

INTRODUCTION

Tim Dosen Mobpro 1

D3 Rekayasa Perangkat Lunak Aplikasi
Fakultas Ilmu Terapan

PEMROGRAMAN UNTUK PERANGKAT BERGERAK 1

Mata kuliah diadakan sebanyak 4 SKS:

1. Sesi teori 2 x 50 menit
2. Sesi praktikum 4 x 50 menit
 - 100 menit : pengerjaan modul
 - 20 menit : istirahat
 - 100 menit : pengerjaan challenge

Curang = E

SILABUS

1. Introduction
2. Build Your First App
3. Working with Images
4. Scrollable List
5. Get User Input
6. **Asesmen #1**
7. App Architecture
8. App Navigation
9. Data persistence: Room
10. Data persistence: DataStore
11. **Asesmen #2**
12. Connect to the Internet
13. Activity & Fragment Lifecycle
14. Work in Background
15. Recap & Looking Forward
16. **Asesmen #3**

BAHAN BELAJAR

- Jetpack Compose for Android Developers
- Kotlin Bootcamp for Programmers (Google Developers)
- Developing Android Apps with Kotlin (Udacity)
- Android Developer Guides
- Material Design System
- Sesi teori & praktikum
- Ringkasan materi → PDF
- Modul praktikum → PDF
- Starter & final code → Github repo
- Forum diskusi → Github issue

Link lihat di LMS. PDF unduh di LMS.

KOMPONEN PENILAIAN

1. Praktikum 11 modul	25%
• Tugas pendahuluan	20%
• Praktik modul	50%
• Tugas challenge	30%
2. Asesmen 1 (minggu ke-6, project)	20%
3. Asesmen 2 (minggu ke-11, project)	25%
4. Asesmen 3 (minggu ke-16, project)	30%

PLAGIARISM AND ACADEMIC DISHONESTY

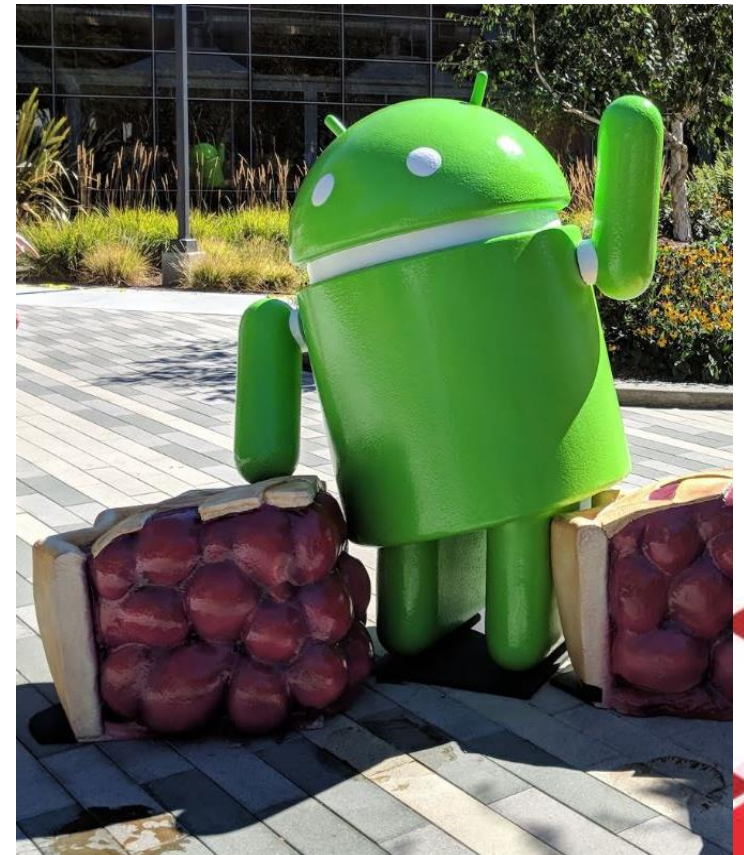
- Any act claiming or implying another person's work as your own.
- Using another person's work in your own work (copying & combining code)
- You should never knowingly view someone else's work until you have completed the project yourself - nor should you share your project with someone who has not yet completed theirs.
- However, once you have completed your project, you are encouraged to see how other people have approached the same challenge in a different way. This allows you to compare your strategies and ways of thinking.

ANDROID OVERVIEW

Android is an open source operating system for mobile devices and a corresponding open source project led by Google.

Key facts:

- 88.97% Indonesia market share (Jan. 2023)
- 2.8 billion global active users (Jan. 2023)
- 109.9 billion downloads of apps (2022)
- \$42.3 billion consumer spending in Play Store (2022, annualized)



ANDROID DEVICES

PLATFORM

Phone & Tablet



PLATFORM

TV



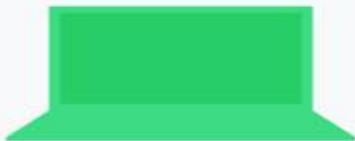
PLATFORM

Cars



PLATFORM

Chrome OS



PLATFORM

Things



PLATFORM

Wear OS



ANDROID + KOTLIN



- Kotlin is supported as a first-class language on Android (Google I/O 2017).
- Benefits of Kotlin: expressive and concise, safer code, interoperable, structured concurrency.
- Kotlin is 100% interoperable with the Java programming language.
- Kotlin is used by over 60% of professional Android developers.

ANDROID KOTLIN EXAMPLE

KOTLIN

```
class MainActivity : AppCompatActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        ...  
        fab.setOnClickListener { view ->  
            Snackbar.make(view, "Hello $name", Snackbar.LENGTH_LONG).show()  
        }  
    }  
}
```

Nullable and NonNull
types help reduce
NullPointerExceptions

Use lambdas for concise
event handling code

Use template expressions
in strings to avoid concatenation

Semicolons are optional

ANDROID + COMPOSE

```
class MainActivity : ComponentActivity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContent {  
            MessageCard("Android")  
        }  
    }  
}  
  
@Composable  
fun MessageCard(name: String) {  
    Text(text = "Hello $name!")  
}
```

AUTO A MOBPRO

- Jika berhasil lulus sertifikasi Google Associate Android Developer
<https://developers.google.com/certification/associate-android-developer>
- Atau jika berhasil lulus tiga kelas ini di Dicoding
 - ✓ Belajar Fundamental Aplikasi Android <https://www.dicoding.com/academies/14>
 - ✓ Belajar Pengembangan Aplikasi Android Intermediate:
<https://www.dicoding.com/academies/352>
 - ✓ Menjadi Android Developer Expert: <https://www.dicoding.com/academies/165>
- Atau jika memiliki aplikasi Android di Play Store dengan > 5000 download (WAJIB dibuat dengan Java, Kotlin atau Flutter)

REFERENCES

- Jetpack Compose for Android Developers
<https://developer.android.com/courses/jetpack-compose/course>
- Kotlin Bootcamp for Programmers
<https://developer.android.com/courses/kotlin-bootcamp/overview>
- Developing Android Apps with Kotlin
<https://www.udacity.com/course/ud9012>