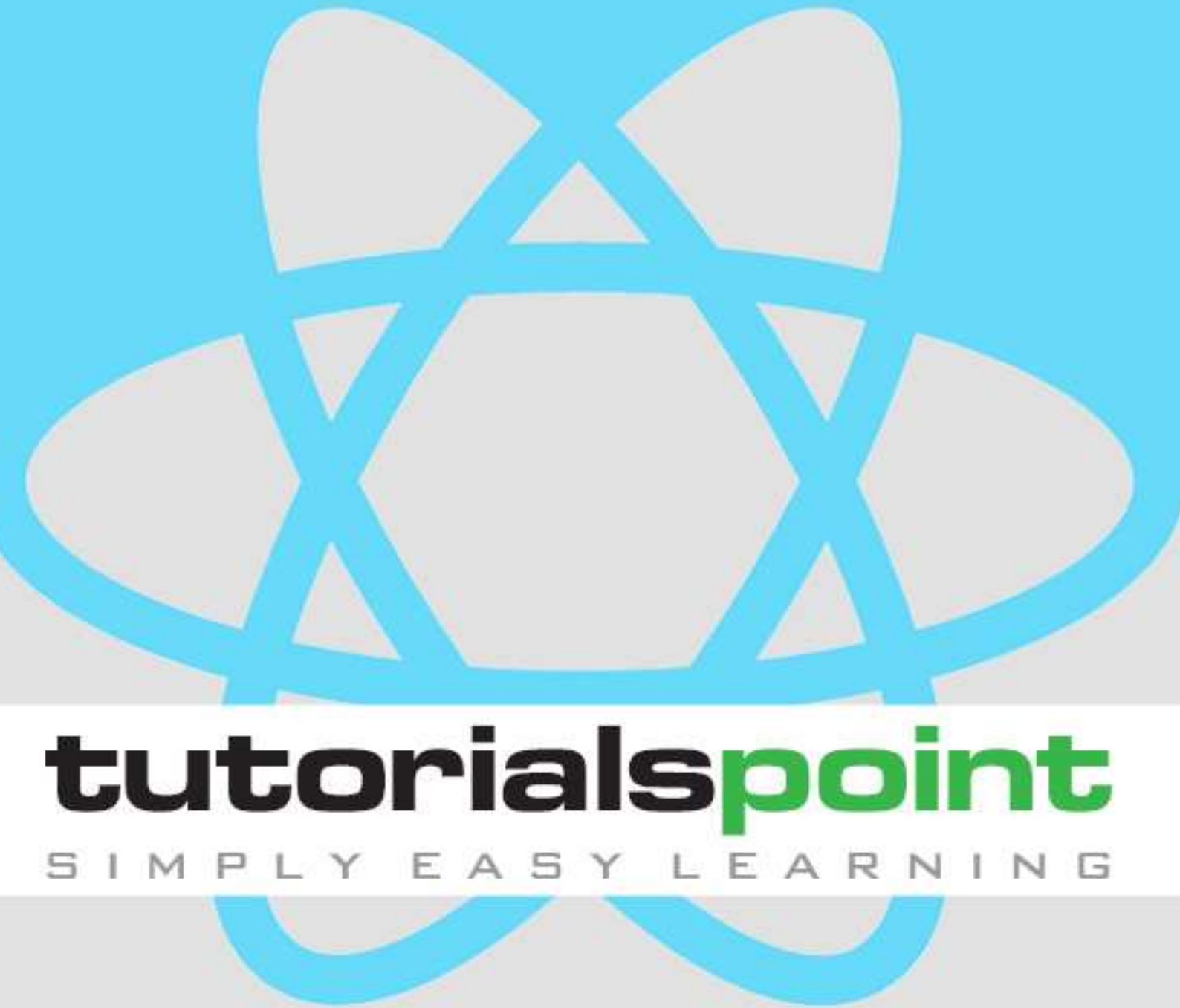
React Native



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About the Tutorial

React Native is a JavaScript framework for building native mobile apps. It uses the React framework and offers large amount of inbuilt components and APIs.

Audience

This tutorial is designed for JavaScript and React developers who aspire to learn mobile building skills. By following this course, you will expand your React and JavaScript knowledge, learn some concepts of functional programming, and prepare to enter the mobile world.

Since JavaScript world is moving forward, we will keep up with it and use EC6 syntax in this tutorial.

Prerequisites

To be able to follow this tutorial, you should be familiar with React and have solid JavaScript knowledge. Even if you do not have previous experience with React, you should be able to follow it. In this tutorial, we will explain some fundamental React concepts.

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Core Concepts

1. React Native – Overview

For better understanding of React Native concepts, we will borrow a few lines from the official documentation –

React Native lets you build mobile apps using only JavaScript. It uses the same design as React, letting you compose a rich mobile UI from declarative components.

