

# Something old, something new



Maia Grotepass



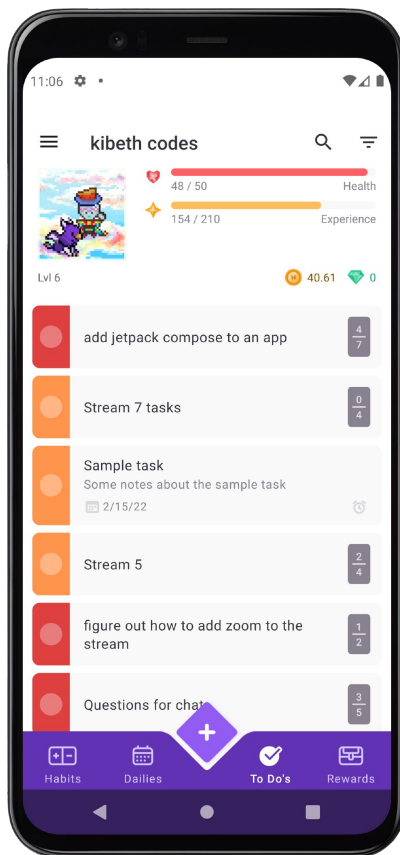
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## Adding Jetpack Compose to a large open source app

A cautionary tale



# What and Why?



4,3  
★★★★★  
21 497 total

**Installs**

1,000,000+

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## Contributor

Has contributed to Habitica, whether via code, art, music, writing, or other methods. To learn more, join the Aspiring Spe Legends Guild!

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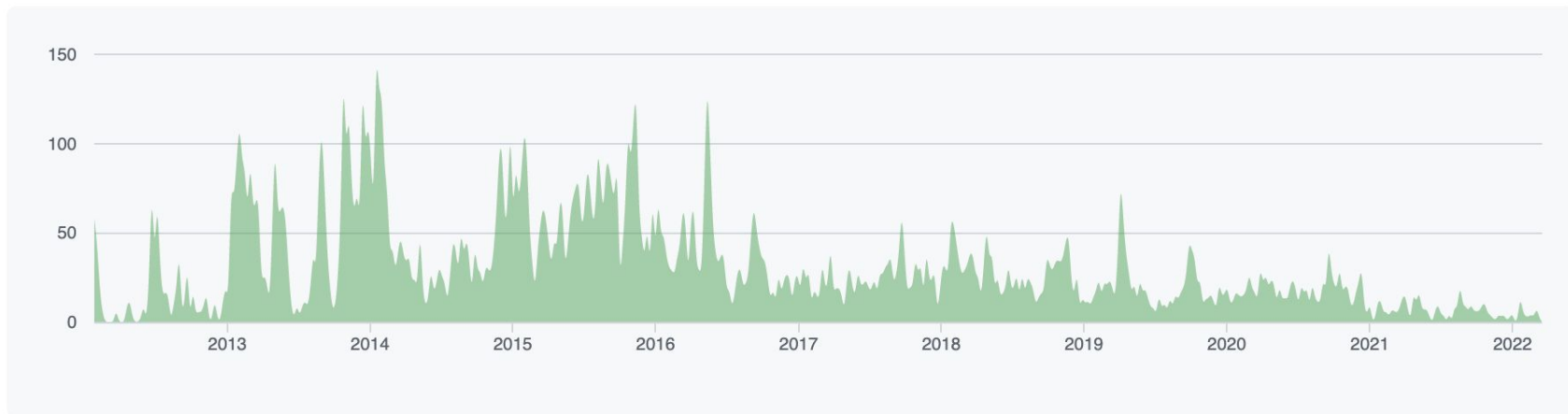
# Old yet active

26 activities  
33 fragment  
12 Repositories  
7 viewModels 🤔  
13 viewHolders 🤖

Jan 29, 2012 – Mar 20, 2022

Contributions: Commits ▾

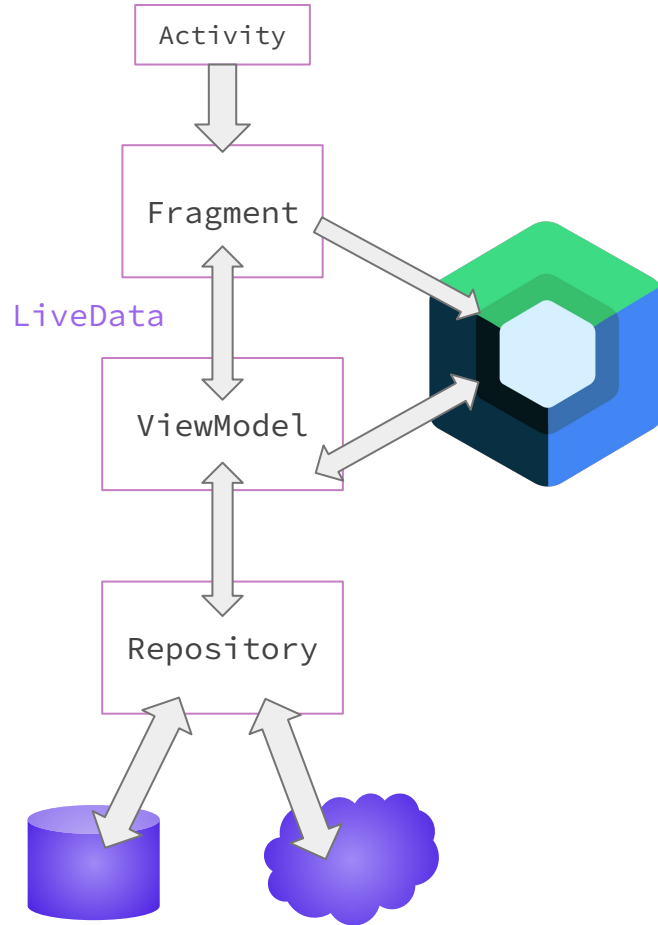
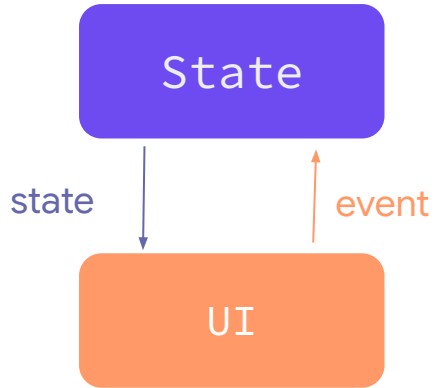
Contributions to develop, excluding merge commits and bot accounts



