

IMMOBILIEN
SCOUT24

Android JetPack

Navigation Component



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```
class MainActivity : AppCompatActivity {

    private val message: EditText
        get() = findViewById(R.id.message)

    override fun onCreate(savedInstanceState: Bundle) {
        /* ... */
    }

    fun sendMessage() {
        val intent = Intent(this, DisplayMessageActivity::class.java)
        intent.putExtra(DisplayMessageActivity.EXTRA_MESSAGE, message.text.toString())
        startActivity(intent)
    }
}
```



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Scoping

Application

Activity 1

Activity 2

Activity 3

"Once we have gotten in to this entry-point to your UI, we really don't care how you organise the flow inside."

— Dianne Hackborn, **Android Framework team**



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Family



Find contacts

New



4 contacts

H



Home

K



K

T



Torin



東洸



★ K

Phone

(415) 555-1212

Home

Email

example@gmail.com

Home



Groups

Family



9:41 *

```
public class MainActivity extends FragmentActivity {

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.news_articles);

        // Check that the activity is using the layout version with
        // the fragment_container FrameLayout
        if (findViewById(R.id.fragment_container) != null) {

            // However, if we're being restored from a previous state,
            // then we don't need to do anything and should return or else
            // we could end up with overlapping fragments.
            if (savedInstanceState != null) {
                return;
            }

            // Create a new Fragment to be placed in the activity layout
            HeadlinesFragment firstFragment = new HeadlinesFragment();

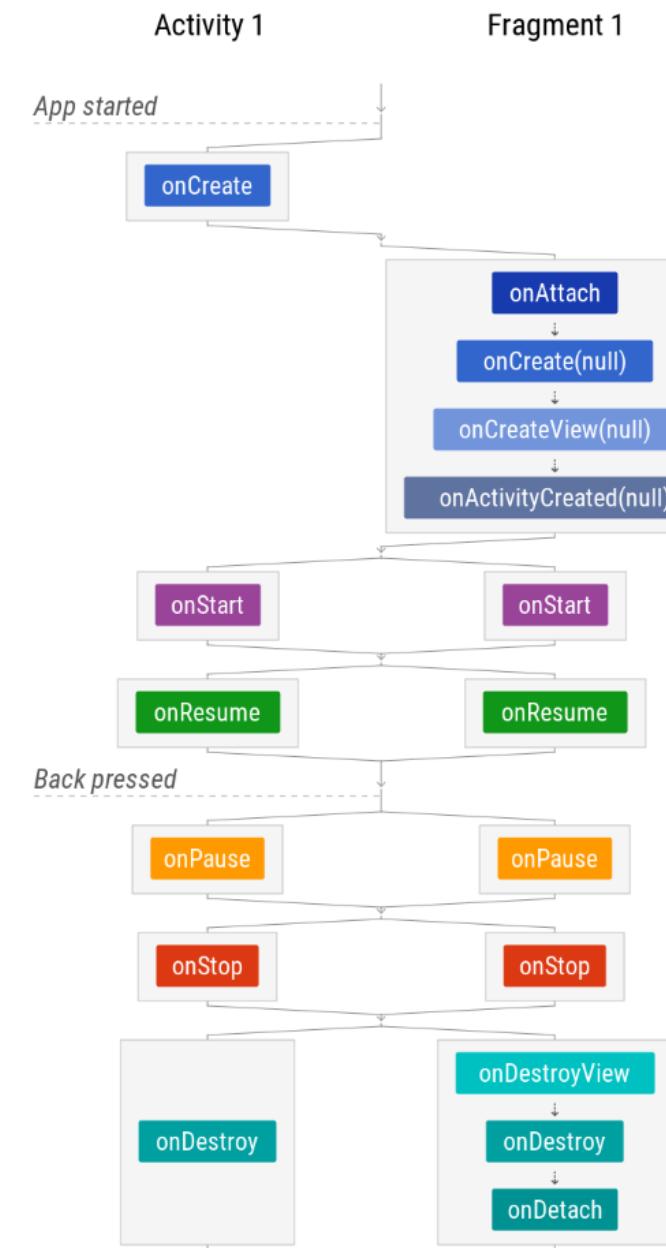
            // In case this activity was started with special instructions from an
            // Intent, pass the Intent's extras to the fragment as arguments
            firstFragment.setArguments(getIntent().getExtras());

