Ubiquitous and Mobile Computing
CS 528: React Native
Google Analytics

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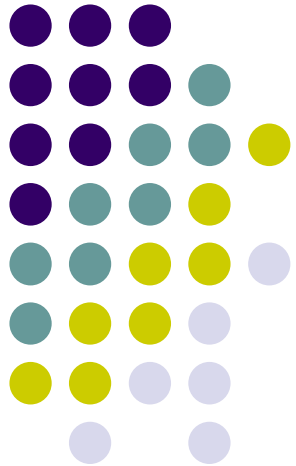
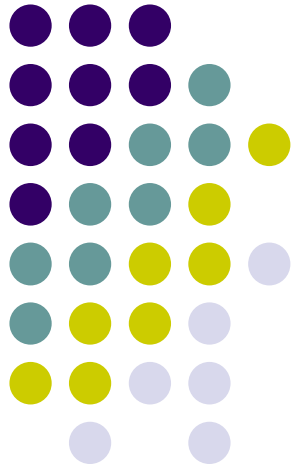
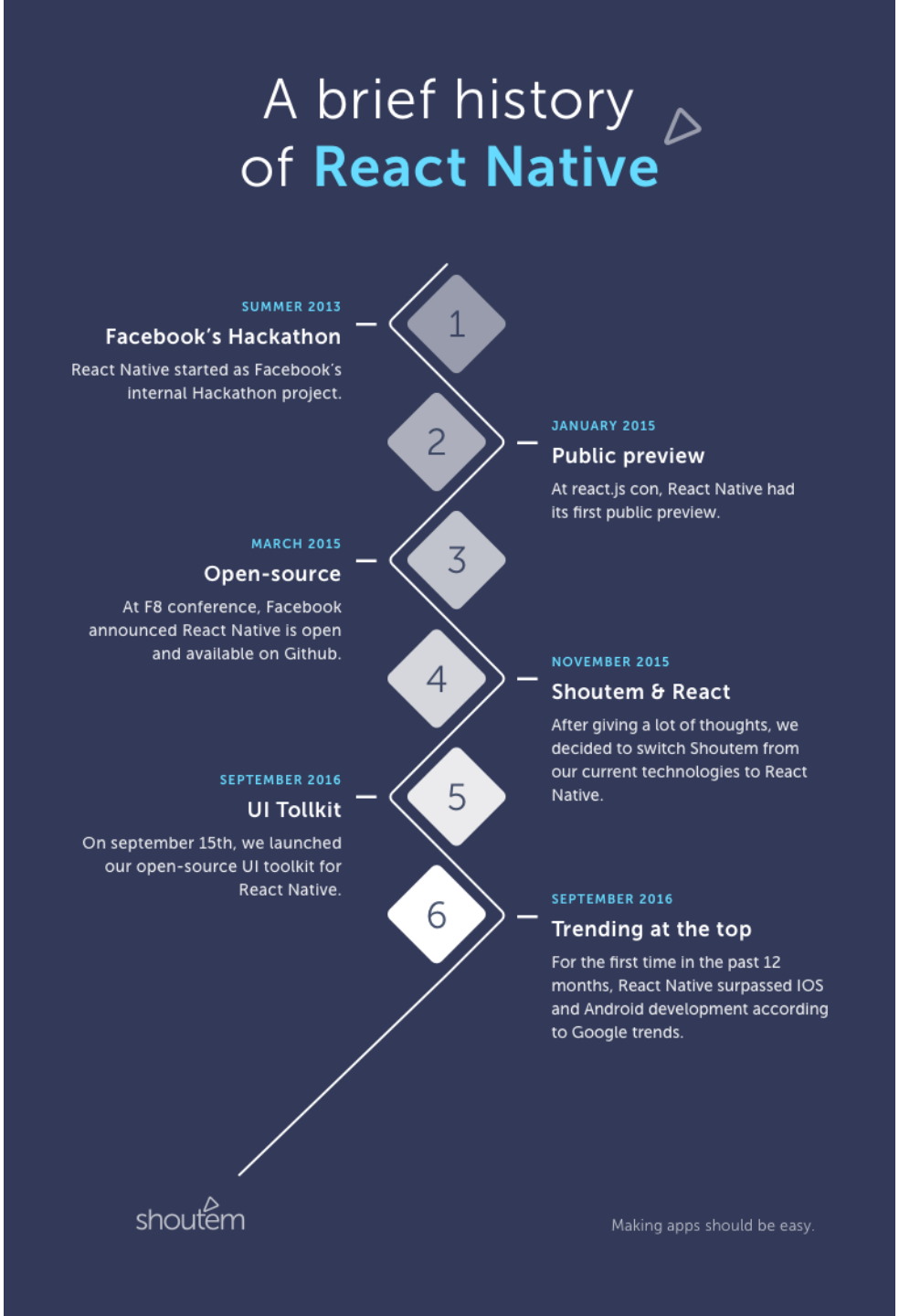
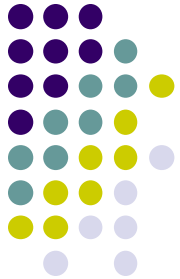


