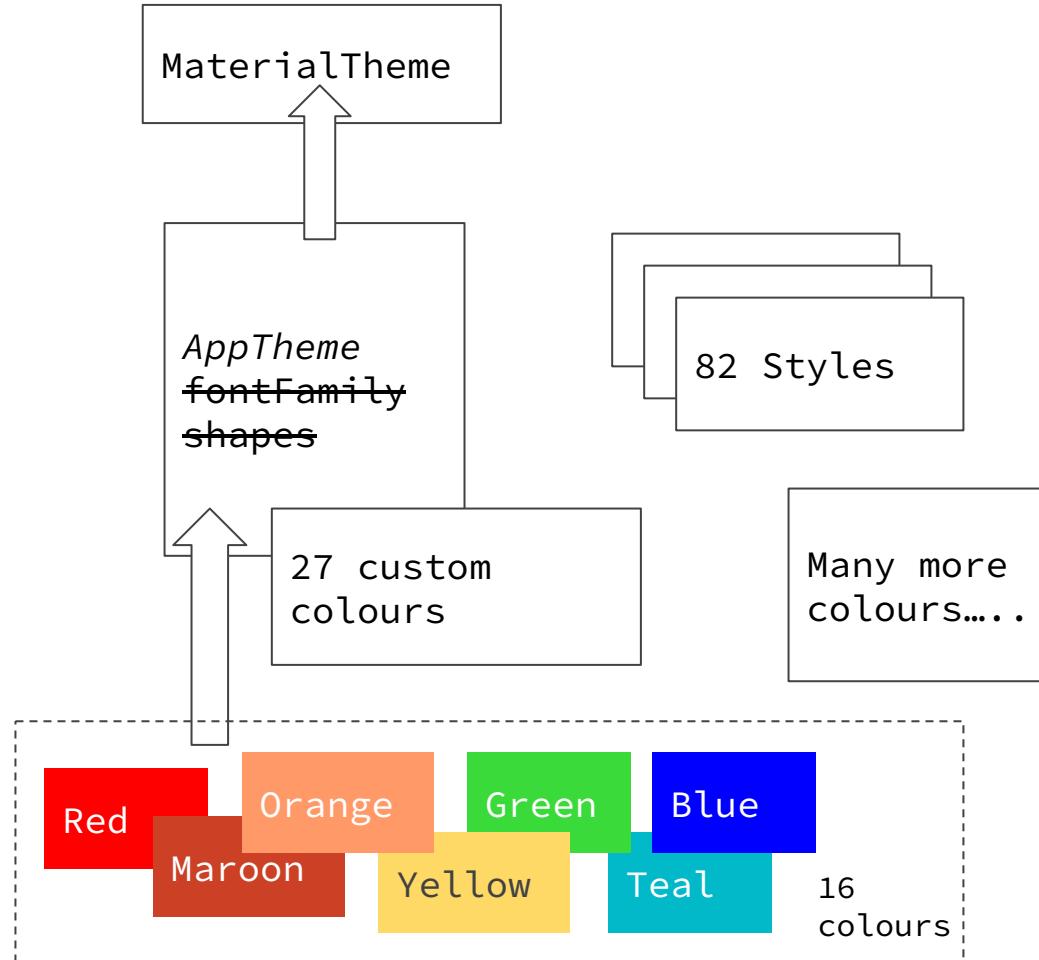
+fontfamily

+shapes



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Theme



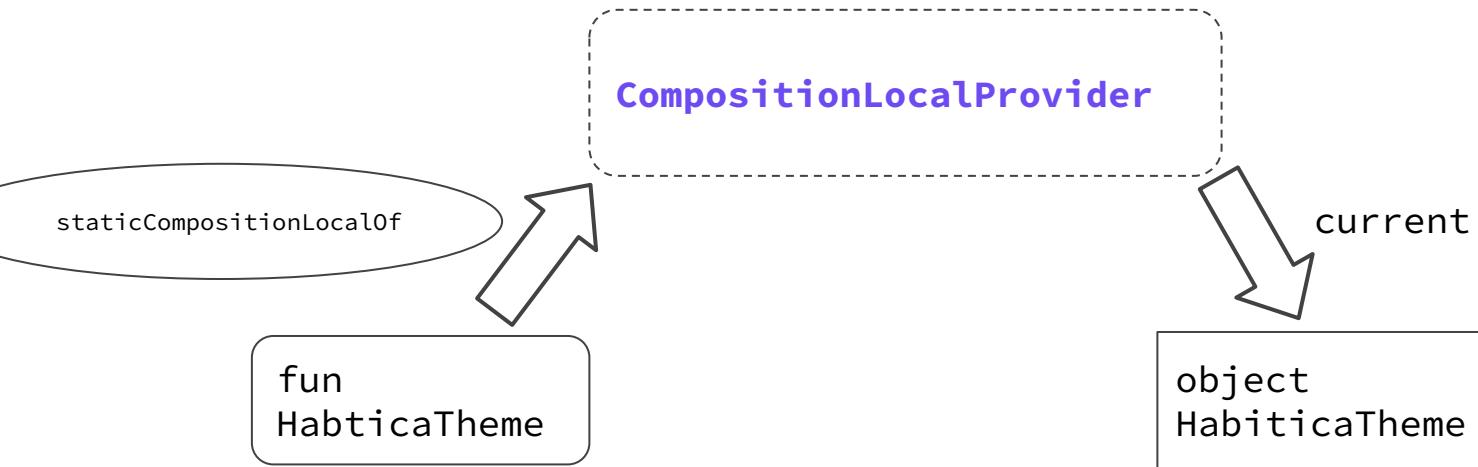
Theme



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Theme - ~~single source of truth~~

<https://developer.android.com/jetpack/compose/themes/custom>



Theme - ~~single source of truth~~

