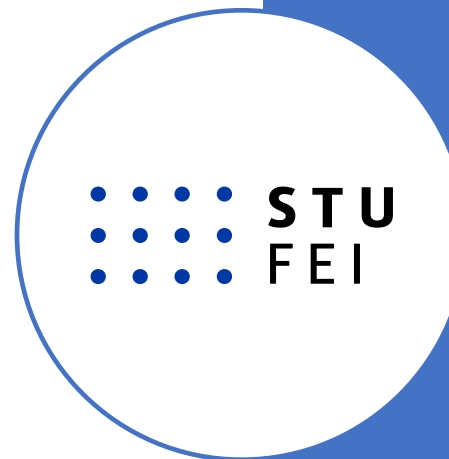
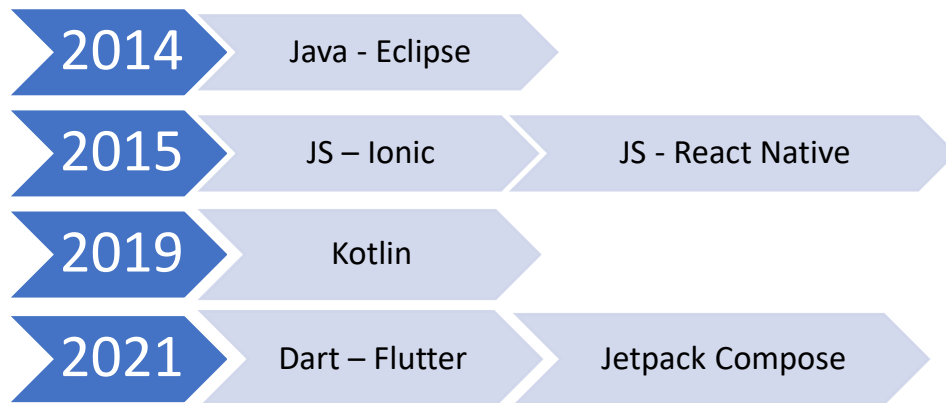




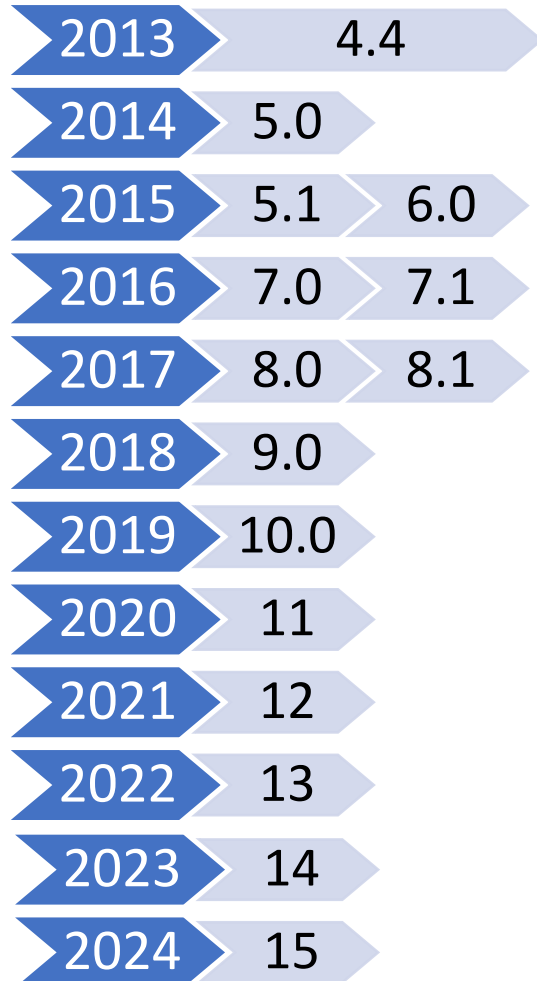
Mobilné výpočty

Maroš Čavojský

Možnosti vytvárania aplikácií



Verzie Android OS



Zmeny ochrany súkromia:

