# Native vs Cross-Platform App Battle

Thien Chau – Jun 2019


# Agenda

- Introduction
- Native app development
- Cross-platform app development
- Choosing between native and cross-platform applications
- Popular cross-platform frameworks
- Q&A

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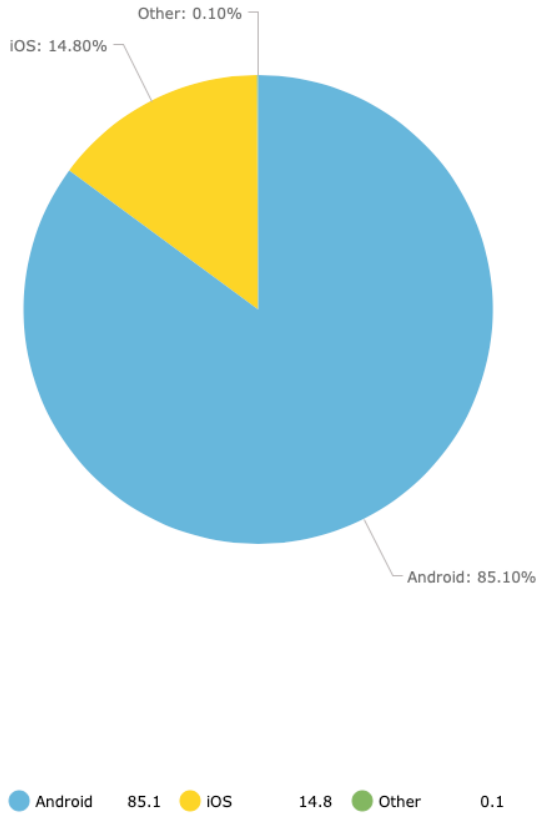
# Introduction

# Smartphone OS Market Share

Global, Q1 2017

*Source: IDC Quarterly Mobile Phone Tracker*



# Terms

| Native | Semi-Native | Hybrid | Web |
| --- | --- | --- | --- |
| Java | Flutter | CORDOVA | HTML |
| Kotlin | React Native | PhoneGap | CSS |
| OBJECTIVE-C | Xamarin | ionic | JavaScript |
| SWIFT | | | Bootstrap |

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# Native app development

# Native app development

- Native applications are created using platform-specific programming languages
  - Android: Java, Kotlin
  - iOS: Objective-C, Swift

# Pros of native apps

- High performance
- Ultimate user experience
- Better positioning on app stores

# Cons of native apps

- Costly and time consuming
- Missed opportunities
- Different codebases

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# Cross-platform app development

# Cross-platform app development

- Cross-platform entails creating applications that can run on a variety of operating systems.
- It’s an all-in-one approach that is popularly used to save time and money

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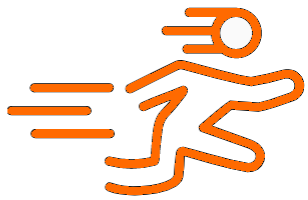
# Pros of cross-platform apps

- Affordable and time-saver
- Easy and fast deployment
- Wider audience reach
- Single codebase

# Cons of cross-platform apps

- Performance glitches
- User experience issues
- Slow updates

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# Choosing between native and cross-platform apps

# Choosing between native and cross-platform apps

- It depends on an app's intended feature set and scope of application

Native app:

- The app is supposed to become a business of its own (like fitness and healthcare or popular face-morphing apps…)
- The app needs access to the hardware features
- You need high responsiveness

Cross-platform app:

- A purely informative or content distribution application
- Excellent responsiveness is not your priority
- You don't want complex animations or calculations
- You need to penetrate the market quickly
- You want to turn a site into an app with minimum costs

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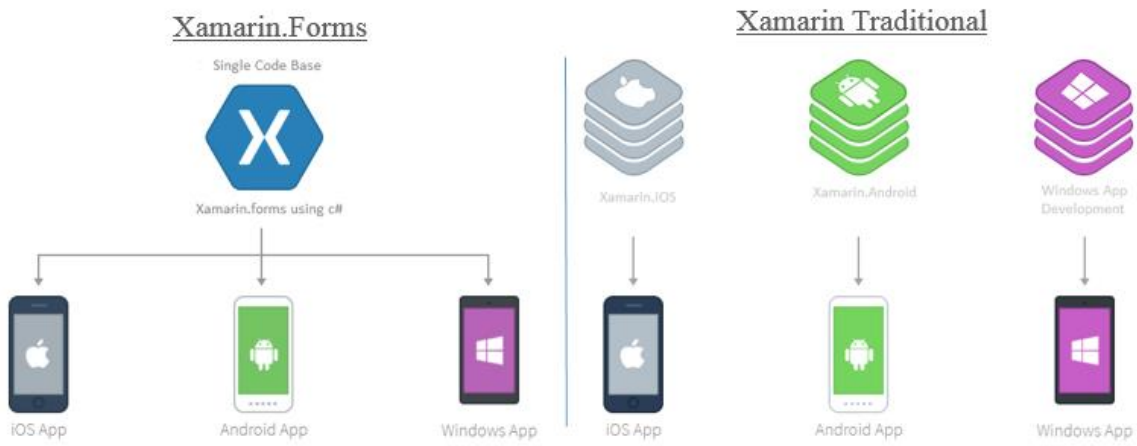
# Popular cross-platform frameworks