With React Native, you don't build a mobile web app, an HTML5 app, or a hybrid app; you build a real mobile app that's indistinguishable from an app built using Objective-C or Java. React Native uses the same fundamental UI building blocks as regular iOS and Android apps. You just put those building blocks together using JavaScript and React.

React Native Features

- **React** – This is a Framework for building web and mobile apps using JavaScript.
- **Native** – You can use native components controlled by JavaScript.
- **Platforms** – React Native supports IOS and Android platform.

React Native Advantages

- **JavaScript** – You can use the existing JavaScript knowledge to build native mobile apps.
- **Code sharing** – You can share most of your code on different platforms.
- **Community** – The community around React and React Native is large, and you will be able to find any answer you need.

React Native Limitations

- **Native Components** – If you want to create native functionality which is not created yet, you will need to write some platform specific code.

2. React Native – Environment Setup

There are a couple of things you need to install to set up the environment for React Native. We will use OSX as our building platform.

S.NO.	Software	Description
1	NodeJS and NPM	You can follow our NodeJS Environment Setup tutorial to install NodeJS.

Step 1 – Install Homebrew

Open your terminal and run the following code to install Homebrew –

```
/usr/bin/ruby -e "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

Step 2 – Install Watchman

Run the following code to install Watchman.

```
brew install watchman
```

Step 3 – Install React Native

Now, run the following code to install React Native.

```
npm install -g react-native-cli
```

Step 4 Android – Install Visual Studio

You can install Android studio by following this link.

Step 4 IOS – Install XCode

For IOS development you will need XCode.

Step 5 – Create First App

We will initialize our first app by running the code given below in the terminal from the folder where we want to create the app (in our case Desktop).

```
react-native init reactTutorialApp
```

Step 6 – Run React Native Packager

First, we need to open the app folder in terminal.

```
cd reactTutorialApp
```

Now, we can run the packager.

```
react-native start
```

You should keep this terminal window running while developing your app.

Step 7 – Run the App on IOS simulator

This step will open your app in the IOS simulator. Run the following command in another terminal.

```
react-native run-ios
```

3. React Native – State

The data inside React Components is managed by **state** and **props**. In this chapter, we will talk about **state**.

Difference between State and Props

The **state** is mutable while **props** are immutable. This means that **state** can be updated in the future while props cannot be updated.

Using State

This is our root component. We are just importing **Home** which will be used in most of the chapters.

NOTE: This file won't change during the course of this tutorial, so we will leave it out in the future.

index.ios.js

```
import React, { Component } from 'react';
import { AppRegistry, View } from 'react-native';
import Home from './src/components/home/Home.js'

class reactTutorialApp extends Component {
   render() {
      return (
         <View>
            <Home />
         </View>
      );
   }
}

export default reactTutorialApp
AppRegistry.registerComponent('reactTutorialApp', () ⇒ reactTutorialApp);
```

Initial state is defined inside the **Home** class by using the **state = {}** syntax.

We will bind **myText** in a view using the **{this.state.myText}** syntax.

src/components/home/Home.js

```
import React, { Component } from 'react';
import { Text, View } from 'react-native';

class Home extends Component {
   state = {
      myState: 'Lorem ipsum dolor sit amet, consectetur adipisicing elit,
         sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
         Ut enim ad   minim veniam, quis nostrud  exercitation ullamco laboris
         nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in
         reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.
         Excepteur sint occaecat cupidatat non proident, sunt in culpa qui
         officia deserunt mollit anim id est laborum.'
   }

   render() {
      return (
         <View>
            <Text>
               {this.state.myState}
            </Text>
         </View>
      );
   }
}

export default Home;
```

We can see in emulator text from the state as in the following screenshot.

Updating State

Since state is mutable, we can update it by creating the **deleteState** function and call it using the **onPress = {this.deleteText}** event.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { Text, View } from 'react-native'

class Home extends Component {

   state = {
      myState: 'Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed
         do eiusmod tempor incididunt ut labore et dolore magna aliqua.
```

```
         Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi
         ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit
         in voluptate velit esse cillum dolore eu fugiat nulla pariatur.
         Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia
         deserunt mollit anim id est laborum.'
   }
   updateState = () ⇒ this.setState({ myState: 'The state is updated' })

   render() {
      return (
         <View>
            <Text onPress = {this.updateState}>
               {this.state.myState}
            </Text>
         </View>
      );
   }
}
export default Home;
```

NOTES – In all chapters, we will use the class syntax for stateful (container) components and function syntax for stateless (presentational) components. We will learn more about components in the next chapter.

