Android Studio Jetpack Tutorial

https://www.youtube.com/watch?v=0fhOxFvkEQI

Create New Project

Create Android Project

Application name

Android Studio Jetpack Tutorials

Company domain

htl.at

Project location

uetz/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials ...

Package name

at.htl.androidstudiojetpacktutorials Edit

Include C++ support

Include Kotlin support

⚠ project location should not contain whitespace, as this can cause problems with the NDK tools.

Cancel Previous Next Finish

Create New Project

Target Android Devices

Select the form factors and minimum SDK

Some devices require additional SDKs. Low API levels target more devices, but offer fewer API features.

- [x] **Phone and Tablet**

  API 27: Android 8.1 (Oreo)

  By targeting **API 27 and later**, your app will run on < 1% of devices. Help me choose

  - [ ] Include Android Instant App support

- [ ] **Wear OS**

  API 23: Android 6.0 (Marshmallow)

- [ ] **TV**

  API 21: Android 5.0 (Lollipop)

- [ ] **Android Auto**

- [ ] **Android Things**

  API 24: Android 7.0 (Nougat)

Cancel | Previous | Next | Finish

Create New Project

Add an Activity to Mobile

Add No Activity

Basic Activity

Bottom Navigation Activity

Empty Activity

Fragment + ViewModel

Fullscreen Activity

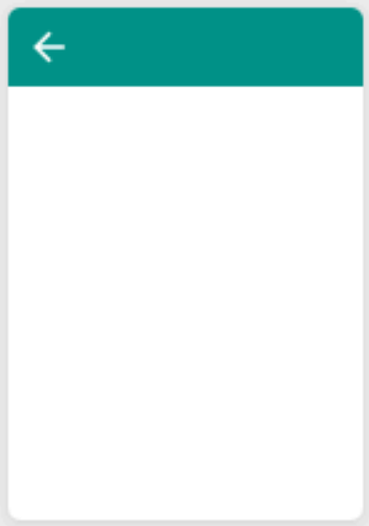
Google AdMob Ads Activity

Google Maps Activity

Cancel | Previous | Next | Finish

Create New Project

Configure Activity

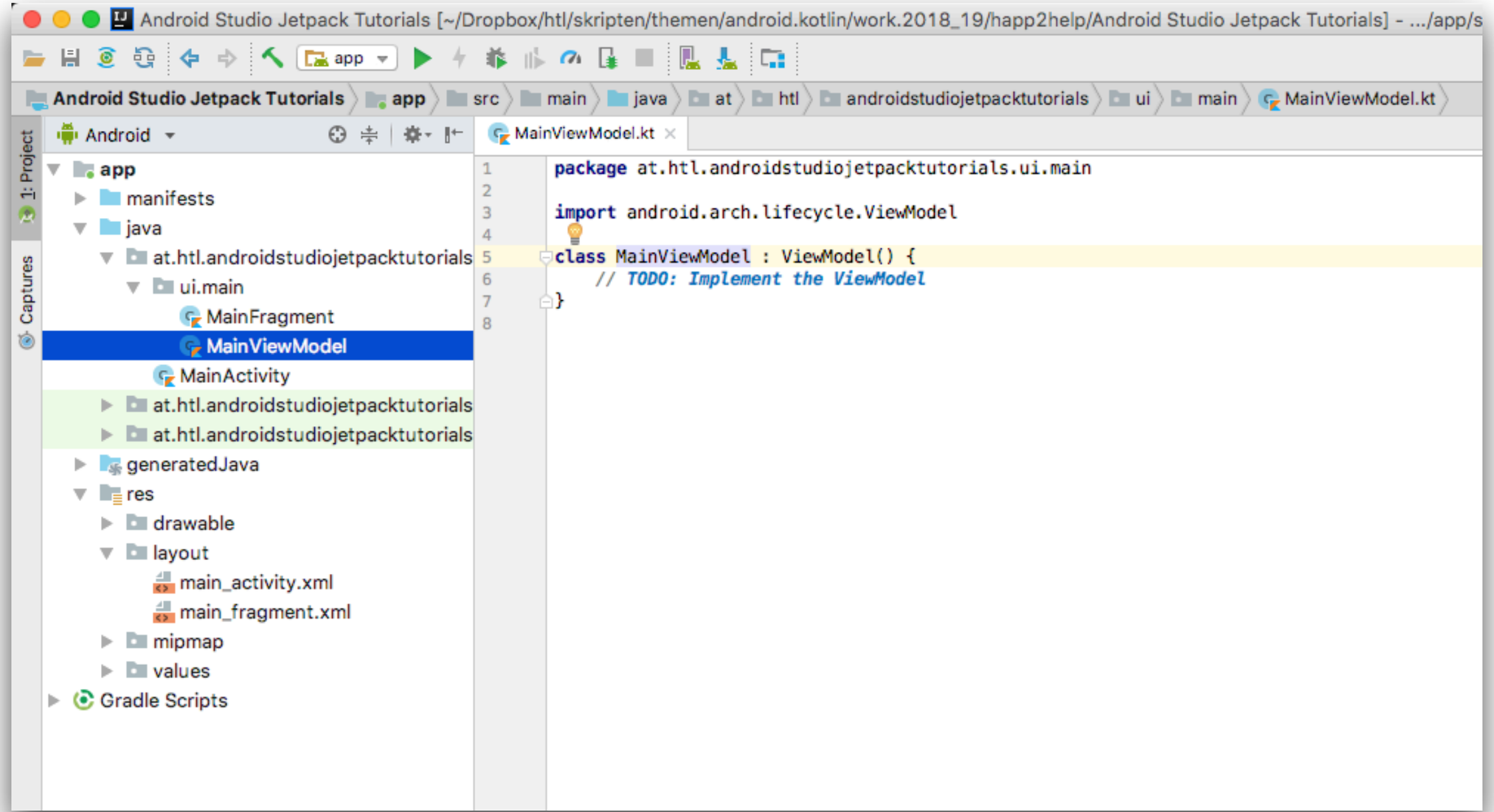


Creates a new activity and a fragment with view model

Activity Name:	MainActivity
Activity Layout Name:	main_activity
Fragment Name:	MainFragment
Fragment Layout Name:	main_fragment
ViewModel Name:	MainViewModel
Fragment package path:	ui.main

The name of the activity class to create

Cancel | Previous | Next | Finish


Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/s
app
Android Studio Jetpack Tutorials
app
src
main
java
at
htl
androidstudiojetpacktutorials
ui
main
MainViewModel.kt
1: Project
Captures
Android
MainViewModel.kt
app
manifests
java
at.htl.androidstudiojetpacktutorials
ui.main
MainFragment
MainViewModel
MainActivity
at.htl.androidstudiojetpacktutorials
at.htl.androidstudiojetpacktutorials
generatedJava
res
drawable
layout
main_activity.xml
main_fragment.xml
mipmap
values
Gradle Scripts
1 package at.htl.androidstudiojetpacktutorials.ui.main
2
3 import android.arch.lifecycle.ViewModel
4
5 class MainViewModel : ViewModel() {
6 // TODO: Implement the ViewModel
7 }
8

Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/java/at/htl/and

app

Android Studio Jetpack Tutorials > app > src > main > java > at > htl > androidstudiojetpacktutorials > ui > main > MainViewModel.kt

Android

MainViewModel.kt

```
1  package at.htl.androidstudiojetpacktutorials.ui.main
2
3  import android.arch.lifecycle.ViewModel
4
```

- app
  - manifests
  - java
    - at.htl.an
      - ui.ma
        - Ma
        - Ma
      - MainA
    - at.htl.an
    - at.htl.an
  - generatedJ
  - res
    - drawable
    - layout
      - main_
      - main_
    - mipmap
    - values
- Gradle Scripts

1: Project

Captures

Build Sync

Build: co

Run b

Variants

New

Link C++ Project with Gradle

Cut	⌘X
Copy	⌘C
Copy Path	⇧⌘C
Copy Reference	⌥⇧⌘C
Paste	⌘V
Find Usages	⌥F7
Find in Path...	⇧⌘F
Replace in Path...	⇧⌘R
Analyze	▶
Refactor	▶
Add to Favorites	▶
Show Image Thumbnails	⇧⌘T
Reformat Code	⌥⌘L
Optimize Imports	^⌥O
Delete...	⌦
Run 'Tests in 'at.htl.androidstudiojetpacktutorials''	^⇧R
Debug 'Tests in 'at.htl.androidstudiojetpacktutorials''	^⇧D
Run 'Tests in 'at.htl.androidstudiojetpacktutorials'' with Coverage	
Create 'Tests in 'at.htl.androidstudiojetpacktutorials''...	
Reveal in Finder	
Open in terminal	
Local History	▶
Synchronize 'androidstu...cktutorials'	

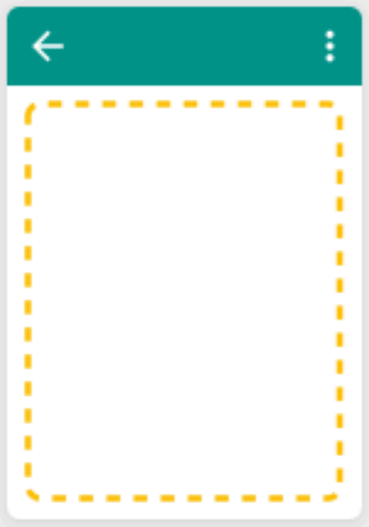
- Java Class
- Kotlin File/Class
- Android Resource File
- Android Resource Directory
- Sample Data Directory
- File
- Scratch File ⇧⌘N
- Package
- C++ Class
- C/C++ Source File
- C/C++ Header File
- Image Asset
- Vector Asset
- Kotlin Script
- Singleton
- Gradle Kotlin DSL Build Script
- Gradle Kotlin DSL Settings
- Edit File Templates...
- AIDL ▶
- Activity ▶
- Android Auto ▶
- Folder ▶
- Fragment ▶
- Google ▶
- Other ▶
- Service ▶
- UI Component ▶
- Wear ▶

- Fragment (Blank)
- Fragment (List)
- Fragment (with ViewModel)
- Fragment (with a +1 button)
- Modal Bottom Sheet

New Android Component

Configure Component

Android Studio



Creates a blank fragment that is compatible back to API level 4.

Fragment Name: FirstFragment

Create layout XML?

Fragment Layout Name: fragment_first

nclude fragment factory metho...

nclude interface callbacks?

Source Language: Kotlin

The name of the fragment class to create

Cancel Previous Next Finish

https://developer.android.com/jetpack/

Developers | Platform | Android Studio | Google Play | **Android Jetpack** | Docs | Blog | Search

OVERVIEW | GET STARTED | COMMUNITY

Foundation

Foundation components provide core system capabilities, Kotlin extensions and support for multidex and automated testing.

AppCompat

Degrade gracefully on older versions of Android

Android KTX

Write more concise, idiomatic Kotlin code

Multidex

Provide support for apps with multiple DEX files

Test

An Android testing framework for unit and runtime UI tests

Architecture

Architecture components have classes that help manage your UI component lifecycle, handle data persistence, and more.

Data Binding

Declaratively bind observable data to UI elements

Lifecycles

Manage your activity and fragment lifecycles

LiveData

Notify views when underlying database changes

Navigation

Handle everything needed for in-app navigation

Paging

Gradually load information on

Behavior

Behavior Components help you design robust, testable, and maintainable apps.