- A cross-platform framework with C# and native platform libraries wrapped in a .NET layer
- Main components: Xamarin Platform, Xamarin Cloud, and Xamarin Insights

# Xamarin



# Xamarin

ADVANTAGES:

- Performance comparable to native apps
- Hardware consistency
- MVC and MVVM architecture compatibility

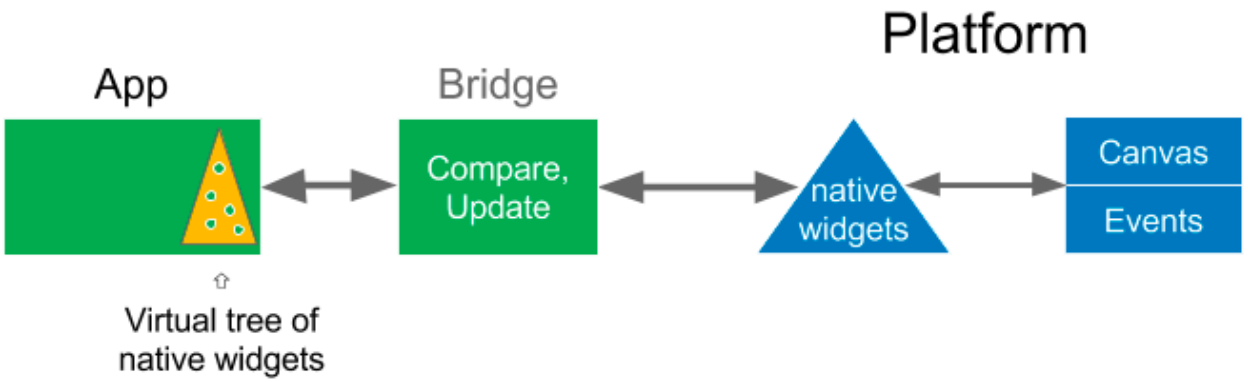
# Xamarin

DISADVANTAGES

- Operational overhead
- Time-consuming UI development
- Complexities with code support


- An open source mobile development framework for cross-platform mobile development
- Develop applications with JavaScript and a handful of native component APIs

# React Native



# React Native

ADVANTAGES:

- Native UI
- Simplified development
- Modular architecture
- Ready-made solutions and libraries
- Third-party support
- Hot reloading
- Great community and ecosystem

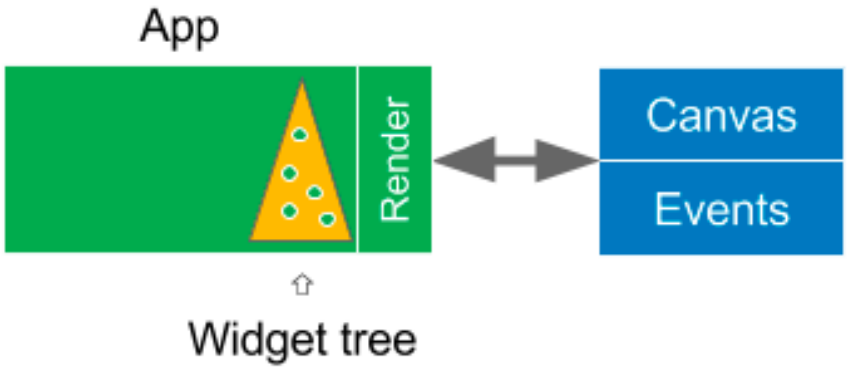
# React Native

DISADVANTAGES

- Application performance
- Possible need for native developers
- Inability to deal with complexity
- Native understanding
- Native platform updates


- Flutter is considered the best tool for cross platform mobile development
- Developed and supported by Google
- Uses Dart and a collection of native widgets to create stunning cross platform apps

# Flutter



# Flutter

ADVANTAGES:

- High performance
- Hot reload
- A full set of unique widgets
- Number of packages available
- Device compatibility
- A step to Fuchsia

# Flutter

DISADVANTAGES

- Immaturity
- Third-party support
- Application size

# Preferences

- https://codeburst.io
- https://medium.com
- http://nreality.com
- https://jelvix.com
- https://hackernoon.com

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# Q&A

# THANK YOU

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