In our second example, we are using the arrow function syntax for **updateState**. You should keep in mind that this syntax uses the lexical scope, and **this** keyword will be bound to the environment object (Class). This will sometimes lead to unexpected behavior.

The other way to define methods is to use the EC5 functions but in that case we will need to bind **this** manually in the constructor. Consider the following example to understand this.

```
class Home extends Component {

   constructor(){
      super()
      this.updateState = this.updateState.bind(this)
   }

   updateState(){
```

```
      //
   }

   render(){
      //
   }
}
```

4. React Native – Props

In our last chapter, we showed you how to use mutable **state**. In this chapter, we will show you how to combine the state and the **props**.

Presentational components should get all data by passing **props**. Only container components should have **state**.

Container Component

We will now understand what a container compenent is and also how it works.

Theory

Now we will update our container component. This component will handle the state and pass the props to the presentational component.

Container component is only used for handling state. All functionality related to view (styling etc.) will be handled in the presentational component.

Example

If we want to use example from the last chapter we need to remove the **Text** element from the render function since this element is used for presenting text to the users. This should be inside the presentational component.

Let us review the code in the example given below. We will import the **PresentationalComponent** and pass it to the render function.

After we import the **PresentationalComponent** and pass it to the render function, we need to pass the props. We will pass the props by adding **myText = {this.state.myText}** and **deleteText = {this.deleteText}** to **<PresentationalComponent>**. Now, we will be able to access this inside the presentational component.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View } from 'react-native'
import PresentationalComponent from './PresentationalComponent'

class Home extends Component {

   state = {
      myState: 'Lorem ipsum dolor sit amet, consectetur adipisicing elit,
         sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
         Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi
```

```
         ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in
         voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur
         sint occaecat cupidatat non proident, sunt in culpa qui officia
         deserunt mollit anim id est laborum.'
   }

   updateState = () ⇒ {
      this.setState({ myState: 'The state is updated' })
   }

   render() {
      return (
         <View>
            <PresentationalComponent myState = {this.state.myState} updateState
= {this.updateState}/>
         </View>
      )
   }
}

export default Home
```

Presentational Component

We will now understand what a presentational component is and also how it works.

Theory

Presentational components should be used only for presenting view to the users. These components do not have state. They receive all data and functions as props.

The best practice is to use as much presentational components as possible.

Example

As we mentioned in our previous chapter, we are using the EC6 function syntax for presentational components.

Our component will receive props, return view elements, present text using **{props.myText}** and call the **{props.deleteText}** function when a user clicks on the text.

src/components/home/PresentationalComponent.js

```
import React, { Component } from 'react'
import { Text, View } from 'react-native'

const PresentationalComponent = (props) ⇒ {
   return (
      <View>
         <Text onPress = {props.updateState}>
            {props.myState}
         </Text>
      </View>
   )
}
export default PresentationalComponent
```

Now, we have the same functionality as in our **State** chapter. The only difference is that we refactored our code to the container and the presentational component.

You can run the app and see the text as in the following screenshot.

If you click on text, it will be removed from the screen.

5. React Native – Styling

There are a couple of ways to style your elements in React Native.

You can use the **style** property to add the styles inline. However, this is not the best practice because it can be hard to read the code.

In this chapter, we will use the **Stylesheet** for styling.

Container Component

In this section, we will simplify our container component from our previous chapter.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View } from 'react-native'
import PresentationalComponent from './PresentationalComponent'

class Home extends Component {
   state = {
      myState: 'This is my state'
   }

   render() {
      return (
         <View>
            <PresentationalComponent myState = {this.state.myState}/>
         </View>
      )
   }
}
export default Home
```

Presentational Component

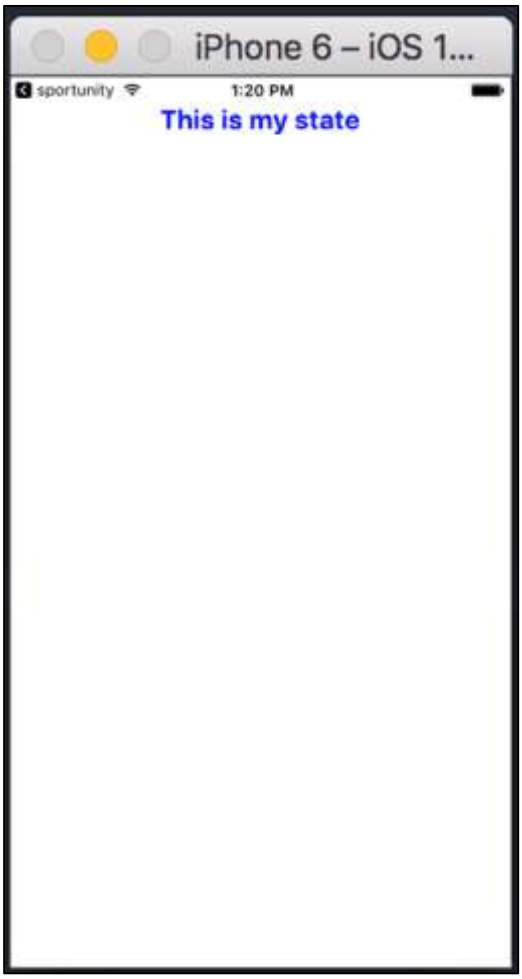
In the following example, we will import the **StyleSheet**. At the bottom of the file, we will create our stylesheet and assign it to the **styles** constant. Note that our styles are in **camelCase** and we do not use **px** or **%** for styling.