Download manager

Schedule and manage large downloads

Media & playback

Backwards compatible APIs for media playback and routing (including Google Cast)

Notifications

Provides a backwards-compatible notification API with support for Wear and Auto

Permissions

Compatibility APIs for checking and requesting app permissions

Sharing

UI

UI components make it easy for you to make your app not only easy, but delightful to use.

Animation & transitions

Move widgets and transition between screens

Auto

Components to help develop apps for Android Auto.

Emoji

Enable an up-to-date emoji font on older platforms

Fragment

A basic unit of composable UI

Layout

Lay out widgets using different algorithms

Figure 1. A navigation graph

The Navigation Architecture Component is implemented based on the Principles of navigation.

> **Note:** If you want to use Navigation Architecture Components with Android Studio, you must use Android Studio 3.2 Canary 14 or higher.

Set up navigation in a project

Before you can create a navigation graph, you must set up the Navigation Architecture Component for your project. To set up your project in Android Studio, perform the following steps.

1. If using a Beta, Release Candidate, or Stable build, you must enable the Navigation Editor. Click **File > Settings** (**Android Studio > Preferences** on Mac), select the **Experimental** category in the left pane, check **Enable Navigation Editor**, and then restart Android Studio.
2. Add the following Navigation Architecture Component to your app or module's `build.gradle` file. For more information on adding Archtecture Components to `build.gradle`, refer to Adding components to your project.
3. In the Project window, right-click on the `res` directory and select **New > Android Resource File**. The **New Resource File** dialog appears.
4. Type a name in the **File name** field, such as "`nav_graph`".
5. Select **Navigation** from the **Resource type** drop-down list.
6. Click **OK**. The following occurs:
   a. A `navigation` resource directory is created within the `res` directory.
   b. A `nav_graph.xml` file is created within the navigation directory.
   c. The `nav_graph.xml` file opens in the Navigation Editor. This xml file contains your navigation graph.
7. Click the **Text** tab to toggle to the XML text view. The XML for an empty navigation graph looks like this:

```
<?xml version="1.0" encoding="utf-8"?>
```

Navigation

Dependencies for Navigation.

Navigation classes are already in the androidx.navigation package, but currently depend on Support Library 27.1.1, and associated Arch component versions. Version of Navigation with AndroidX dependencies will be released in the future.

```
dependencies {
    def nav_version = "1.0.0-alpha05"

    implementation "android.arch.navigation:navigation-fragment:$nav_version" // use -ktx fo
    implementation "an                                          :$nav_version" // use -ktx for Kotl

    // optional - Test
    androidTestImpleme                                          vigation-testing:$nav_version" // u
}
```

Copy
Select All
Search Google for “def nav_version...”
View Selection Source
Inspect Element

Safe args

For Safe args, add the following **classpath** in your **top level** `build.gradle` file

```
buildscript {
    repositories {
        google()
```

The `NavController` and its navigation graph is contained within a single activity. Therefore, when migrating an existing project to use the Navigation Architecture Component, focus on migrating one Activity at a time by creating a navigation graph for the destinations within each Activity.

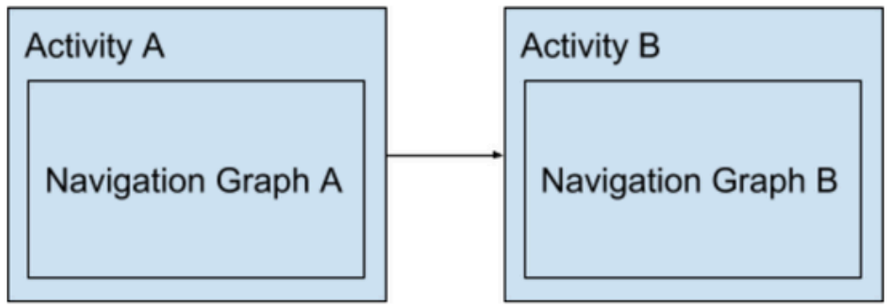


Figure 1. Activities and their individual navigation graphs.

Separate Activities can then be linked by adding activity destinations to the navigation graph, replacing existing usages of `startActivity()` throughout the code base.

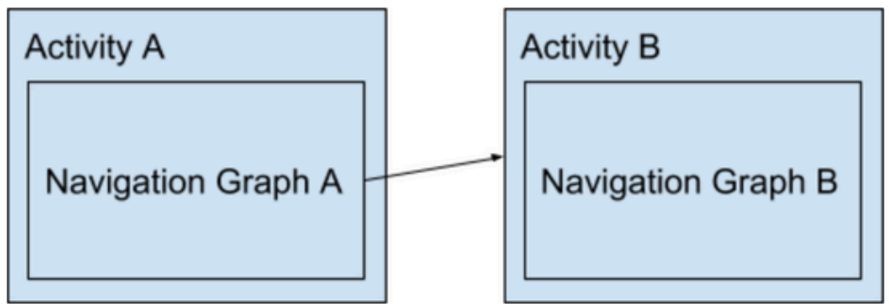


Figure 2. Navigation graph in one Activity pointing to second Activity.

In cases where multiple Activities share the same layout, the navigation graphs can be combined, replacing navigate calls to the activity destination to navigate calls directly between the two navigation graphs.

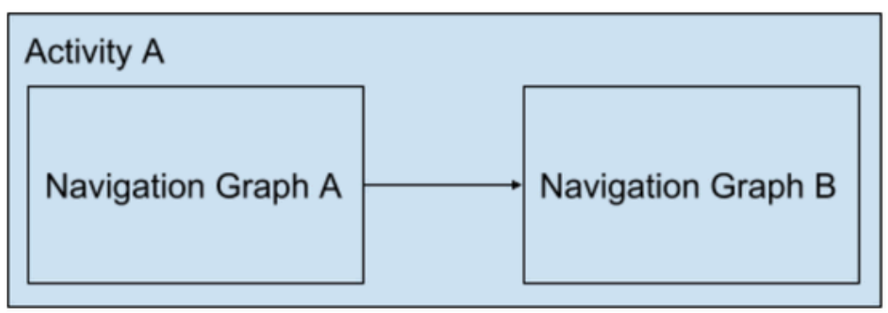


Figure 3. Activity with combined navigation graph.

app

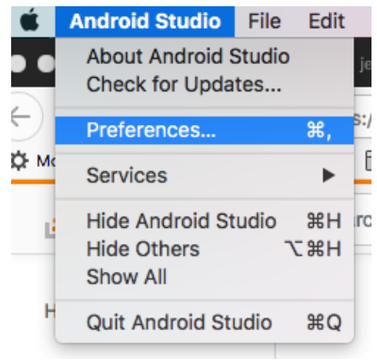
Gradle project sync in progress...

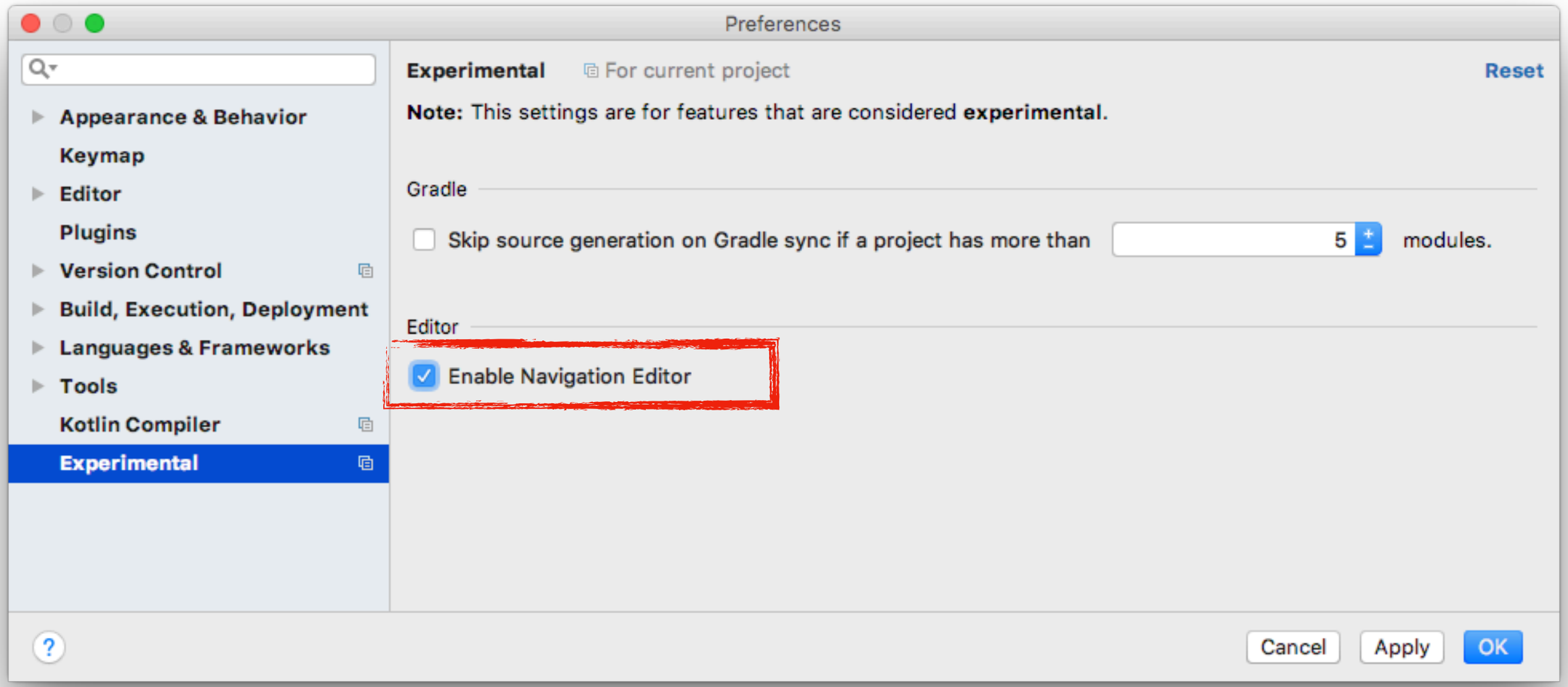
```
apply plugin: 'kotlin-android-extensions'

android {
    compileSdkVersion 28
    defaultConfig {
        applicationId "at.htl.androidstudiojetpacktutorials"
        minSdkVersion 27
        targetSdkVersion 28
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
        }
    }
}

dependencies {
    def nav_version = "1.0.0-alpha05"

    implementation "android.arch.navigation:navigation-fragment:$nav_version" // use -ktx for Kotlin
    implementation "android.arch.navigation:navigation-ui:$nav_version" // use -ktx for Kotlin

    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation "org.jetbrains.kotlin:kotlin-stdlib-jdk7:$kotlin_version"
    implementation 'com.android.support:appcompat-v7:28.0.0-rc01'
    implementation 'com.android.support.constraint:constraint-layout:1.1.2'
    implementation 'android.arch.lifecycle:extensions:1.1.1'
    implementation 'com.android.support:support-v4:28.0.0-rc01'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'com.android.support.test:runner:1.0.2'
    androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
}

```

build.gradle (Module: app)

```
apply plugin: 'kotlin-android'

apply plugin: 'kotlin-android-extensions'

android {
    compileSdkVersion 28
    buildToolsVersion '28.0.2'
    defaultConfig {
        applicationId "at.htl.androidstudiojetpacktutorials"
        minSdkVersion 27
        targetSdkVersion 28
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
        }
    }
}

dependencies {
    def nav_version = "1.0.0-alpha05"

    implementation "android.arch.navigation:navigation-fragment:$nav_version" // use -ktx for Kotlin
    implementation "android.arch.navigation:navigation-ui:$nav_version" // use -ktx for Kotlin

    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation "org.jetbrains.kotlin:kotlin-stdlib-jdk7:$kotlin_version"
    implementation 'com.android.support:appcompat-v7:28.0.0-rc02'
    implementation 'com.android.support.constraint:constraint-layout:1.1.2'
    implementation 'android.arch.lifecycle:extensions:1.1.1'
    implementation 'com.android.support:support-v4:28.0.0-rc02'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'com.android.support.test:runner:1.0.2'
    androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
}
```

Kontrolliere …

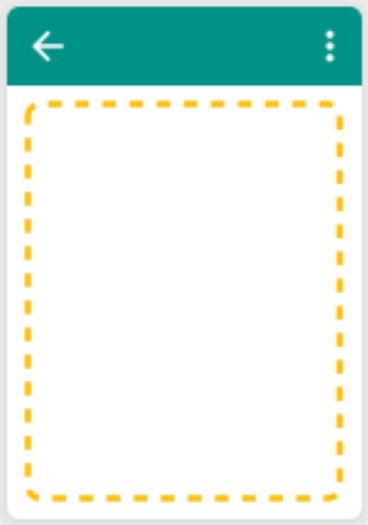




New Android Component

Configure Component

Android Studio



Creates a blank fragment that is compatible back to API level 4.

