Advanced Mobile App Development

React Native
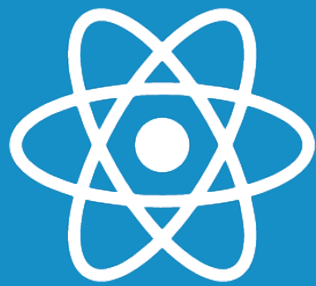
Flutter

Overview Flutter & React Native

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▶ bit.ly/2RksFkW

Course Overview

React Native

Flutter

React Native	Flutter/Back-end	Publishing
Section 1. Getting Start	Section 6. Local Storage/Database	Section 11: Using Camera/Video Component/Video Conference
Section 2. Overview **Flutter**/**React Native**	Section 7: Http Request & Back-end	Section 12: Using Location & Map
Section 3. Components/Widgets, Styling and Layout	Section 8: In App Authentication	Section 13: Publish AppStore & Play Store
Section 4. Navigation/Routing	Section 9. Debugging & Developer Tools	Section 14. Marketing Mobile App
Section 5. State Management	Section 10: Advance State Management (MobX, Redux..)	Section 15. Conclusion

Overview React/React Native

React Native

Flutter

1. Setup environment/ Programming language	4. Overview React Component/Flutter Widgets	7. Getting started with Style
2. Generate app and run app on Simulator/Devices	5. Props & State	8. Flexbox/Box Constraint
3. Project walkthrough	6. Using JSX/Dart	9. Question?

Setup Environment for React Native

React Native

Flutter

Webstorm, Visual Studio Code, Atom, Sublime, VIM, etc...

What is IDE?

XCODE   ANDROID STUDIO

Develop native code + Package app and run app on the Simulator

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HOMEBREW

HomeBrew

Used to install node

NODE   NPM

Node run javascript out of browser
NPM package manager for Nodejs

WATCHMAN

Watch changed files on hard disk

RN CLI/EXPO CLI

Used to generate React Native project & run app on Simulator

What is IDE?

Webstorm

Visual Studio Code

Atom

Sublime

VIM

Installation Guide

React Native   **Flutter**

❑ 1. Install IDE
  ▪ Webstorm, Visual Studio Code, Atom, Sublime, Vim, etc…

❑ 2. Install Xcode, Android Studio
  ▪ Install Xcode from **Appstore**
  ▪ Install Android Studio
    • JDK: https://www.oracle.com/java/technologies/javase-jdk14-downloads.html
    • Android Studio: https://developer.android.com/studio

❑ 3. Install Homebrew (https://brew.sh/)
  ▪ Open **Terminal**

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```

Installation Guide

React Native

Flutter

❑ 4. Node & NPM (https://nodejs.org/en/)
- Open Terminal

```
$ brew install node
```

❑ 5. watchman (https://facebook.github.io/watchman/)
- Open Terminal

```
$ brew install watchman
```