- Povolenia (XML, Run-time, Once,..)
- GPS
- WiFi
 - vlastná MAC adresa
 - MAC adresy iných zariadení
 - skenovanie sietí
 - vypínanie / zapínanie
- Telefónne vykryvače
- IMEI kód, Sériové číslo
- Nainštalované aplikácie
- Senzory, aj pri vypnutej obrazovke
- Alarmy a nepretržitý beh aplikácie
- Obmedzenie aplikácií spúšťaných po štarte telefónu

Potrebné vybavenie na cvičenia

- Notebook s možnosťou pripojiť sa na internet – WiFi,...
- Android Studio
- Android zariadenie
 - fyzické mobilné zariadenie Android + kábel
 - alebo vytvorený emulátor zariadenia v notebooku



Tip: myš, nabíjačka notebooku a predlžovačka

Novinka !

Možnosť samostatnej práce*
aj vo Flutteri pre iOS zariadenia.

*povinnosť mať vedomosti o vytváraní Android aplikácie v Kotlin

Ako zvládnuť tento predmet ?

- Priebežné úlohy na cvičeniach, ktoré budú 3x kontrolované a hodnotené bodmi. $16 + 16 + 18 = 50$ bodov
- Cvičenia o počte cca. 25 študentov/šudentiek (spolu 73 ľudí)
- Pýtať sa počas prednášok a cvičení ak Vám niečo nie je jasné.
- Chodiť na cvičenia aj na prednášky.
- Študovať samostatne pomocou kurzov napr.
<https://developer.android.com/courses>



V čom budeme programovať ?

- Android Studio (aktuálna verzia Koala Feature Drop)
 - Návod :
 - <https://developer.android.com/studio/intro>
 - <https://developer.android.com/studio/install>
 - <https://developer.android.com/studio/intro/user-interface>
 - <https://developer.android.com/studio/workflow>
- Kotlin



Novinka !

Možnosť samostatnej práce*
aj vo Flutteri pre iOS zariadenia.

*povinnosť mať vedomosti o vytváraní Android aplikácie v Kotlin

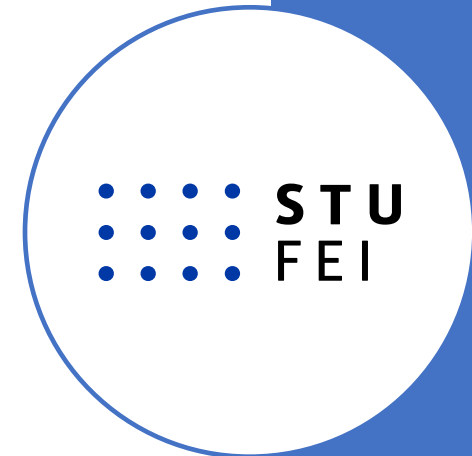
Android in Kotlin

- <https://developer.android.com/topic/architecture/intro>

Prezentácie Developer Training

<https://developer.android.com/teach#teach-a-class>

Introduction	Android Development with Kotlin	–
Lesson 1	Kotlin Basics	–
Lesson 2	Functions	–
Lesson 3	Classes and Objects	–
Lesson 4	Build your first Android app	Dice Roller App
Lesson 5	Layouts	Tip Calculator App
Lesson 6	App Navigation	AndroidTrivia App
Lesson 7	Activity and Fragment Lifecycle	DessertClicker App
Lesson 8	App Architecture (UI Layer)	Unscramble App
Lesson 9	App Architecture (Persistence Layer)	TrackMySleepQuality App
Lesson 10	Advanced RecyclerView use cases	RecyclerView App
Lesson 11	Connect to the Internet	MarsRealEstate App
Lesson 12	Repository pattern and WorkManager	WorkManager App
Lesson 13	App UI Design	Shrine App