Fragment Name: SecondFragment

Create layout XML?

Fragment Layout Name: fragment_second

nclude fragment factory metho...

nclude interface callbacks?

Source Language: Kotlin

Generate event callbacks for communication with an Activity or other fragments

Cancel Previous Next Finish

SecondFragment.kt

```kotlin
package at.htl.androidstudiojetpacktutorials


import ...


// TODO: Rename parameter arguments, choose names that match
// the fragment initialization parameters, e.g. ARG_ITEM_NUMBER
private const val ARG_PARAM1 = "param1"
private const val ARG_PARAM2 = "param2"

/**
 * A simple [Fragment] subclass.
 *
 */
class SecondFragment : Fragment() {

    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
                              savedInstanceState: Bundle?): View? {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_second, container, false)
    }


}
```

löschen

main_activity.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" />
```

main_activity.xml

```
1  <?xml version="1.0" encoding="utf-8"?>
2  <Dra
3      android.support.v4.widget.DrawerLayout
4      SlidingDrawer
5  Press ^Space to view tags from other namespaces
6      android:layout_width="match_parent"
7      android:layout_height="match_parent"
8      tools:context=".MainActivity" />
9
10
```

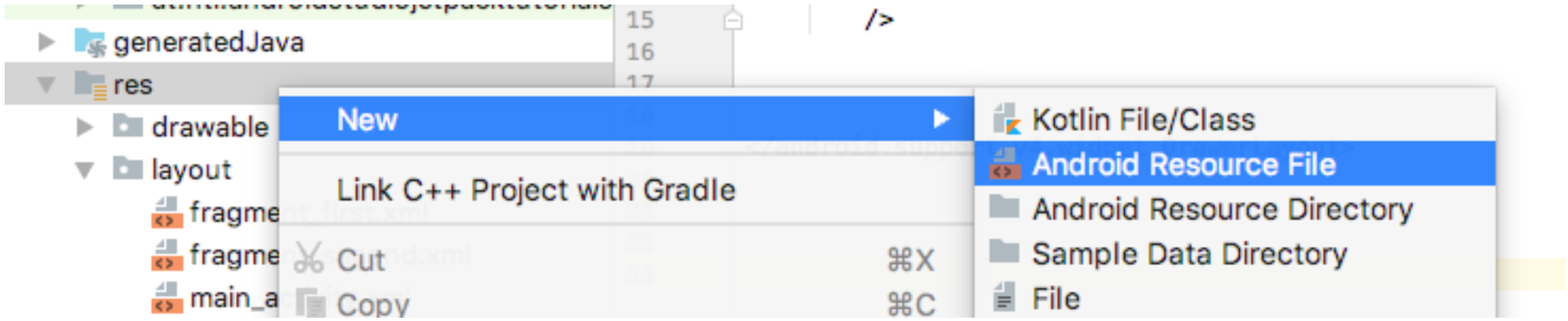
```
android.support.v4.widget
public class DrawerLayout
extends android.view.ViewGroup

Gradle:
com.android.support:drawerlayout-28.0.0-rc0
```

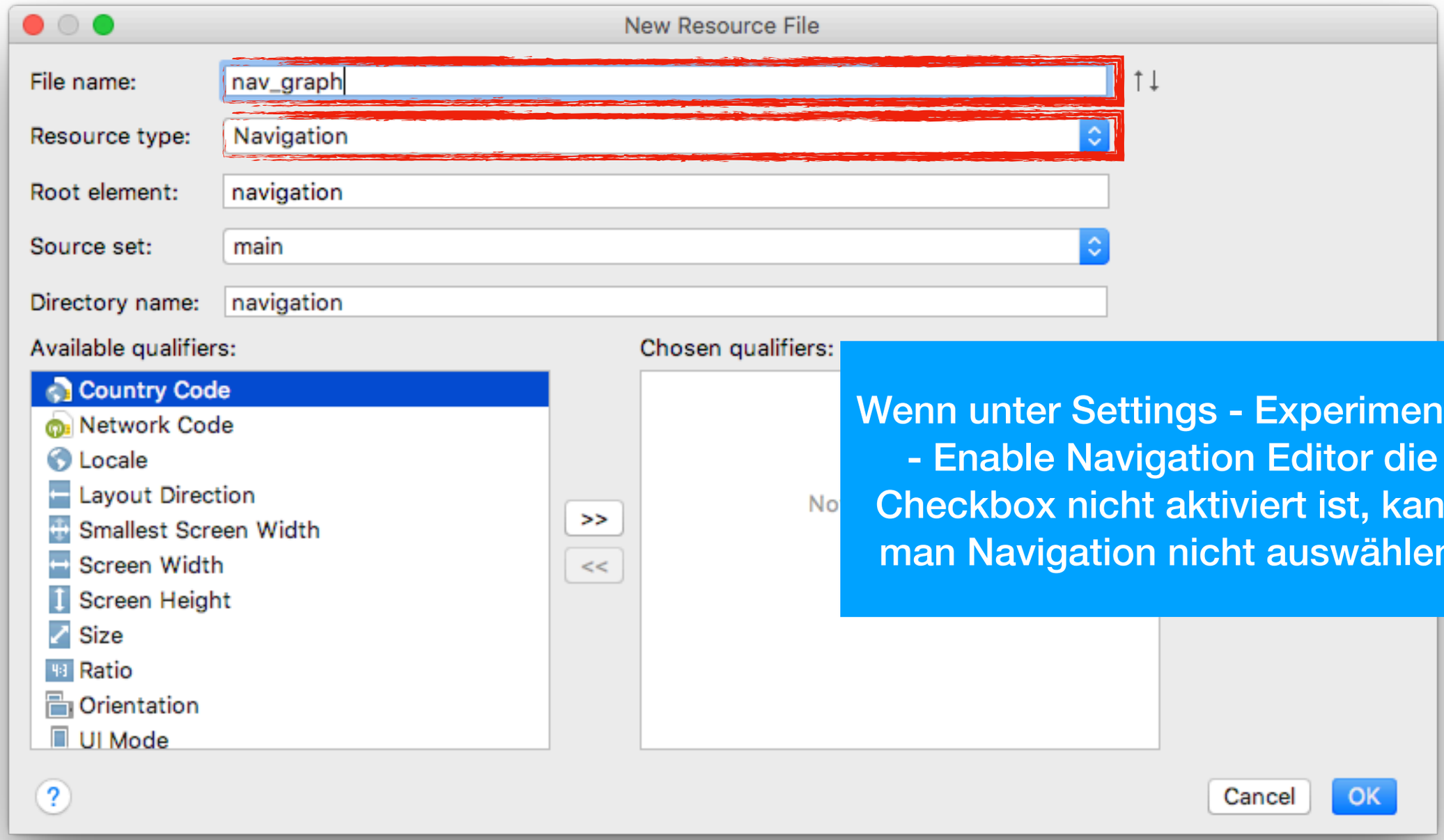
main_activity.xml

```
1  <?xml version="1.0" encoding="utf-8"?>
2  <android.support.v4.widget.DrawerLayout
3      xmlns:android="http://schemas.android.com/apk/res/android"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:id="@+id/container"
6      android:layout_width="match_parent"
7      android:layout_height="match_parent"
8      tools:context=".MainActivity" >
9
10
11
12 </android.support.v4.widget.DrawerLayout>
```

main_activity.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <fragment
        android:id="@+id/my_fragment"
        android:name="androidx.navigation.fragment.NavHostFragment"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        />



</android.support.v4.widget.DrawerLayout>

```



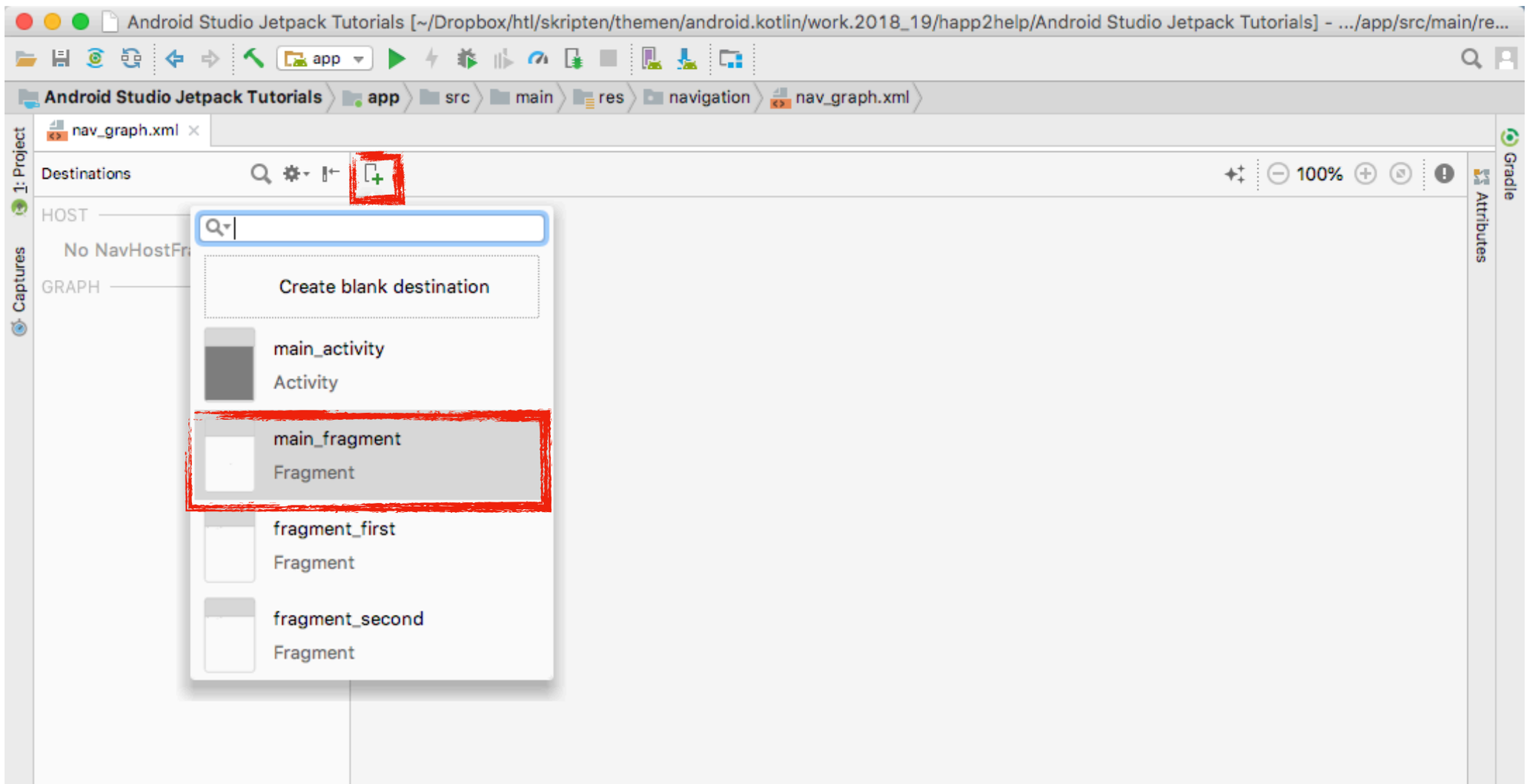


Wenn unter Settings - Experimental - Enable Navigation Editor die Checkbox nicht aktiviert ist, kann man Navigation nicht auswählen.

