REACT NATIVE

Introduction

React Native

HIENLTH

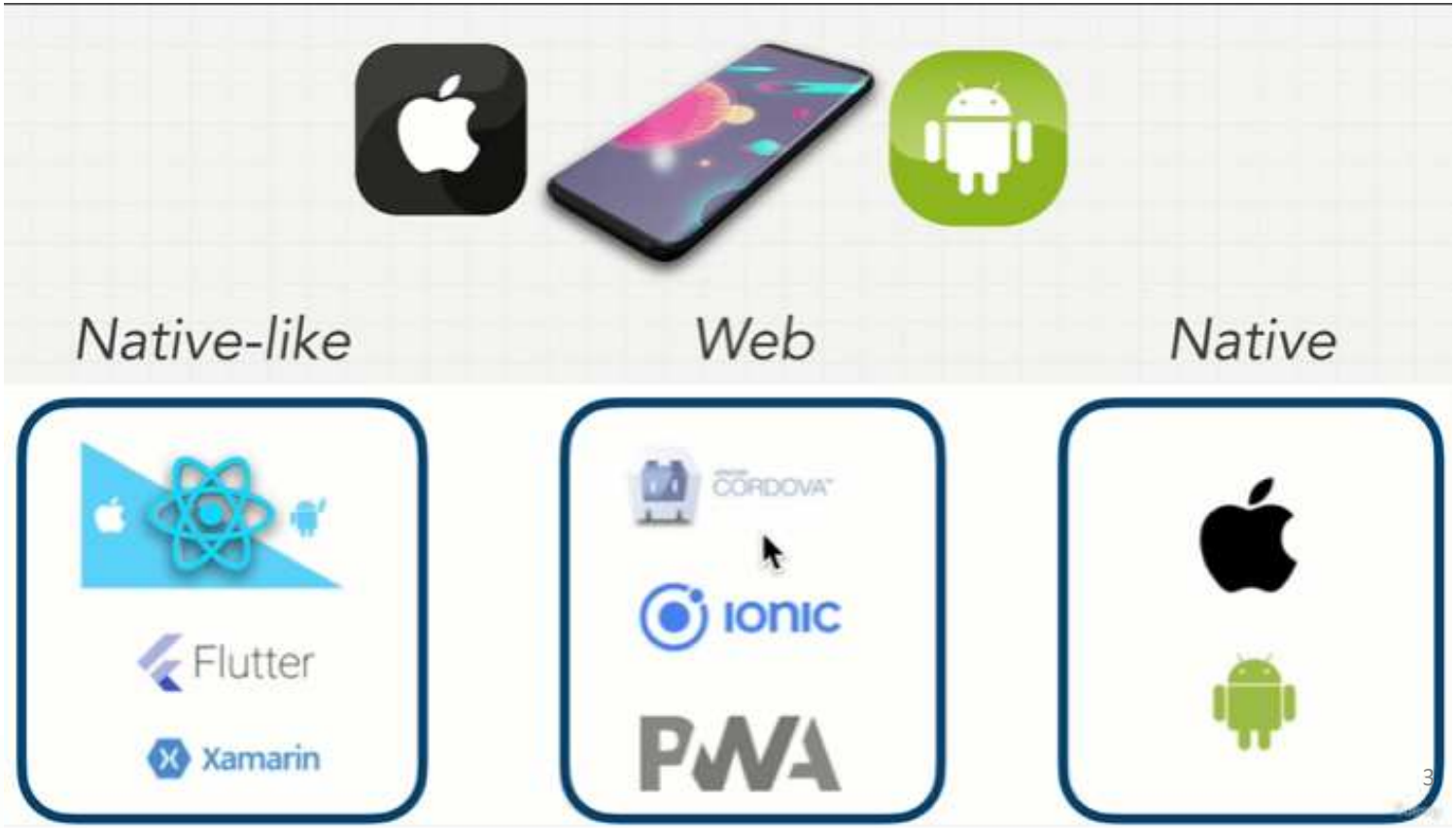
Hybrid and Native Application

- Hybrid
  - Is written base on web platform (html, css, javascript)
  - Is purely web application
  - Added features to manipulate operating system like access file, camera, GPS, using PhoneGap/Cordova
- Native
  - Is developed directly in the language of operating system provided (Objective C, Swift, Java, C++, C#)
  - Have all the features that the operating system provides
  - The speed is fastest

HIENLTH

Native vs. Web vs. Hybrid Apps vs. PWAs: The Pros & Cons

- **https://www.mendix.com/blog/native-vs-web-vs-hybrid-vs-pwas/**
  latest access 20-Jan-2022



