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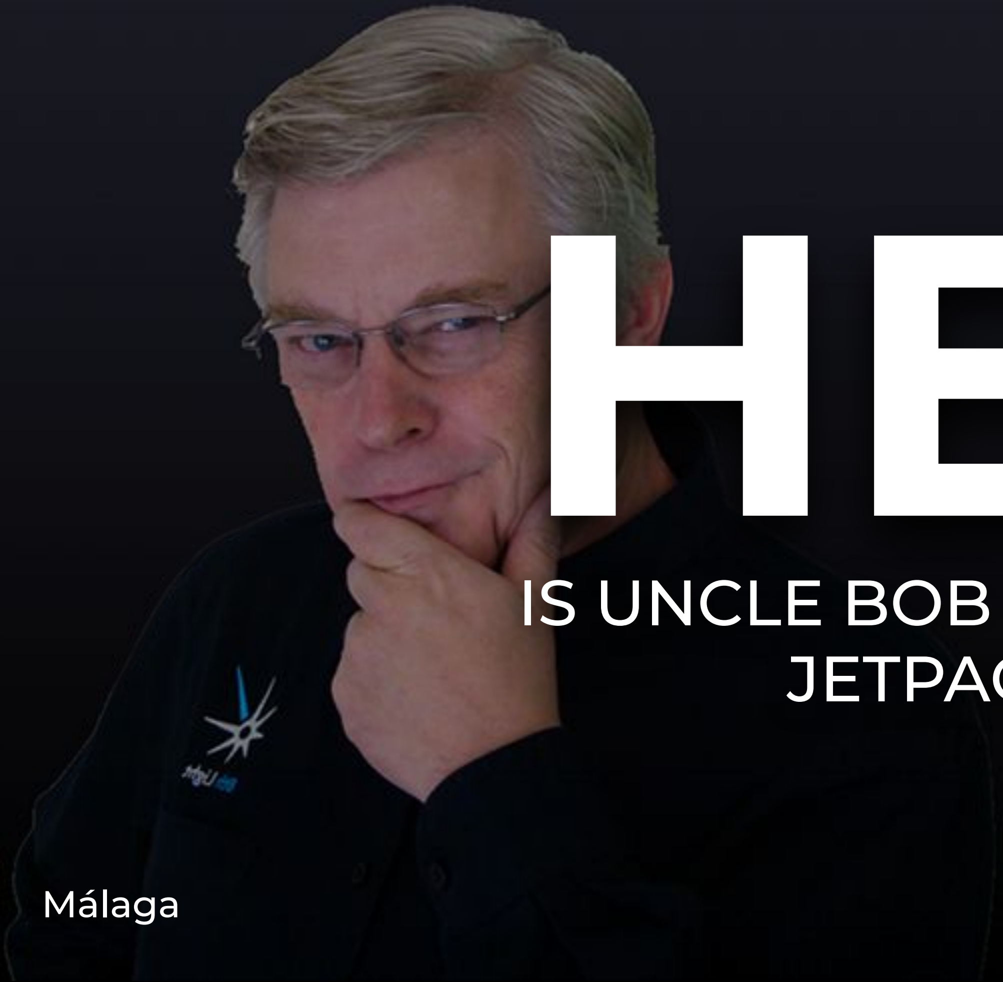

HEY

IS UNCLE BOB WEARING A JETPACK?!

Málaga

Rafa Ortega

@ortiOficial

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AGENDA

- A word on architecture
- Jetpack
- Our way
  - Live data
  - Model mapping
  - Data binding
  - Testing
- Navigation
- Coming soon

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ARCHITECTURE

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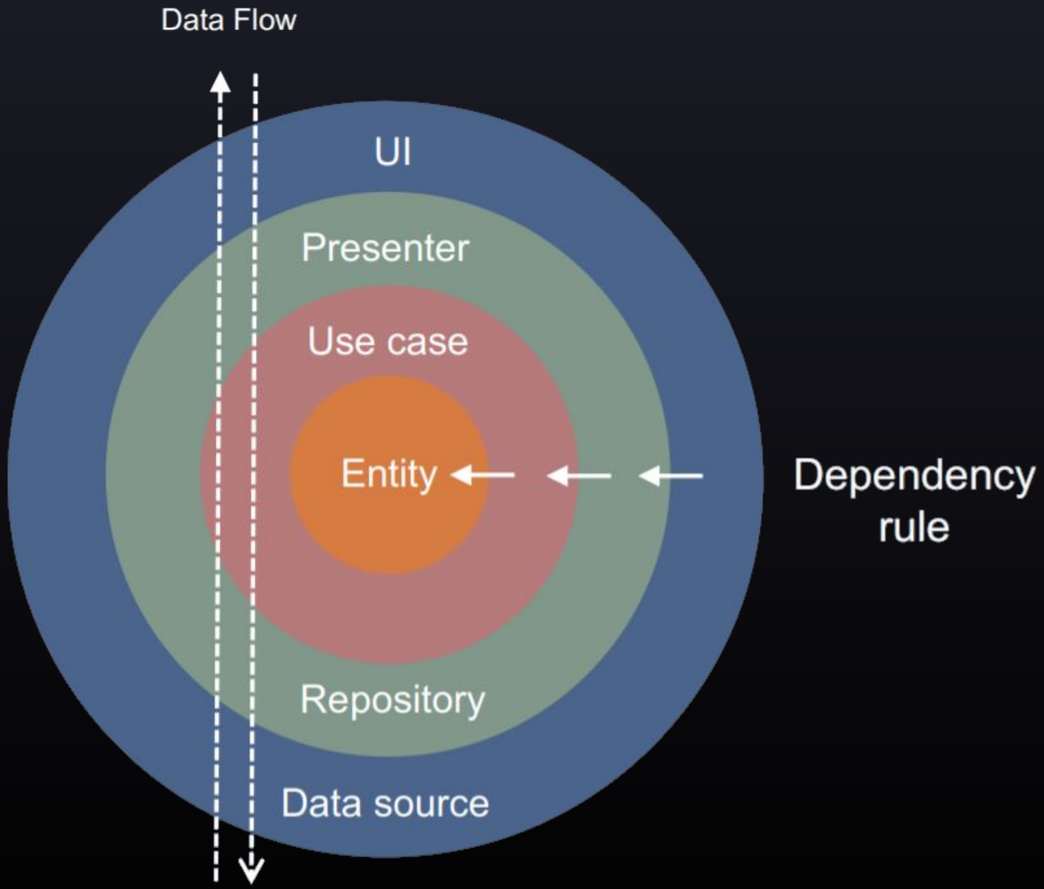
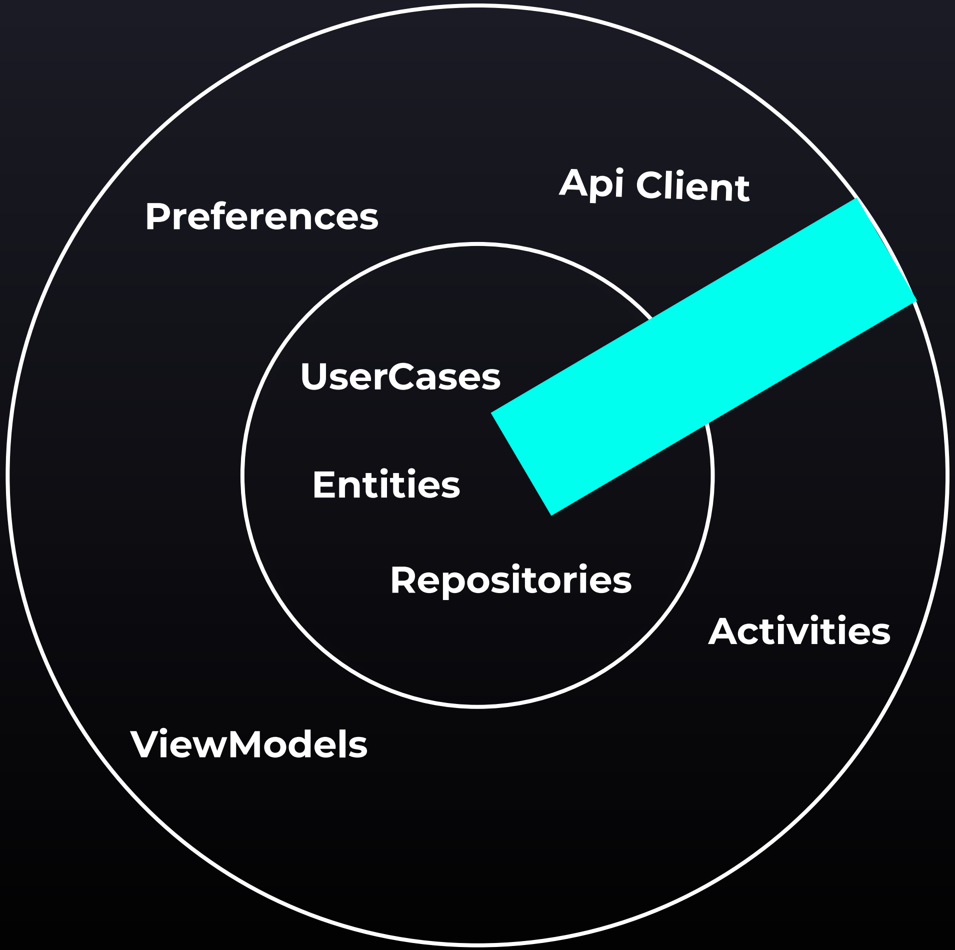
ARCHITECTURE