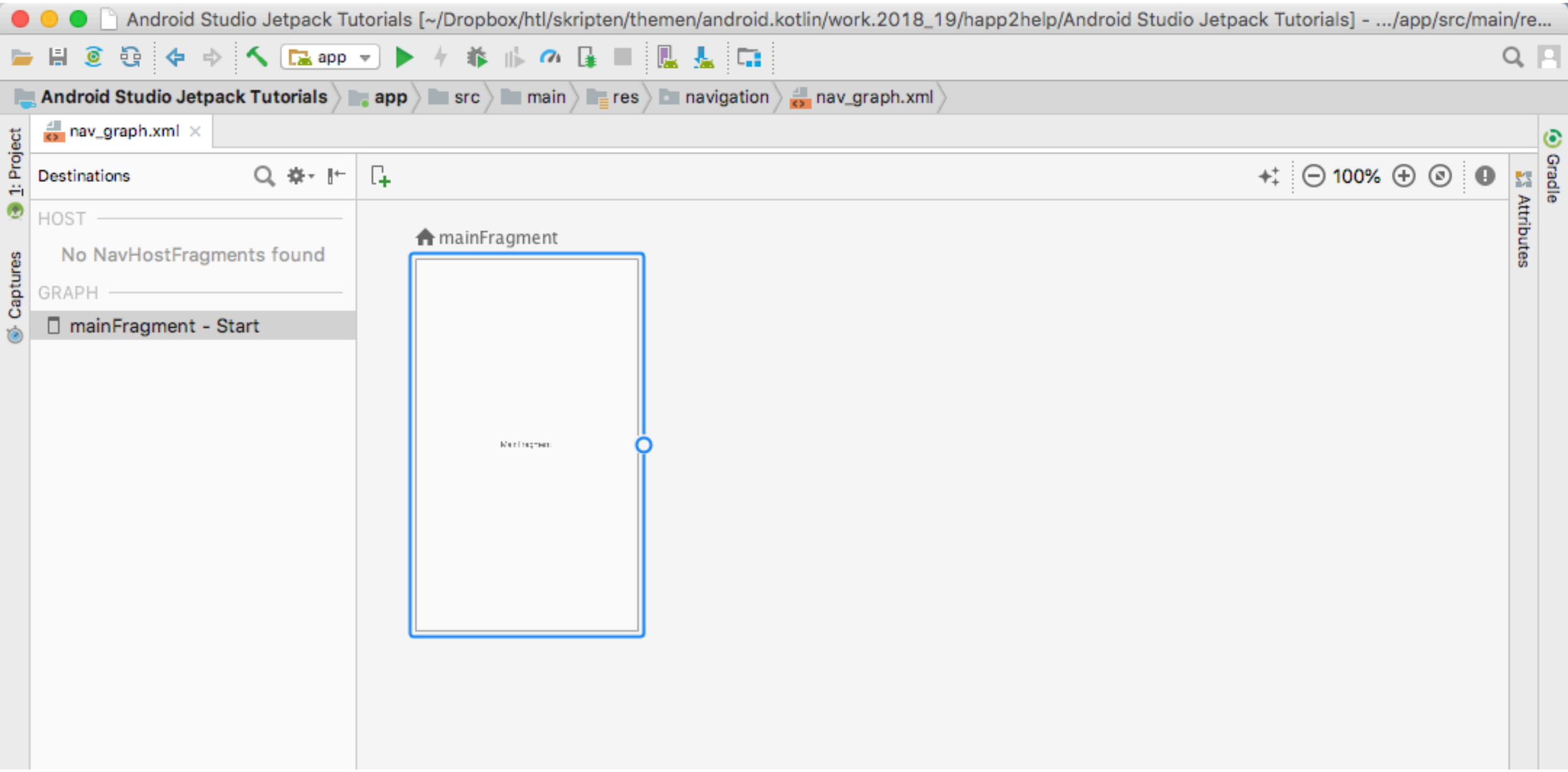
Navigation Graph

nav_graph.xml

```
1   <?xml version="1.0" encoding="utf-8"?>
2   <navigation xmlns:android="http://schemas.android.com/apk/res/android"
3       xmlns:app="http://schemas.android.com/apk/res-auto" android:id="@+id/nav_graph">
4
5   </navigation>
```



Navigation Editor



main_activity.xml

main_activity.xml

```
1   <?xml version="1.0" encoding="utf-8"?>
2   <android.support.v4.widget.DrawerLayout
3       xmlns:android="http://schemas.android.com/apk/res/android"
4       xmlns:app="http://schemas.android.com/apk/res-auto"
5       xmlns:tools="http://schemas.android.com/tools"
6       android:id="@+id/container"
7       android:layout_width="match_parent"
8       android:layout_height="match_parent"
9       tools:context=".MainActivity">
10
11      <fragment
12          android:id="@+id/my_fragment"
13          android:name="androidx.navigation.fragment.NavHostFragment"
14          android:layout_width="match_parent"
15          android:layout_height="match_parent"
16          app:defaultNavHost="true"
17          app:navGraph="@navigation/nav_graph" />
18
19
20  </android.support.v4.widget.DrawerLayout>
21
```

MainActivity.kt

MainActivity.kt

```
1   package at.htl.androidstudiojetpacktutorials
2
3   import ...
6
7   class  MainActivity : AppCompatActivity() {
8
9       override fun onCreate(savedInstanceState: Bundle?) {
10          super.onCreate(savedInstanceState)
11          setContentView(R.layout.main_activity)
12          if (savedInstanceState == null) {
13              supportFragmentManager.beginTransaction()
14                      .replace(R.id.container, MainFragment.newInstance())
15                      .commitNow()
16          }
17      }
18
19  }
```

löschen

MainActivity.kt

```
package at.htl.androidstudiojetpacktutorials

import ...

class  MainActivity : AppCompatActivity() {

    lateinit var drawer: DrawerLayout
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.main_activity)

        val host = supportFragmentManager.findFragmentById(R.id.my_fragment) as NavHostFragment? ?: return
        val navController = host.navController

        drawer = findViewById(R.id.container)
        NavigationUI.setupActionBarWithNavController(this, navController, drawer)

    }

    override fun onSupportNavigateUp(): Boolean {
        return NavigationUI.navigateUp(drawer, Navigation.findNavController(this, R.id.my_fragment))
    }
}
```

nav_graph.xml

Destinations

HOST

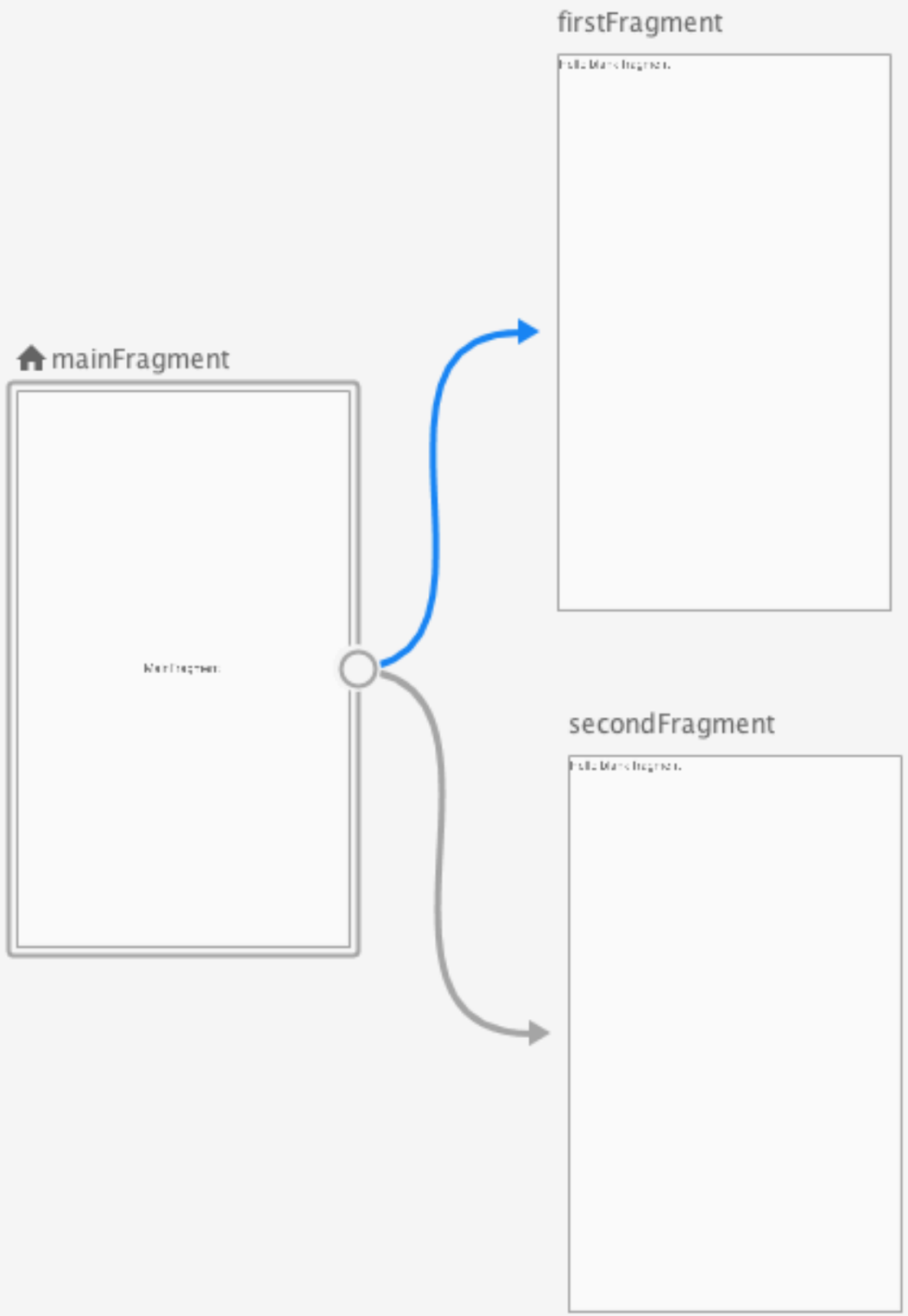
main_activity (my_fragment)