```
val LocalExtendedColors = staticCompositionLocalOf {...}

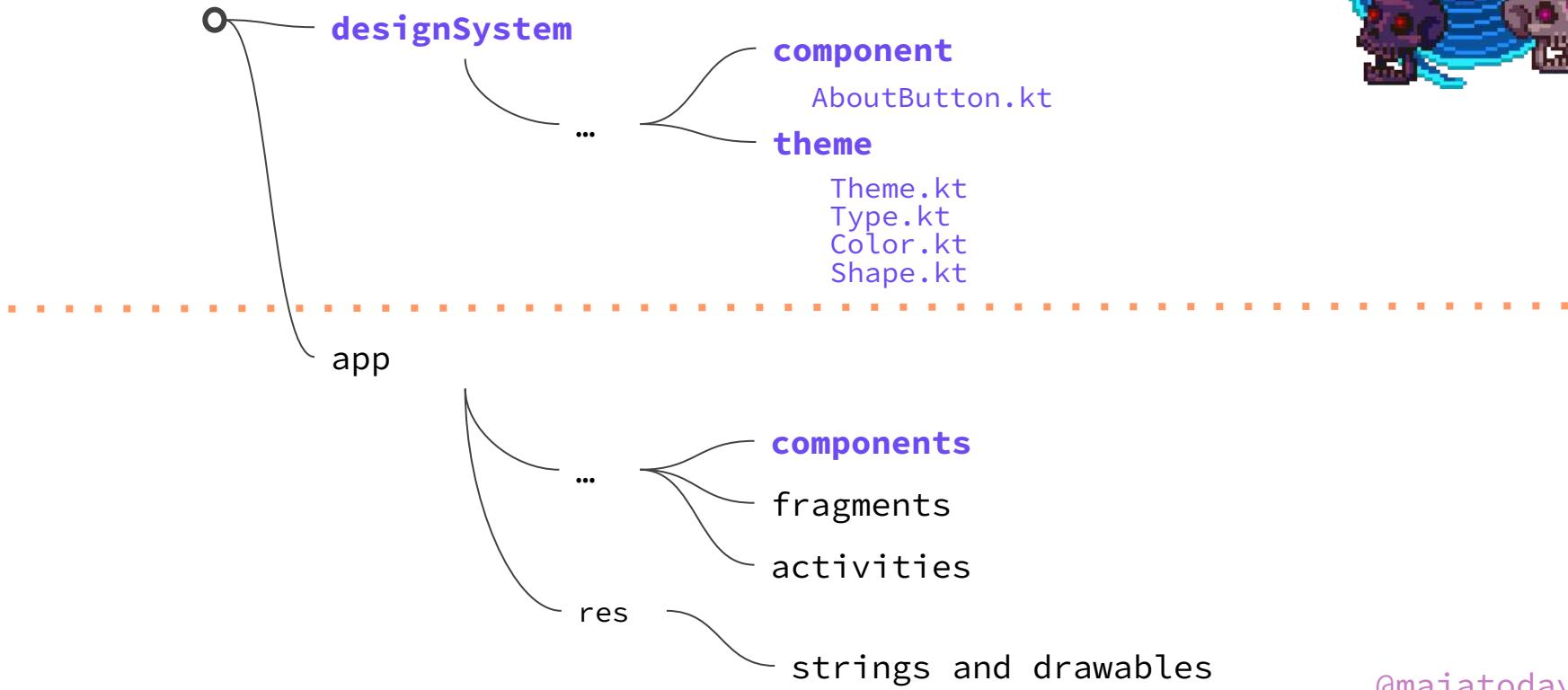
@Composable
fun HabiticaTheme(...) {
    ...
    CompositionLocalProvider(LocalExtendedColors provides extendedColors) {...}
    ...
}

object HabiticaTheme {
    val colors: ExtendedColors
        @Composable
        get() = LocalExtendedColors.current
}
```