ARCHITECTURE



ARCHITECTURE

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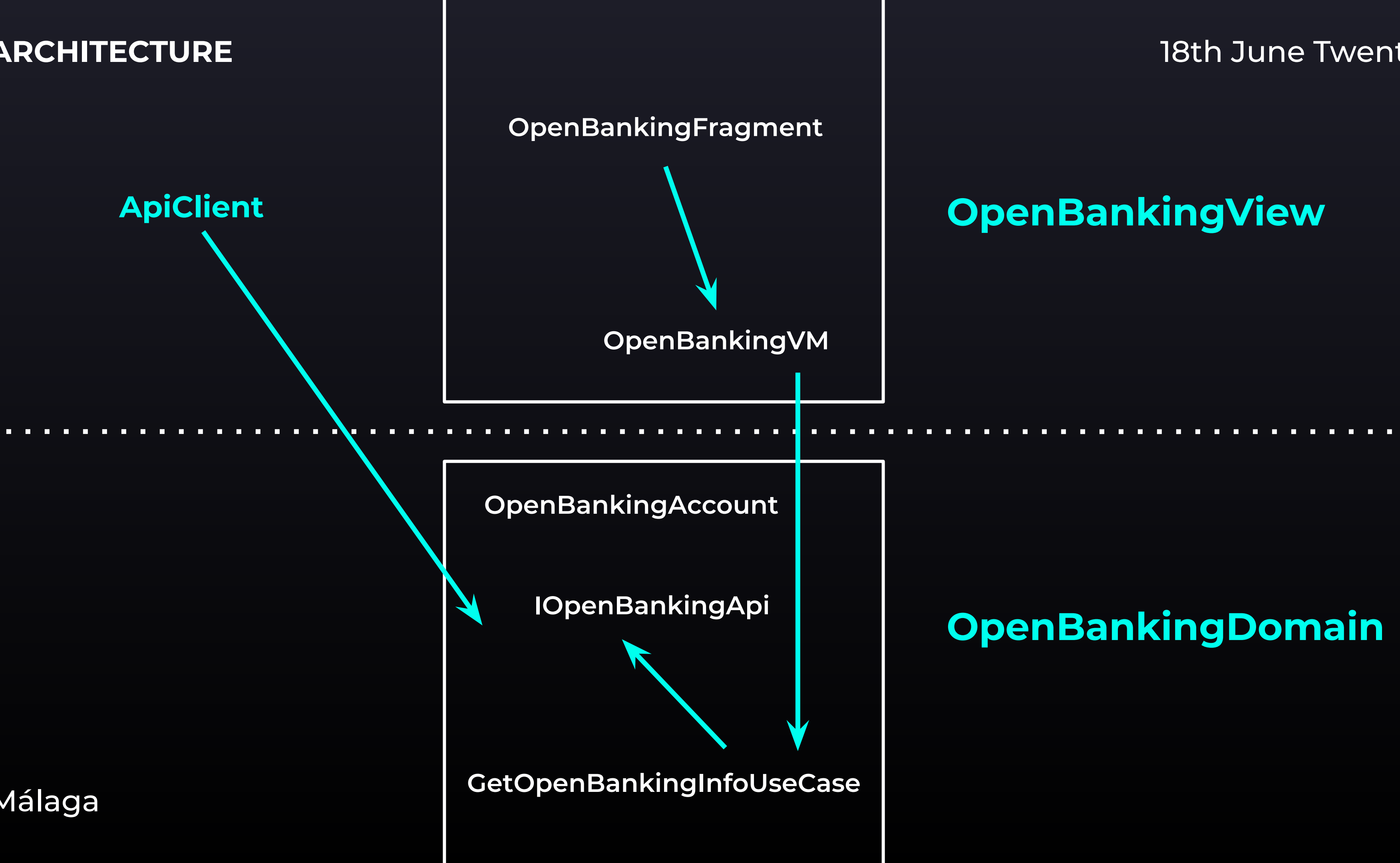

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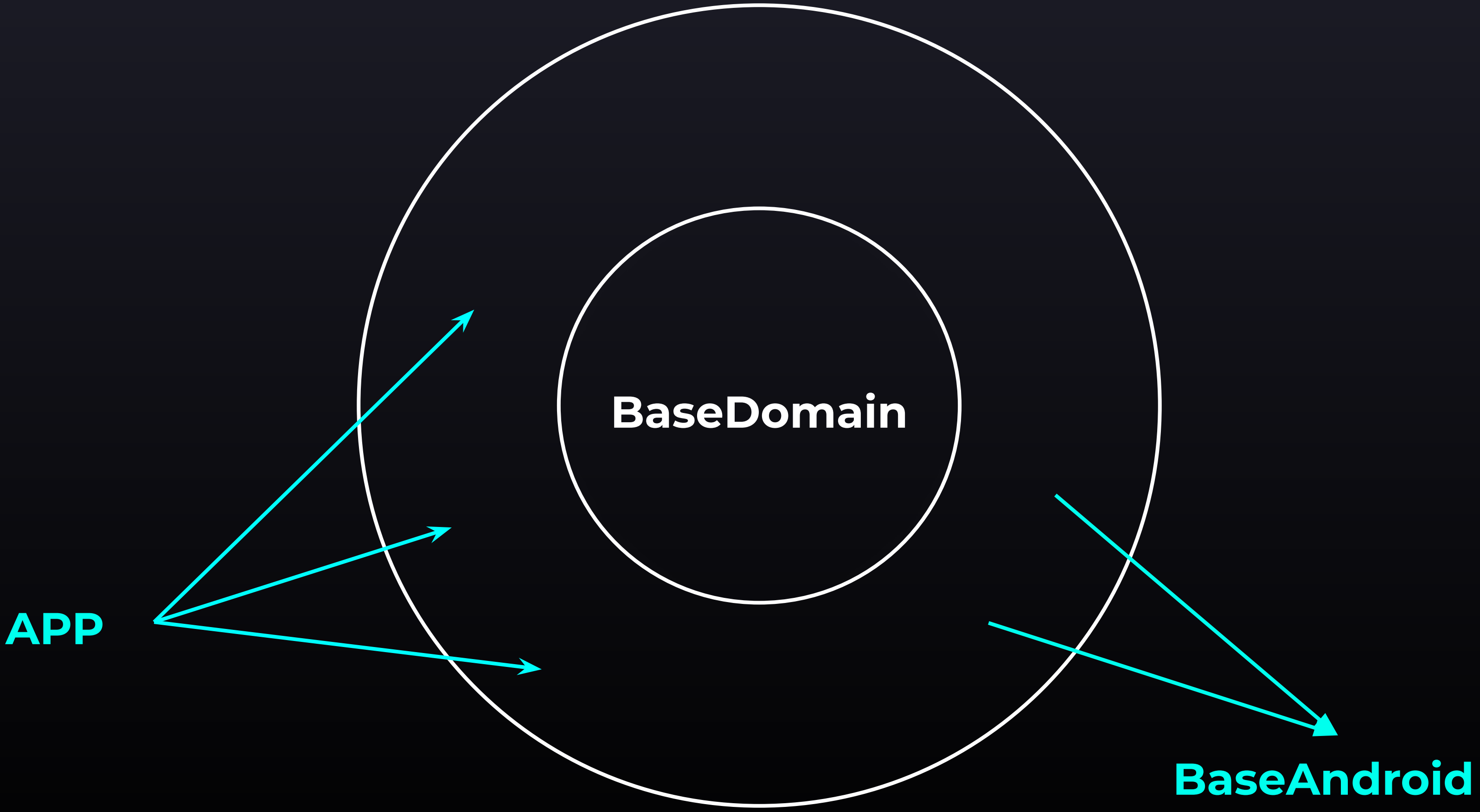
SPECIAL MODULES