GRAPH

mainFragment - Start

firstFragment

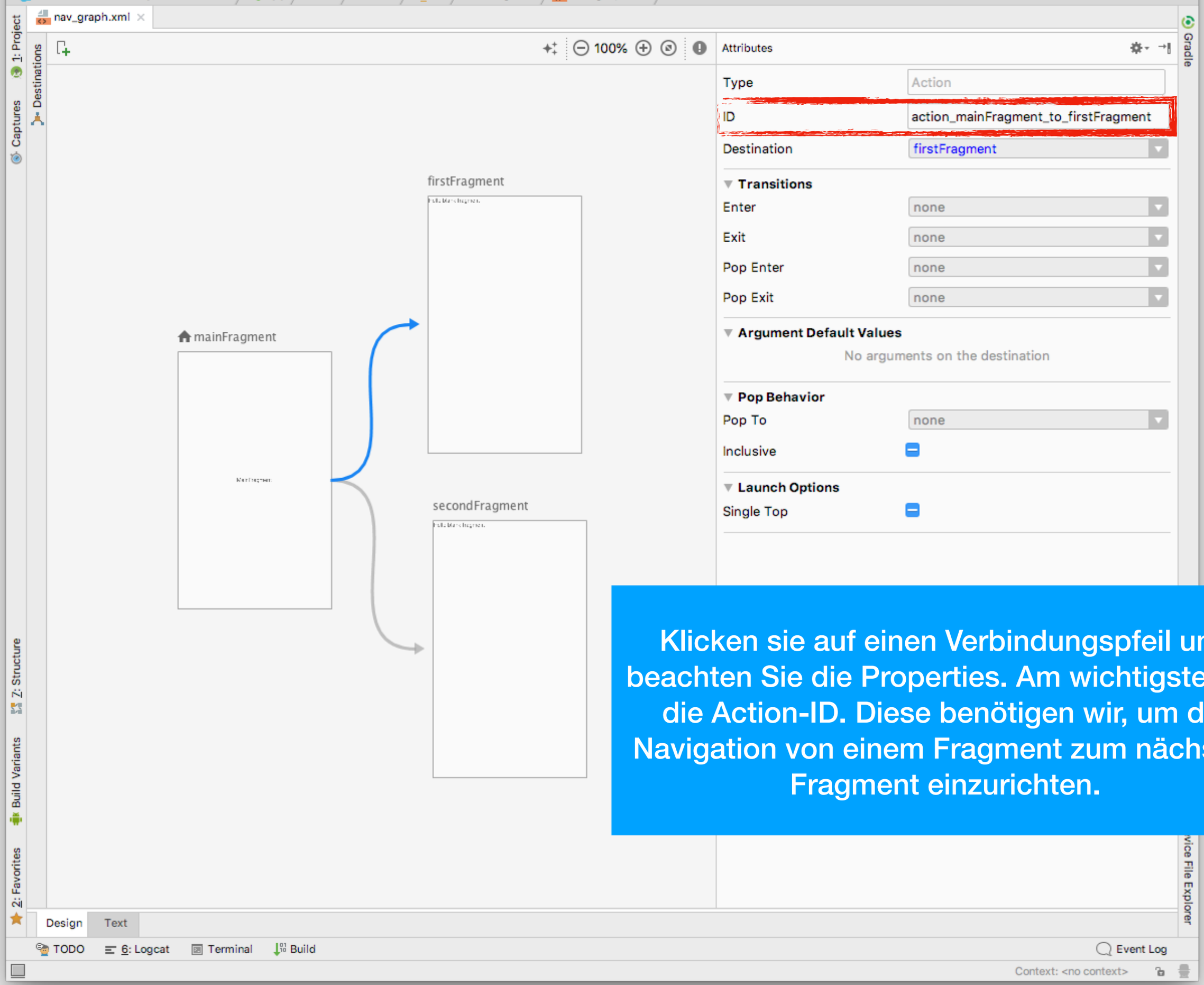
secondFragment



100%

Attributes

Gradle



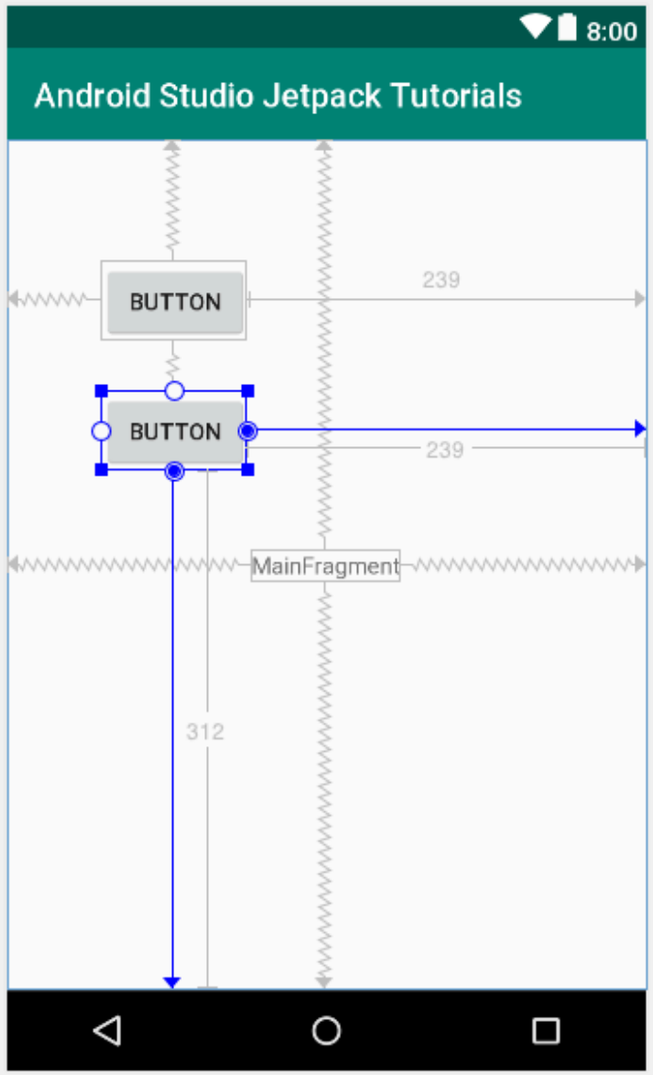
Klicken sie auf einen Verbindungspfeil und beachten Sie die Properties. Am wichtigsten ist die Action-ID. Diese benötigen wir, um die Navigation von einem Fragment zum nächsten Fragment einzurichten.

Android Studio Jetpack Tutorials › app › src › main › res › layout › main_fragment.xml

main_fragment.xml

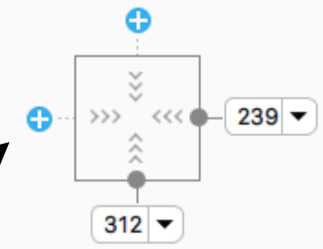
Palette: Common, Text, Buttons, Widgets, Layouts, Containers, Google, Legacy
TextView, Button, ImageView, RecyclerView, <fragment>, ScrollView, Switch

Nexus 4 · 28 · 45% · 8dp



Component Tree
main
Ab message- "MainFrag...
button- "Button"
button2- "Button"

Attributes
ID: button2
layout_width: wrap_content
layout_height: wrap_content



Setzen Sie zwei Buttons auf das Main-Fragment und klicken Sie jeweils auf die Plus-Symbole

elevation
background
backgroundTint
backgroundTintMode: none

TextView
text: Button
text
contentDescription
textAppearance: Material
fontFamily: sans-serif-medium
typeface: none
textSize: 14sp
lineSpacingExtra: none

Design | Text

TODO | 6: Logcat | Terminal | Build | Event Log

Context: <no context>

Buttons im Main Fragment

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="57dp"
    android:layout_marginTop="73dp"
    android:layout_marginEnd="239dp"
    android:layout_marginBottom="30dp"
    android:text="First Frag"
    app:layout_constraintBottom_toTopOf="@+id/button2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="57dp"
    android:layout_marginTop="30dp"
    android:layout_marginEnd="239dp"
    android:layout_marginBottom="312dp"
    android:text="Second Frag"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button" />
```

Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/java/at/htl/androidst...

Android Studio Jetpack Tutorials > app > src > main > java > at > htl > androidstudiojetpacktutorials > ui > main > MainFragment.kt

Android

- app
  - manifests
  - java
    - at.htl.androidstudiojetpacktut
      - ui.main
        - MainFragment
        - MainViewModel
      - FirstFragment
      - MainActivity
      - SecondFragment
    - at.htl.androidstudiojetpacktut
    - at.htl.androidstudiojetpacktut
  - res
    - main_fragment.xml
    - mipmap
    - navigation
      - nav_graph.xml
    - values
- Gradle Scripts
  - build.gradle (Project: Android Stu
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Grad
  - proguard-rules.pro (ProGuard Ru
  - gradle.properties (Project Proper
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

MainFragment.kt

```
1  package at.htl.androidstudiojetpacktutorials.ui.main
2
3  import ...
10
11 class MainFragment : Fragment() {
12
13     companion object {
14         fun ne
15     }
16
17     private la
18
19     override f
20
         return
         erride f
           super.
           viewMo
           // TOD
28     }
29
30
31
32 }
33
```

1. ^O
2. ovc tippen
3. Button OK anklicken

Override Members

2

Search for: ovc

- onMultiWindowModeChanged(isInMultiWindowMode: Boolean): Unit
- setEnterTransition(transition: Any?): Unit
- onInflate(context: Context!, attrs: AttributeSet!, savedInstanceState: Bu
- onInflate(activity: Activity!, attrs: AttributeSet!, savedInstanceState: Bun
- onViewCreated(view: View, savedInstanceState: Bundle?): Unit
- performCreate(savedInstanceState: Bundle!): Unit
- performContextItemSelected(item: MenuItem!): Boolean
- onCreate(savedInstanceState: Bundle?): Unit
- onLowMemory(): Unit

3

Copy JavaDoc | Cancel | Select None | OK

1

Override Methods via ^O (Ctrl+O for Win/Linux)

TODO | 6: Logcat | Terminal | Build | Event Log

30:5 LF UTF-8 Context: <no context>

MainFragment.kt

```kotlin
package at.htl.androidstudiojetpacktutorials.ui.main

import ...

class MainFragment : Fragment() {

    companion object {
        fun newInstance() = MainFragment()
    }

    private lateinit var viewModel: MainViewModel

    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
                              savedInstanceState: Bundle?): View {
        return inflater.inflate(R.layout.main_fragment, container, false)
    }

    override fun onActivityCreated(savedInstanceState: Bundle?) {
        super.onActivityCreated(savedInstanceState)
        viewModel = ViewModelProviders.of(this).get(MainViewModel::class.java)
        // TODO: Use the ViewModel
    }

    override fun onViewCreated(view: View, savedInstanceState: Bundle?) {
        super.onViewCreated(view, savedInstanceState)