            // Add the fragment to the 'fragment_container' FrameLayout
            getSupportFragmentManager()
                .beginTransaction()
                .add(R.id.fragment_container, firstFragment)
                .commit();
        }
    }
}
```

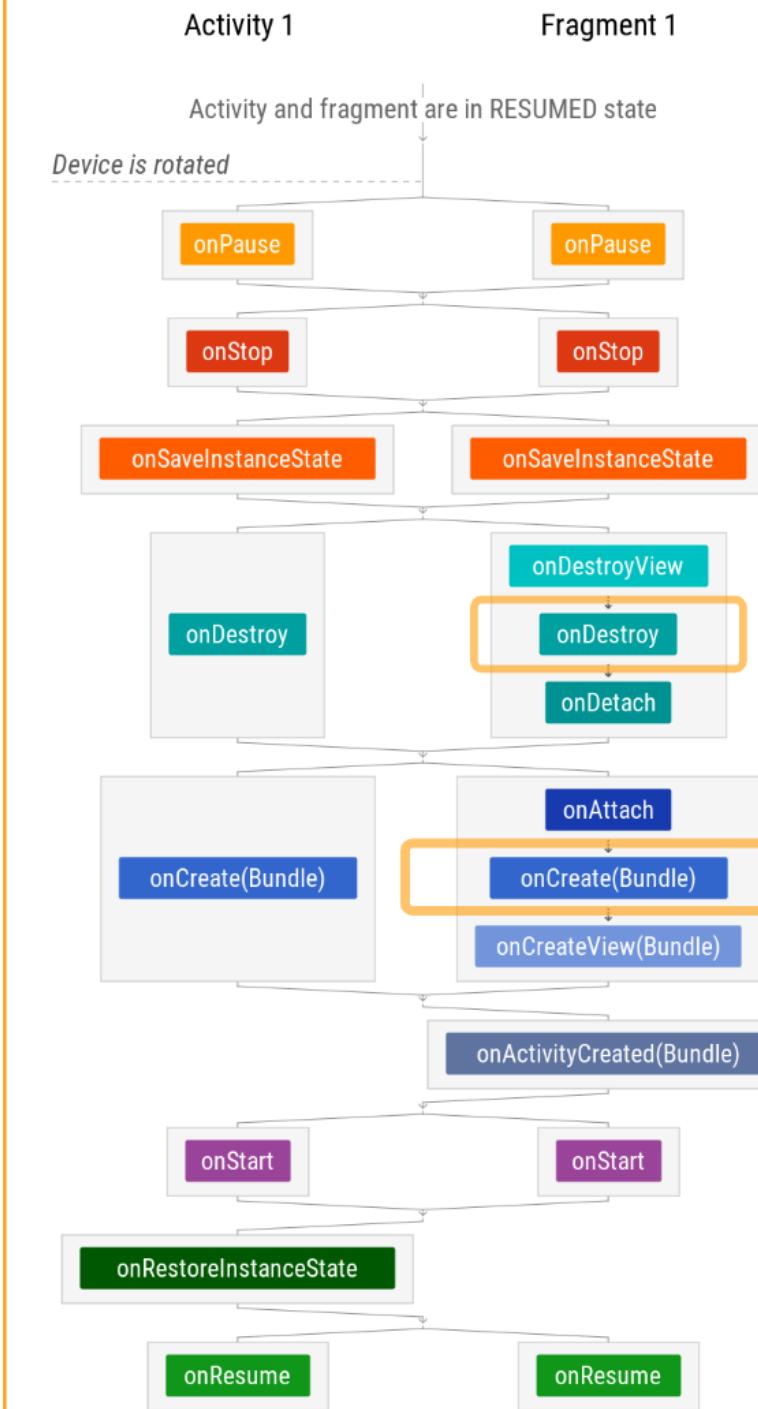
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Fragments

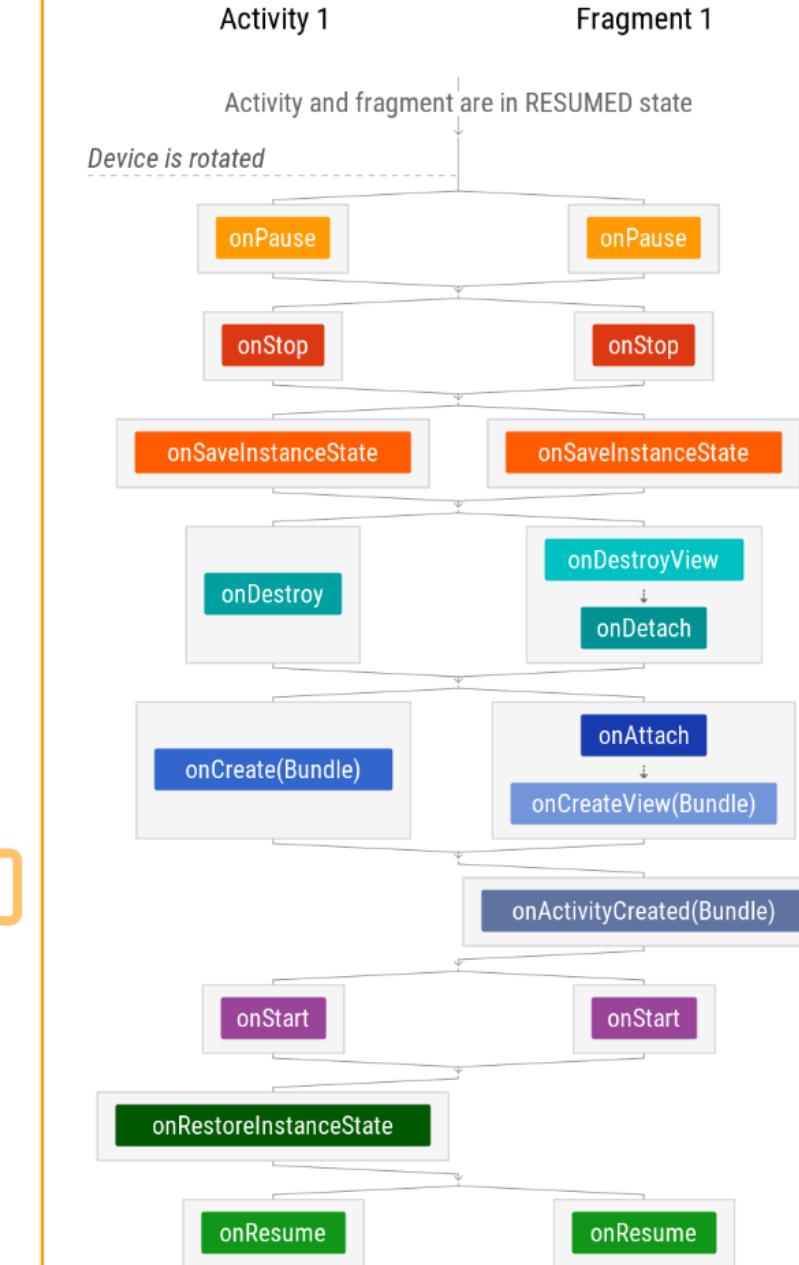
Start and finish

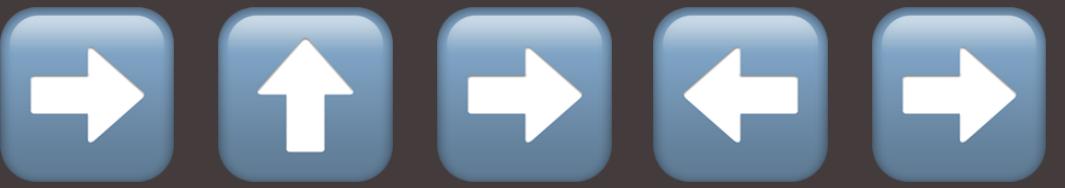


Rotation (non-retained)



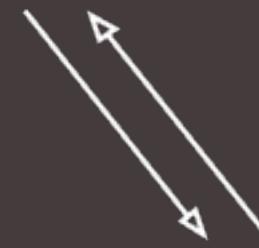
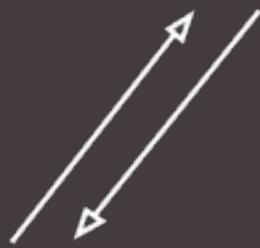
Rotation (retained)