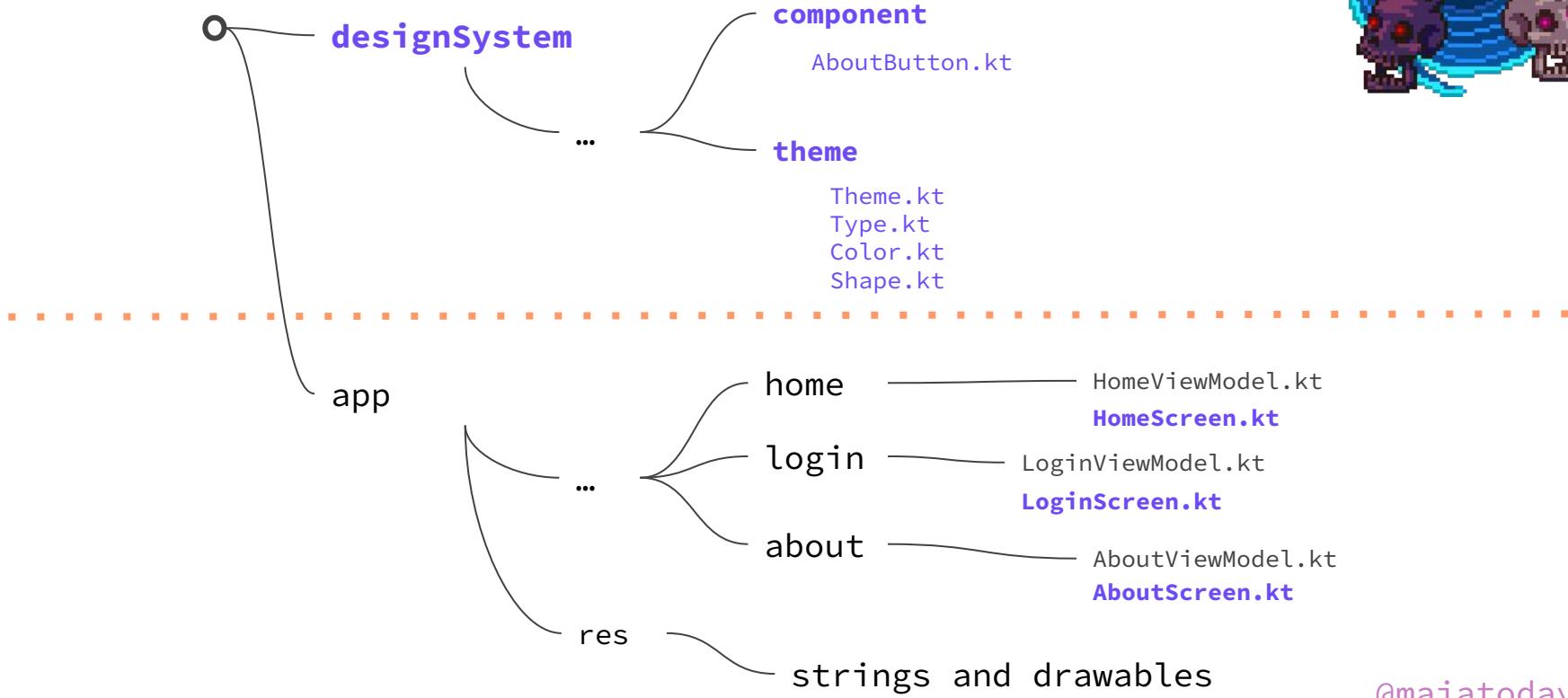


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Module structure

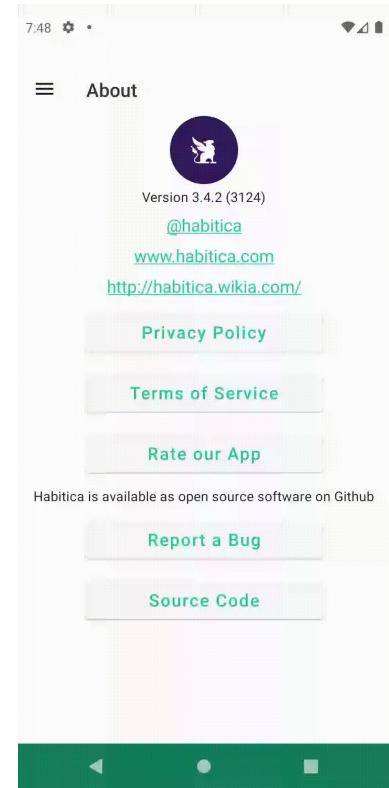