        // set on click listener
        view.findViewById<Button>(R.id.button)?.setOnClickListener {
            Navigation.findNavController(it).navigate(R.id.action_mainFragment_to_firstFragment)
        }

        view.findViewById<Button>(R.id.button2)?.setOnClickListener {
            Navigation.findNavController(it).navigate(R.id.action_mainFragment_to_secondFragment)
        }
    }
}
```

1

fragment_first.xml

Palette

Common
Text
Buttons
Widgets
Layouts
Containers
Google
Legacy

Ab TextView
Button
ImageView
RecyclerView
<fragment>
ScrollView
Switch

Nexus 4 28 35%

8:00
Android Studio Jetpack Tutorials
Hello blank fragment

Attributes

ID
layout_width match_parent
layout_height match_parent

TextView
text first
text
contentDescription
textAppearance Material
fontFamily sans-serif
typeface none
textSize 14sp
lineSpacingExtra none
textColor

3

2

ponent Tree
Ab TextView

1

fragment_second.xml

Palette

Common
Text
Buttons
Widgets
Layouts
Containers
Google
Legacy

Ab TextView
Button
ImageView
RecyclerView
<fragment>
ScrollView
Switch

Nexus 4 28 35%

8:00
Android Studio Jetpack Tutorials
second

Attributes

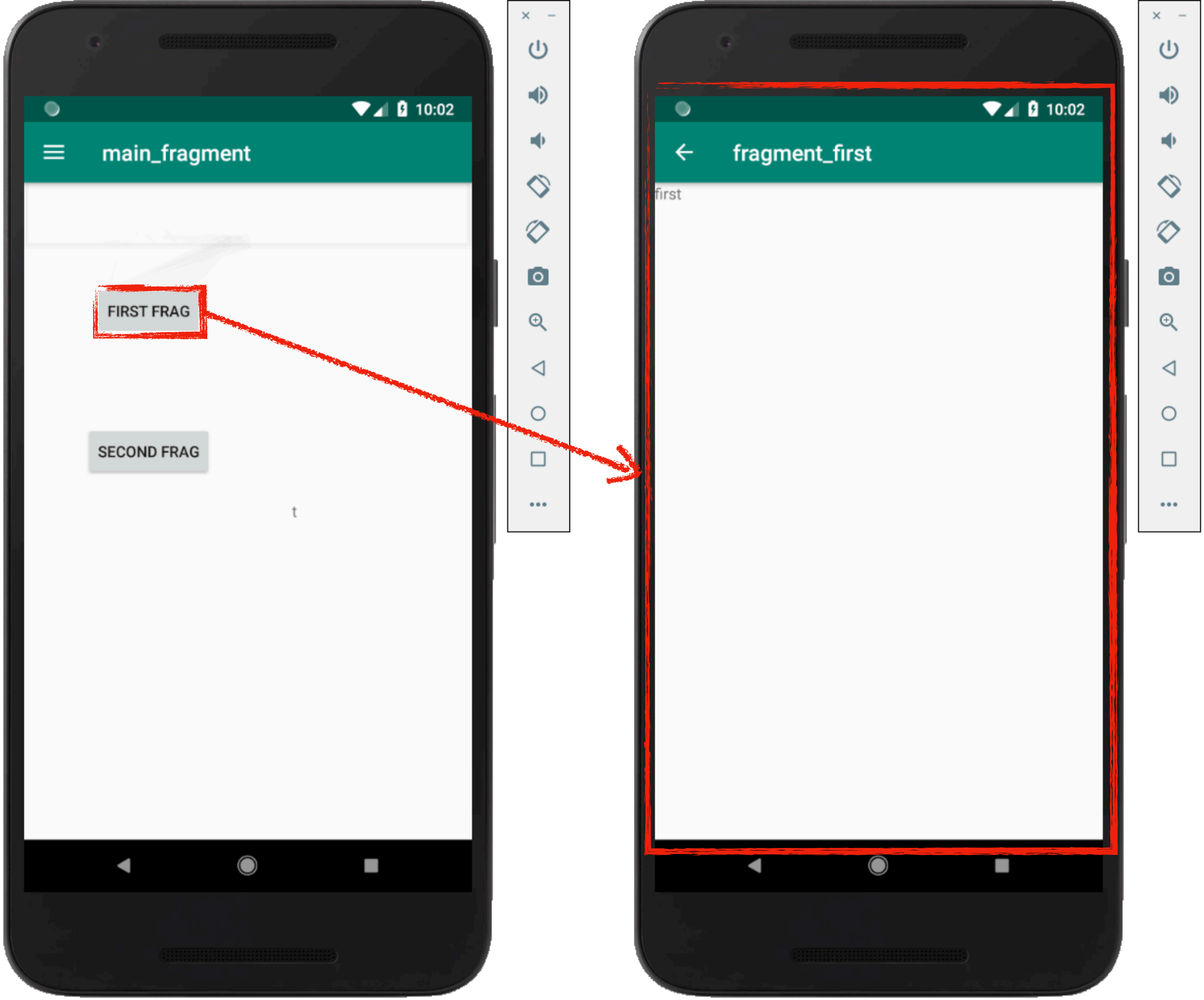
ID
layout_width match_parent
layout_height match_parent

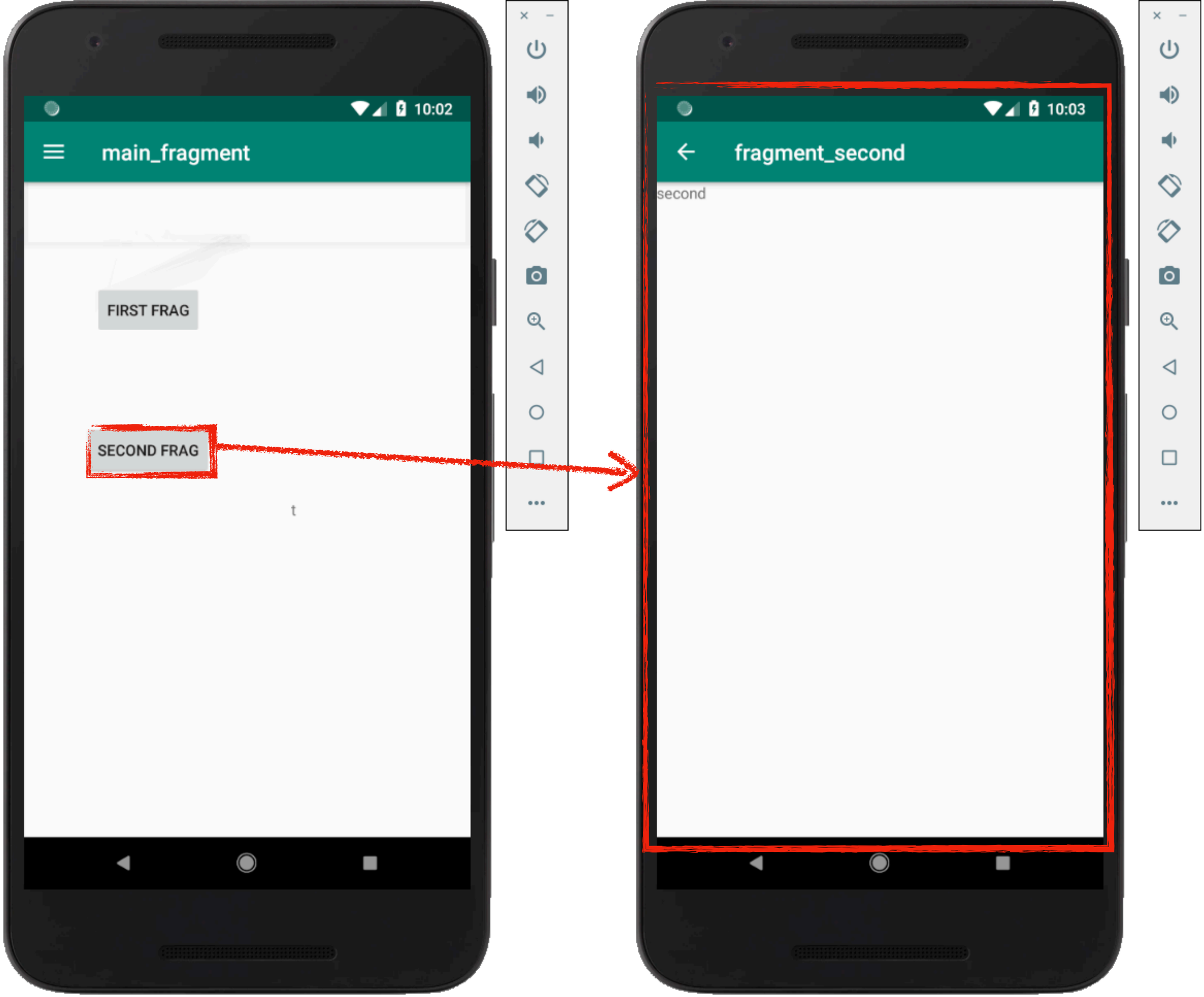
TextView
text second
text
contentDescription
textAppearance Material
fontFamily sans-serif
typeface none
textSize 14sp
lineSpacingExtra none
textColor

3

2

ponent Tree
Ab TextView- "second


10:02
main_fragment
FIRST FRAG
SECOND FRAG
t
10:02
fragment_first
first


10:02
main_fragment
FIRST FRAG
SECOND FRAG
t
10:03
fragment_second
second

Übergabe von Parametern

Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/res/layout/fragment...

app

Android Studio Jetpack Tutorials > app > src > main > res > layout > fragment_second.xml

1: Project | Captures | Z: Structure | Build Variants | 2: Favorites | Gradle | Device File Explorer

Android

- app
  - manifests
  - java
    - at.htl.androidstudiojetpacktut
      - ui.main
        - FirstFragment
        - MainActivity
        - SecondFragment
    - at.htl.androidstudiojetpacktut
    - at.htl.androidstudiojetpacktut
  - generatedJava
  - res
    - drawable
    - layout
      - fragment_first.xml
      - fragment_second.xml
      - fragment_third.xml
      - main_activity.xml
      - main_fragment.xml
    - mipmap
    - navigation
    - values
- Gradle Scripts
  - build.gradle (Project: Android Stu
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Grad
  - proguard-rules.pro (ProGuard Ru
  - gradle.properties (Project Proper
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

fragment_second.xml

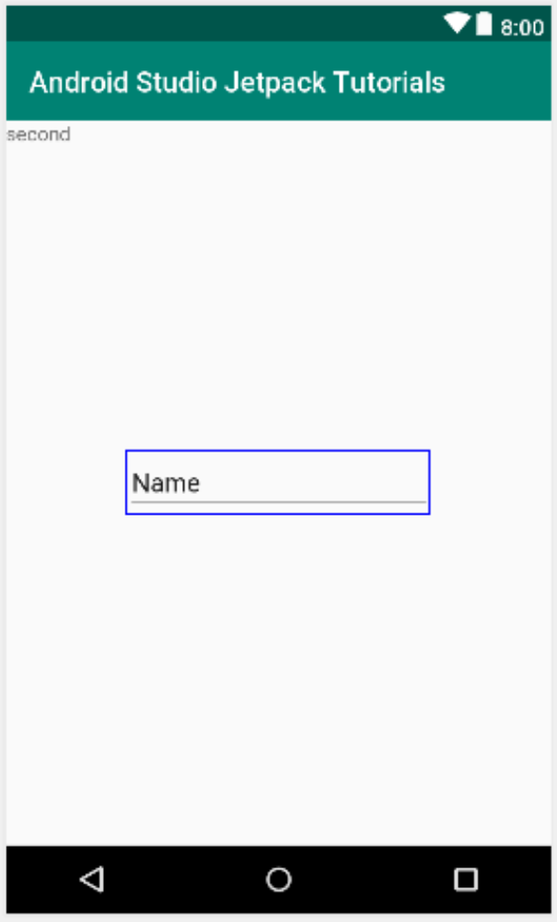
Palette

Common	TextView
Text	Plain Text
Buttons	Password
Widgets	Password (N...
Layouts	E-mail
Containers	Phone
Google	Postal Address
Legacy	Multiline Text
	Time
	Date
	Number
	Number (Sig...
	Number (Dec...
	AutoComplet...
	MultiAutoCo

Component Tree

- FrameLayout
  - TextView - "second"
  - editText - "Name"

Nexus 4 | 28 | 35%



layout

layout_width	wrap_content
layout_height	wrap_content
Layout_Margin	[?, ?, ?, ?, ?]
Theme	
layoutDirectior	
layout_gravity	[center]
top	
bottom	
left	
right	
center_vert	✓
fill_vertical	
center_hori	✓
fill_horizont	
center	✓
fill	
clip_vertical	
clip_horizor	
start	
end	
layout_margin	
layout_margin'	

View fewer attributes

Design | Text

TODO | 6: Logcat | Terminal | Build | 1 Event Log

Gradle build finished in 4 s 146 ms (2 minutes ago)

Context: <no context>

Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/res/layout/fragment...

Android Studio Jetpack Tutorials > app > src > main > res > layout > fragment_second.xml

Android

- app
  - manifests
  - java
    - at.htl.androidstudiojetpacktut
      - ui.main
        - FirstFragment
        - MainActivity
        - SecondFragment
    - at.htl.androidstudiojetpacktut
    - at.htl.androidstudiojetpacktut
  - generatedJava
  - res
    - drawable
    - layout
      - fragment_first.xml
      - fragment_second.xml
      - fragment_third.xml
      - main_activity.xml
      - main_fragment.xml
    - mipmap
    - navigation
    - values
- Gradle Scripts
  - build.gradle (Project: Android Stu
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Grad
  - proguard-rules.pro (ProGuard Ru
  - gradle.properties (Project Proper
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

fragment_second.xml

Palette

- Common
- Text
- Buttons
- Widgets
- Layouts
- Containers
- Google
- Legacy

Ab TextView
Button
ImageView
RecyclerView
<fragment>
ScrollView
Switch

Nexus 4 | 28 | 35%

Component Tree

- FrameLayout
  - Ab TextView- "second"
  - Ab nameText- "Name"
  - nextBtn- "NEXT"

8:00
Android Studio Jetpack Tutorials
second
Name
BUTTON

ID nameText

TextView
text NEXT
ID nextBtn

layout

- layout_width wrap_content
- layout_height wrap_content
- Layout_Margin [?, ?, ?, ?, ?]
- Theme
- layoutDirectior
- layout_gravity [bottom, center_hor
  - top
  - bottom
  - left
  - right
  - center_vert
  - fill_vertical
  - center_hori
  - fill_horizont
  - center
  - fill
  - clip_vertical
  - clip_horizor
  - start
  - end
- layout_margin
- layout_margin'

Design | Text