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Activity



Fragment 1

Fragment 2

JetPack: Navigation





Libraries



Plugin

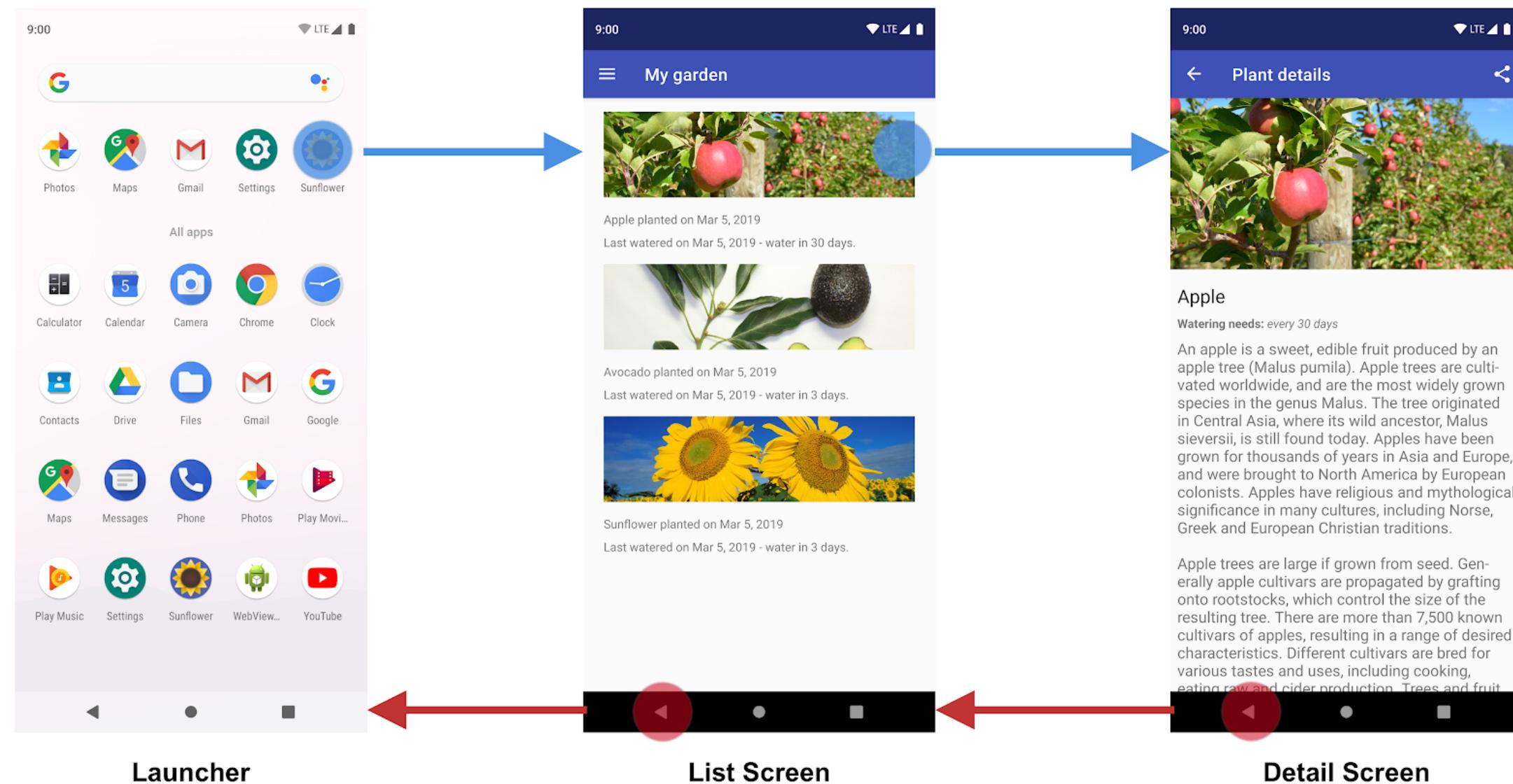


Tooling

- Fragment transactions
- Up and back actions
- Standardised transition resources
- Deep link implementation
- Easy navigation patterns
- Type safe arguments

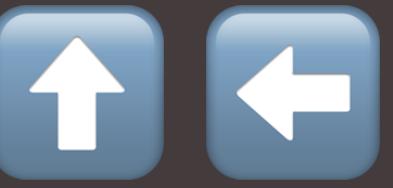
Principles of Navigation

Fixed Start Destination





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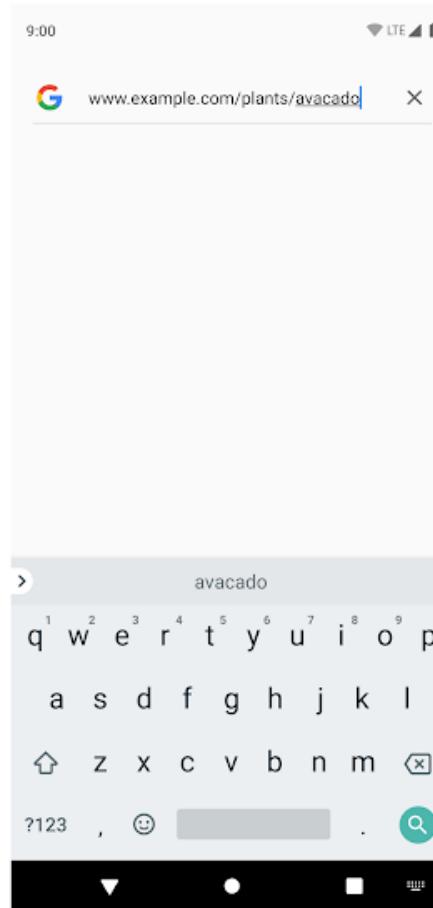
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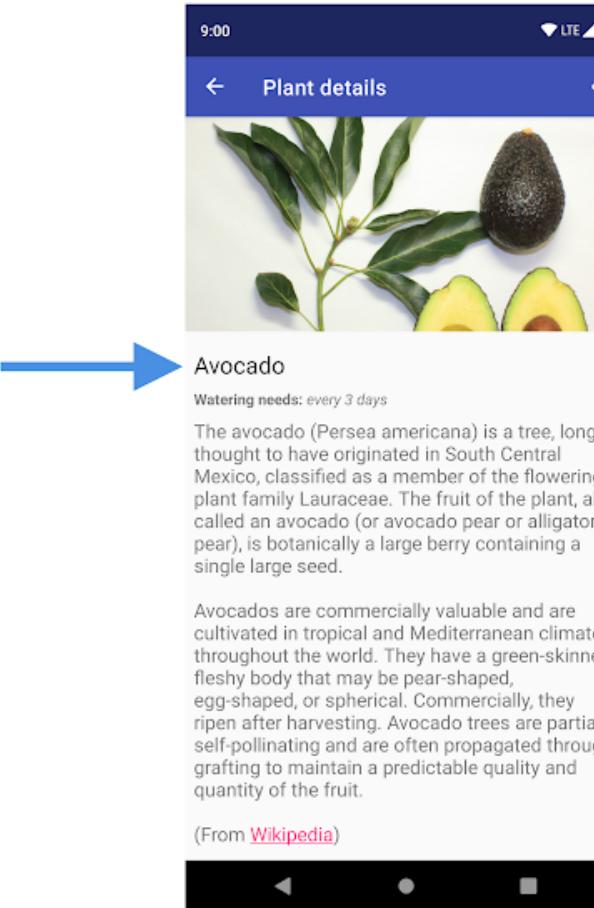