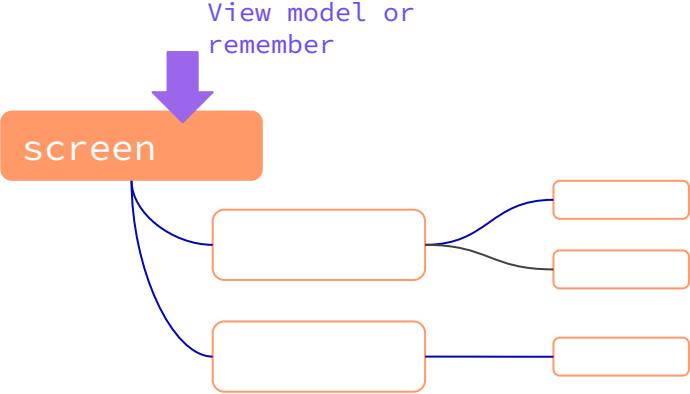
It's gonna get messy



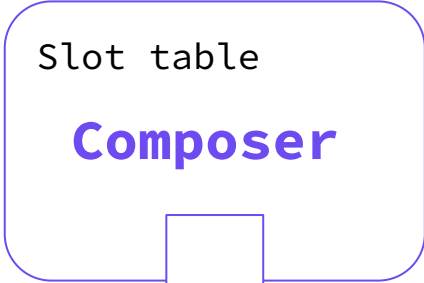
# Basics of Compose



# Basics of Compose



saves state and  
**recompose** when  
state changes



```
@Composable  
fun BlahBlah(someState: SomeState ):Unit
```

# 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



# Laziness and vice



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

 [twitch.tv/kibethcodes](https://www.twitch.tv/kibethcodes)

A screenshot of a Twitch stream. The main content is a dark-themed IDE with code. A large text overlay on the left says "OFFLINE kibethcodes made a highlight of a recent Science & Technology stream" with a "Turn on Notifications" button. On the right, there's a chat window with several messages, some starting with "Habit Title". A small video inset shows a woman with glasses. At the bottom, the streamer's profile "kibethcodes" with 16 followers is visible.

OFFLINE

kibethcodes made a highlight of a recent Science & Technology stream

Turn on Notifications

kibethcodes  
16 followers

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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.

```
Please fix your configuration
```