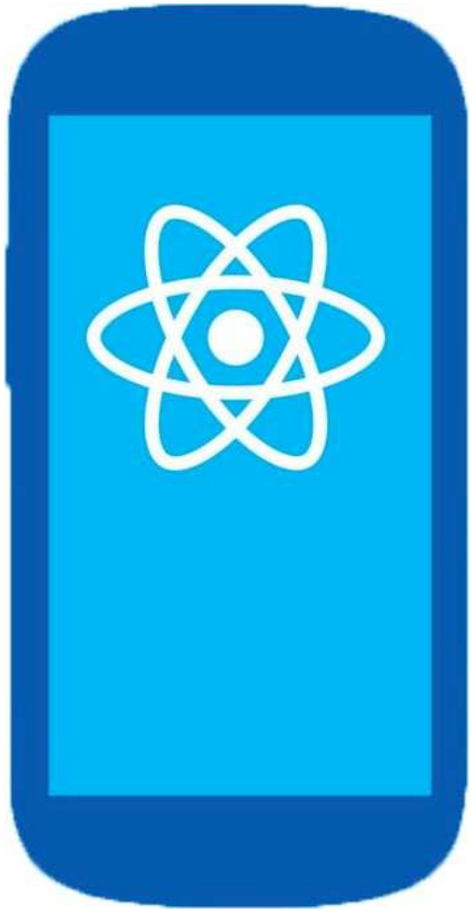
Flutter vs React Native

Flutter vs React Native: Which is the Best for Mobile App Development in 2022?

https://apexlabs.ai/post/flutter-vs-react-native

What Is React Native?

- JavaScript framework for building iOS and Android mobile apps.
- Based on popular JavaScript Web framework called React.
- Created by Facebook. Firstly release iOS version on March 2015 and Android version on September 2015
- Writing the app by using JavaScript and XML-esque markup (JSX)
- React-Native bridges and invokes the Native rendering API in Objective-C (iOS) and Java (Android)



HIENLTH

Approach of Mobile App Dev

Approach	Platform	Logic	UI	UX	Dev Time*
Native	Object C, Swift (iOS), Java (Android)	Native	Native	Smooth	6-24 weeks
HTML5 Hybrid	PhoneGap, Cordova, Ionic	JS	HTML, CSS	Laggy	2-8 weeks
Native Hybrid	React Native, NativeScript	JS	Native	Smooth	2-8 weeks

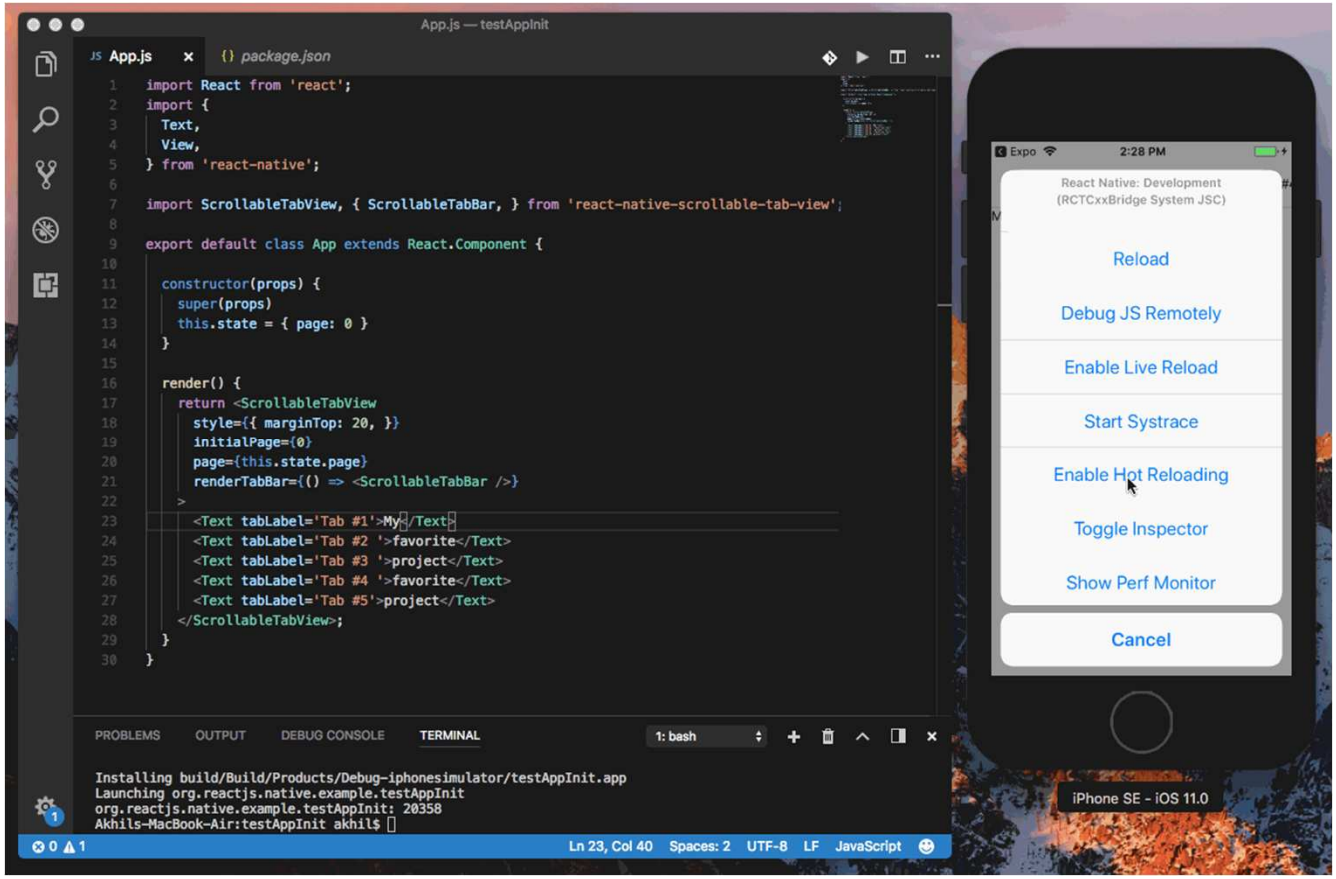
- * 20-30 screens mobile apps approximated based on instructor experiences