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Deep linking simulates manual navigation

Deep Link into Plant Details (Linking to avocado details)

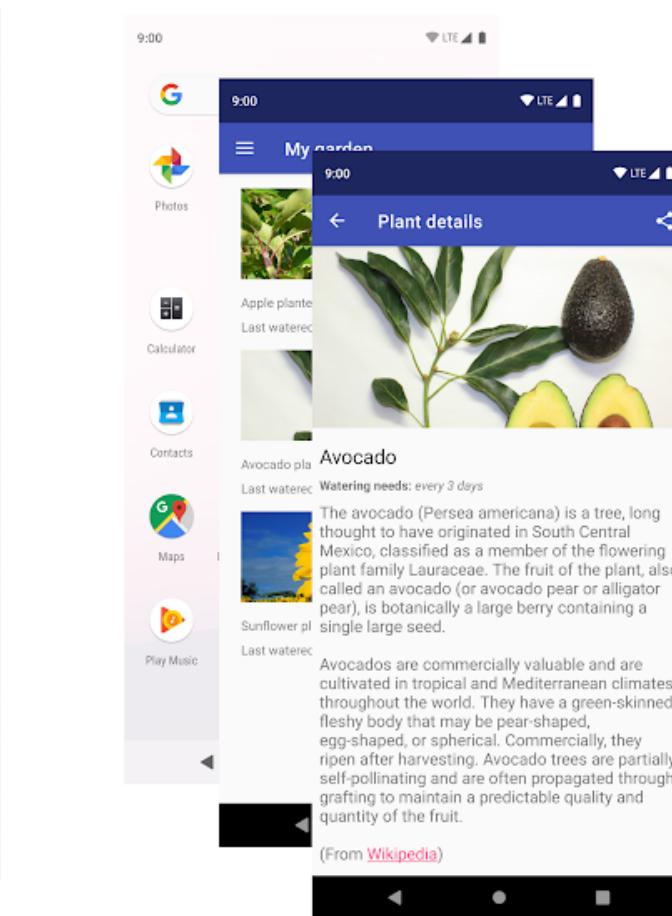


Follow Deep Link



Detail Screen

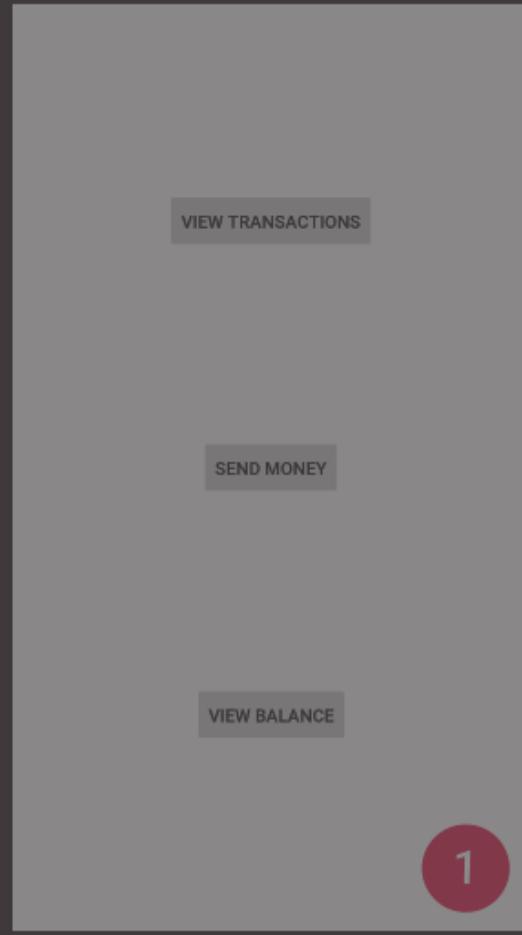
Resulting Sunflower Task Back Stack
(after user enters through deep link)



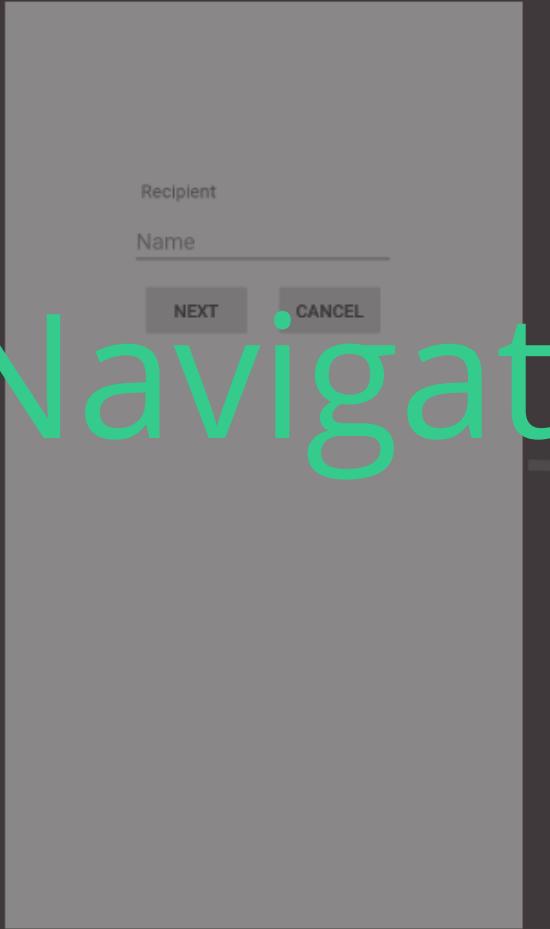
JetPack: Navigation



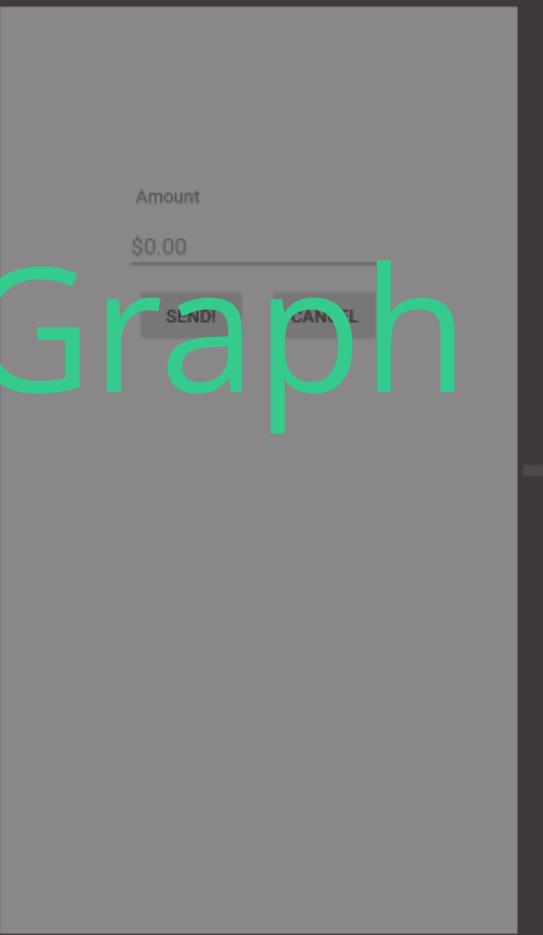
fragmentMain



fragmentChooseRecipient...



fragmentSpecifyAmount



fragmentConfirmation



fragmentViewBalance



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2

nav_graph.xml