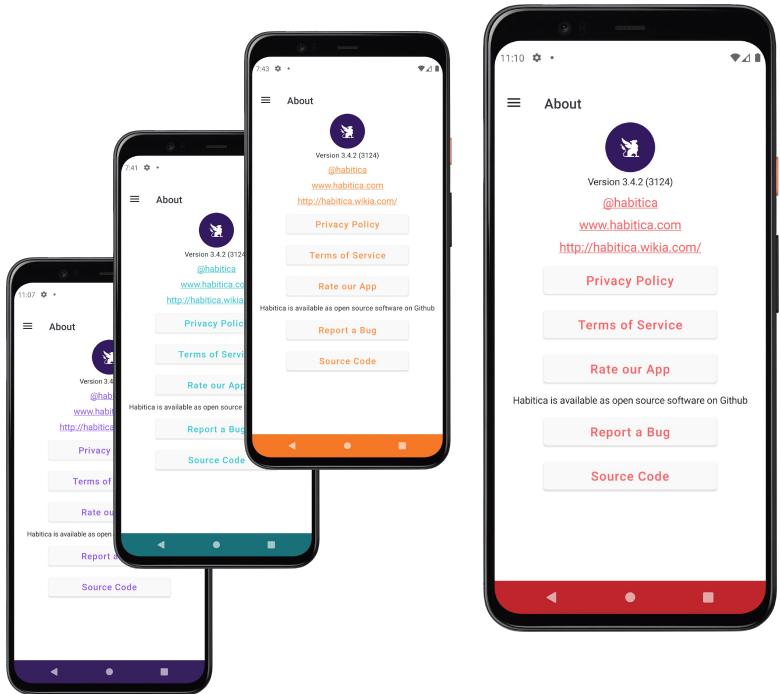


Module structure



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Whole screen approach - About demo