To apply styles to our text, we need to add **style = {styles.myText}** property to the **Text** element.

src/components/home/PresentationalComponent.js

```
import React, { Component } from 'react'
import { Text, View, StyleSheet } from 'react-native'

const PresentationalComponent = (props) ⇒ {
   return (
      <View>
         <Text style = {styles.myState}>
            {props.myState}
         </Text>
      </View>
   )
}

export default PresentationalComponent

const styles = StyleSheet.create ({
   myState: {
      marginTop: 20,
      textAlign: 'center',
      color: 'blue',
      fontWeight: 'bold',
      fontSize: 20
   }
})
```

When we run the app, we will receive the following output.



6. React Native – Flexbox

To accommodate different screen sizes, React Native offers **Flexbox** support.

We will use the same code that we used in our **React Native - Styling** chapter. We will only change the **PresentationalComponent**.

Layout

To achieve the desired layout, flexbox offers three main properties – **flexDirection** **justifyContent** and **alignItems**.

The following table shows the possible options.

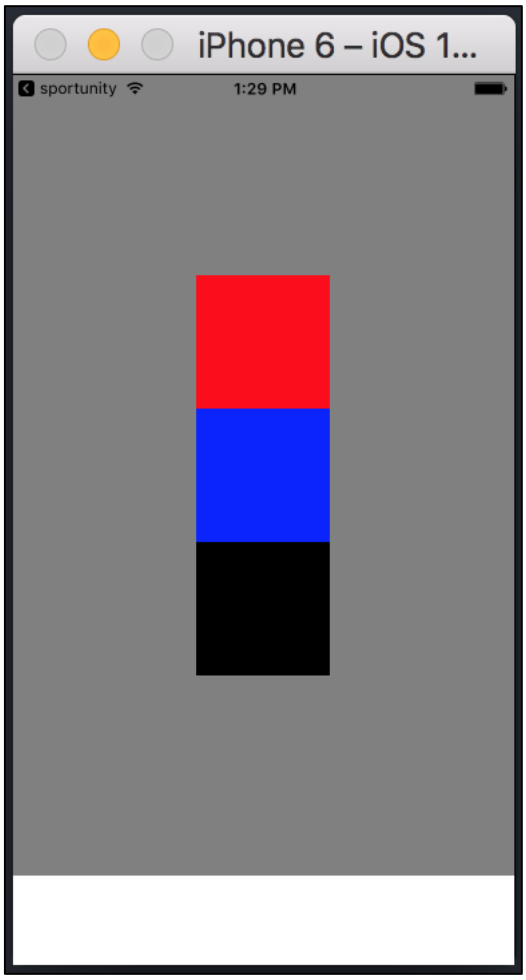
Property	Values	Description
flexDirection	'column', 'row'	Used to specify if elements will be aligned vertically or horizontally.
justifyContent	'center', 'flex-start', 'flex-end', 'space-around', 'space-between'	Used to determine how should elements be distributed inside the container.
alignItems	'center', 'flex-start', 'flex-end', 'stretched'	Used to determine how should elements be distributed inside the container along the secondary axis (opposite of flexDirection)

If you want to align the items vertically and centralize them, then you can use the following code.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View, StyleSheet } from 'react-native'

const Home = (props) => {
   return (
      <View style = {styles.container}>
         <View style = {styles.redbox} />
         <View style = {styles.bluebox} />
         <View style = {styles.blackbox} />
      </View>
   )
}
```