React Native



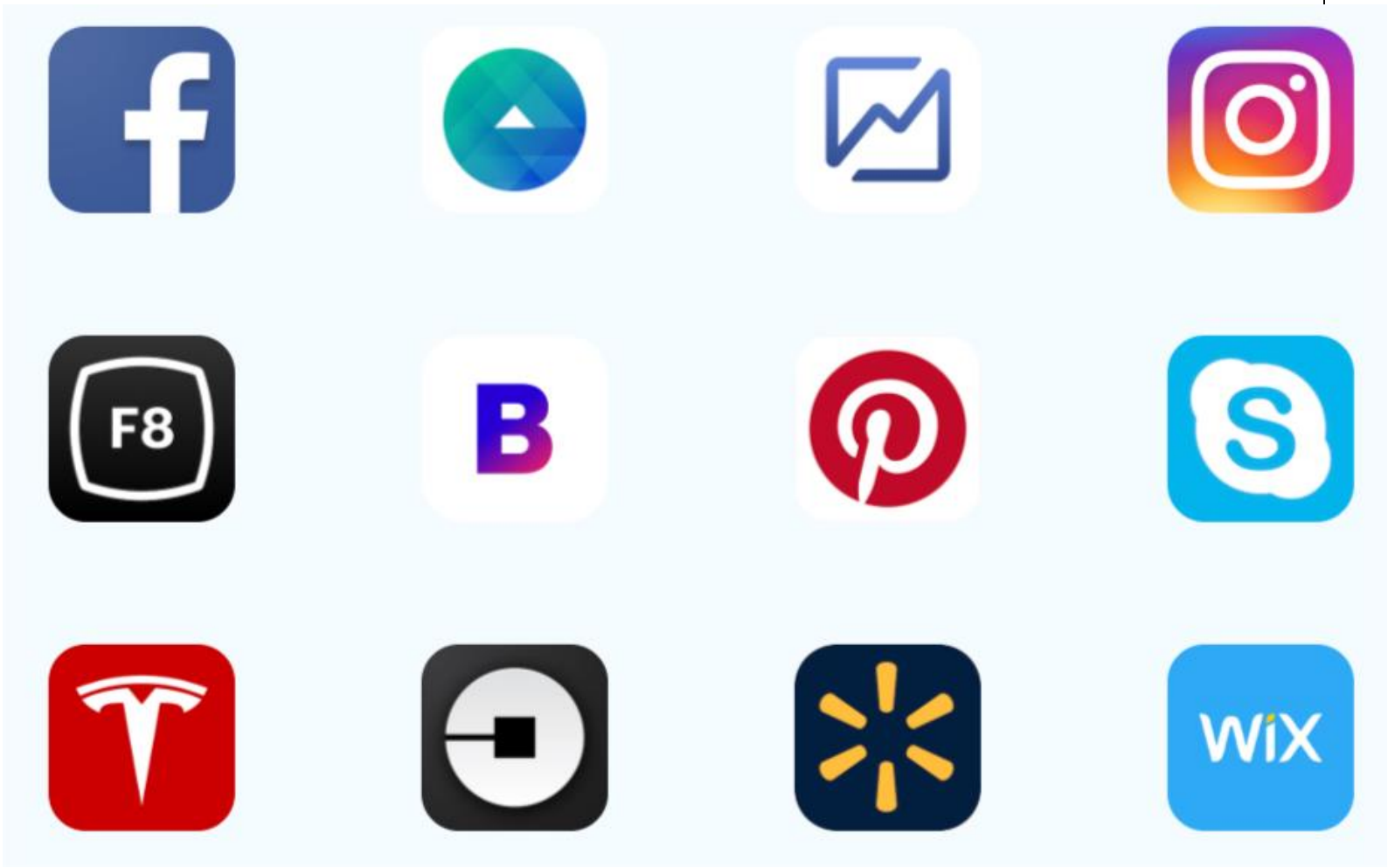

A brief history of React Native
1
SUMMER 2013
Facebook's Hackathon
React Native started as Facebook's internal Hackathon project.
2
JANUARY 2015
Public preview
At react.js con, React Native had its first public preview.
3
MARCH 2015
Open-source
At F8 conference, Facebook announced React Native is open and available on Github.
4
NOVEMBER 2015
Shoutem & React
After giving a lot of thoughts, we decided to switch Shoutem from our current technologies to React Native.
5
SEPTEMBER 2016
UI Tollkit
On september 15th, we launched our open-source UI toolkit for React Native.
6
SEPTEMBER 2016
Trending at the top