BaseDomain
APP
BaseAndroid

JETPACK

- Livedata (transformations, LiveDataEvent)
- Databinding (custom adapters)
- Navigation component
- Architecture components (VM, viewModelScope)
- Motion layout

“Jetpack is a suite of libraries, tools, and guidance to help developers write high-quality apps easier. These components help you follow best practices, free you from writing boilerplate code, and simplify complex tasks, so you can focus on the code you care about.”

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OUR WAY

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LIVE DATA

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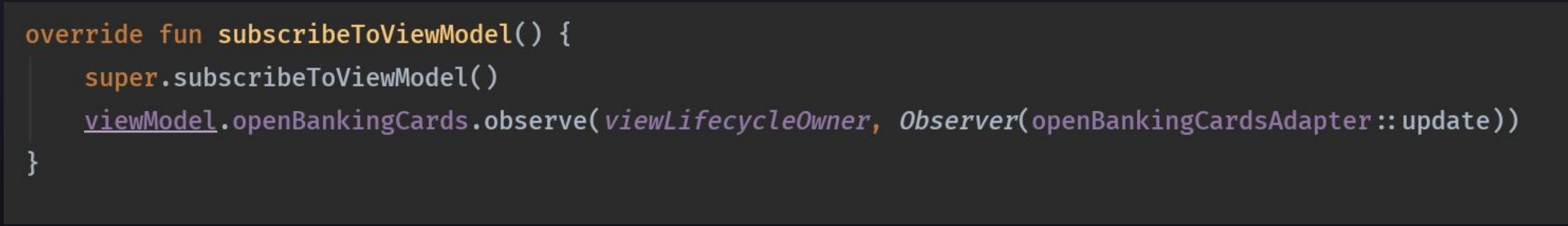
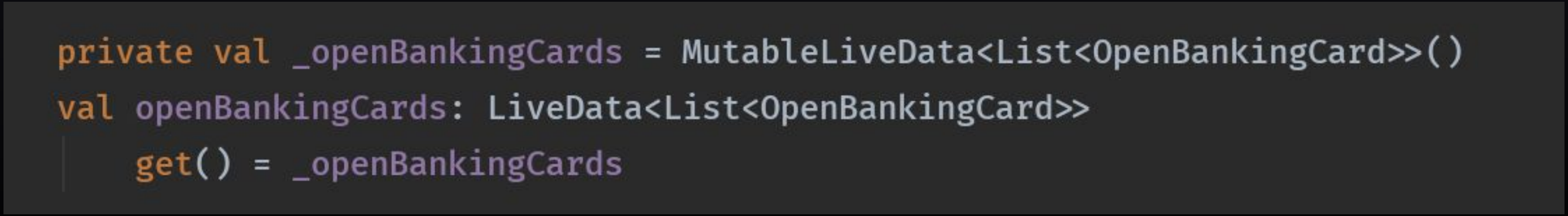
LIVE DATA

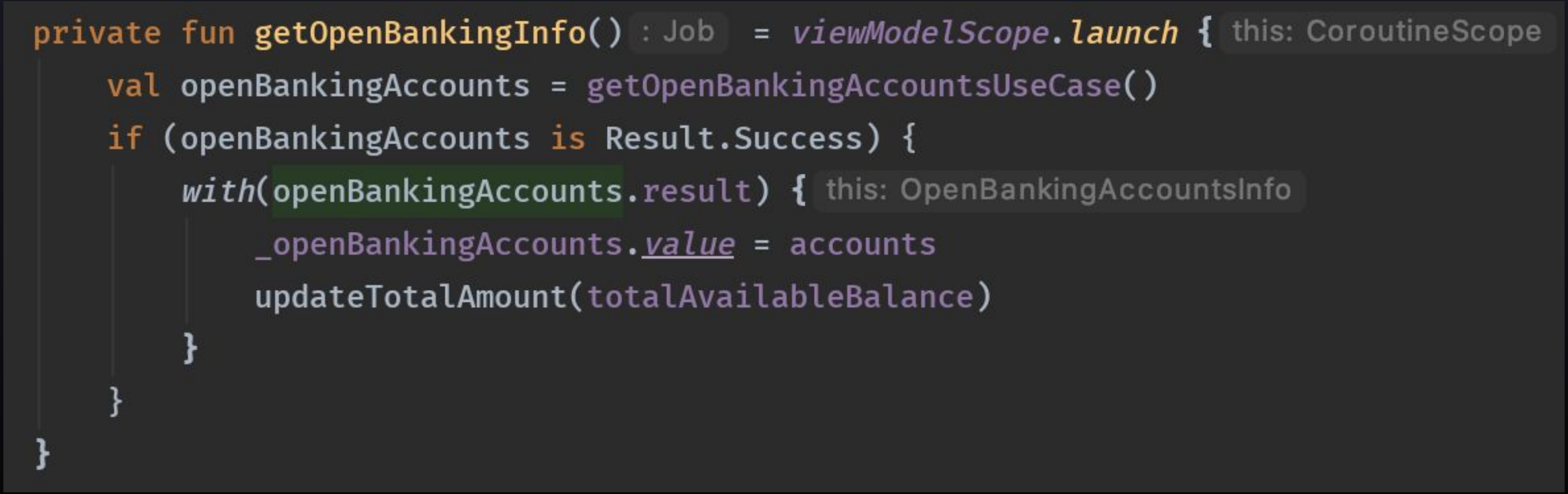


```kotlin
override fun subscribeToViewModel() {
    super.subscribeToViewModel()
    viewModel.openBankingCards.observe(viewLifecycleOwner, Observer(openBankingCardsAdapter::update))
}
```



```kotlin
private val _openBankingCards = MutableLiveData<List<OpenBankingCard>>()
val openBankingCards: LiveData<List<OpenBankingCard>>
    get() = _openBankingCards
```

LIVE DATA



```kotlin
private fun getOpenBankingInfo() : Job  = viewModelScope.launch { this: CoroutineScope
    val openBankingAccounts = getOpenBankingAccountsUseCase()
    if (openBankingAccounts is Result.Success) {
        with(openBankingAccounts.result) { this: OpenBankingAccountsInfo
            _openBankingAccounts.value = accounts
            updateTotalAmount(totalAvailableBalance)
        }
    }
}
```