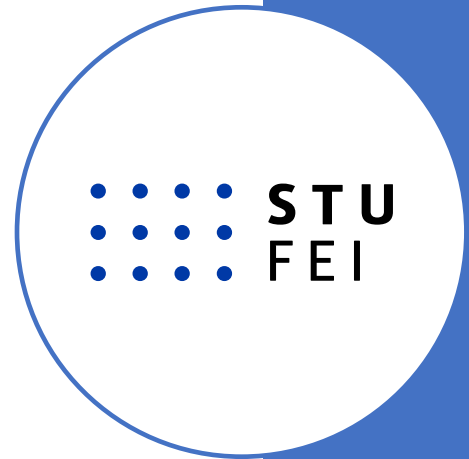
Kotlin resources

- [Learn Kotlin](#) for a list of official reference materials
- [Kotlin Language Documentation](#) (downloadable PDF)
- [Kotlin Koans](#) for more snippets to practice with
- [Coding Conventions](#) for a coding style guide for the Kotlin language
- [Learn Kotlin by Example](#) for a set of small and simple annotated examples

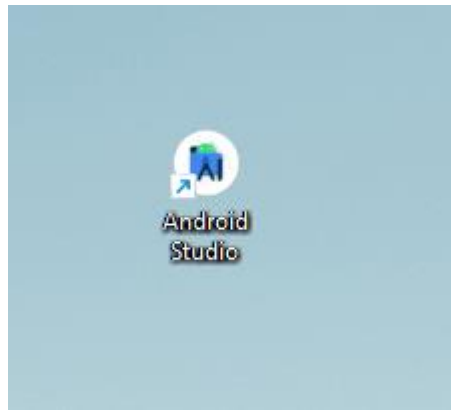