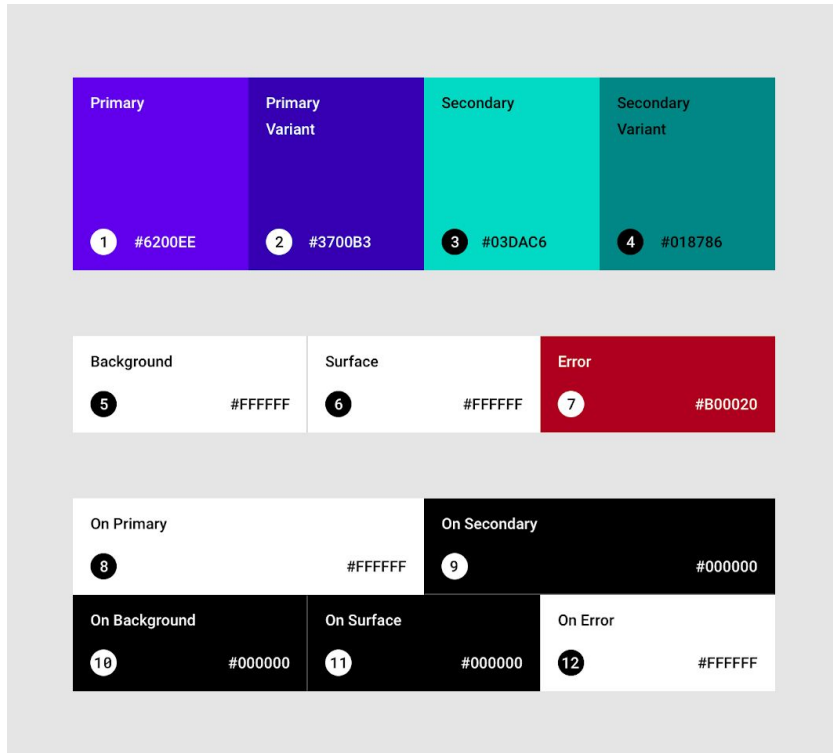


# Theme - single source of truth



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

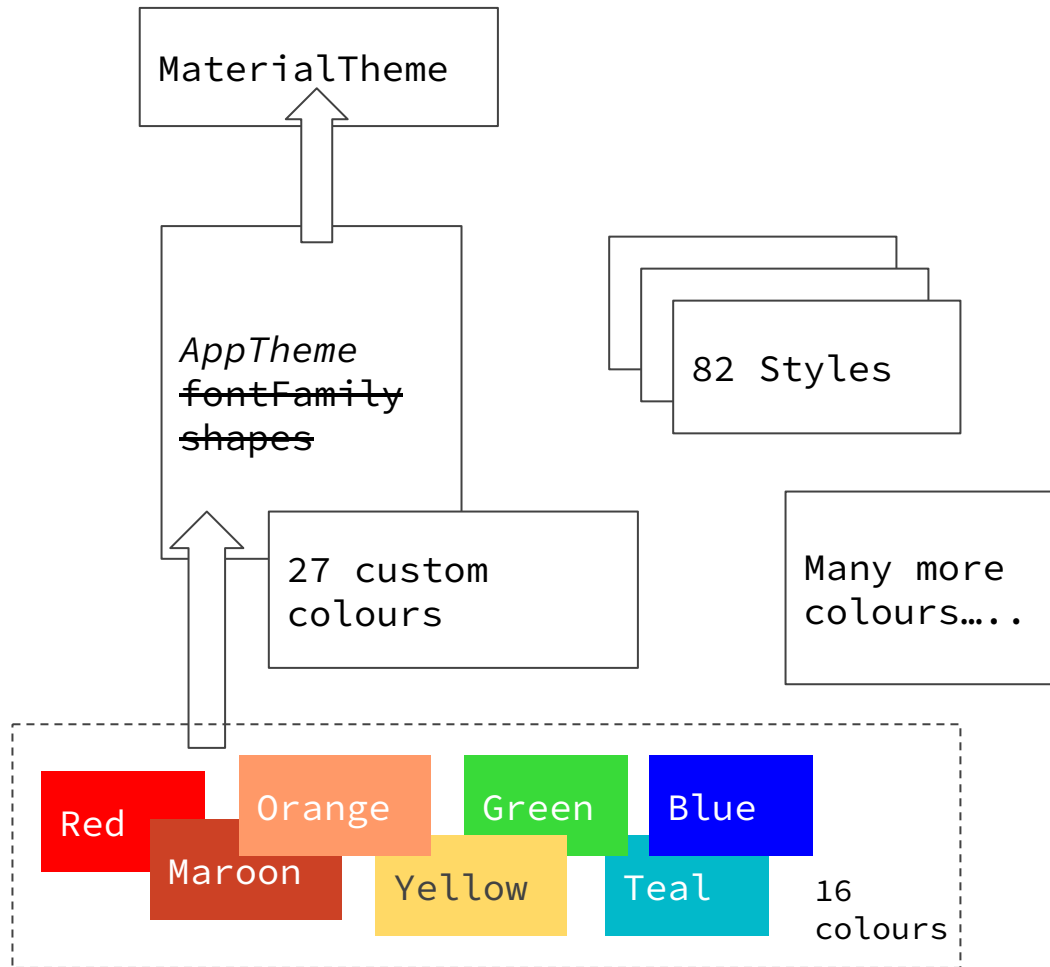