LIVE DATA

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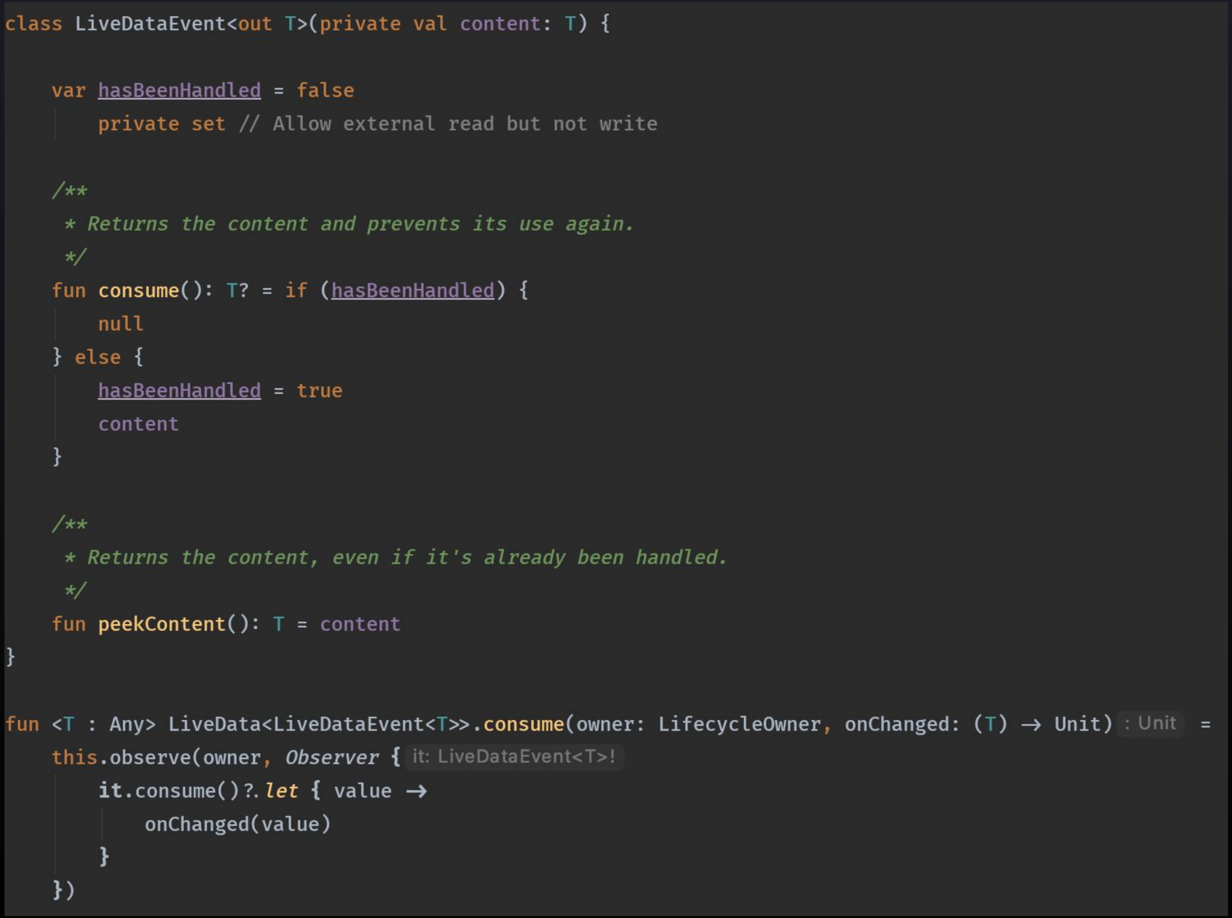

```kotlin
class LiveDataEvent<out T>(private val content: T) {

    var hasBeenHandled = false
        private set // Allow external read but not write

    /**
     * Returns the content and prevents its use again.
     */
    fun consume(): T? = if (hasBeenHandled) {
        null
    } else {
        hasBeenHandled = true
        content
    }

    /**
     * Returns the content, even if it's already been handled.
     */
    fun peekContent(): T = content
}

fun <T : Any> LiveData<LiveDataEvent<T>>.consume(owner: LifecycleOwner, onChanged: (T) → Unit) : Unit  =
    this.observe(owner, Observer { it: LiveDataEvent<T>!
        it.consume()?.let { value →
            onChanged(value)
        }
    })
```

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MODEL MAPPING

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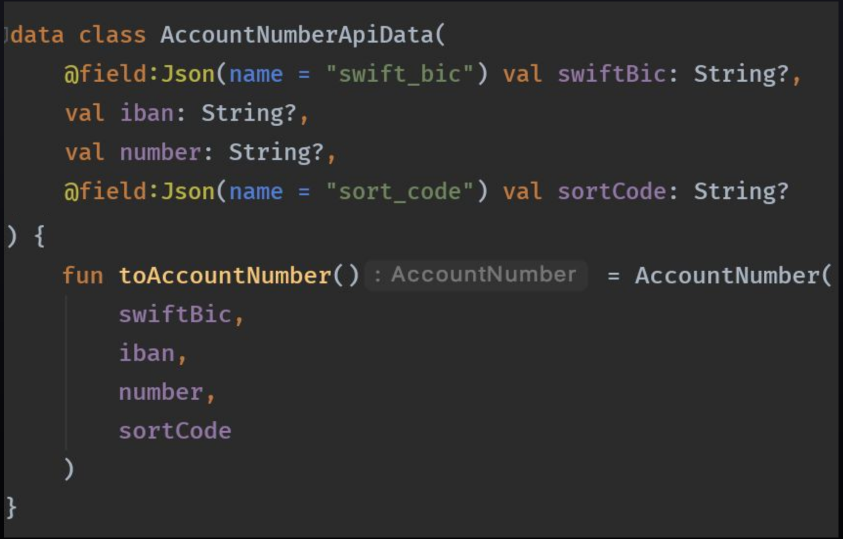
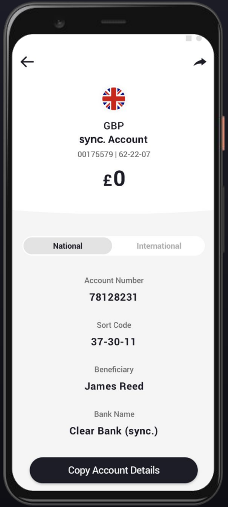
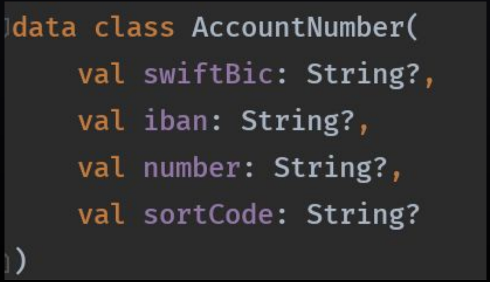


```
data class AccountNumberApiData(
    @field:Json(name = "swift_bic") val swiftBic: String?,
    val iban: String?,
    val number: String?,
    @field:Json(name = "sort_code") val sortCode: String?
) {
    fun toAccountNumber() : AccountNumber  = AccountNumber(
        swiftBic,
        iban,
        number,
        sortCode
    )
}
```



Business Logic



```
data class AccountNumber(
    val swiftBic: String?,
    val iban: String?,
    val number: String?,
    val sortCode: String?
)
```