Android and other resources

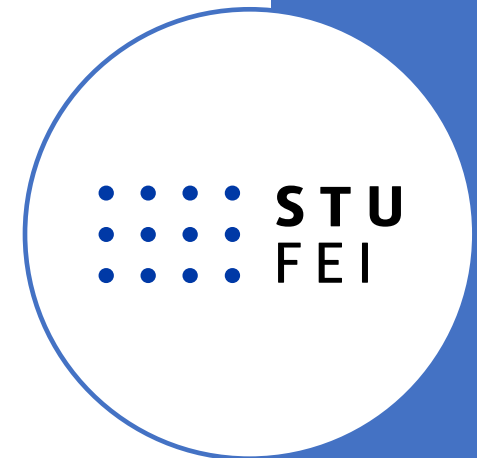
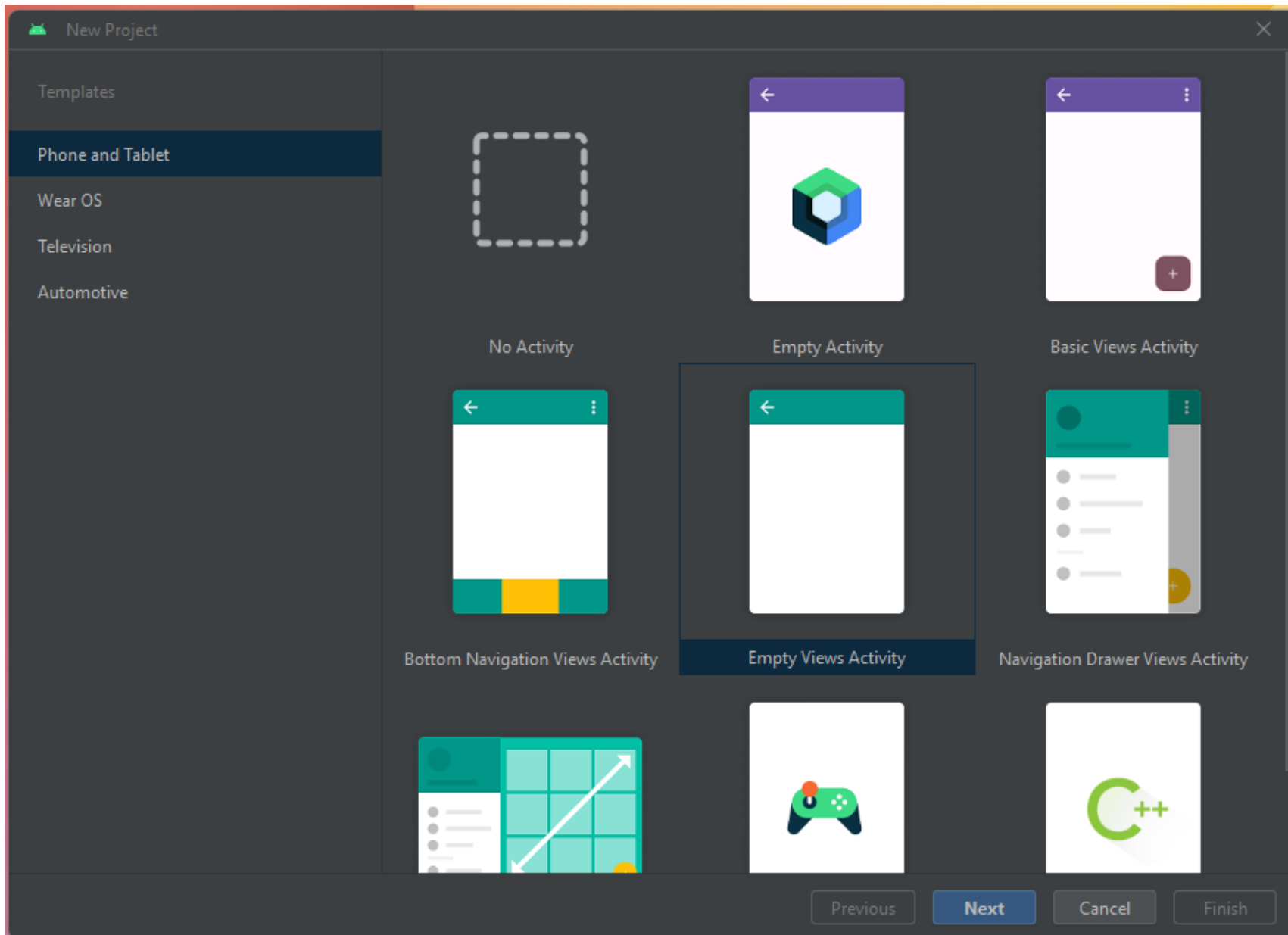
- [Official Android developer website](#)
- [Android Developers Blog](#)
- [Android Developers Medium blog](#)
- [Android Developers YouTube channel](#)
- [@AndroidDev on Twitter](#)
- [Android Developer Newsletter](#)
- [Stack Overflow](#)
- Offline documentation through [SDK Manager](#)