# Theme - material theme



+fontfamily

+shapes

# Theme



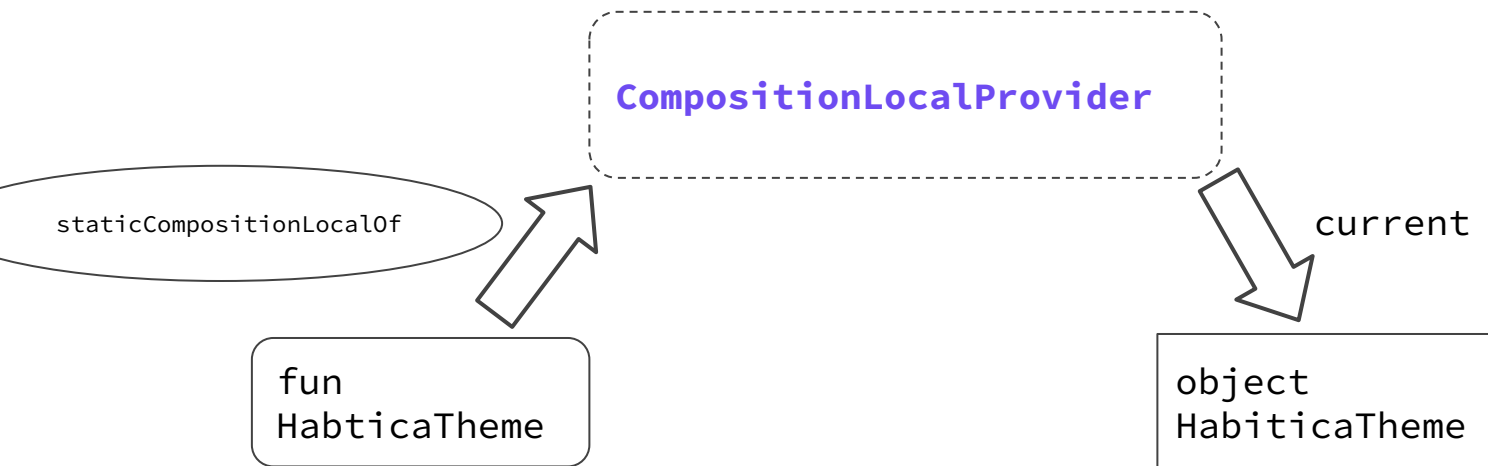
Theme



# 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 {
```