❑ 6. RN CLI/Expo CLI

```
$ npm install -g react-native-cli
```
```
$ npm install -g expo-cli
```
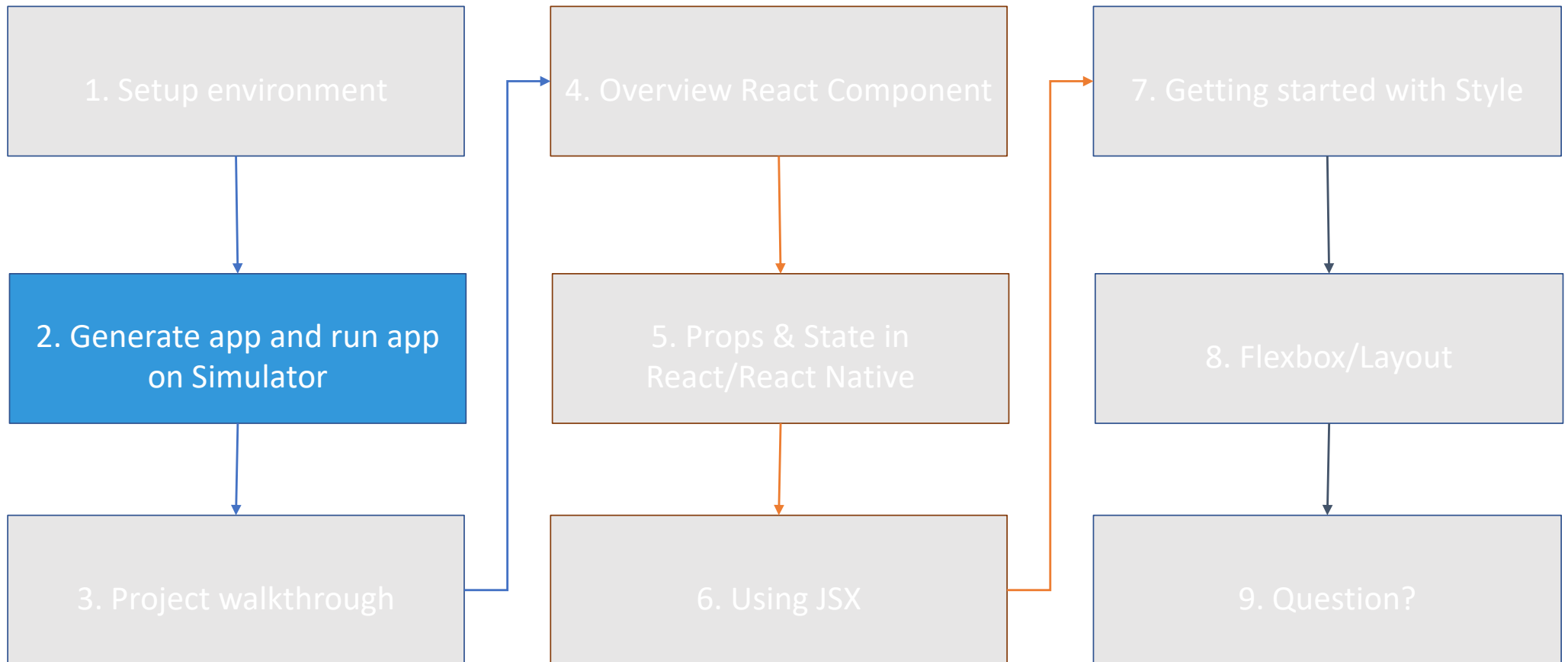
RN CLI: https://github.com/react-native-community/cli

Expo CLI: https://expo.io/

Overview React/React Native

Generate React Native Project
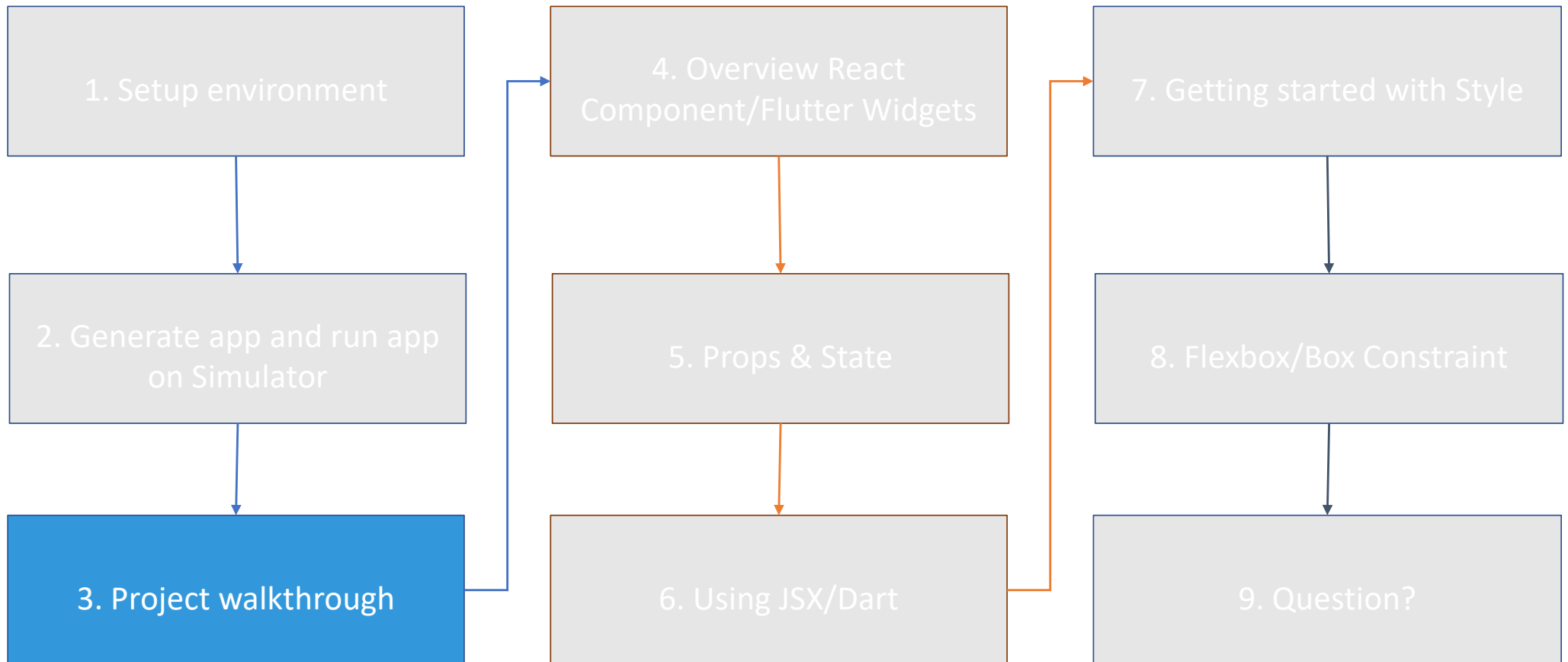
❑ Generate a React Native project with RN CLI/EXPO CLI