For the first time in the past 12 months, React Native surpassed IOS and Android development according to Google trends.
shoutem
Making apps should be easy.

Why React Native

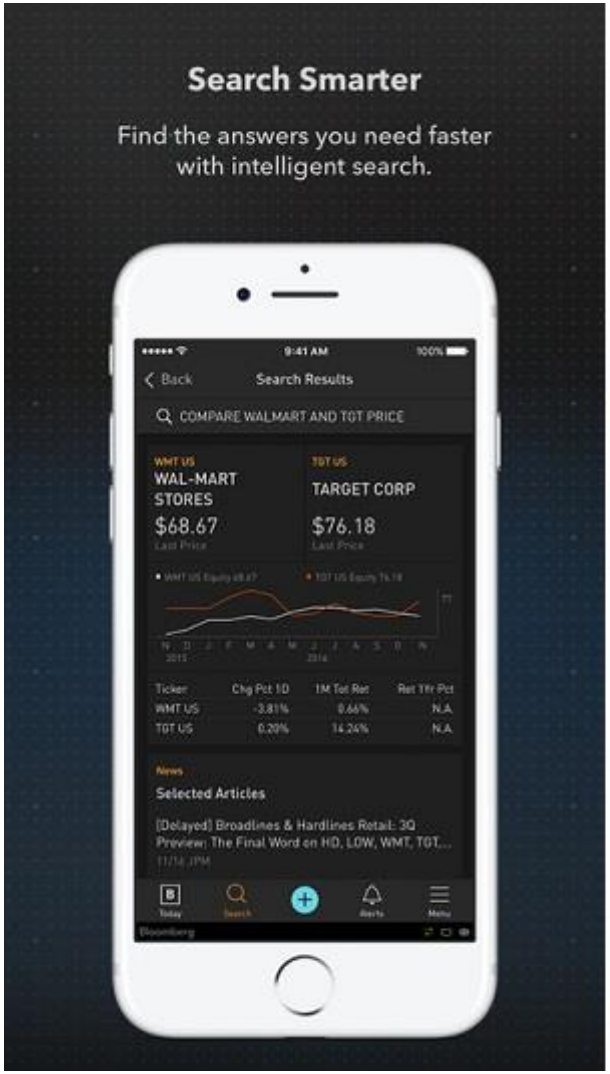


- Build native app using Javascript, which is ubiquitous nowadays.
- A React Native app is a real mobile app. Not HTML or Hybrid app.
  - WebKit (or similar technology) is still too heavy for mobile device!
- Reload the parts that have been changed without re-compiling entire project.
- Use native code when you need to: Use ***Platform.OS === 'android'*** and ***Platform.OS === 'ios'*** to separate platform-specific code.
- Therefore, developers can shared codebase for iOS and Android! (sort of...)