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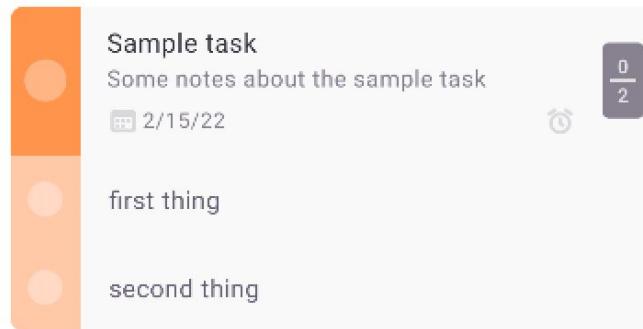
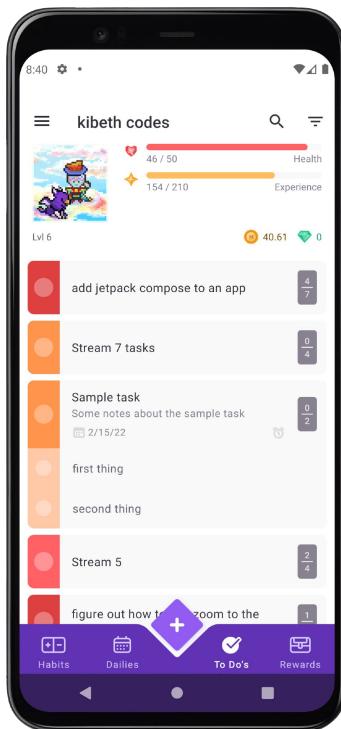
40 / 50



98 / 100

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Component approach

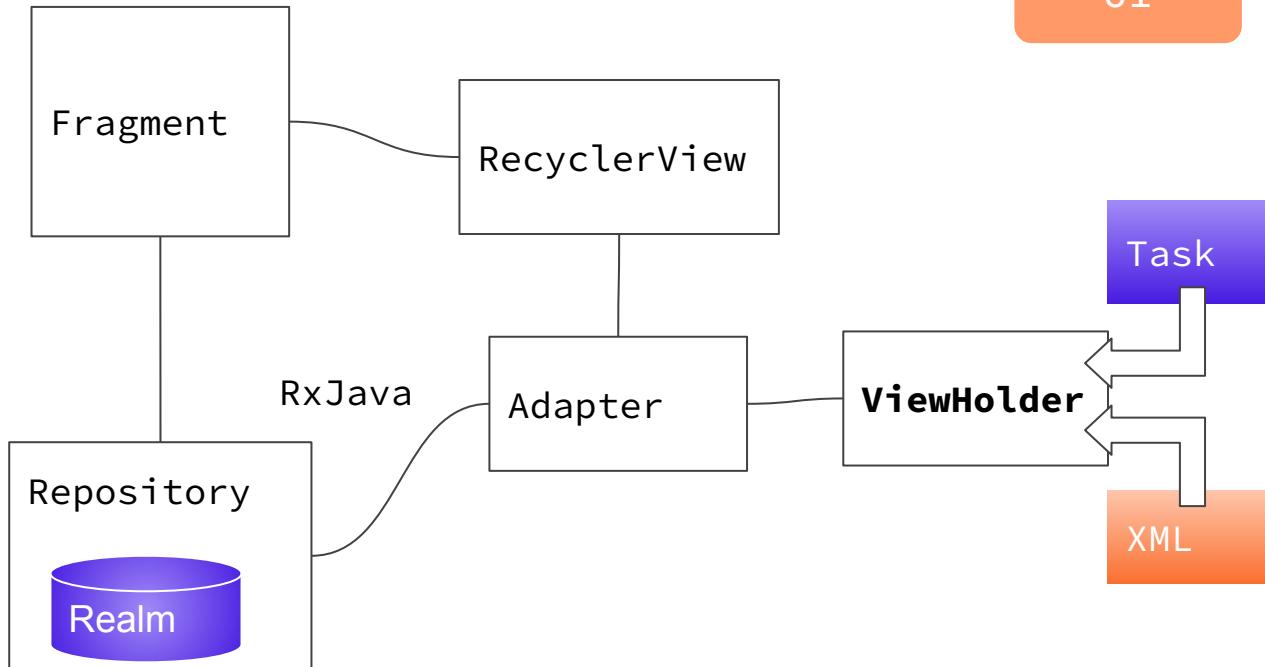


Compose in recycler view



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State



TodoCardViewHolder



```
override fun bind(data: Task, position: Int, displayMode: String) {  
    composeView.setContent {  
        HabiticaTheme {  
            TodoCard(taskItem = data.toTaskItem(), ... /* lambdas */)  
        }  
    }  
}
```