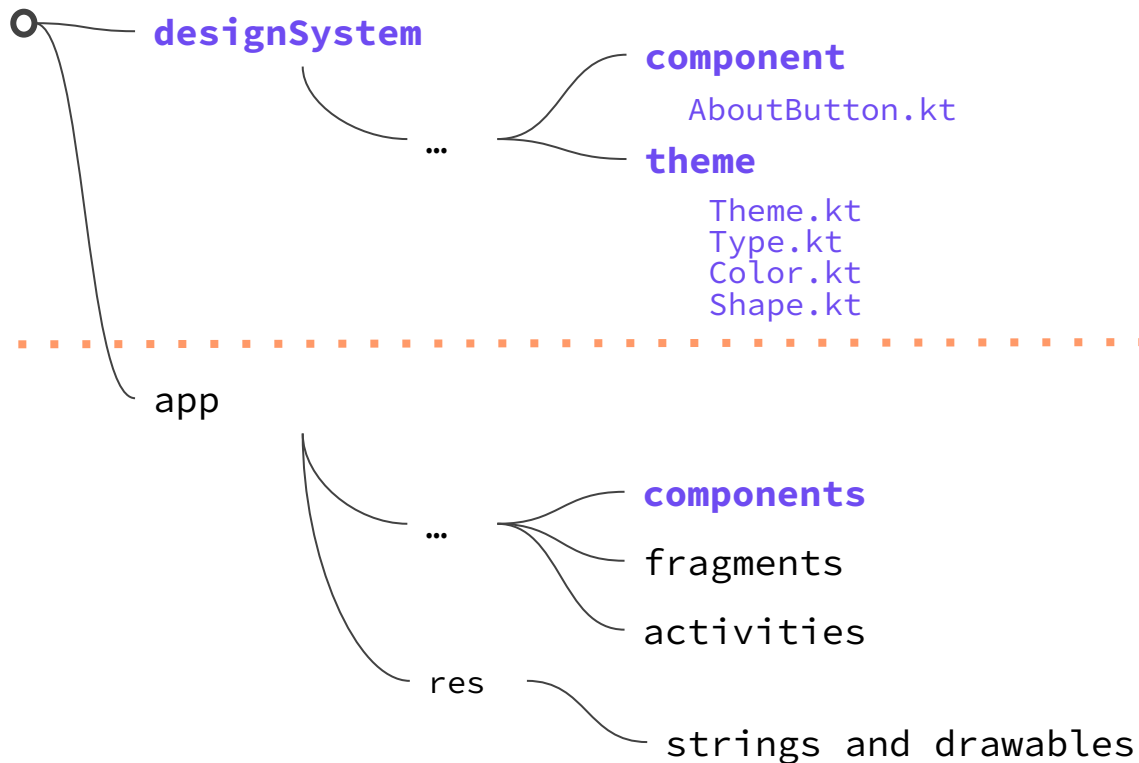
```
    val colors: ExtendedColors
```

```
        @Composable
```

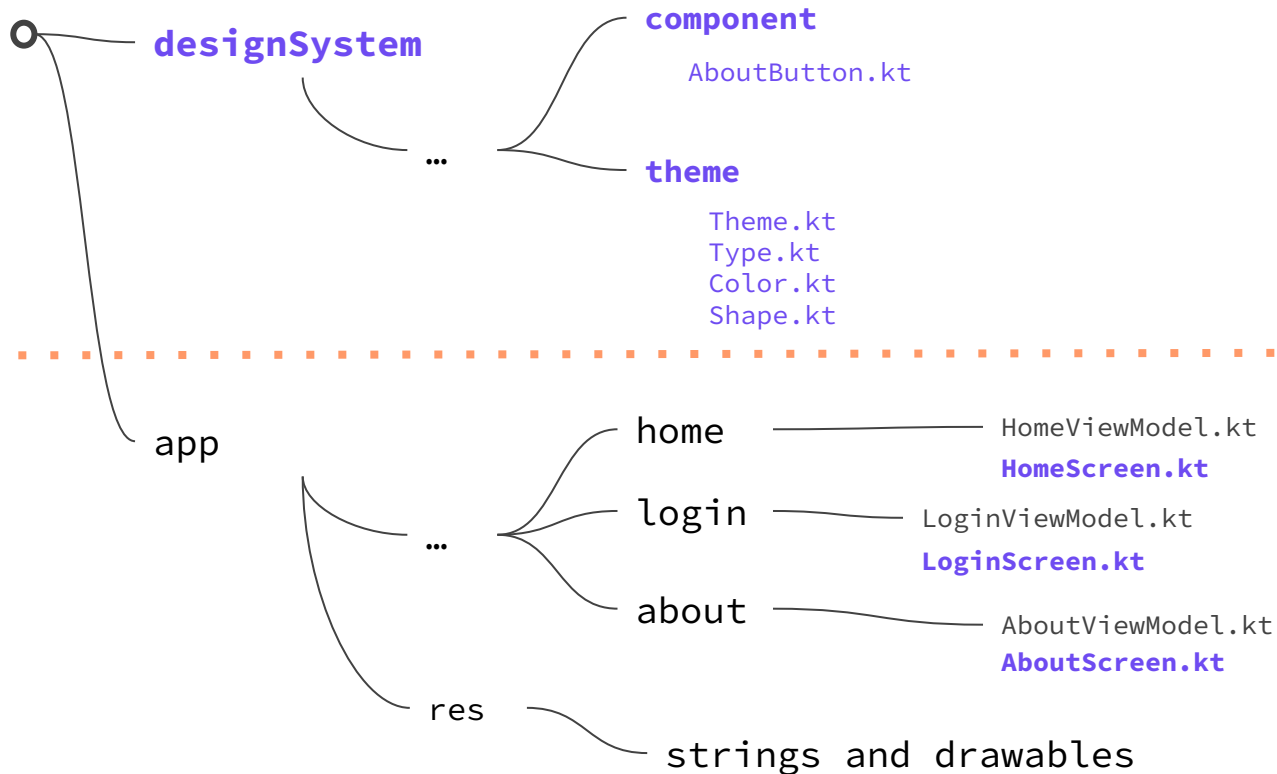
```
        get() = LocalExtendedColors.current
```