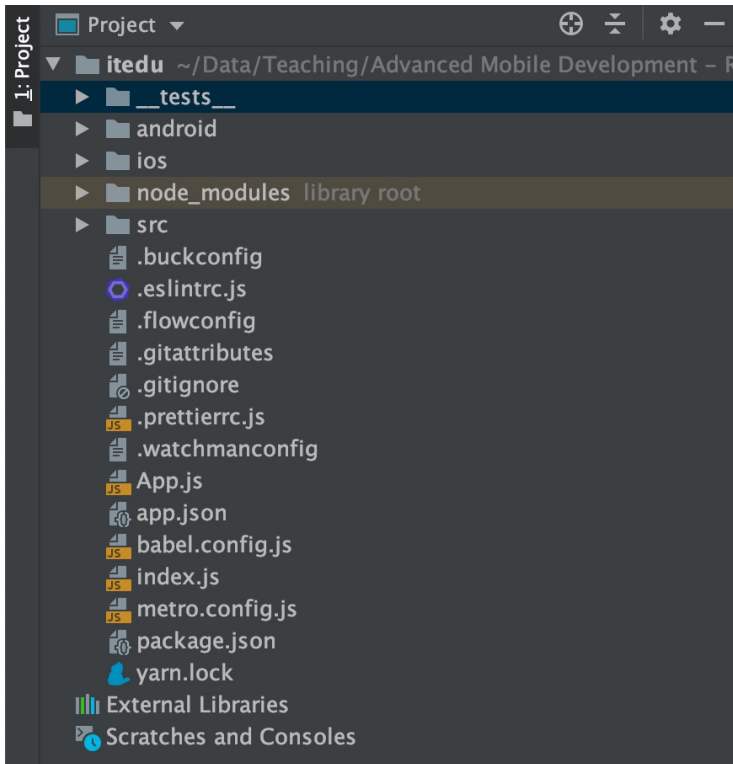> *react-native init project-name*

> *expo init project-name*

❑ Run app on Simulator
- Xcode & Android Studio
- Command line
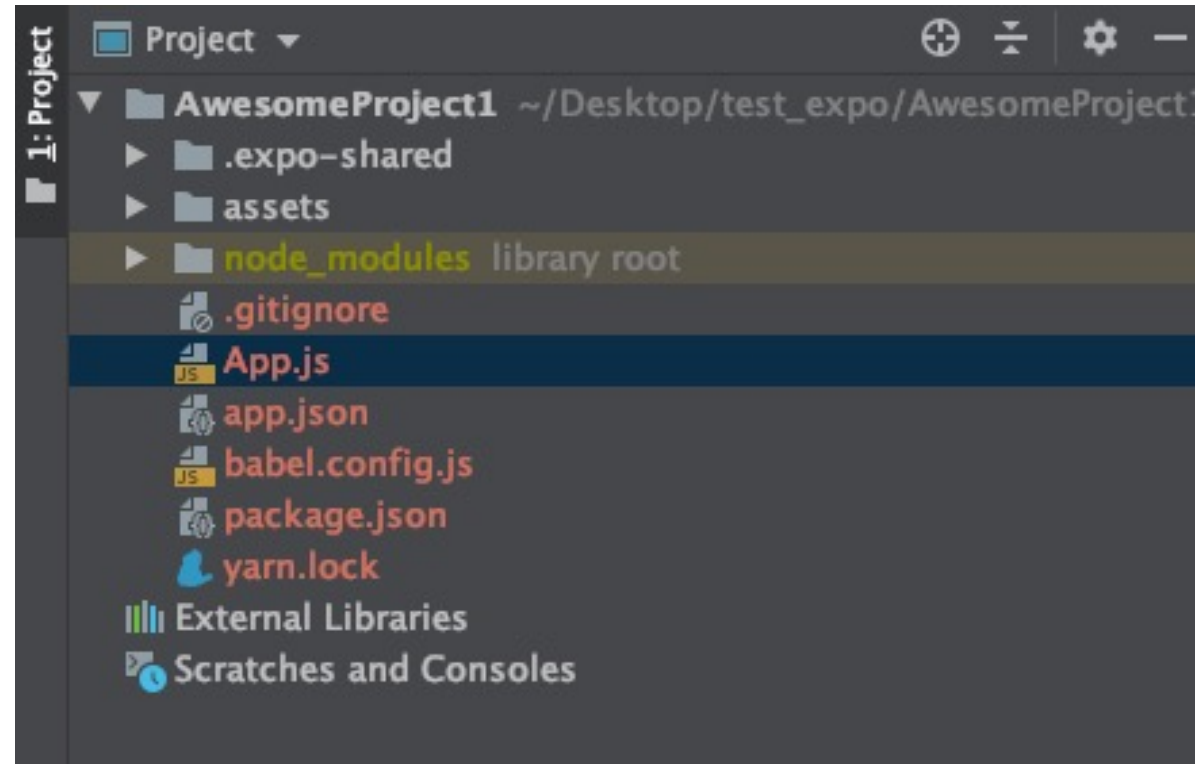
> *react-native run-ios*
> *react-native run-android*