Base RecyclerViewHolder
↳ RecyclerViewHolder

RealmBase TaskRecyclerViewHolder
↳ VH AT

ComposeTodoView

RecyclableViewHolder
↳ BindableViewHolder

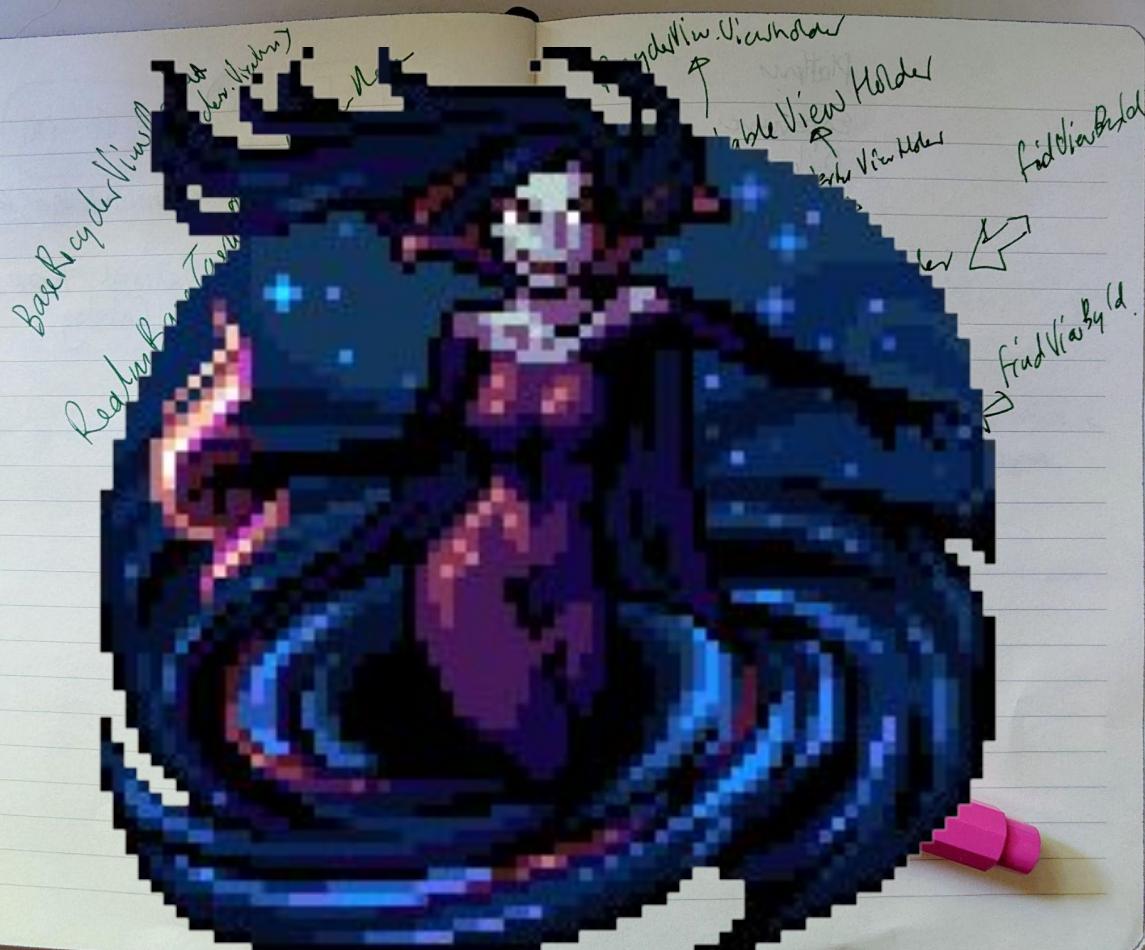
BindableViewHolder
↳ Interpolator

Interpolator
↳ findViewHolder

BaseTaskViewHolder
↳ findViewByid.