Who use React Native



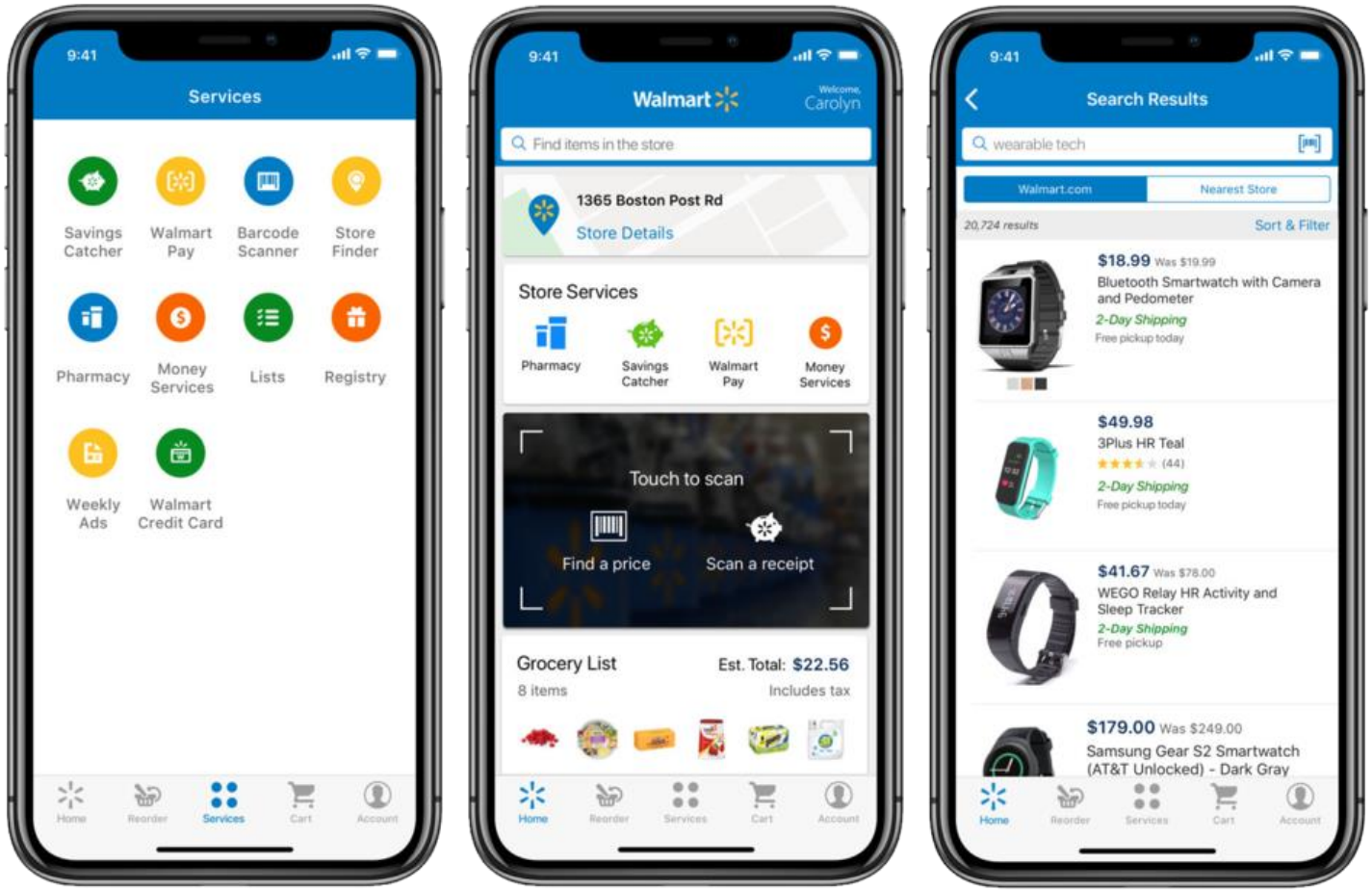
Bloomberg


Search Smarter
Find the answers you need faster with intelligent search.
9:41 AM
100%
Back
Search Results
COMPARE WALMART AND TGT PRICE
WMT US
WAL-MART STORES
$68.67
TGT US
TARGET CORP
$76.18
Selected Articles