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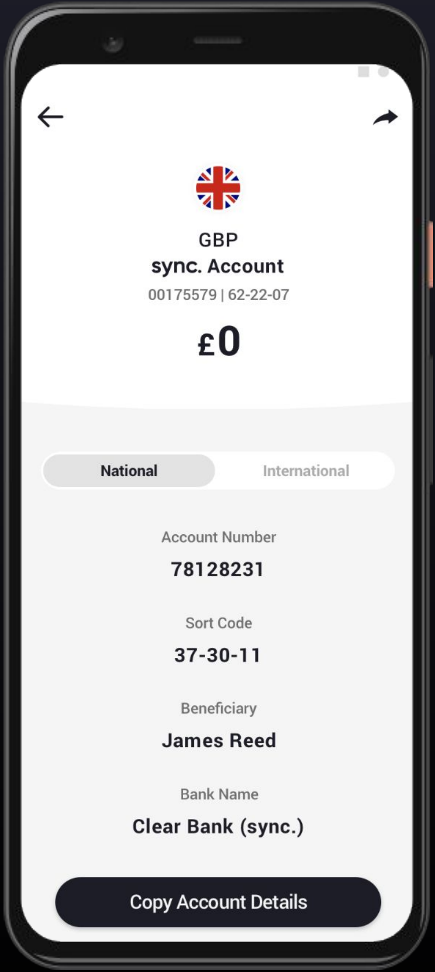
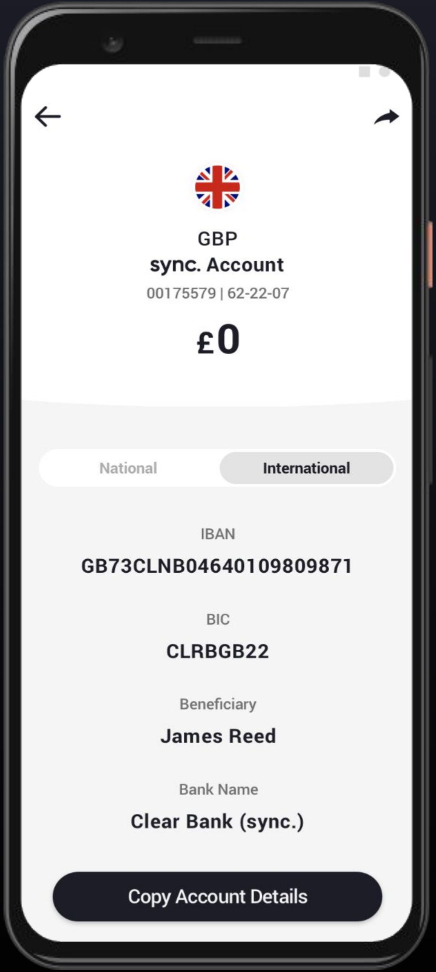

GBP
sync. Account
00175579 | 62-22-07
£0

Account Number
78128231

Sort Code
37-30-11

Beneficiary
James Reed

Bank Name
Clear Bank (sync.)


GBP
sync. Account
00175579 | 62-22-07
£0

IBAN
GB73CLNB04640109809871

BIC
CLRBGB22

Beneficiary
James Reed

Bank Name
Clear Bank (sync.)

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MODEL MAPPING

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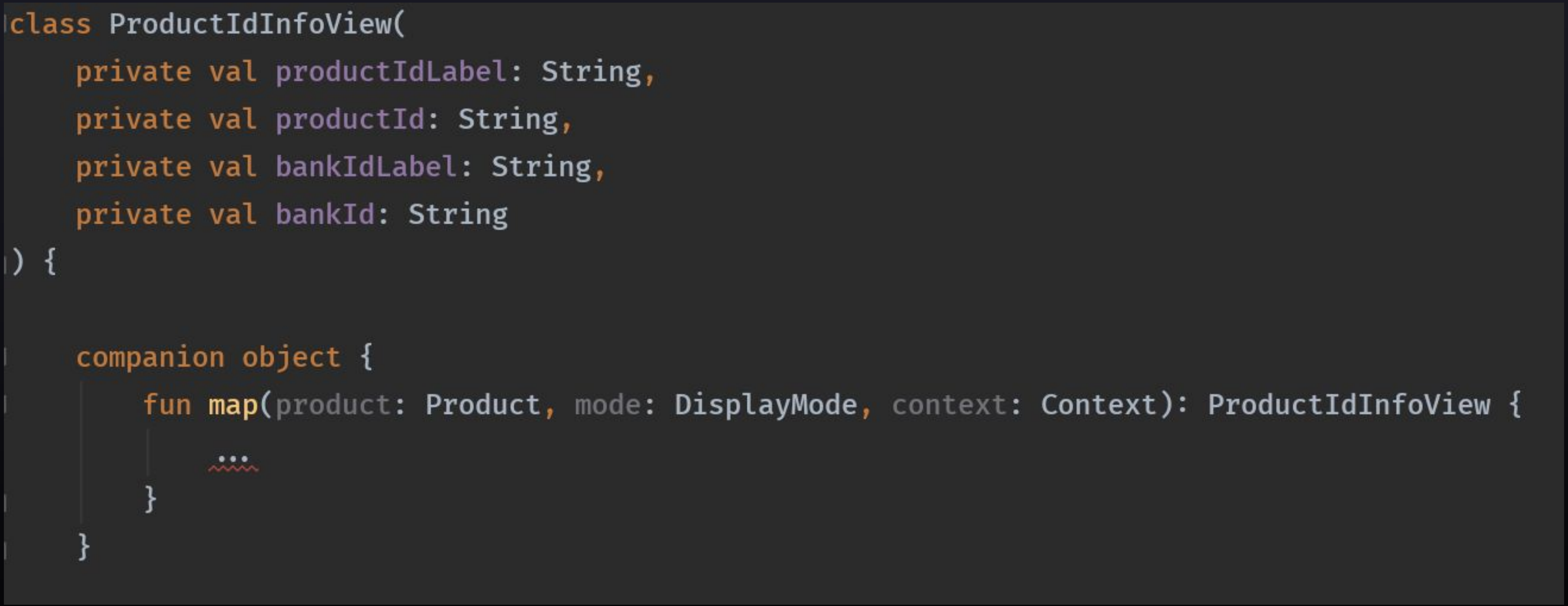

```kotlin
class ProductIdInfoView(
    private val productIdLabel: String,
    private val productId: String,
    private val bankIdLabel: String,
    private val bankId: String
) {

    companion object {
        fun map(product: Product, mode: DisplayMode, context: Context): ProductIdInfoView {
            ...
        }
    }
```

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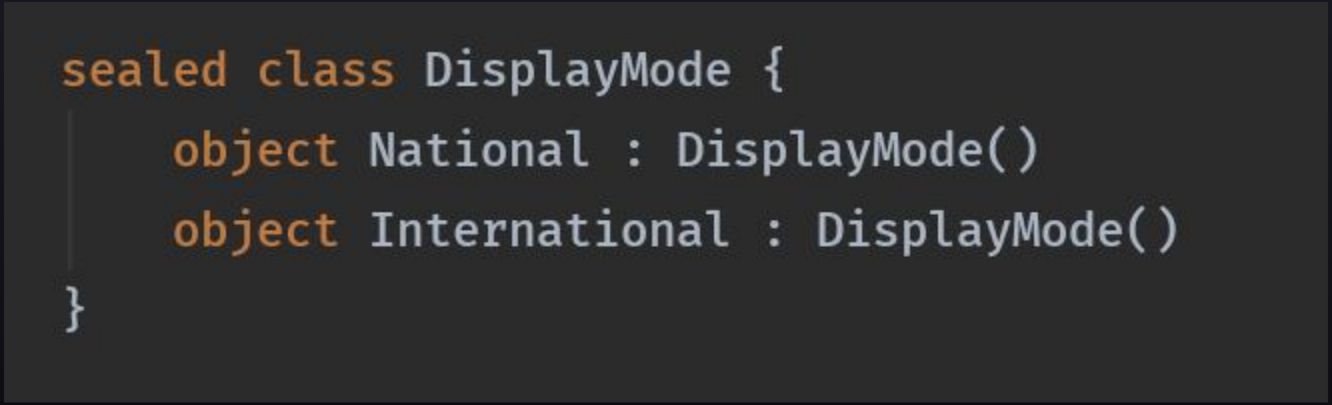
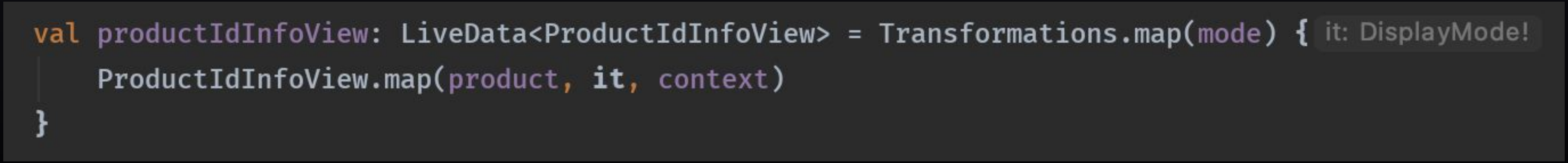
MODEL MAPPING