Prvá aplikácia



Android Studio





New Project

Empty Views Activity

Creates a new empty activity

Name

Package name

Save location

Language

Minimum SDK

 Your app will run on approximately **84,1%** of devices.
[Help me choose](#)

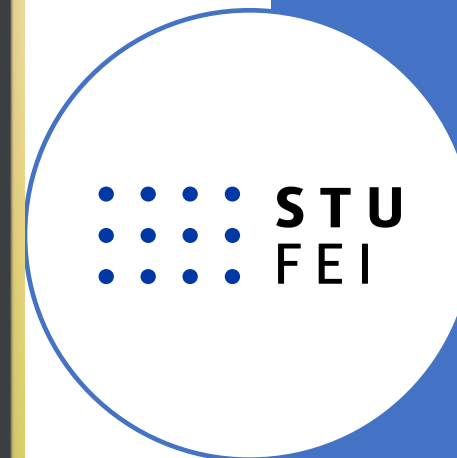
Build configuration language 

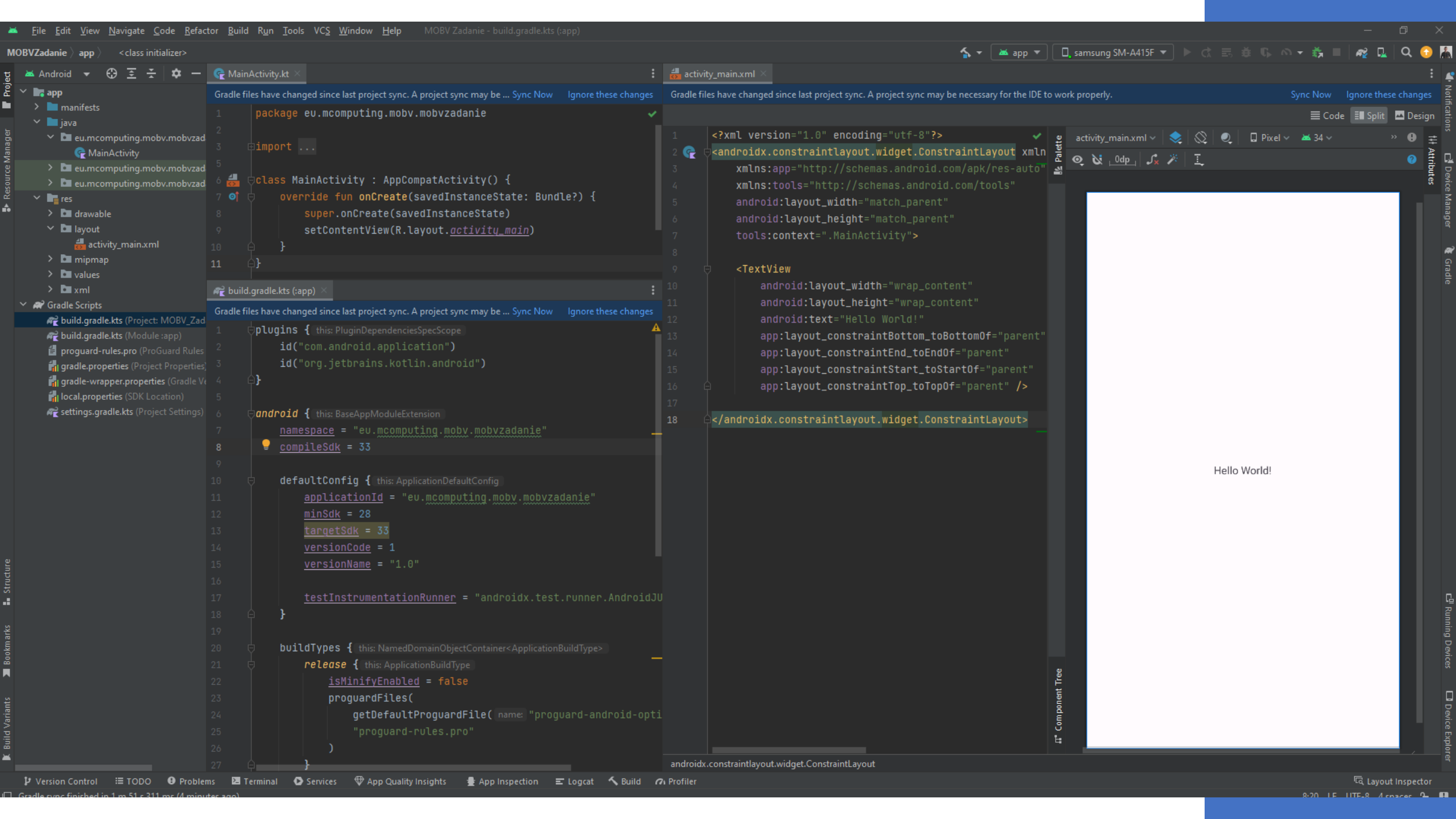
Previous

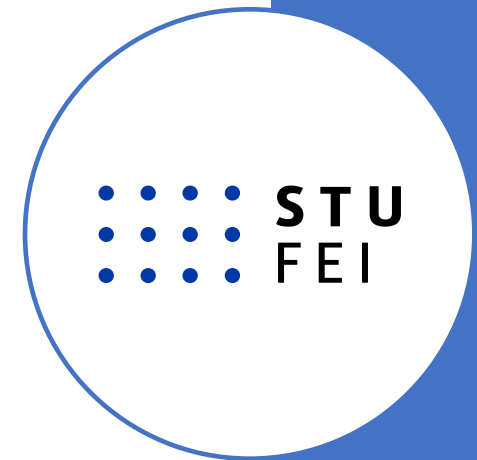
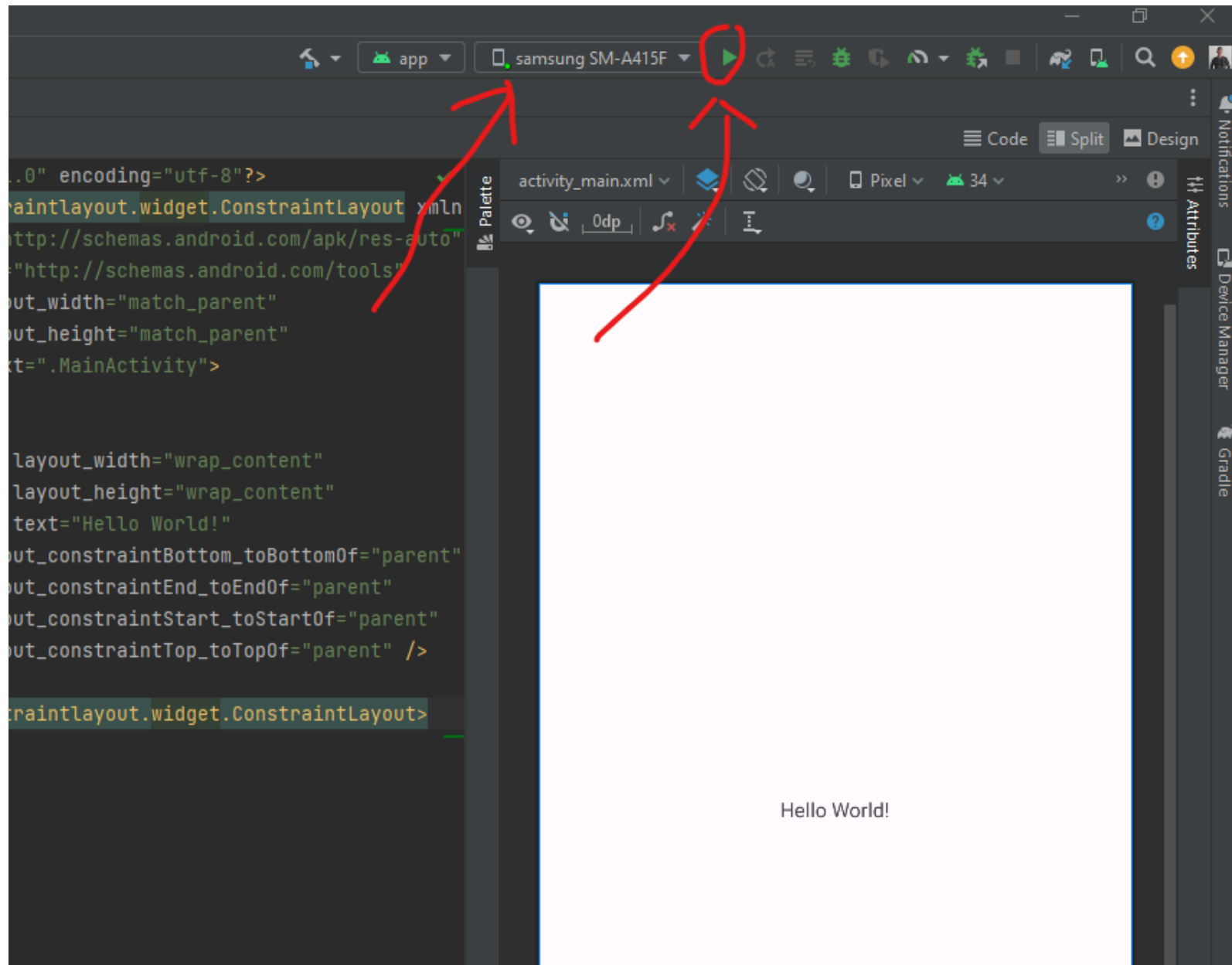