```
export default Home

const styles = StyleSheet.create ({
   container: {
      flexDirection: 'column',
      justifyContent: 'center',
      alignItems: 'center',
      backgroundColor: 'grey',
      height: 600
   },

   redbox: {
      width: 100,
      height: 100,
      backgroundColor: 'red'
   },

   bluebox: {
      width: 100,
      height: 100,
      backgroundColor: 'blue'
   },

   blackbox: {
      width: 100,
      height: 100,
      backgroundColor: 'black'
   },
})
```

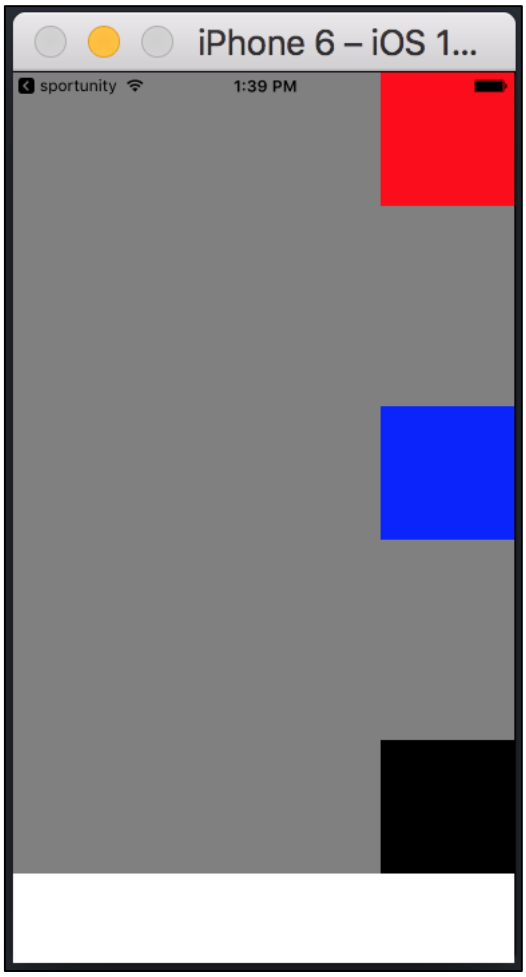


If the items need to be moved to the right side and spaces need to be added between them, then we can use the following code.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { Text, View, StyleSheet } from 'react-native'

const Home = (props) ⇒ {
   return (
      <View style = {styles.container}>
         <View style = {styles.redbox} />
         <View style = {styles.bluebox} />
         <View style = {styles.blackbox} />
      </View>
   )
```

```
}

export default Home

const styles = StyleSheet.create ({
   container: {
      flexDirection: 'column',
      justifyContent: 'space-between',
      alignItems: 'flex-end',
      backgroundColor: 'grey',
      height: 600
   },

   redbox: {
      width: 100,
      height: 100,
      backgroundColor: 'red'
   },

   bluebox: {
      width: 100,
      height: 100,
      backgroundColor: 'blue'
   },

   blackbox: {
      width: 100,
      height: 100,
      backgroundColor: 'black'
   },
})
```



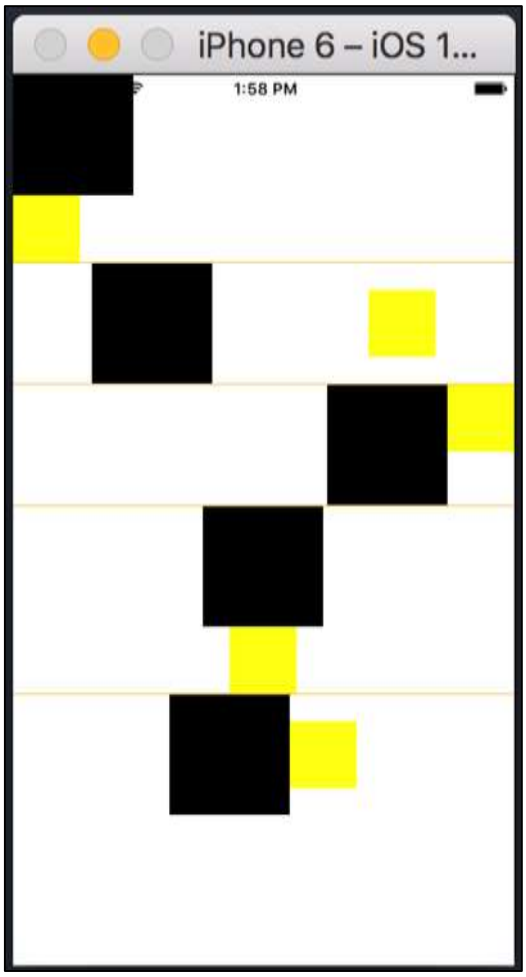
The following example shows how you can style black and yellow boxes using flexbox. Each container uses different properties.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View, Image, StyleSheet } from 'react-native'

const Home = () => {
   return (
      <View>
         <View style = {style.container1}>
            <View style = {style.blackImg}/>
            <View style = {style.yellowImg}/>
      </View>
```

```
      <View style = {style.container2}>
         <View style = {style.blackImg}/>
         <View style = {style.yellowImg}/>
      </View>

      <View style = {style.container3}>
         <View style = {style.blackImg}/>
         <View style = {style.yellowImg}/>
      </View>