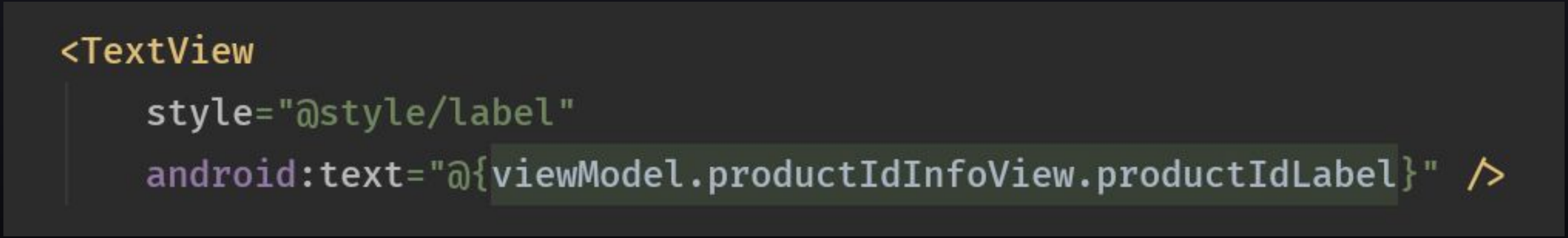


```kotlin
sealed class DisplayMode {
    object National : DisplayMode()
    object International : DisplayMode()
}
```

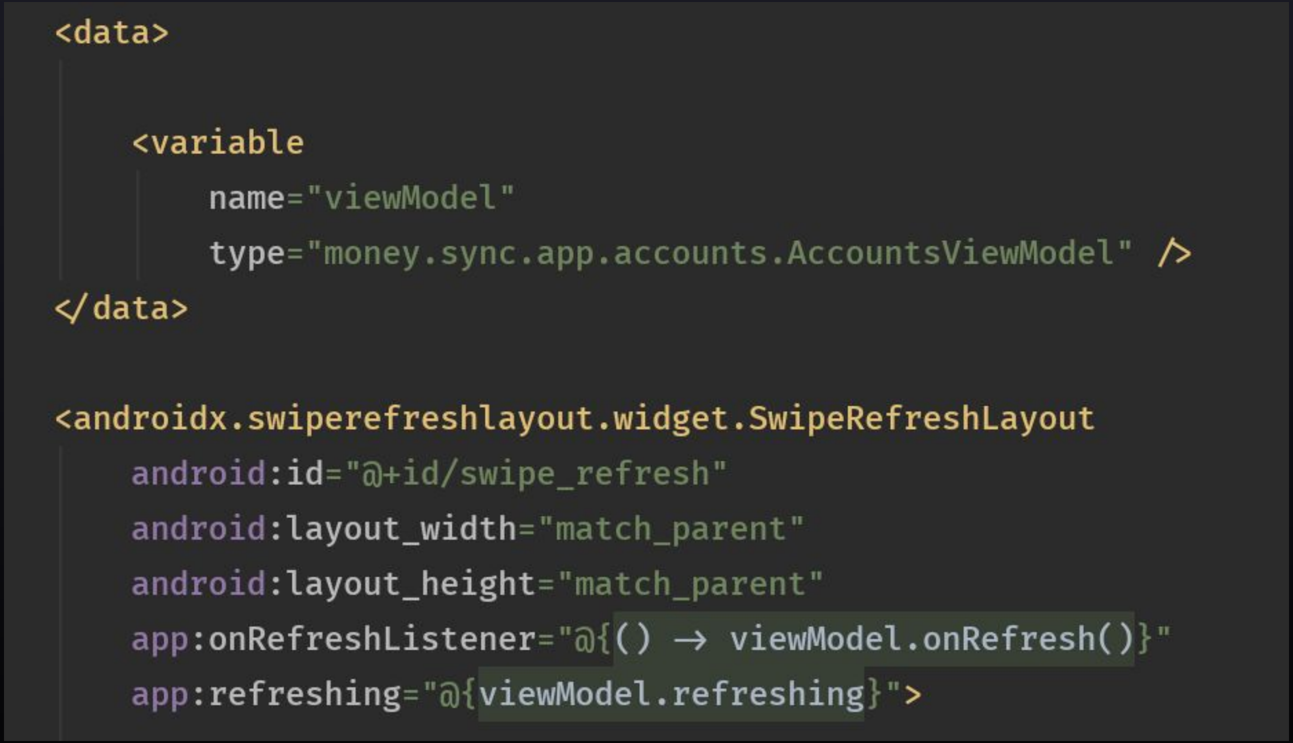


```kotlin
val productIdInfoView: LiveData<ProductIdInfoView> = Transformations.map(mode) { it: DisplayMode!
    ProductIdInfoView.map(product, it, context)
}
```

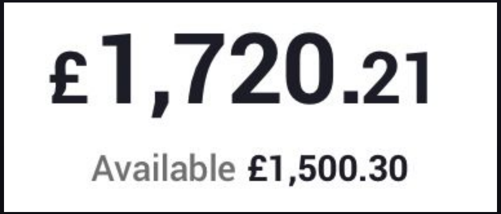
DATA BINDING

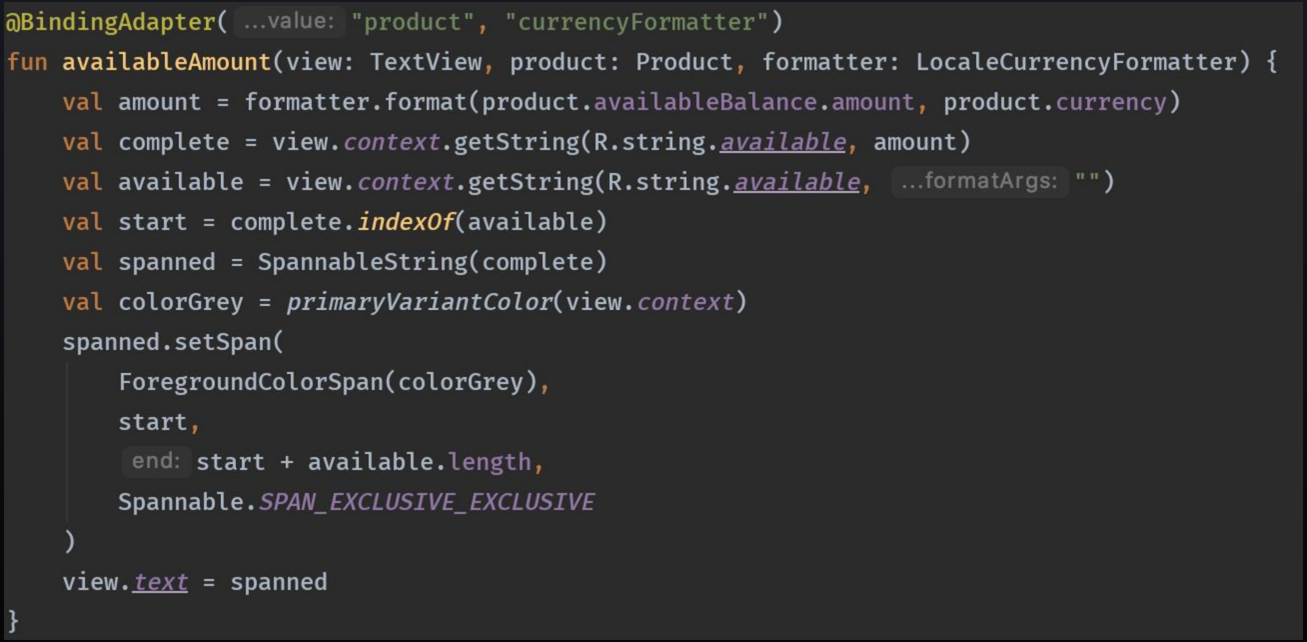


```
<TextView
    style="@style/label"
    android:text="@{viewModel.productIdInfoView.productIdLabel}" />
```