```
}
```

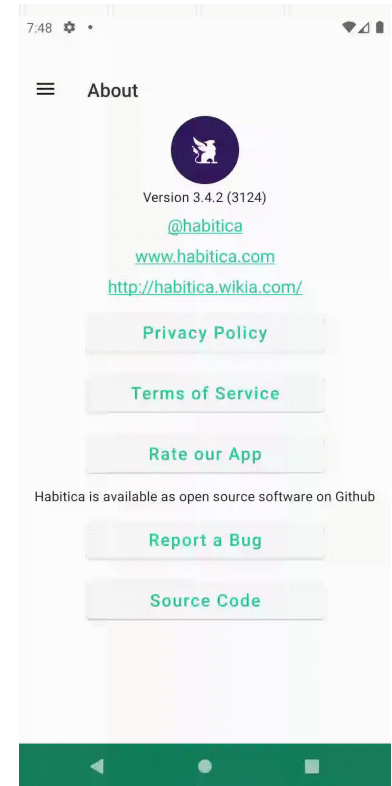
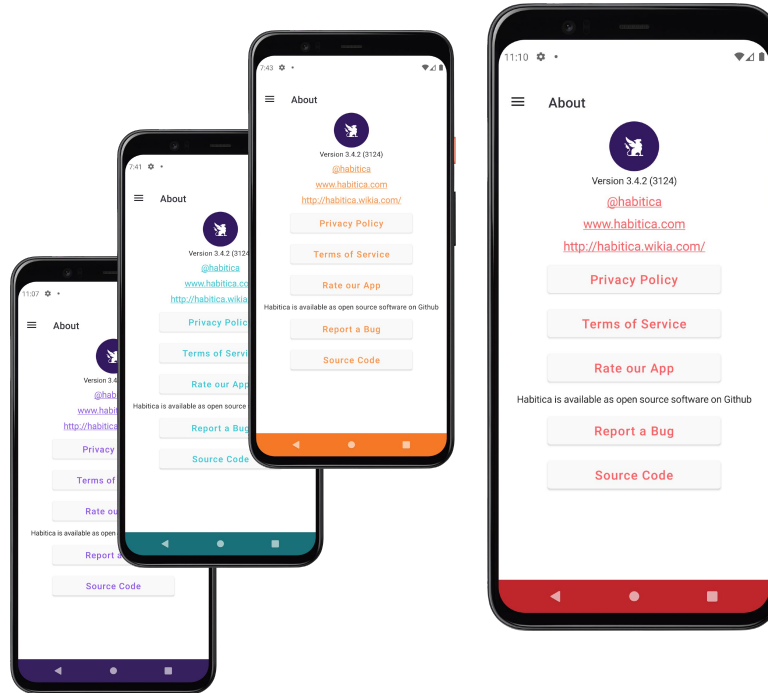
# Module structure



# Module structure



# Whole screen approach - About demo





**kibeth codes**  
@kibethCodes • Level 4 Warrior

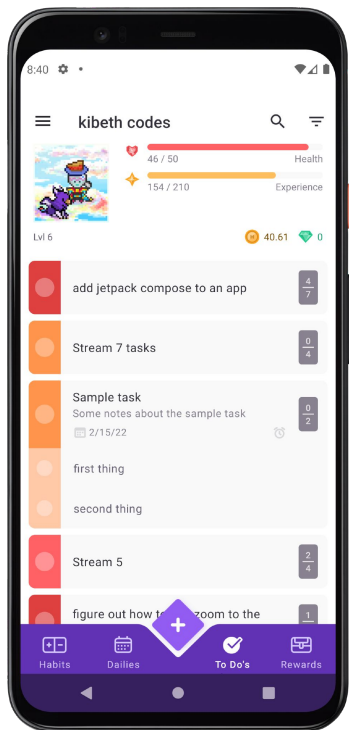
  

40 / 50

98 / 100

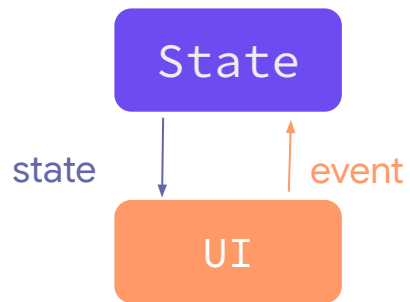
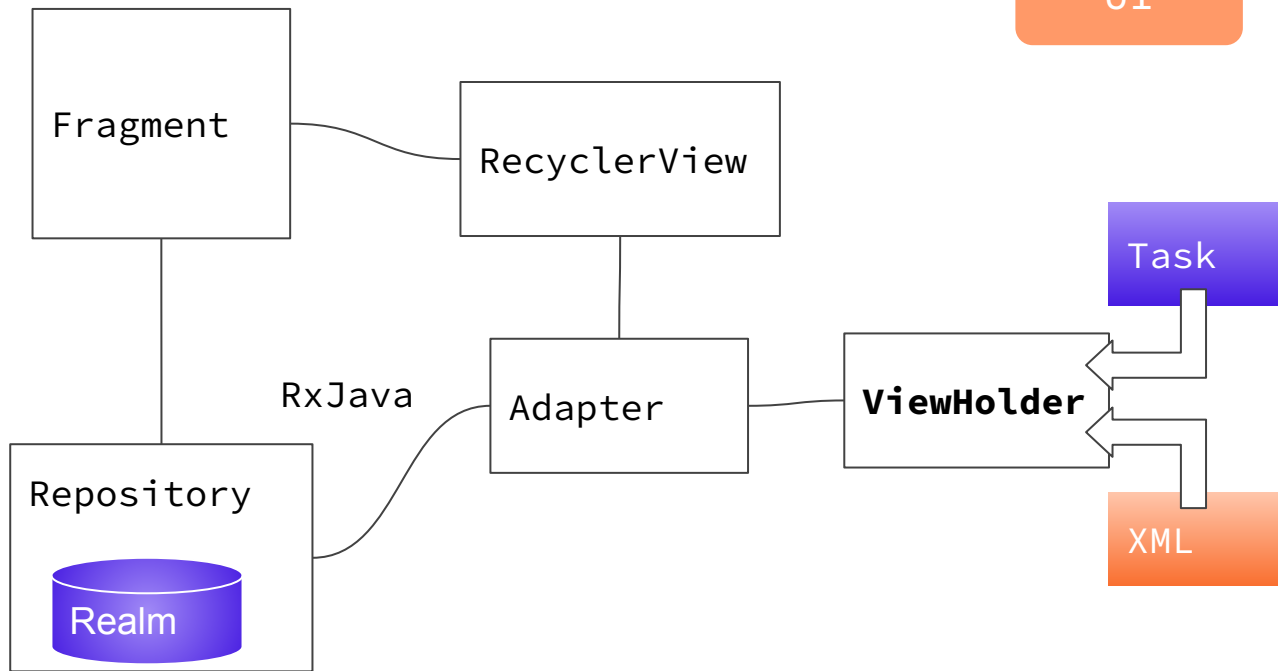
Stat	Value	Max
Health	40	50
Stamina	98	100

# Component approach



Compose in recycler view

# State



# TodoCardViewHolder

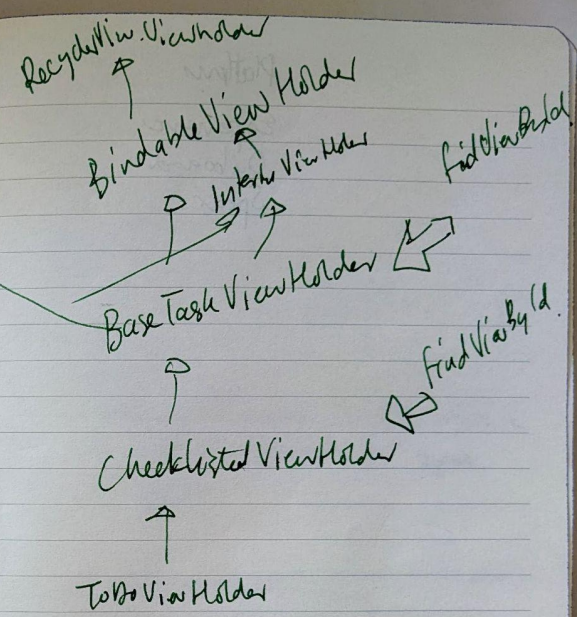


