

Development Kits

Course Code: ELEE1146

Course Name: Mobile Applications for Engineers

Credits: 15

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What is a Software Development Kit (SDK)?

- Is a collection of software development tools in one installable package.
- Can come with:
 - compiler
 - debugger
 - software framework
 - **inversion of control**- behavioural design,
 - **extensibility** - overriding, or adding specialised user code
 - **non-modifiable framework code** - user can extend the code, not modify the base

SDKs Platform Specificity

- Android
- Java
- iOS
- .Net
- UWP ()



Android SDK

Appilcation Development Tools (ADT)

- Android developers use an ADT that includes:
 - Android Platform-tools
 - Android SDK Tools
 - Eclipse + ADT plug-in

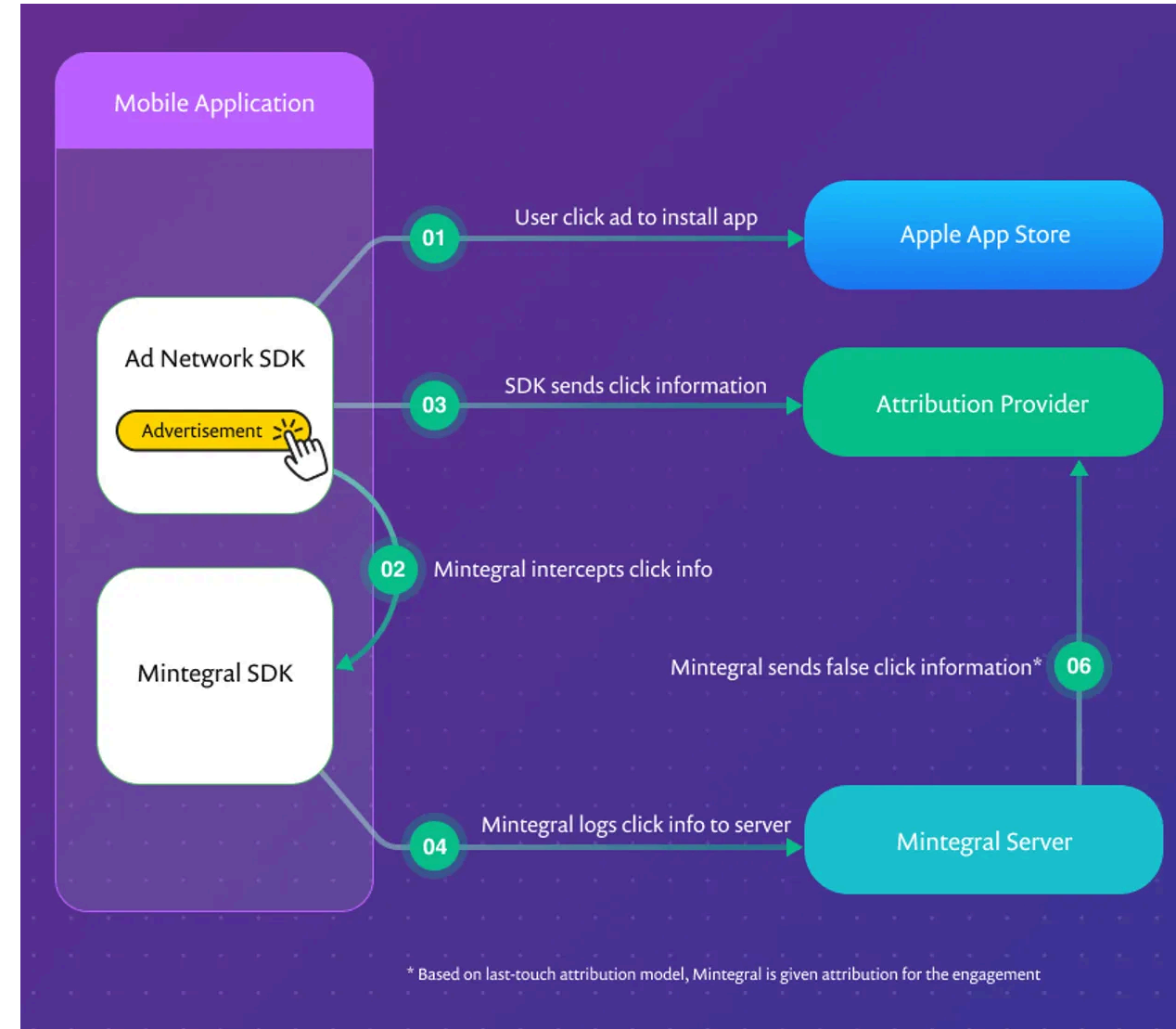
Average SDKs in Mobile Apps

- ▶ Average SDK per App (Android & iOS)

SDK - Malicious Code?

Mintegral SDK

- tap an advertisement
- SDK hijacks the click referral process,
- making it appear to the underlying iOS OS that the user clicked on one of its ads.
- effectively robbing revenue from other SDKs and advertising networks.



[Open] Java Development Kit ([Open]JDK)

JDK

- Implements Java Language Specifications (JLS)
- Implements Java Virtual Machine Specifications (JVMS)
- Provides Standard Edition (SE) of the Java API.