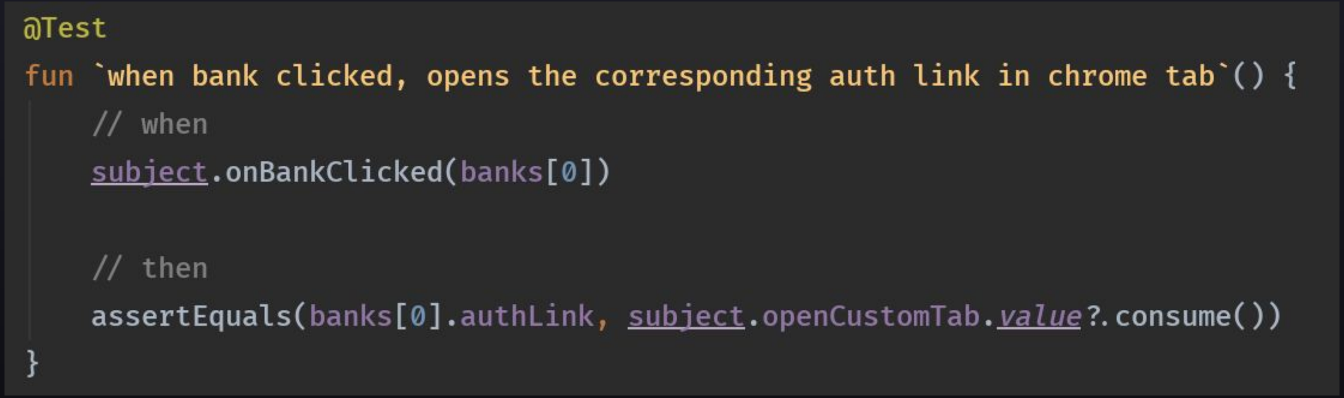
```xml
<data>


    <variable
        name="viewModel"
        type="money.sync.app.accounts.AccountsViewModel" />
</data>

<androidx.swiperefreshlayout.widget.SwipeRefreshLayout
    android:id="@+id/swipe_refresh"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    app:onRefreshListener="@{() -> viewModel.onRefresh()}"
    app:refreshing="@{viewModel.refreshing}">
```



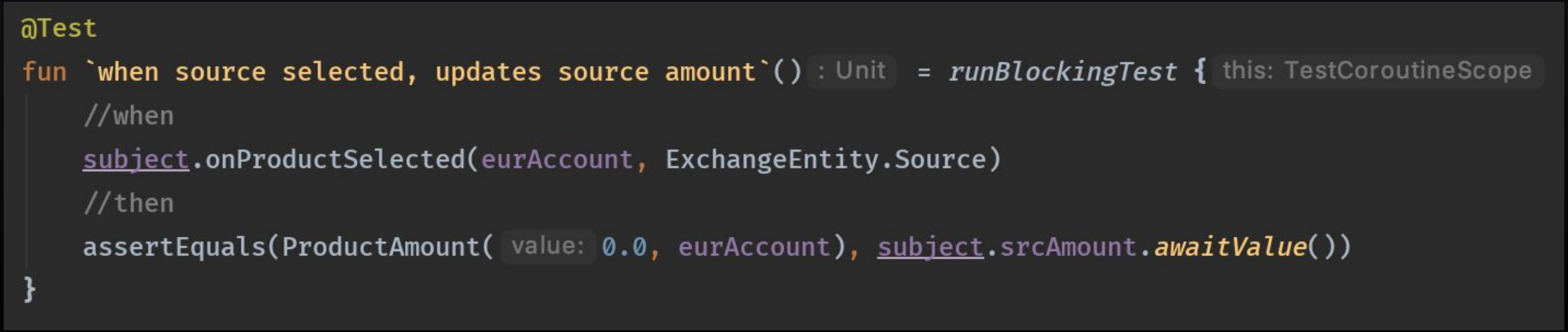


```kotlin
@BindingAdapter( ...value: "product", "currencyFormatter")
fun availableAmount(view: TextView, product: Product, formatter: LocaleCurrencyFormatter) {
    val amount = formatter.format(product.availableBalance.amount, product.currency)
    val complete = view.context.getString(R.string.available, amount)
    val available = view.context.getString(R.string.available, ...formatArgs: "")
    val start = complete.indexOf(available)
    val spanned = SpannableString(complete)
    val colorGrey = primaryVariantColor(view.context)
    spanned.setSpan(
        ForegroundColorSpan(colorGrey),
        start,
        end: start + available.length,
        Spannable.SPAN_EXCLUSIVE_EXCLUSIVE
    )
    view.text = spanned
}
```

TESTING



```kotlin
@Test
fun `when bank clicked, opens the corresponding auth link in chrome tab`() {
    // when
    subject.onBankClicked(banks[0])

    // then
    assertEquals(banks[0].authLink, subject.openCustomTab.value?.consume())
}
```



```kotlin
@Test
fun `when source selected, updates source amount`() : Unit  = runBlockingTest { this: TestCoroutineScope
    //when
    subject.onProductSelected(eurAccount, ExchangeEntity.Source)
    //then
    assertEquals(ProductAmount( value: 0.0, eurAccount), subject.srcAmount.awaitValue())
}
```

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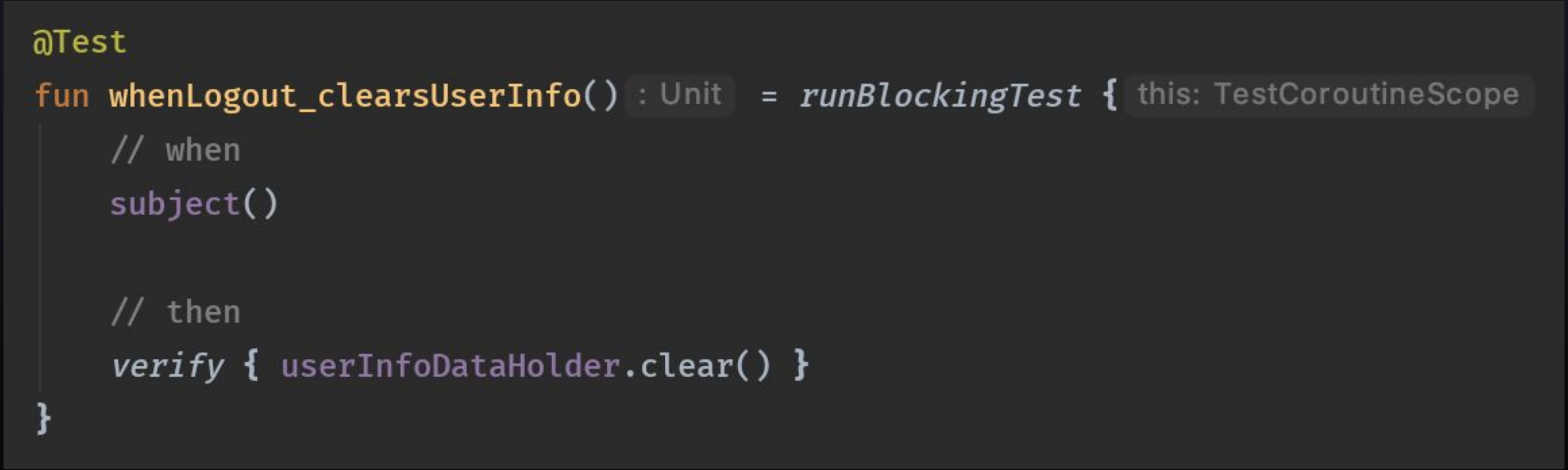

```
@Test
fun whenLogout_clearsUserInfo() : Unit  = runBlockingTest { this: TestCoroutineScope
    // when
    subject()

    // then
    verify { userInfoDataHolder.clear() }
}
```