Overview React/React Native

React Native

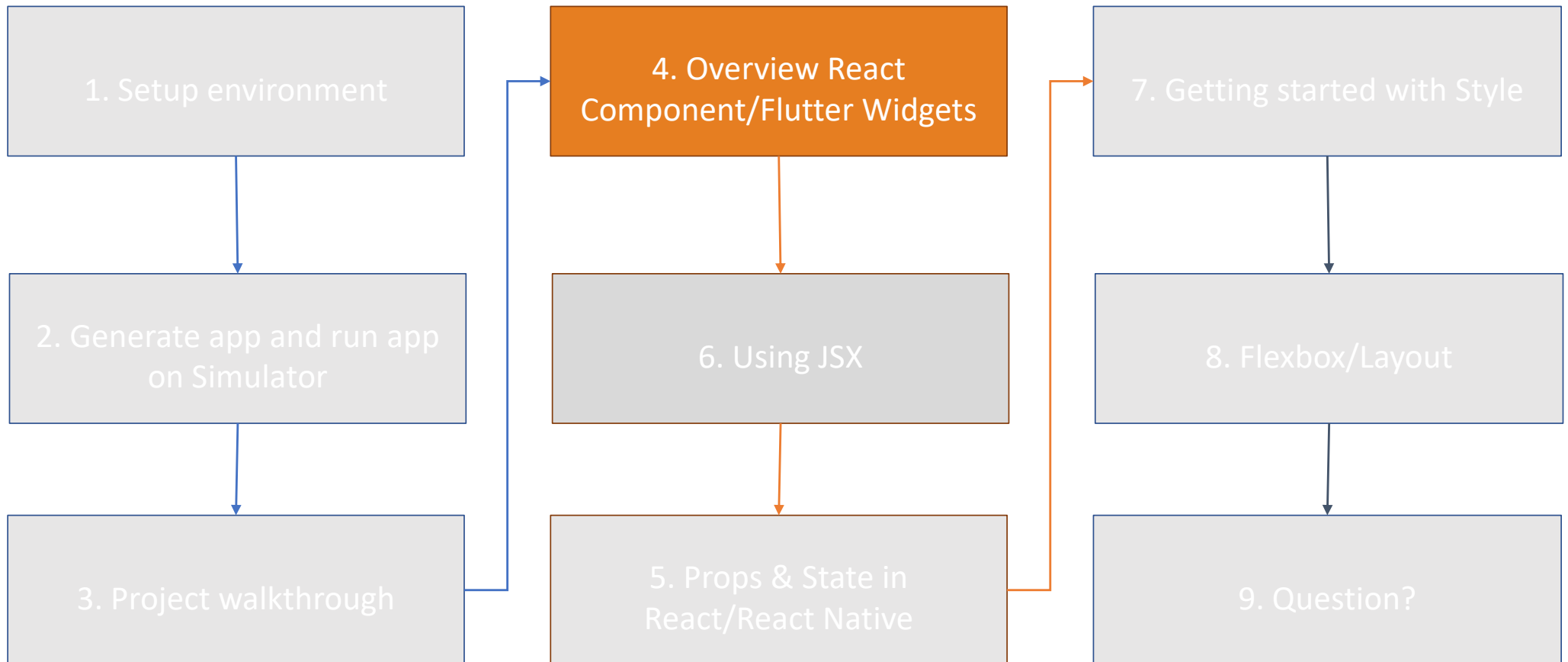**Flutter**

```
1. Setup environment
        │
        ▼
2. Generate app and run app
   on Simulator
        │
        ▼
3. Project walkthrough
```

```
4. Overview React
   Component/Flutter Widgets
        │
        ▼
5. Props & State
        │
        ▼
6. Using JSX/Dart
```

```
7. Getting started with Style
        │
        ▼
8. Flexbox/Box Constraint
        │
        ▼
9. Question?
```