Open JDK

- is the FOSS implementation of JDK

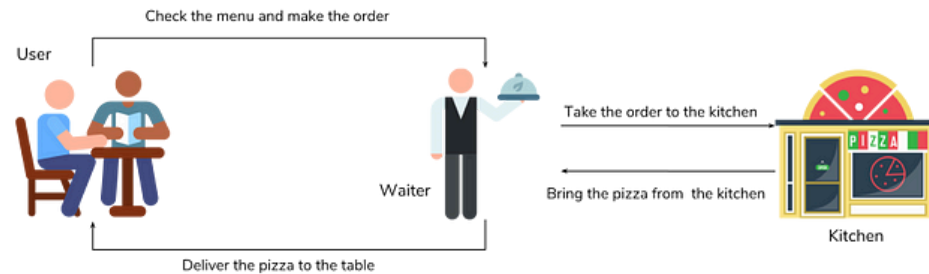
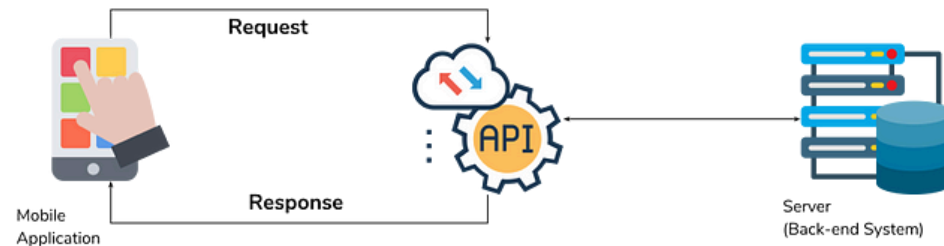


OpenJDK

APK vs SDK

- A **SDK** is typically a set of software development tools that allows the creation of applications for a certain software package, software framework, hardware platform, computer system, video game console, operating system, or similar development platform.
- **Android Package** is the package file format used by the Android operating system for distribution and installation of mobile apps and middleware

SDK vs API



	API	SDK
Purpose	Connects and integrates software	Contains a variety of development tools
Characteristics	Lightweight, fast, usually specialized	More robust, usually includes many utilities
Use Case	Used for adding specific functions to an application	Used for creating new applications or adding many functionalities with one package

Native Development Kit (NDK)

- Android has an NDK
- Uses GCC compiler, as code base is in C/C++
- To execute code directly through the core OS
- Normally done via Virtual machine or interpreter



microsoft/Windows-driver-samples



This repo contains driver samples prepared for use with Microsoft Visual Studio and the Windows Driver Kit (WDK). It contains...

163
Contributors

18
Used by

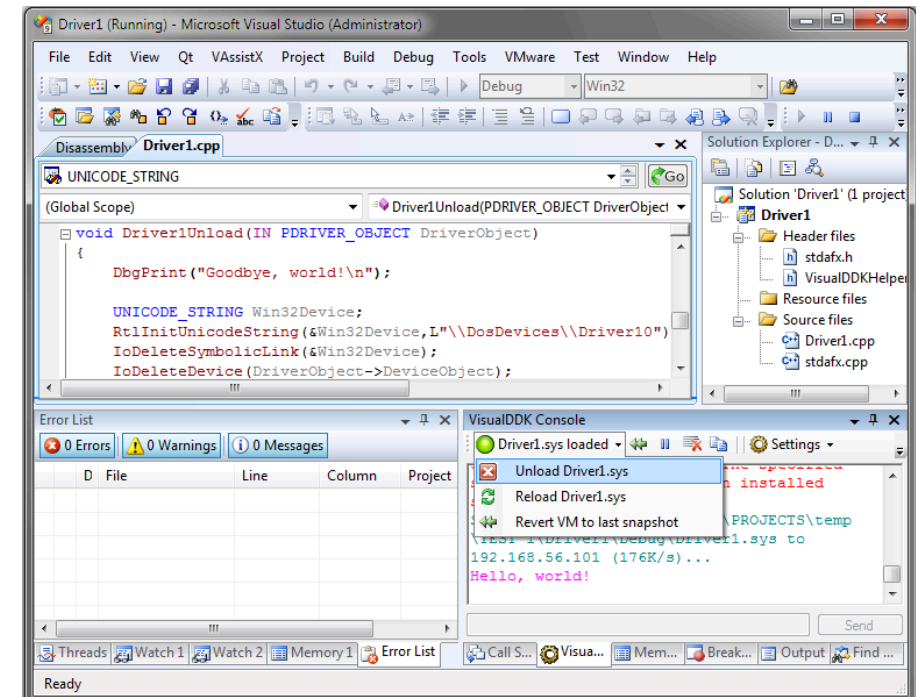
7k
Stars

5k
Forks



Driver Development Kits (DDK)

- Used for developing drivers



Developing, Maintaining and Releasing SDKs

1. Initial Creation and ramp-up time

- you will have to build a CI/CD pipeline end-to-end
- will take some time to build and get right.

2. Ongoing maintenance and development

- Fixing bugs, improvements, new features

3. Release management

- You have track each change... 5 different languages, 10 updates... 50 versions of SDK