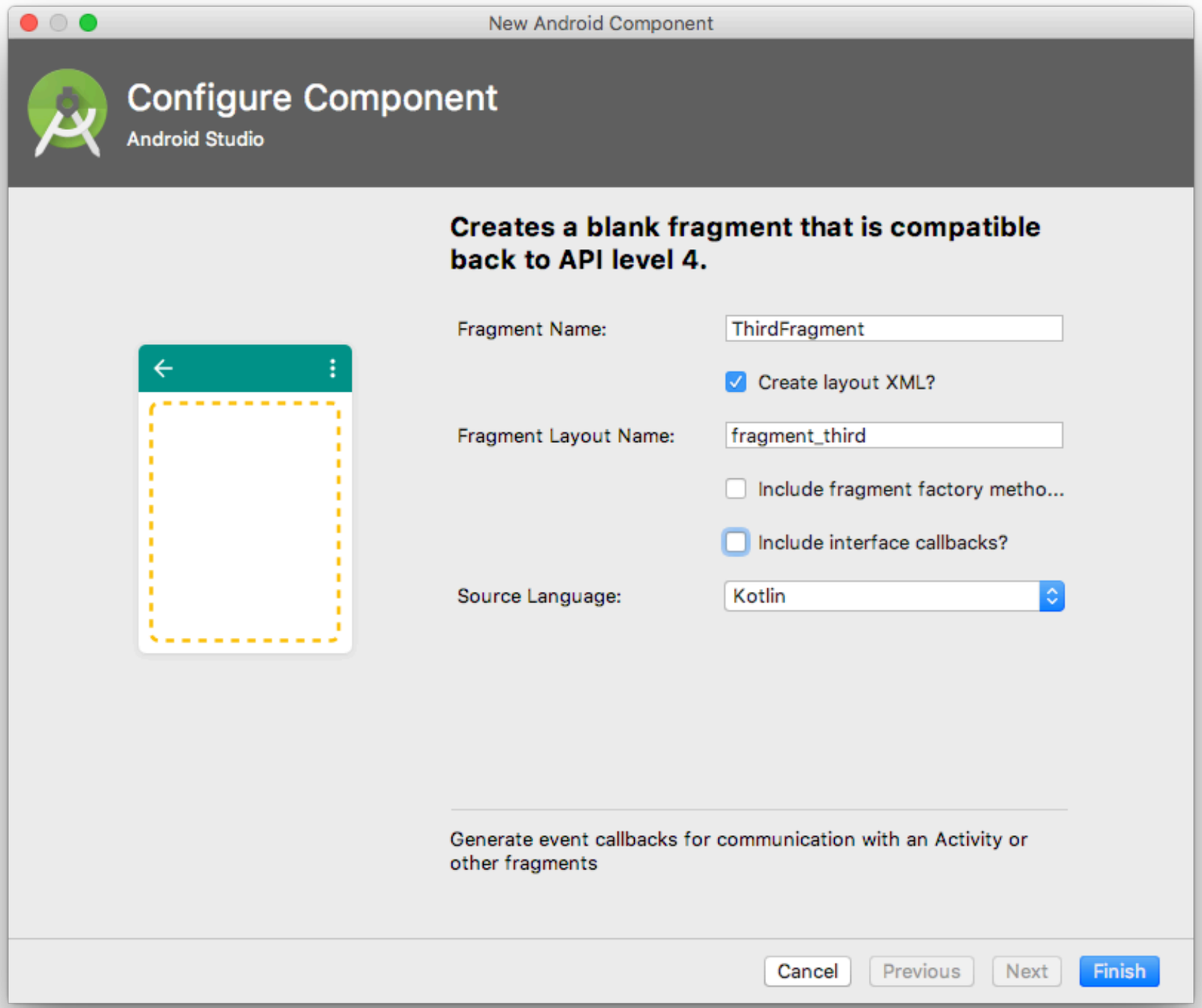
TODO | 6: Logcat | Terminal | Build | Event Log

Gradle build finished in 4 s 146 ms (4 minutes ago)

Context: <no context>

1: Project | Captures | Z: Structure | Build Variants | 2: Favorites | Gradle | Device File Explorer

Erstellen eines neuen Layouts



Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/res/navigation/nav_...

app

Android Studio Jetpack Tutorials > app > src > main > res > navigation > nav_graph.xml

Android

- app
  - manifests
  - java
    - at.htl.androidstudiojetpacktut
      - ui.main
      - FirstFragment
      - MainActivity
      - SecondFragment
    - at.htl.androidstudiojetpacktut
    - at.htl.androidstudiojetpacktut
  - generatedJava
  - res
    - drawable
    - layout
      - fragment_first.xml
      - fragment_second.xml
      - fragment_third.xml
      - main_activity.xml
      - main_fragment.xml
    - mipmap
    - navigation
      - nav_graph.xml
    - values
- Gradle Scripts
  - build.gradle (Project: Android Stu
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Grad
  - proguard-rules.pro (ProGuard Ru
  - gradle.properties (Project Proper
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

nav_graph.xml

Destinations

110%

Attributes

Gradle

mainFragment

secondFragment

thirdFragment

firstFragment

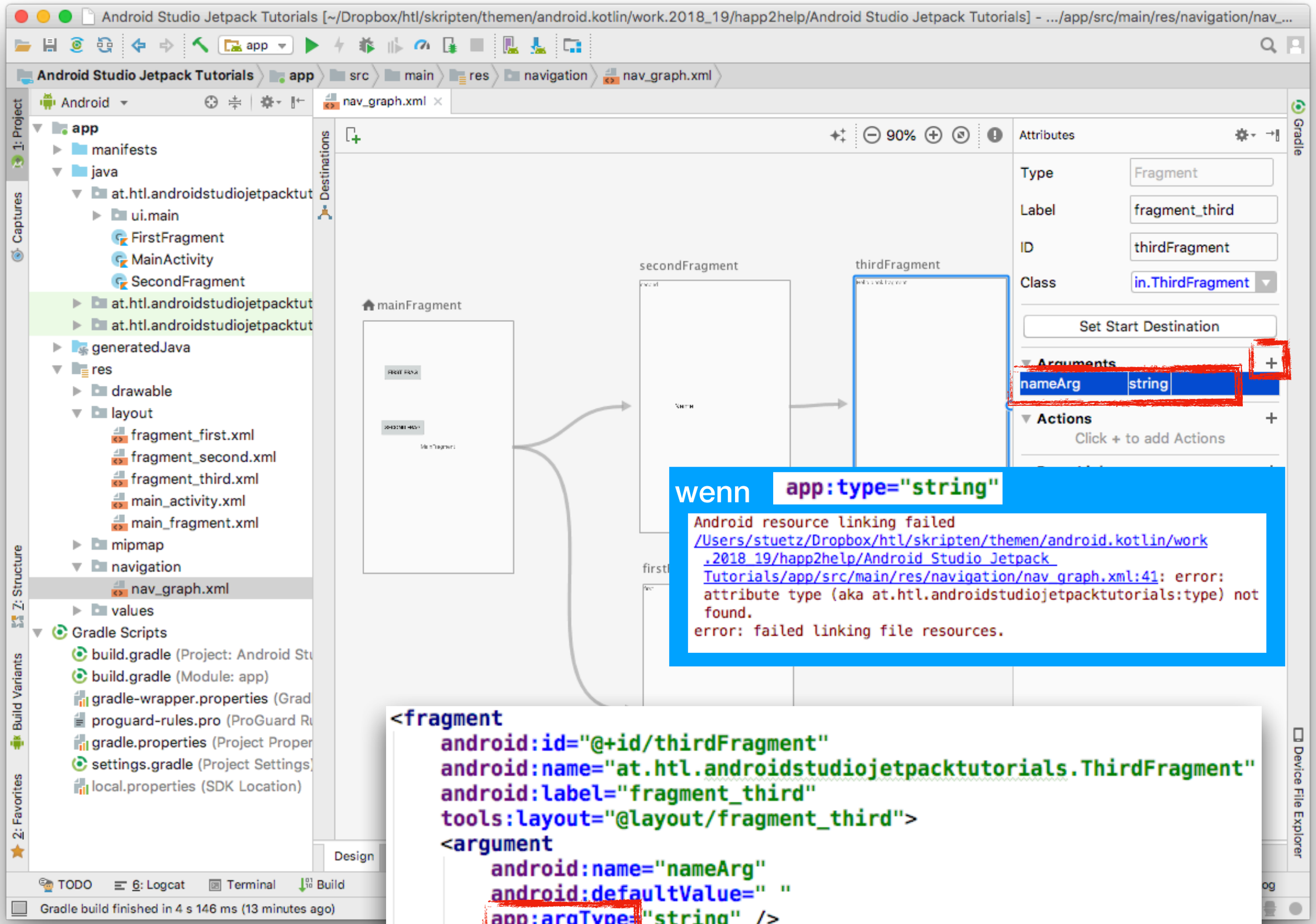
Design | Text

1: Project | Captures | 7: Structure | Build Variants | 2: Favorites | Device File Explorer

TODO | 6: Logcat | Terminal | Build | Event Log

Gradle build finished in 4 s 146 ms (10 minutes ago)

Context: <no context>


Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/res/navigation/nav_...
Android Studio Jetpack Tutorials
app
src
main
res
navigation
nav_graph.xml
Android
nav_graph.xml
Destinations
90%
Attributes
Type
Fragment
Label
fragment_third
ID
thirdFragment
Class
in.ThirdFragment
Set Start Destination
Arguments
nameArg
string
Actions
Click + to add Actions
mainFragment
secondFragment
thirdFragment
app
manifests
java
at.htl.androidstudiojetpacktut
ui.main
FirstFragment
MainActivity
SecondFragment
generatedJava
res
drawable
layout
fragment_first.xml
fragment_second.xml
fragment_third.xml
main_activity.xml
main_fragment.xml
mipmap
navigation
nav_graph.xml
values
Gradle Scripts
build.gradle (Project: Android Stu
build.gradle (Module: app)
gradle-wrapper.properties (Grad
proguard-rules.pro (ProGuard Ru
gradle.properties (Project Proper
settings.gradle (Project Settings)
local.properties (SDK Location)
Design
TODO
6: Logcat
Terminal
Build
Gradle build finished in 4 s 146 ms (13 minutes ago)
wenn
app:type="string"
Android resource linking failed
/Users/stuetz/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials/app/src/main/res/navigation/nav_graph.xml:41: error: attribute type (aka at.htl.androidstudiojetpacktutorials:type) not found.
error: failed linking file resources.
<fragment
android:id="@+id/thirdFragment"
android:name="at.htl.androidstudiojetpacktutorials.ThirdFragment"
android:label="fragment_third"
tools:layout="@layout/fragment_third">
<argument
android:name="nameArg"
android:defaultValue=" "
app:argType="string" />
</fragment>
Gradle
Device File Explorer
1: Project
Captures
7: Structure
Build Variants
2: Favorites

Android Studio Jetpack Tutorials [~/Dropbox/htl/skripten/themen/android.kotlin/work.2018_19/happ2help/Android Studio Jetpack Tutorials] - .../app/src/main/res/layout/fragment...

app

Android Studio Jetpack Tutorials > app > src > main > res > layout > fragment_third.xml

Android

app
- manifests
- java
  - at.htl.androidstudiojetpacktut
    - ui.main
      - MainFragment
      - MainViewModel
    - FirstFragment
    - MainActivity
    - SecondFragment
    - ThirdFragment
  - at.htl.androidstudiojetpacktut
  - at.htl.androidstudiojetpacktut
- generatedJava
- res
  - drawable
  - layout
    - fragment_first.xml
    - fragment_second.xml
    - fragment_third.xml
    - main_activity.xml
    - main_fragment.xml
  - mipmap
  - navigation
    - nav_graph.xml
  - values
- Gradle Scripts
  - build.gradle (Project: Android Stu
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Grad
  - proguard-rules.pro (ProGuard Ru
  - gradle.properties (Project Proper
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

fragment_third.xml

Palette

Common | Text | Buttons | Widgets | Layouts | Containers | Google | Legacy

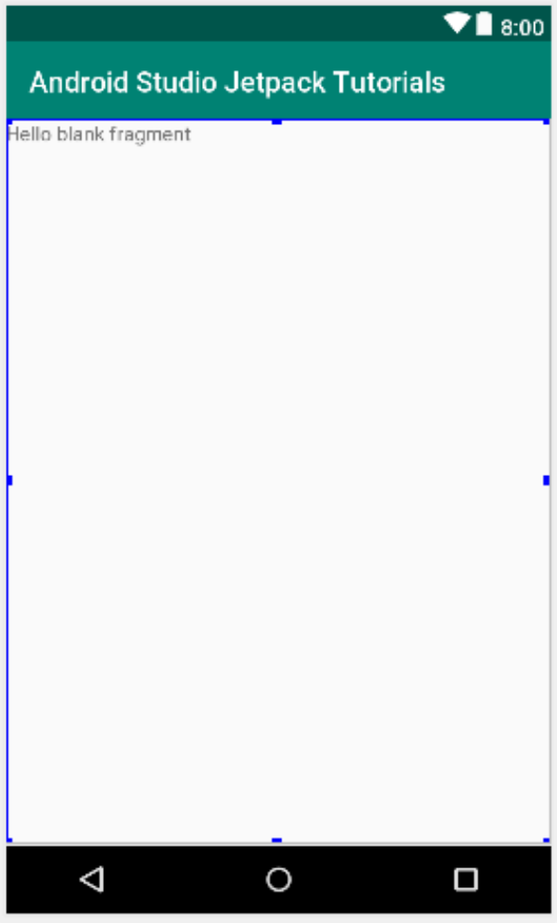
- Ab TextView
- Button
- ImageView
- RecyclerView
- <fragment>
- ScrollView
- Switch

Component Tree

FrameLayout

Ab nameTextView- "@strin...

Nexus 4 | 28 | 35%



Attributes

ID	nameTextView
layout_width	match_parent
layout_height	match_parent

TextView

text	@string/hello_bla
text	
contentDescrip	
textAppearar	Material
fontFamily	sans-serif
typeface	none
textSize	14sp
lineSpacingExtr	none
textColor	
textStyle	B I Tт
textAlignment	

Favorite Attributes

visibility	none

View all attributes

Design | Text

1: Project | Captures | 7: Structure | Build Variants | 2: Favorites | Gradle | Device File Explorer

TODO | 6: Logcat | Terminal | Build | Event Log

Gradle build finished in 4 s 146 ms (31 minutes ago)

Context: <no context>

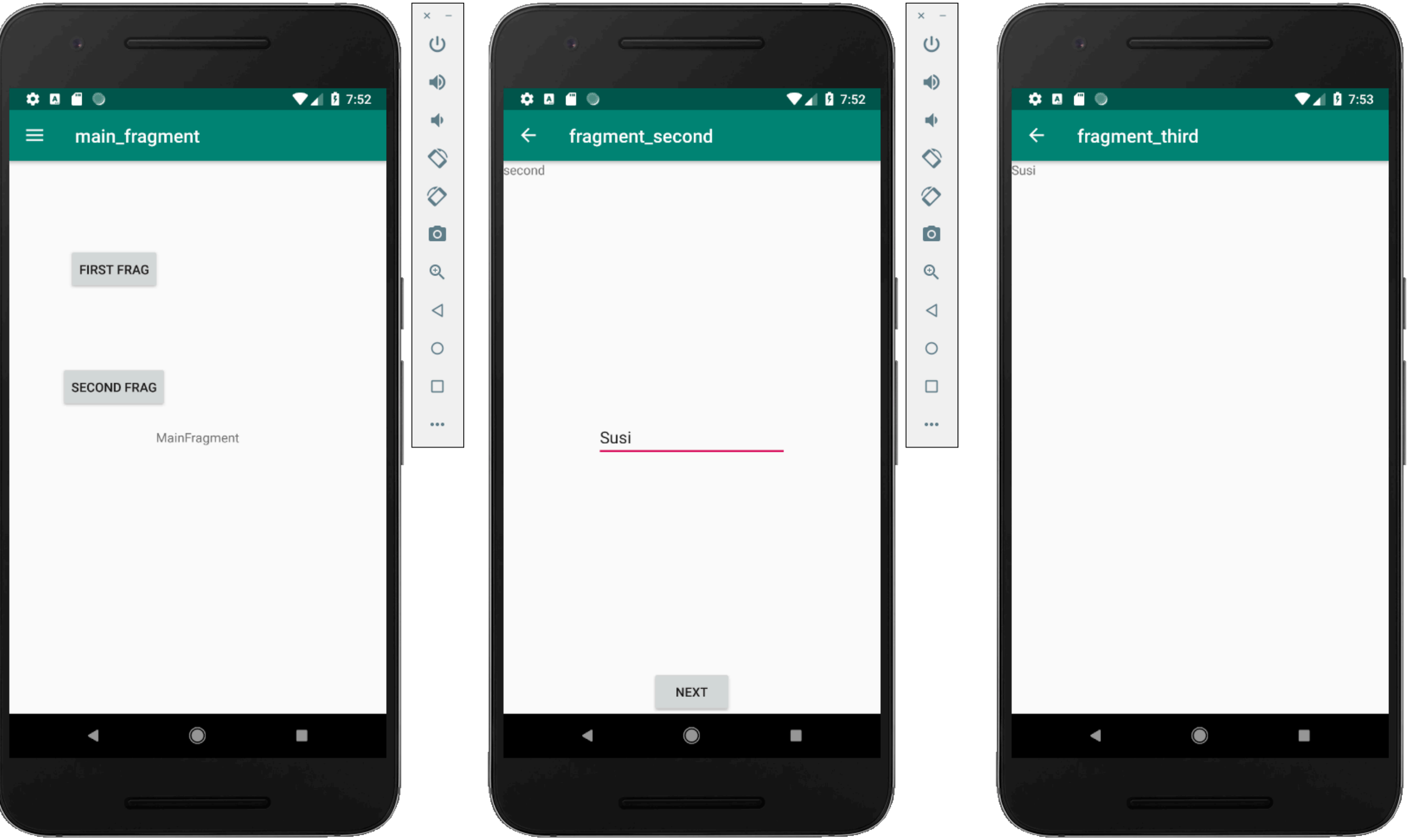
SecondFragment.kt