      <View style = {style.container4}>
         <View style = {style.blackImg}/>
         <View style = {style.yellowImg}/>
      </View>

      <View style = {style.container5}>
         <View style = {style.blackImg}/>
         <View style = {style.yellowImg}/>
      </View>

   )
}

export default Home

const style = StyleSheet.create ({
   container1: {
      borderBottomWidth: 1,
      borderBottomColor: '#f4c842'
   },

   container2: {
      flexDirection: 'row',
      justifyContent: 'space-around',
      alignItems: 'center',
```

```
      borderBottomWidth: 1,
      borderBottomColor: '#f4c842'
   },

   container3: {
      flexDirection: 'row',
      justifyContent: 'flex-end',
      borderBottomWidth: 1,
      borderBottomColor: '#f4c842'
   },

   container4: {
      alignItems: 'center',
      borderBottomWidth: 1,
      borderBottomColor: '#f4c842'
   },

   container5: {
      flexDirection: 'row',
      justifyContent: 'center',
      alignItems: 'center',
   },

   blackImg: {
      backgroundColor: 'black',
      height: 90,
      width: 90
   },

   yellowImg: {
      backgroundColor: 'yellow',
      height: 50,
      width: 50
   }
})
```



7. React Native – ListView

In this chapter, we will show you how to create a list in React Native. We will import **List** in our **Home** component and show it on screen.

src/components/home/Home.js

```
import React from 'react'
import List from './List.js'

const Home = () => {
   return (
   <List />
   )
}
export default Home
```

To create a list, we will use the **map()** method. This will iterate over an array of items, and render each one.

src/components/home/List.js

```
import React, { Component } from 'react'
import { Text, View, TouchableOpacity, StyleSheet } from 'react-native'

class List extends Component {
   state = {
      names: [
         {
            id: 0,
            name: 'Ben',
         },
         {
            id: 1,
            name: 'Susan',
         },
         {
            id: 2,
```

```
            name: 'Robert',
         },
         {
            id: 3,
            name: 'Mary',
         }
      ]
   }

   alertItemName = (item) => {
      alert(item.name)
   }

   render() {
      return (
         <View>
            {
               this.state.names.map((item, index) => (
                  <TouchableOpacity
                     key = {item.id}
                     style = {styles.container}
                     onPress = {() => this.alertItemName(item)}
                  >
                     <Text style={styles.text}>
                        {item.name}
                     </Text>
                  </TouchableOpacity>
               ))
            }
         </View>
      )
   }
}

export default List
```

```
const styles = StyleSheet.create ({
   container: {
      padding: 10,
      marginTop: 3,
      backgroundColor: '#d9f9b1',
      alignItems: 'center',
   },
   text: {
      color: '#4f603c'
   }
})
```

When we run the app, we will see the list of names.

You can click on each item in the list to trigger an alert with the name.

8. React Native – Text Input

In this chapter, we will show you how to work with **TextInput** elements in React Native.

The Home component will import and render inputs.

src/components/home/Home.js

```
import React from 'react';
import Inputs from './Inputs.js'

const Home = () => {
   return (
      <Inputs />
   )
}

export default Home
```

Inputs

We will define the initial state. After defining the initial state, we will create the **handleEmail** and the **handlePassword** functions. These functions are used for updating state.

The **login()** function will just alert the current value of the state.

We will also add some other properties to text inputs to disable auto capitalisation, remove the bottom border on Android devices and set a placeholder.

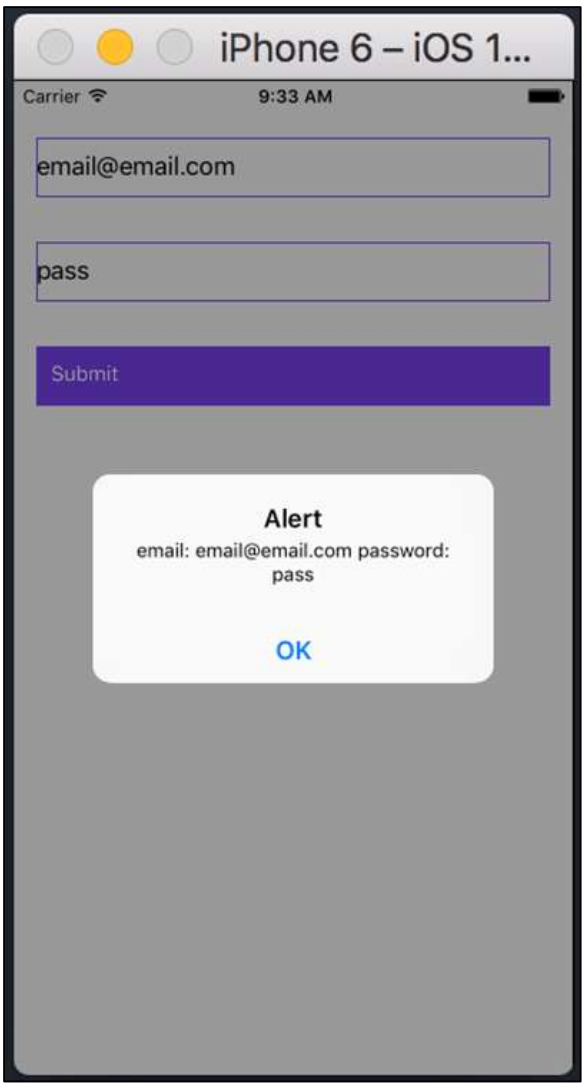
src/components/home/Inputs.js