Destinations Q - + | | - 56% + ⚡ !

HOST

activity_main (fragment)

GRAPH

fragmentMain - Start

fragmentViewBalance

navigation

The diagram illustrates a navigation graph. On the left is a white rectangular box labeled "fragmentMain" containing three buttons: "VIEW TRANSACTIONS", "SEND MONEY", and "VIEW BALANCE". An arrow labeled "navigation" points from the bottom right of the "fragmentMain" box to the top right of a second white rectangular box labeled "fragmentViewBa...". The "fragmentViewBalance" box contains the text "\$1". A tooltip "Nested Graph" is visible above the arrow.

Type Root Graph

Label

ID nav_graph.xml

Start Destination fragmentMain

Argument Default Values
No arguments on the destination

Global Actions +
Click + to add Actions

Deep Links +
Click + to add Deep Links

1 2 3

Design Text

NavHostFragment

```
<fragment  
    android:id="@+id/nav_host_fragment"  
    android:name="androidx.navigation.fragment.NavHostFragment"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    app:defaultNavHost="true"  
    app:navGraph="@navigation/nav_graph" />
```

NavController

- `Fragment.findNavController()`
- `View.findNavController()`
- `Activity.findNavController(viewId: Int)`

Actions

```
NavController.navigate(R.id.viewTransactionsAction)
```

SafeArgs

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When using the `safeargs` plugin in your project, you can add arguments to your destinations in your navigation graph to generate a type safe args class in Kotlin, that has default arguments and null safety to boot.

The navigation library also provides extensions for configuring BottomNavigationView simply and easily.

Deep Link

The navigation library also allows you to easily configure deep linking by specifying a deep link in your navigation graph, which will be automatically included in your manifest.