```
override fun bind(data: Task, position: Int, displayMode: String) {  
    composeView.setContent {  
        HabiticaTheme {  
            TodoCard(taskItem = data.toTaskItem(), ... /* lambdas */)  
        }  
    }  
}
```



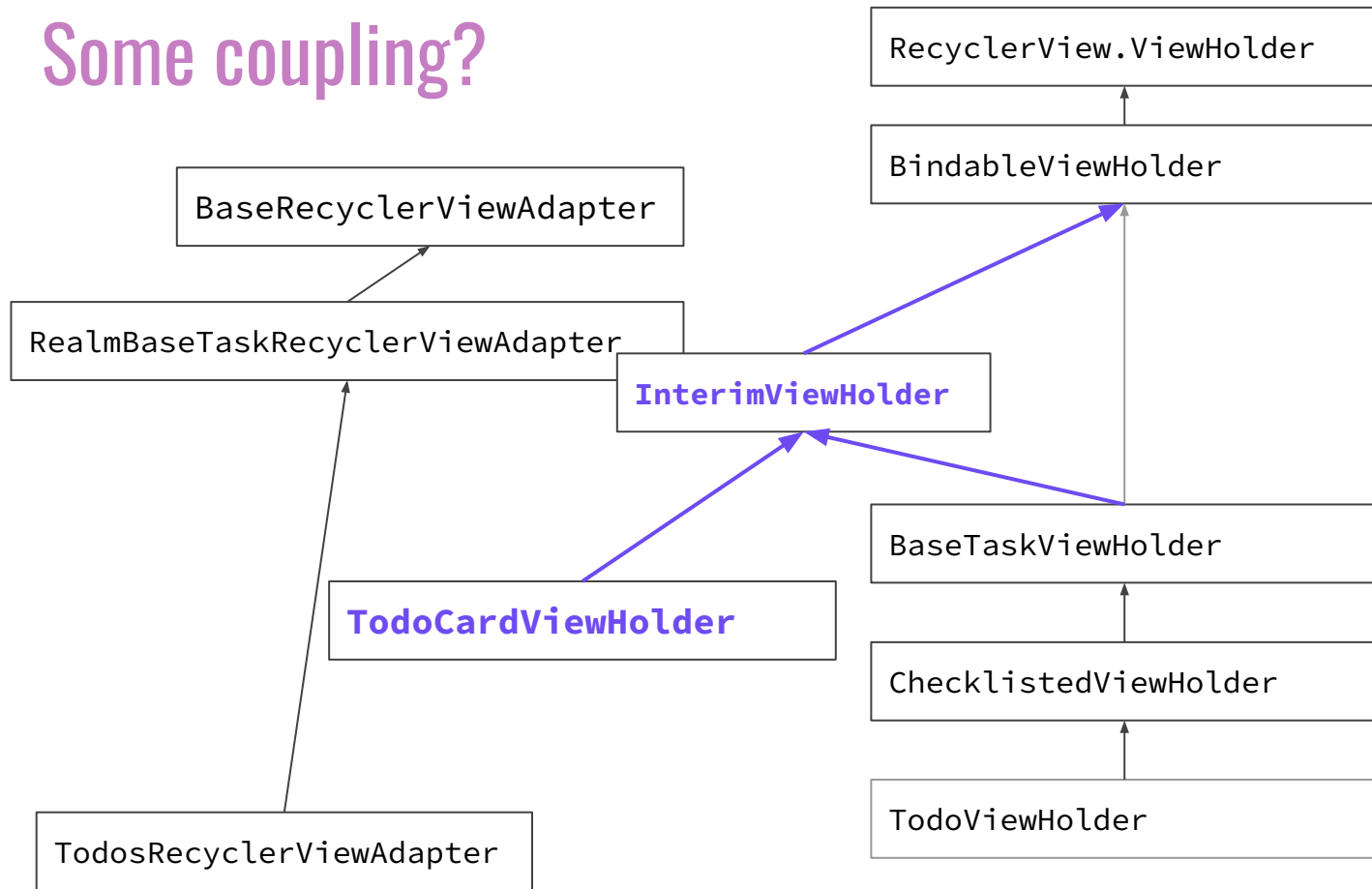
BaseRecyclerViewAdapter  
↳ RecyclerView.ViewHolder  
RecyclerView.ViewHolder  
↳ VH  
↳ VH

Compose TodoView





# Some coupling?

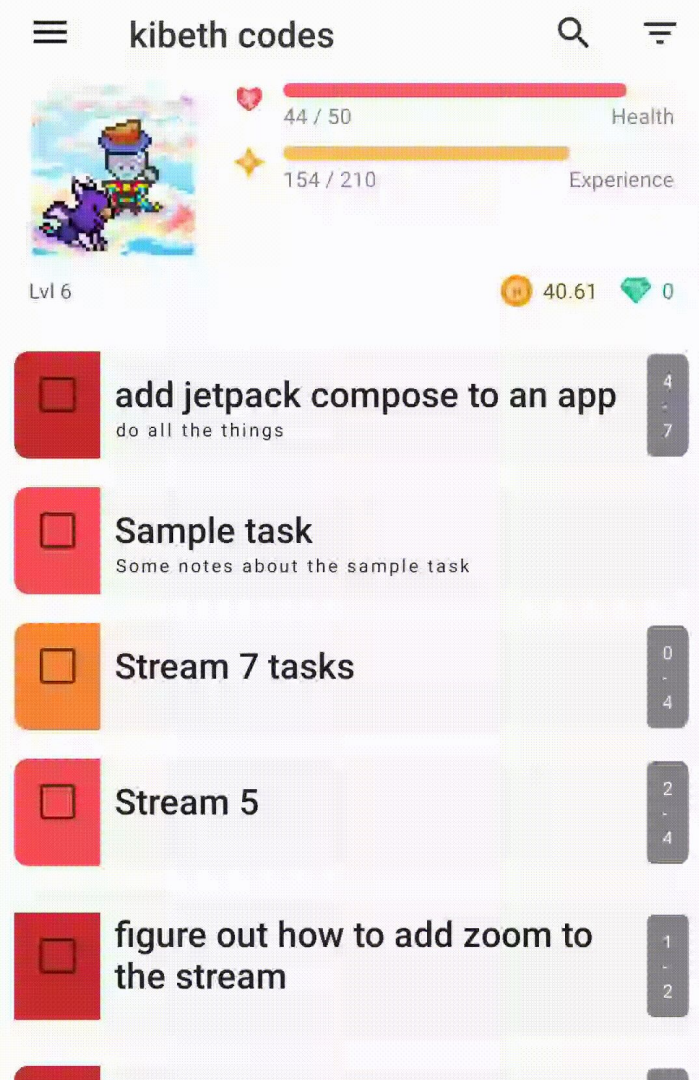
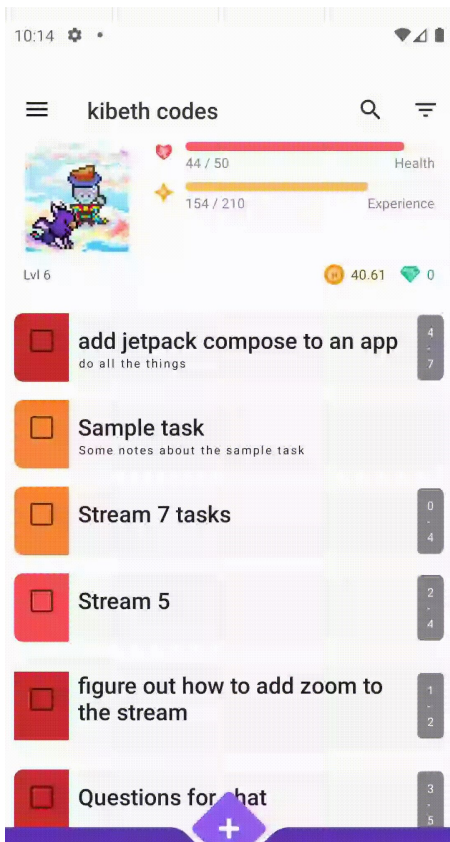


**findViewById**

**findViewById**



# Component demo



# 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 }  
)
```