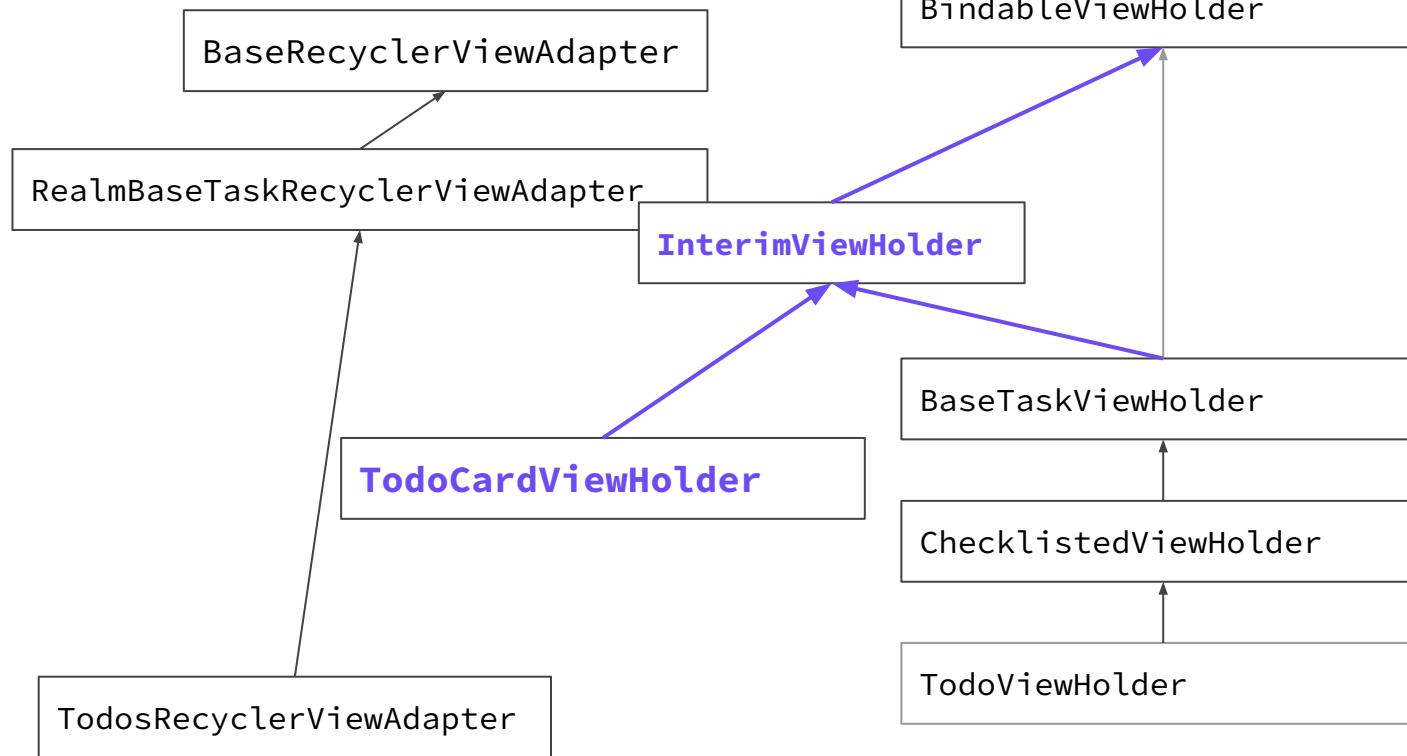
ChecklistTaskViewHolder
↳

ToDoViewHolder
↳



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Some coupling?