Project Walkthrough

REACT-NATIVE CLI

EXPO CLI

Overview React/React Native

React Native

Flutter

1. Setup environment	4. Overview React Component/Flutter Widgets	7. Getting started with Style
2. Generate app and run app on Simulator	6. Using JSX	8. Flexbox/Layout
3. Project walkthrough	5. Props & State in React/React Native	9. Question?

Overview React Component

❑ What is components?

- https://reactjs.org/docs/components-and-props.html
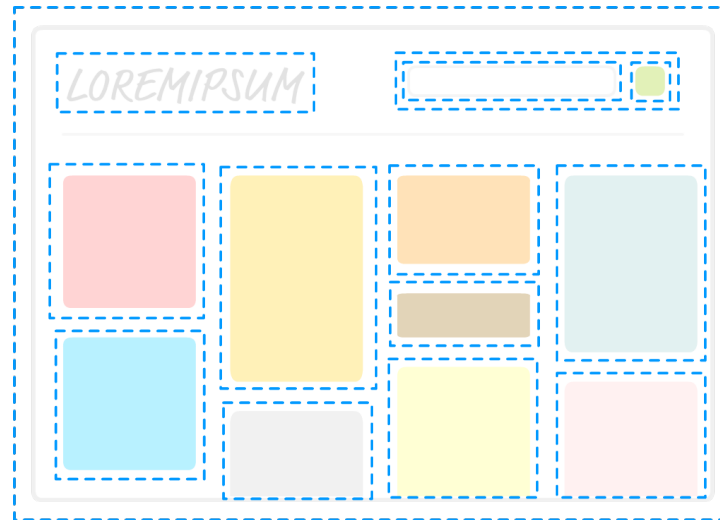
That's a lot of COMPONENTS!