**kibeth codes**

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48 / 50



148 / 210



# Test and PR



**“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**

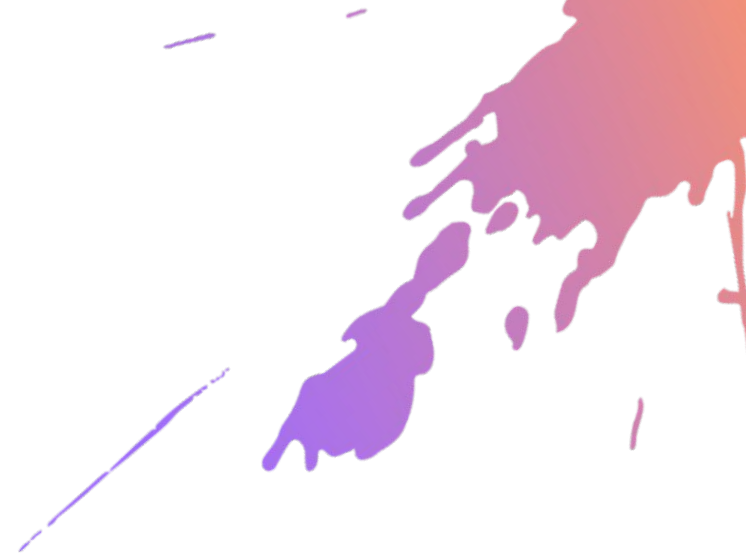
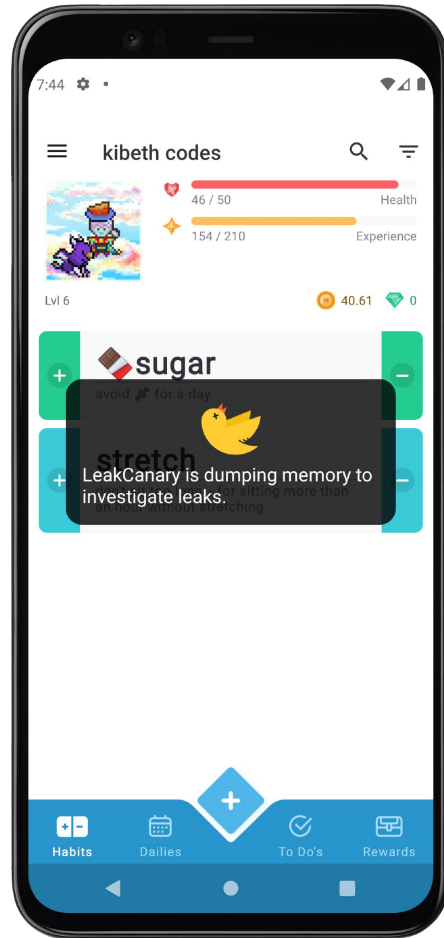
Working effectively with legacy code

## Contributor

Has contributed to Habitica, whether via code, art, music, writing, or other methods. To learn more, join the Aspiring Spe Legends Guild!

5





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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



**Decide on package  
approach**



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**Approach?**  
Screen/**Component**







Sort out ~~Mess~~  
State and Architecture

[www.devconf.co.za/rate](http://www.devconf.co.za/rate)

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# Next?

[Habituca fork](#)

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

[Jetpack Compose interop guide](#)

[Code Realm and Compose](#)

[\*\*maiatoday.net\*\*](https://maiatoday.net)



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# Next?

<https://github.com/kibethcodes/habistica-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](http://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](#)