Next

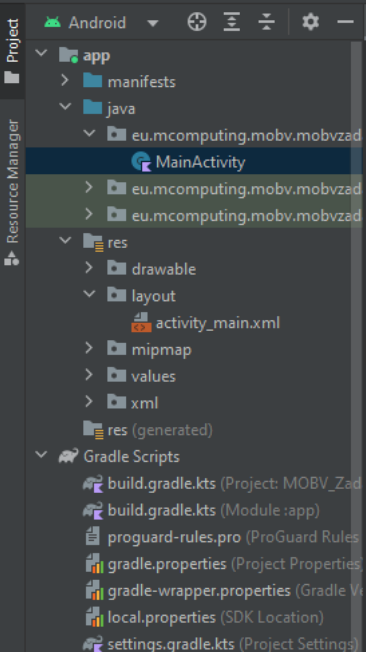
Cancel

Finish









```
1 package eu.mcomputing.mobv.mobvzadanie
2
3 import ...
4
5
6
7
8 class MainActivity : AppCompatActivity() {
9
10     override fun onCreate(savedInstanceState: Bundle?) {
11         super.onCreate(savedInstanceState)
12         setContentView(R.layout.activity_main)
13         Log.d( tag: "Mojtag", msg: "moja info")
14     }
15 }
```