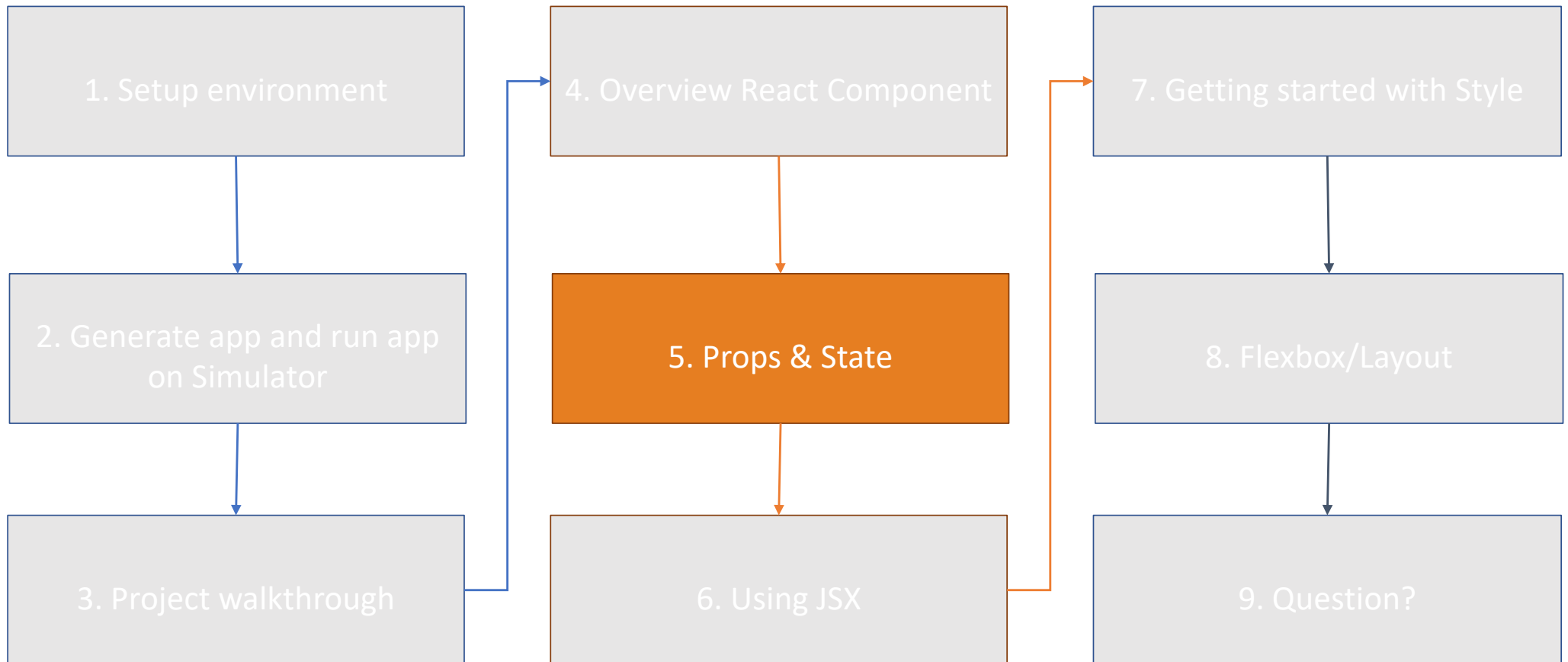# Using JSX

❑ Introduction to JSX
  ▪ https://reactjs.org/docs/introducing-jsx.html

❑ Rules with JSX
  ▪ We can assemble different JSX elements like normal HTML
  ▪ We can prefer to JS variable inside of a JSX block by using curly braces
  ▪ We can assign JSX element to variable, then show the variable in a JSX block.

Overview React/React Native

React Native | Flutter

1. Setup environment	4. Overview React Component	7. Getting started with Style
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Props & State

- ❑ React fundametals:
    - ▪ https://reactjs.org/docs/components-and-props.html
    - ▪ https://reactjs.org/docs/state-and-lifecycle.html

- ❑ What is the difference between Props & State?
    - ▪ Props
        - • Immutable/Read-only
        - • Passed data from Parent to Child
    - ▪ State
        - • Mutable
        - • Owned & managed by Component
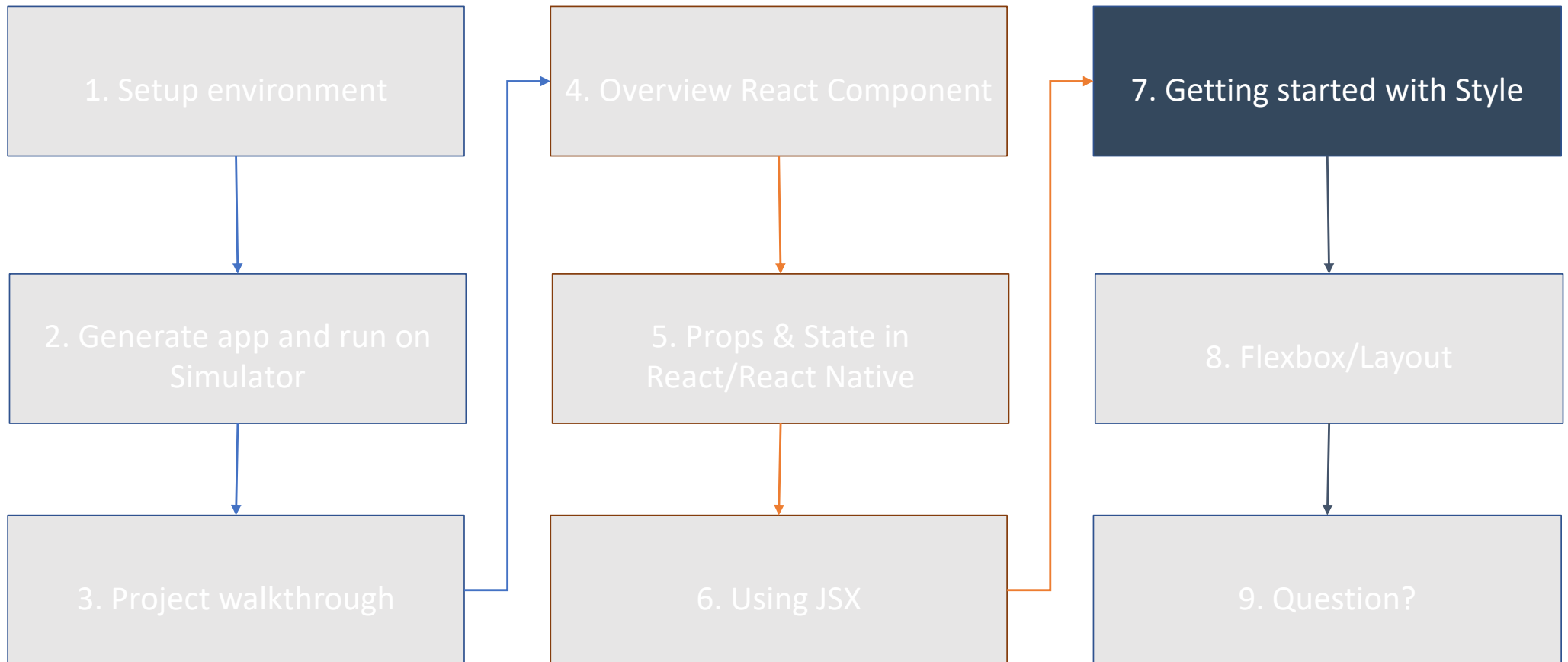
Getting started with Style