```
import React, { Component } from 'react'
import { View, Text, TouchableOpacity, TextInput, StyleSheet } from 'react-
native'

class Inputs extends Component {

   state = {
      email: '',
      password: ''
   }
```

```
   handleEmail = (text) ⇒ {
      this.setState({ email: text })
   }

   handlePassword = (text) ⇒ {
      this.setState({ password: text })
   }

   login = (email, pass) ⇒ {
      alert('email: ' + email + ' password: ' + pass)
   }

   render(){
      return (
         <View style = {styles.container}>
            <TextInput style = {styles.input}
               underlineColorAndroid = "transparent"
               placeholder = "Email"
               placeholderTextColor = "#9a73ef"
               autoCapitalize = "none"
               onChangeText = {this.handleEmail}/>

            <TextInput style = {styles.input}
               underlineColorAndroid = "transparent"
               placeholder = "Password"
               placeholderTextColor = "#9a73ef"
               autoCapitalize = "none"
               onChangeText = {this.handlePassword}/>

            <TouchableOpacity
               style = {styles.submitButton}
               onPress = { () ⇒ this.login(this.state.email,
this.state.password)}>
               <Text style = {styles.submitButtonText}>
                  Submit
```

```
               </Text>
            </TouchableOpacity>
         </View>
      )
   }
}

export default Inputs

const styles = StyleSheet.create({
   container: {
      paddingTop: 23
   },

   input: {
      margin: 15,
      height: 40,
      borderColor: '#7a42f4',
      borderWidth: 1
   },

   submitButton: {
      backgroundColor: '#7a42f4',
      padding: 10,
      margin: 15,
      height: 40,
   },

   submitButtonText:{
      color: 'white'
   }
})
```

Whenever we type in one of the input fields, the state will be updated. When we click on the **Submit** button, text from inputs will be shown inside the dialog box.



9. React Native – ScrollView

In this chapter, we will show you how to work with the **ScrollView** element.

We will again create **ScrollViewExample.js** and import it in **Home**.

src/components/home/Home.js

```
import React from 'react'
import ScrollViewExample from './ScrollViewExample.js'

const Home = () => {
   return (
      <ScrollViewExample />
   )
}

export default Home
```

Scrollview will render a list of names. We will create it in state.

src/components/home/ScrollViewExample.js

```
import React, { Component } from 'react';
import { Text, Image, View, StyleSheet, ScrollView } from 'react-native';

class ScrollViewExample extends Component {
   state = {
      names: [
         {'name': 'Ben', 'id': 1},
         {'name': 'Susan', 'id': 2},
         {'name': 'Robert', 'id': 3},
         {'name': 'Mary', 'id': 4},
         {'name': 'Daniel', 'id': 5},
         {'name': 'Laura', 'id': 6},
         {'name': 'John', 'id': 7},
         {'name': 'Debra', 'id': 8},
         {'name': 'Aron', 'id': 9},
```

```
         {'name': 'Ann', 'id': 10},
         {'name': 'Steve', 'id': 11},
         {'name': 'Olivia', 'id': 12}
      ]
   }