Logcat: Logcat x +

samsung SM-A415F (R58N80T19DB) Android 11, API 30 package:mobv

Time	Level	Class	Message
2023-09-03 14:14:07.881	INFO	LoadedApk	eu.mcomputing.mobv.mobvzadanie LoadedApk::makeApplication() appContext=android.app.ContextImpl@b7b7b9e appContext.mUpPackageName=eu.mcomputing.mobv.mobvzadanie
2023-09-03 14:14:07.881	INFO	NetworkSecurityConfig	eu.mcomputing.mobv.mobvzadanie No Network Security Config specified, using platform default
2023-09-03 14:14:07.899	INFO	NetworkSecurityConfig	eu.mcomputing.mobv.mobvzadanie No Network Security Config specified, using platform default
2023-09-03 14:14:07.913	INFO	ActivityThread	eu.mcomputing.mobv.mobvzadanie handleBindApplication() -- skipGraphicsSupport=false
2023-09-03 14:14:07.992	INFO	AppCompatDelegate	eu.mcomputing.mobv.mobvzadanie Checking for metadata for AppLocalesMetadataHolderService : Service not found
2023-09-03 14:14:08.033	INFO	DecorView	eu.mcomputing.mobv.mobvzadanie [INFO] isPopOver=false, config=true
2023-09-03 14:14:08.033	INFO	DecorView	eu.mcomputing.mobv.mobvzadanie updateCaptionType >> DecorView@49f8d14f: isFloating=false, isApplication=true, hasWindowDecorCaption=false, hasWindowControllerCaption=false
2023-09-03 14:14:08.061	WARN	obv.mobvzadani	eu.mcomputing.mobv.mobvzadanie Accessing hidden method Landroid/view/View; ->co
2023-09-03 14:14:08.062	WARN	obv.mobvzadani	eu.mcomputing.mobv.mobvzadanie Accessing hidden method Landroid/view/ViewGroup
2023-09-03 14:14:08.112	INFO	Mojtag	eu.mcomputing.mobv.mobvzadanie moja info
2023-09-03 14:14:08.165	INFO	InputTransport	eu.mcomputing.mobv.mobvzadanie Input channel constructed: 'a6f9dd8', fd=83
2023-09-03 14:14:08.196	INFO	SurfaceControl	eu.mcomputing.mobv.mobvzadanie assignNativeObject: nativeObject = 0 Surface(name=null)/@0x2e98610 / android.view.SurfaceControl.readFromParcel:1117 android.view.
2023-09-03 14:14:08.198	INFO	ViewRootIm...nActivity]	eu.mcomputing.mobv.mobvzadanie Relayout returned: old=(0,0,1080,2400) new=(0,0,1080,2400) req=(1080,2400) dur=13 res=0x7 s={true -5476376612179890176} ch=true
2023-09-03 14:14:08.208	INFO	ion	eu.mcomputing.mobv.mobvzadanie MSG_WINDOW_FOCUS_CHANGED 1 1

SESSIONS + ■ ■

Profiling with complete data. This does not represent app performance in production. Consider profiling with low overhead.

14:18 ●
mobvzadanie (Samsung SM-A415F)
15 sec

MainActivity



App Inspection

☐ Samsung SM-A415F > eu.mcomputing.mobv.mobvzadanie ▾

Database Inspector Network Inspector Background Task Inspector

NETWORK

– 4 B/s

00.000

Connection View

Thread View

Rules

Name

Size

Type

Status

Time

Version Control

Run

TODO

Problems

Terminal

Services

App Quality Insights

App Inspection

Logcat

Build

⌂