Why React Native?

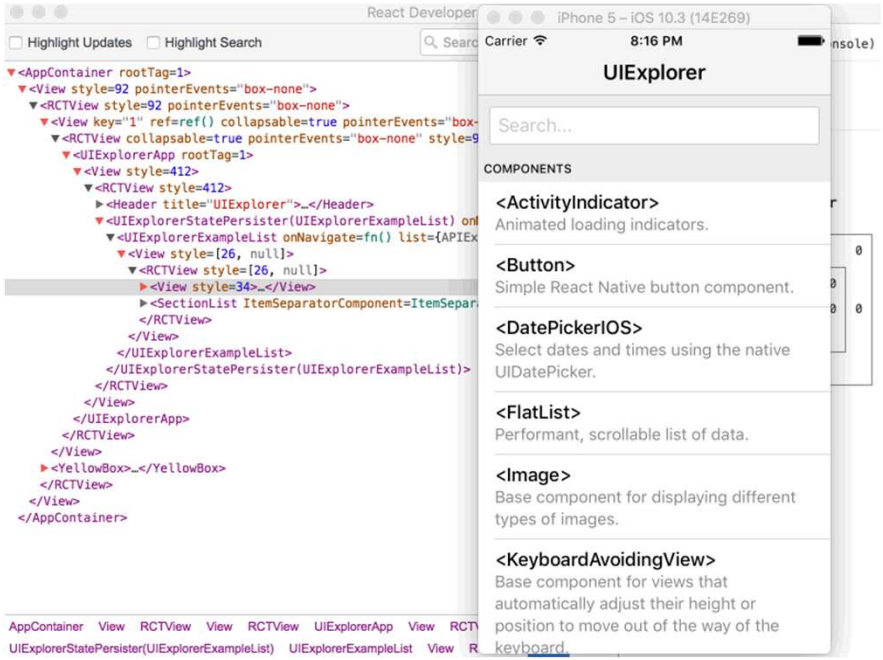
- Native Experience
- One language rules them all, JavaScript.
- Fast & Great Development Experience
  - Don’t Waste Time Recompiling (Hot Reloading)
  - 80% Share code between Android & iOS
  - Great Debugging Tool using Chrome Developer Tools
- Be able to bridge with Native Code when we need to.

Native Experience

Hot Reloading



Debugging With Chrome Developer Tools



Why not React Native?

- React-Native is still relatively young compared with Native iOS and Android Communities (Released on 2015)
- Some of Native API still are not supported. (But you can use the native libraries through)
- Add one additional layer to mobile app project

What Is React?

- Declarative, Efficient, and Flexible JavaScript Library that Building User Interface on Website
- React Native is rooted from React
- React treats every thing as a Component

```
class ShoppingList extends React.Component {
    render() {
        return (
            <div className="shopping-list">
                <h1>Shopping List for {this.props.name}</h1>
                <ul>
                    <li>Instagram</li>
                    <li>WhatsApp</li>
                    <li>Oculus</li>
                </ul>
            </div>
        );
    }
}
```

- A React Component

Prerequisites

- Javascript, preferably ES6/ES2015
- Knowledge of how to use the command line
- Basic understanding of npm & how it works

References

- https://github.com/facebook/react-native
- https://reactnative.dev
- https://docs.expo.dev/index.html

Thank you!

Exercise 1

- Register Expo account: https://expo.dev
- Install App Expo in local machine (to Run your application)

  https://expo.dev/client

- Prepare environment for coding: https://reactnative.dev/docs/environment-setup
  - Visual Studio Code [optional]
  - NodeJs https://nodejs.org/en/ (choose **LTS** version, check $ node --version)
  - Expo CLI: Input command $ npm install -g expo-cli

Exercise 2

- Build a simple mobile app using SNACK EXPO:
  - Open the page https://snack.expo.dev/
  - Create a new GUI that has your information, includeing **fullname, phone, student id, email, hobbies, …**
  - Install Expo GO on mobile [iOS/Android]
  - Open Expo GO app, scan QR code, run and take screen
  - Report all actions and submit to LMS