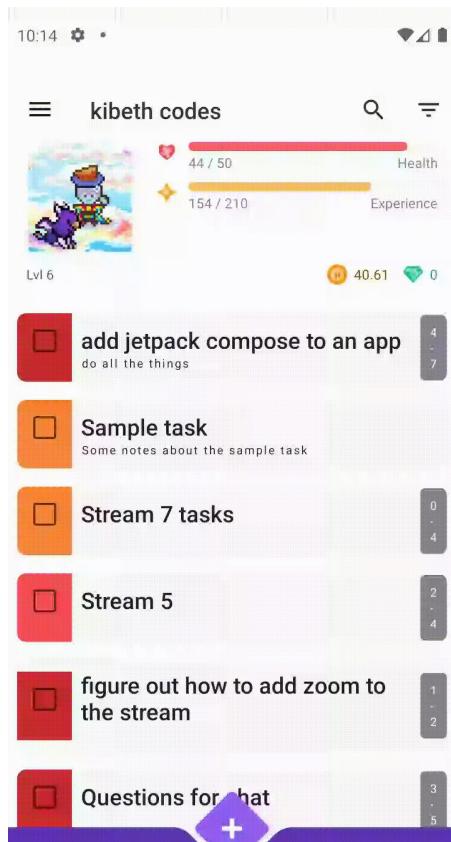


findViewById

findViewById

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Component demo



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animateContentSize



```
var checkListExpanded by remember { mutableStateOf(false) }
```

```
TodoBody(
```

```
    checkListExpanded = checkListExpanded,  
    taskItem = taskItem,  
    onClick = { checkListExpanded = !checkListExpanded }
```

```
)
```

animateContentSize



```
var checkListExpanded by remember { mutableStateOf(false) }
```

```
TodoBody(  
    modifier = Modifier.animateContentSize(),  
    checkListExpanded = checkListExpanded,  
    taskItem = taskItem,  
    onClick = { checkListExpanded = !checkListExpanded }  
)
```

animateContentSize



```
var checkListExpanded by remember { mutableStateOf(false) }

TodoBody(
    modifier = Modifier.animateContentSize(animationSpec = tween(3000)),
    checkListExpanded = checkListExpanded,
    taskItem = taskItem,
    onClick = { checkListExpanded = !checkListExpanded }
)
```



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48 / 50



148 / 210

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Test and PR



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“What does it matter whether I make
this little piece nicer if 90 percent
of the time I’ll still be working with
murky slime?”

Michael Feathers
Working effectively with legacy code

Contributor

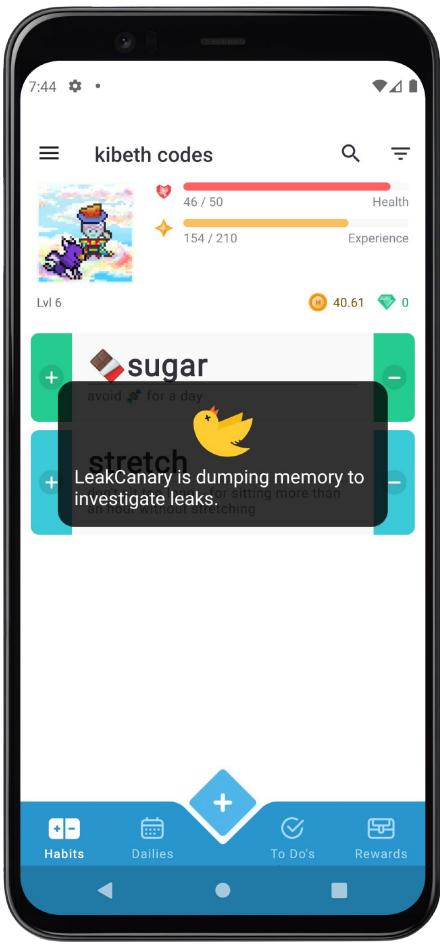
Show All Selected Achievements

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Legends Guild!

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Why do it?



- Component testing
- Unidirectional data flow
- Easy animations
- Better theme switching
- Kotlin
- No RecyclerViews
- Declarative
- Intuitive?
- Quicker?



Sort out **Kotlin version** first



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**Decide on package
approach**



Approach?
Screen/**Component**



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**Sort out ~~Mess~~
State and Architecture**

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Next?

[Habitica fork](#)

[Blog post with collection of links to learn compose](#)

[Jetpack Compose interop guide](#)

[Code Realm and Compose](#)

[maiatoday.net](#)



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Next?

<https://github.com/kibethcodes/habitica-android>

<https://www.maiatoday.net/p/links-to-learn-compose/>

<https://developer.android.com/jetpack/compose/interop/interop-apis>

<https://github.com/mongodb-developer/EmojiGarden/blob/main/app/src/main/java/com/example/emojigarden/EmojiVmRealm.kt>

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www.devconf.co.za/rate

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“Ghaaa!!! The code is **offending** my
engineering sensibilities! It’s
killing me!”

“I forgot to mention that sometimes
the **code wins.**”

Dilbert (Scott Adams)
[The code mocking comic strip](#)