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NAVIGATION

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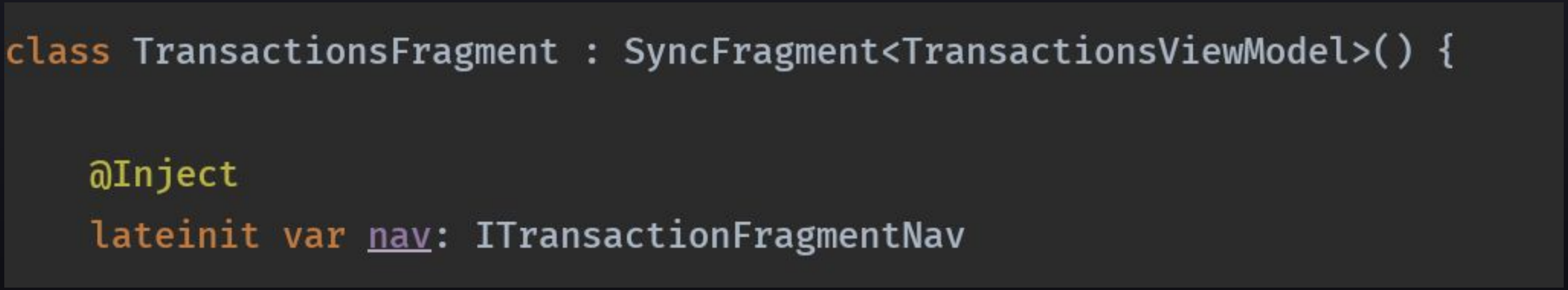
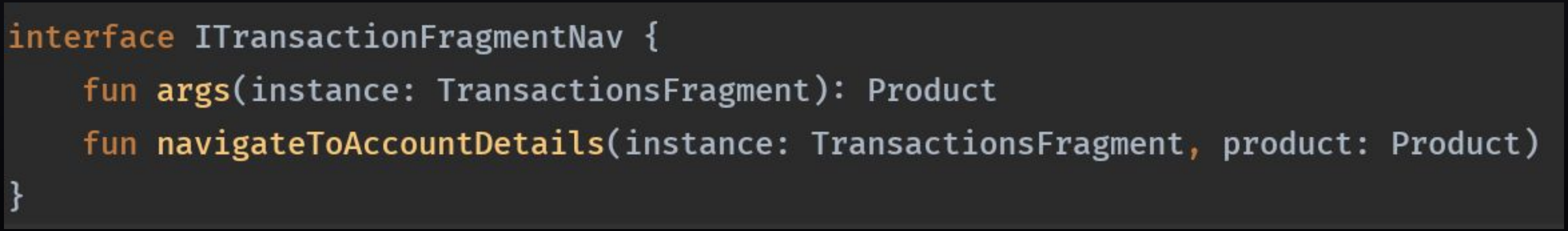
- Navigation component
- Plugin SafeArgs
- Modular
- Isolated

NAVIGATION

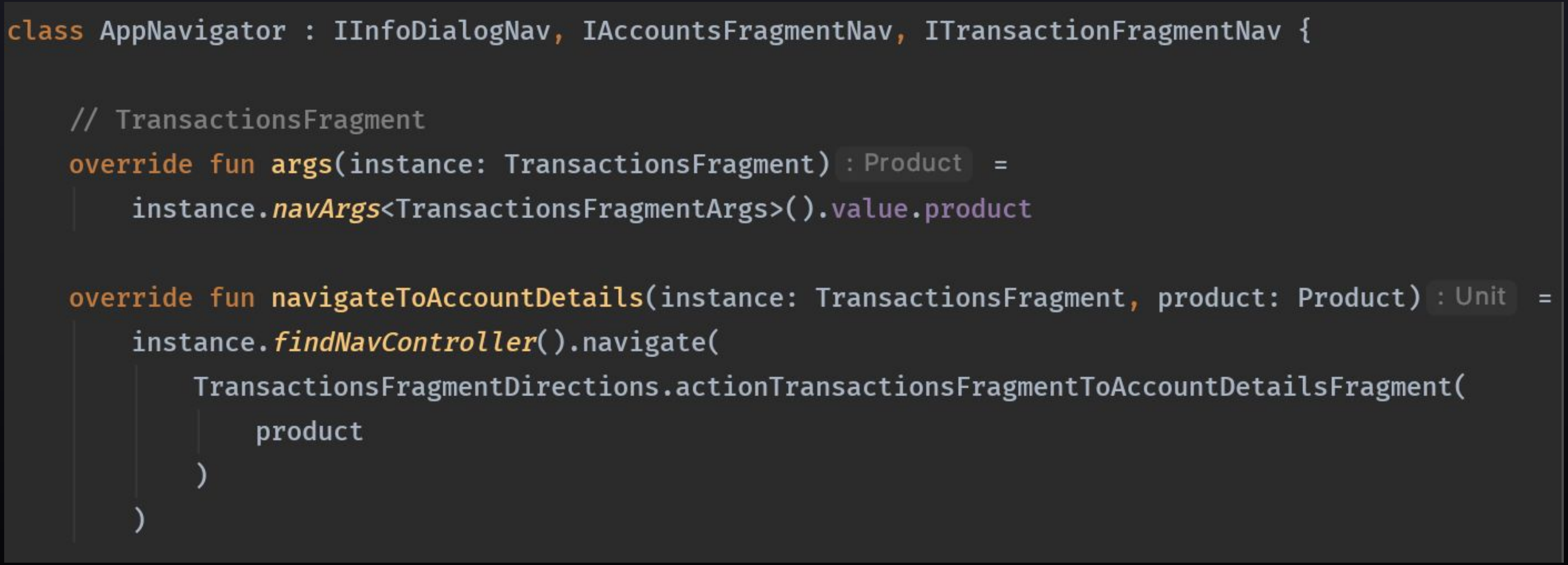


```kotlin
class TransactionsFragment : SyncFragment<TransactionsViewModel>() {

    @Inject
    lateinit var nav: ITransactionFragmentNav
```



```kotlin
interface ITransactionFragmentNav {
    fun args(instance: TransactionsFragment): Product
    fun navigateToAccountDetails(instance: TransactionsFragment, product: Product)
}
```



```
class AppNavigator : IInfoDialogNav, IAccountsFragmentNav, ITransactionFragmentNav {

    // TransactionsFragment
    override fun args(instance: TransactionsFragment) : Product  =
        instance.navArgs<TransactionsFragmentArgs>().value.product

    override fun navigateToAccountDetails(instance: TransactionsFragment, product: Product) : Unit  =
        instance.findNavController().navigate(
            TransactionsFragmentDirections.actionTransactionsFragmentToAccountDetailsFragment(
                product
            )
        )
```

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COMING SOON

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- Room
- Pagination
- Flow

Forget framework

Use it on your benefit, don’t let it drive you

TAKEAWAYS

On going (no silver bullets)

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WE ARE HIRING

rafa.o.es@sync.money

sync.

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