❑ Style with React Native
- https://reactnative.dev/docs/style

❑ Dimensions in React Native
- Fixed Dimensions
- Flex Dimensions
- Percentage Dimensions

Getting started with Style

❑ Fixed dimensions

```jsx
1  import React, { Component } from 'react';
2  import { AppRegistry, View } from 'react-native';
3
4  export default class FixedDimensionsBasics extends Component {
5    render() {
6      return (
7        <View>
8          <View style={{width: 50, height: 50, backgroundColor: 'powderblue'}} /:
9          <View style={{width: 100, height: 100, backgroundColor: 'skyblue'}} />
10         <View style={{width: 150, height: 150, backgroundColor: 'steelblue'}}}
11       </View>
12     );
13   }
14 }
15
16 // skip this line if using Create React Native App
17 AppRegistry.registerComponent('AwesomeProject', () => FixedDimensionsBasics);
18
```

No Errors   Show Details
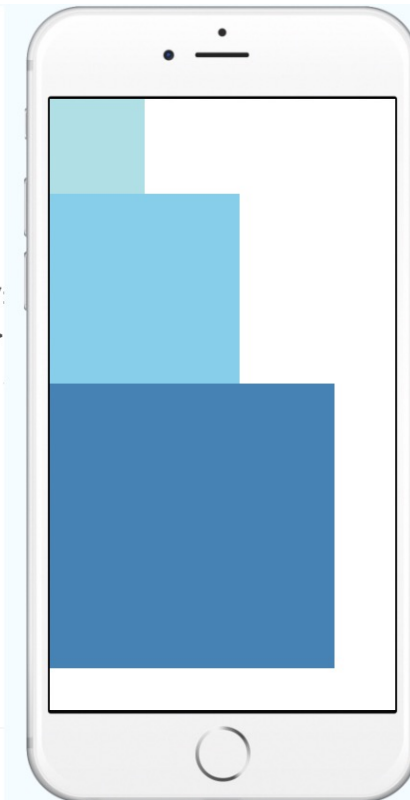
Getting started with Style

❑ Flex dimensions

```
3
4  export default class FlexDimensionsBasics extends Component {
5    render() {
6      return (
7        // Try removing the `flex: 1` on the parent View.
8        // The parent will not have dimensions, so the children can't expand.
9        // What if you add `height: 300` instead of `flex: 1`?
10       <View style={{flex: 1}}>
11         <View style={{flex: 1, backgroundColor: 'powderblue'}} />
12         <View style={{flex: 2, backgroundColor: 'skyblue'}} />
13         <View style={{flex: 3, backgroundColor: 'steelblue'}} />
14       </View>
15     );
16   }
17 }
18
19 // skip this line if using Create React Native App
20 AppRegistry.registerComponent('AwesomeProject', () => FlexDimensionsBasics);
21
```

No Errors   Show Details
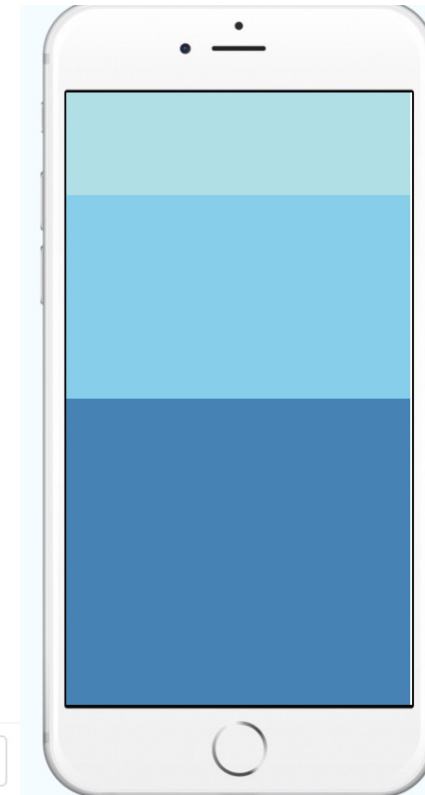
Component Structure