```
package at.htl.androidstudiojetpacktutorials


import android.os.Bundle
import android.support.v4.app.Fragment
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import androidx.navigation.Navigation
import kotlinx.android.synthetic.main.fragment_second.*

class SecondFragment : Fragment() {

    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
                              savedInstanceState: Bundle?): View? {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_second, container,  attachToRoot: false)
    }

    override fun onViewCreated(view: View, savedInstanceState: Bundle?) {
        super.onViewCreated(view, savedInstanceState)

        nextBtn.setOnClickListener {  it: View!
            val nameBundle = Bundle()
            nameBundle.putString("nameArg", nameText.text.toString())
            Navigation.findNavController(it).navigate(R.id.thirdFragment, nameBundle)
        }
    }
}
```

ThirdFragment.kt

Mit onvi Funktion generieren


```
package at.htl.androidstudiojetpacktutorials

import android.os.Bundle
import android.support.v4.app.Fragment
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup

import at.htl.androidstudiojetpacktutorials.R
import kotlinx.android.synthetic.main.fragment_third.*

class ThirdFragment : Fragment() {

    override fun onCreateView(inflater: LayoutInflater, container: ViewGroup?,
                              savedInstanceState: Bundle?): View? {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_third, container, attachToRoot: false)
    }

    override fun onViewCreated(view: View, savedInstanceState: Bundle?) {
        super.onViewCreated(view, savedInstanceState)

        nameTextView.text = arguments?.getString( key: "nameArg")
    }
}
```


7:52
main_fragment
FIRST FRAG
SECOND FRAG
MainFragment
7:52
fragment_second
second
Susi
NEXT
7:53
fragment_third
Susi

Quellen

- https://www.youtube.com/watch?v=0fhOxFvkEQI
- https://www.youtube.com/watch?v=GOpeBbfyb6s
- https://www.youtube.com/watch?v=WVPH48lUzGY
- https://github.com/googlesamples/android-sunflower/blob/master/app/src/main/res/navigation/nav_garden.xml