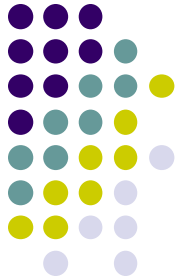

Make It Yours
Prioritize the features you need most.
9:41 AM
100%
Cancel
Save
Message
IB
APPT
Securities
Settings
News
Catalog
Notes
Info
Research
File
People


Connect Instantly
Tap into 24/7 live customer support and connect to your network with secure collaboration tools.
9:41 AM
100%

Walmart


9:41
Services
Savings Catcher
Walmart Pay
Barcode Scanner
Store Finder
Pharmacy
Money Services
Lists
Registry
Weekly Ads
Walmart Credit Card
Home
Reorder
Services
Cart
Account
9:41
Walmart
Welcome, Carolyn
Find items in the store
1365 Boston Post Rd
Store Details
Store Services
Pharmacy
Savings Catcher
Walmart Pay
Money Services
Touch to scan
Find a price
Scan a receipt
Grocery List
Est. Total: $22.56
8 items
Includes tax
Home
Reorder
Services
Cart
Account
9:41
Search Results
wearable tech
Walmart.com
Nearest Store
20,724 results
Sort & Filter
$18.99 Was $19.99
Bluetooth Smartwatch with Camera and Pedometer
2-Day Shipping
Free pickup today
$49.98
3Plus HR Teal
(44)
2-Day Shipping
Free pickup today
$41.67 Was $78.00
WEGO Relay HR Activity and Sleep Tracker
2-Day Shipping
Free pickup
$179.00 Was $249.00
Samsung Gear S2 Smartwatch (AT&T Unlocked) - Dark Gray
Home
Reorder
Services
Cart
Account