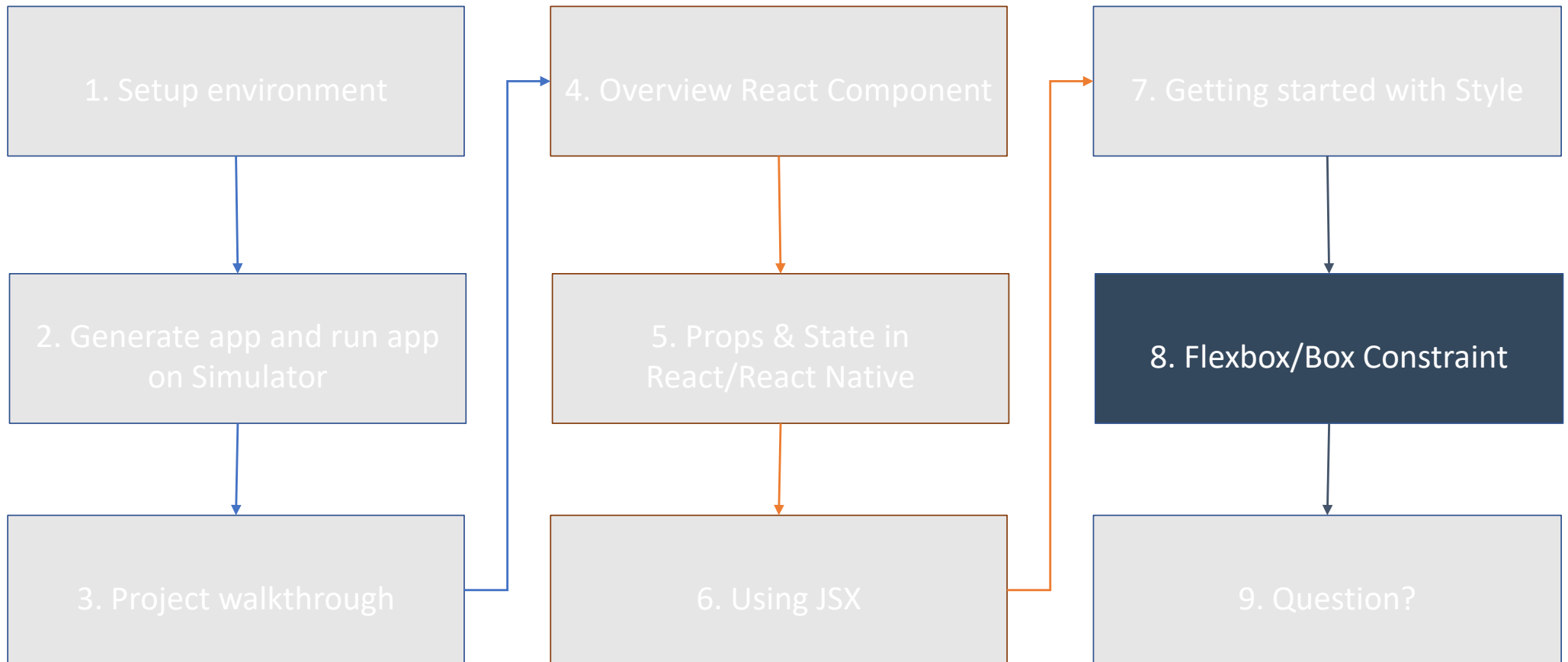Import libraries which we need to create a component

Create a component - a function which returns JSX

Create a stylesheet to style our component

Export the component so we can use it else where in our project

```js
hello-function-component.js

1  import React from 'react';
2  import {View, StyleSheet, Text, Button} from 'react-native';
3
4  const HelloFunctionComponent = (props) => {
5      const onPressGreeting = () => {};
6
7      return (
8          <View>
9              <Text style={styles.textStyle}>Hello {props.name}</Text>
10             <Button onPress={onPressGreeting} title="Greeting" />
11         </View>
12     );
13 };
14
15 const styles = StyleSheet.create({
16     textStyle: {
17         fontSize: 20,
18         color: 'red',
19     },
20 });
21
22 export default HelloFunctionComponent;
23
```

Flexbox & Layout

❑ Layout with Flexbox
  ▪ https://reactnative.dev/docs/style

Practice

- ❑ Finish the game: https://flexboxfroggy.com/

React Native

Flutter

Question?