What is React Native

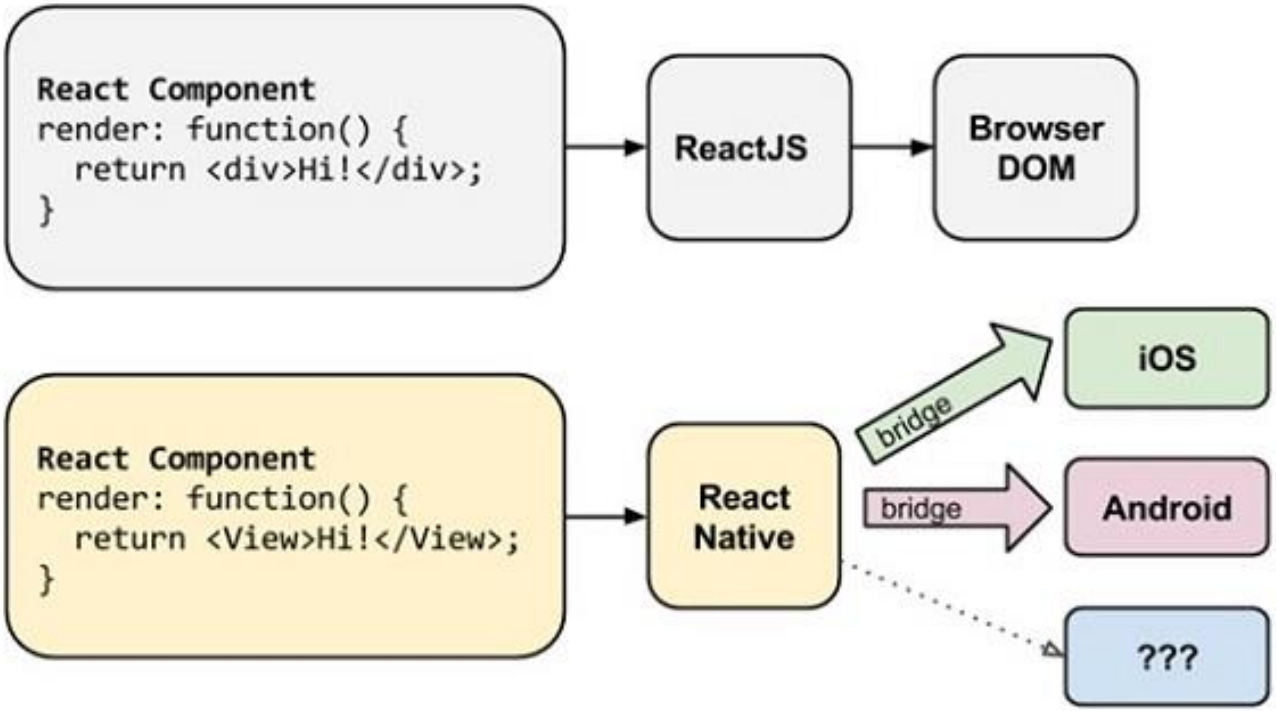


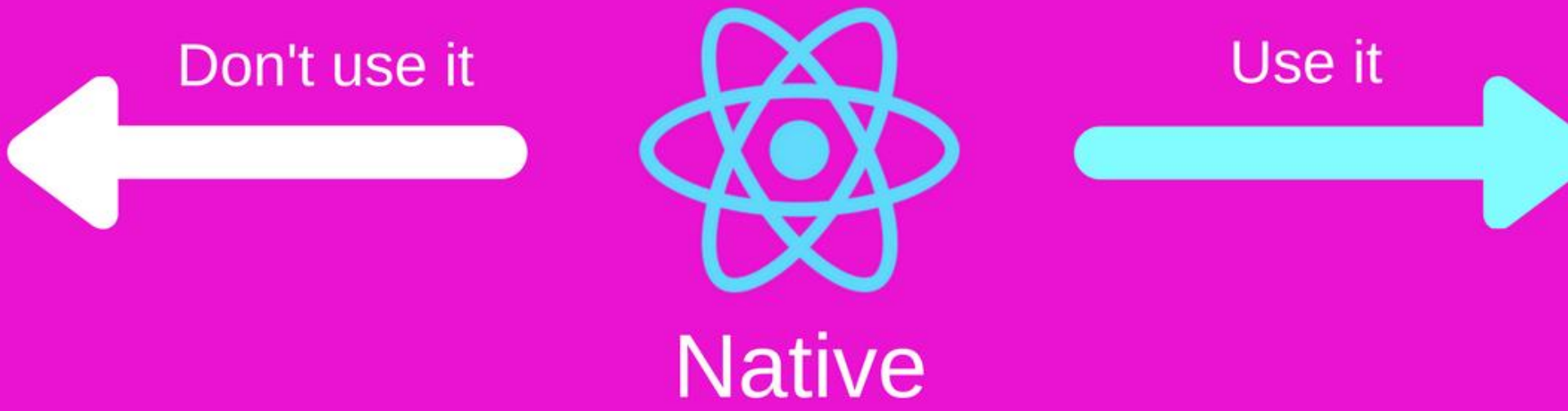
- Developers create UI in the same way as React (see below).
- React native already has many built-in components: ListView, Image, Button, Picker, TextInput, , ...etc.
- It also support Geolocation, various touch events handling

As the image shown in the right, the declarative UI code(aka. component) is mixed with logic code.

```
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>
    );
  }
}
```

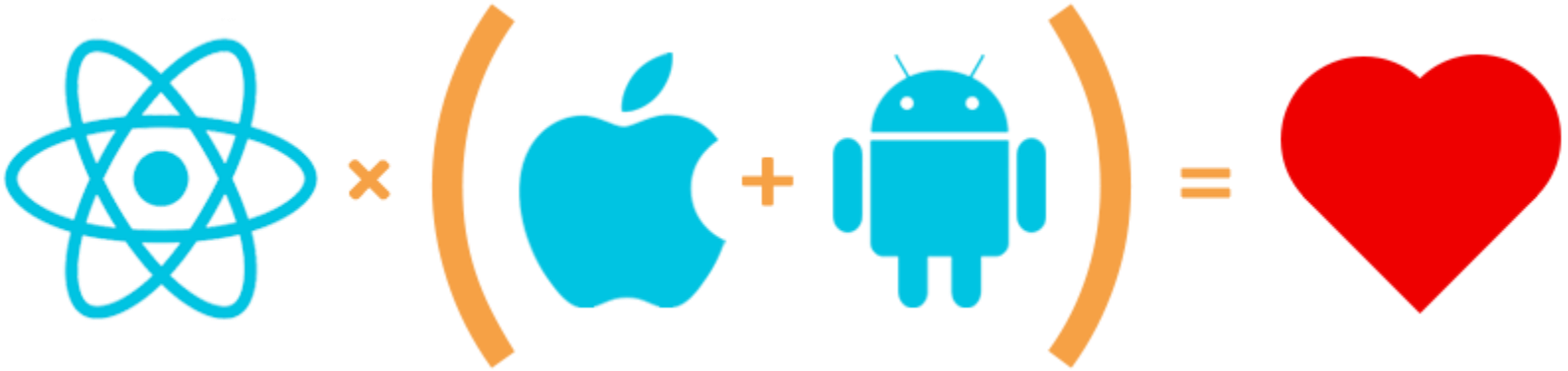
How React Native Works




Don't use it
Use it
Native

When to use React Native

- Small and Poor
- The app doesn’t require platform specific toolkit, e.g. ARkits
- The app doesn’t require user to do interaction intensively, e.g. Social app, e-commerce app, ...etc

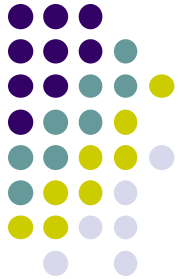


And when not to use it

- Big and Rich
- Apps having complex interaction, e.g. Gestures
- Apps that have to communicate with its background services heavily, e.g. rely on binder to do IPC

Airbnb dropped React native

- React Native Immaturity
- React Native Open Source Libraries
- Hard to Debug



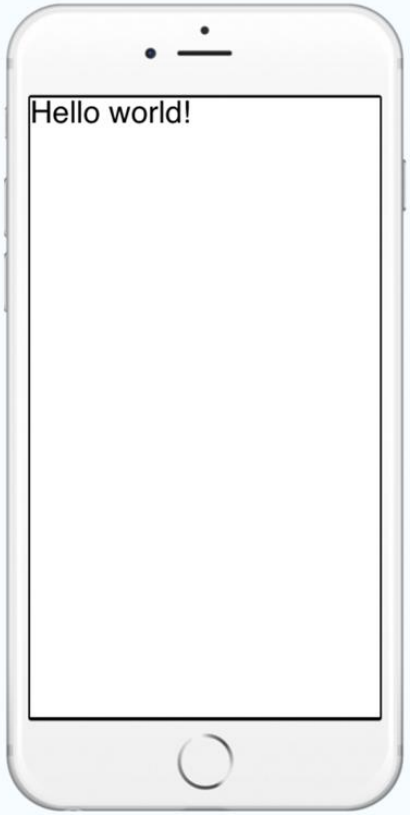
Let’s learn some React Native!

Hello World!

```
1  import React, { Component } from 'react';
2  import { Text, View } from 'react-native';
3
4  export default class HelloWorldApp extends Component {
5    render() {
6      return (
7        <View>
8          <Text>Hello world!</Text>
9        </View>
10     );
11   }
12 }
13
```

No Errors

Show Details



```
class ShoppingList extends React.Component {

  constructor(props) {
    super(props);
  }

  render() {
    return (
      <View>
        <Text>Shopping List for {this.props.name}</Text>
        <FlatList
          data={this.props.Items}
          renderItem={ ({item}) => <Text> {item.key} </Text> }
        />
      </View>
    );
  }
}

export default class App extends Component {
  render() {
    return (
      <View>
        <ShoppingList
          name={"alvin"}
          Items={[{key: "coffee"} , {key: "candy"}]} />

        <ShoppingList
          name={"john"}
          Items={[{key: "beer"} , {key: "egg"}]} />
      </View>
    );
  }
}
```

Shopping List for alvin
coffee
candy
Shopping List for john
beer
egg