   render() {
      return (
         <View>
            <ScrollView>
               {
                  this.state.names.map((item, index) => (
                     <View key = {item.id} style = {styles.item}>
                        <Text>{item.name}</Text>
                     </View>
                  ))
               }
            </ScrollView>
         </View>
      )
   }
}
export default ScrollViewExample
const styles = StyleSheet.create ({
   item: {
      flexDirection: 'row',
      justifyContent: 'space-between',
      alignItems: 'center',
      padding: 30,
      margin: 2,
      borderColor: '#2a4944',
      borderWidth: 1,
      backgroundColor: '#d2f7f1'
   }
})
```

When we run the app, we will see the scrollable list of names.

10. React Native – Images

In this chapter, we will understand how to work with images in React Native.

Adding Image

Let us create a new folder **img** inside the **src** folder. We will add our image (**myImage.png**) inside this folder.

We will show images on the home screen.

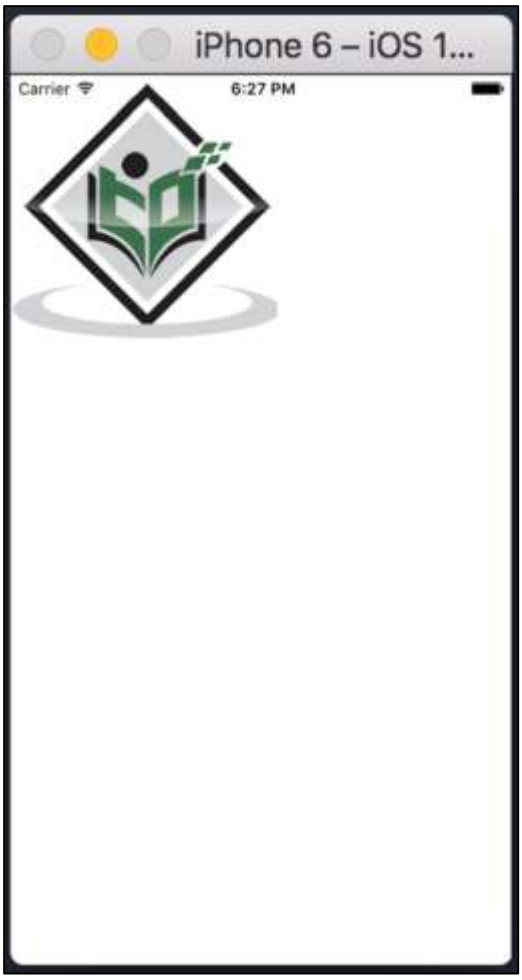
src/components/home/Home.js

```
import React from 'react';
import ImagesExample from './ImagesExample.js'

const Home = () => {
   return (
      <ImagesExample />
   )
}

export default Home
```

Local image can be accessed using the following syntax.

src/components/home/ImagesExample.js

```
import React, { Component } from 'react'
import { Image } from 'react-native'

const Home = () => (
   <Image source = {require('../../img/myImage.png')} />
)

export default Home
```



Screen Density

React Native offers a way to optimize images for different devices using **@2x**, **@3x** suffix. The app will load only the image necessary for particular screen density.

The following will be the names of the image inside the **img** folder.

```
my-image@2x.jpg
my-image@3x.jpg
```

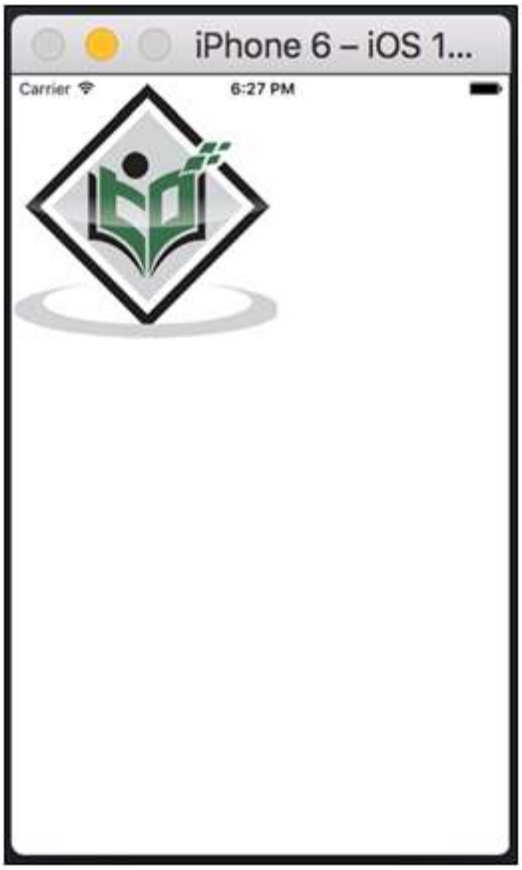
Network Images

When using network images, instead of **require**, we need the **source** property. It is recommended to define the **width** and the **height** for network images.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View, Image } from 'react-native'

const Home = () ⇒ (
   <Image
      source = {{ uri:
'https://pbs.twimg.com/profile_images/486929358120964097/gNLINY67_400x400.png' }}
      style = {{ width: 200, height: 200 }}
   />
)
export default Home
```

It will show the following output:



11. React Native – HTTP

In this chapter, we will show you how to use **fetch** for handling network requests.

src/components/home/Home.js

```
import React from 'react';
import HttpExample from './HttpExample.js'

const Home = () => {
   return (
      <HttpExample />
   )
}

export default Home
```

Using Fetch

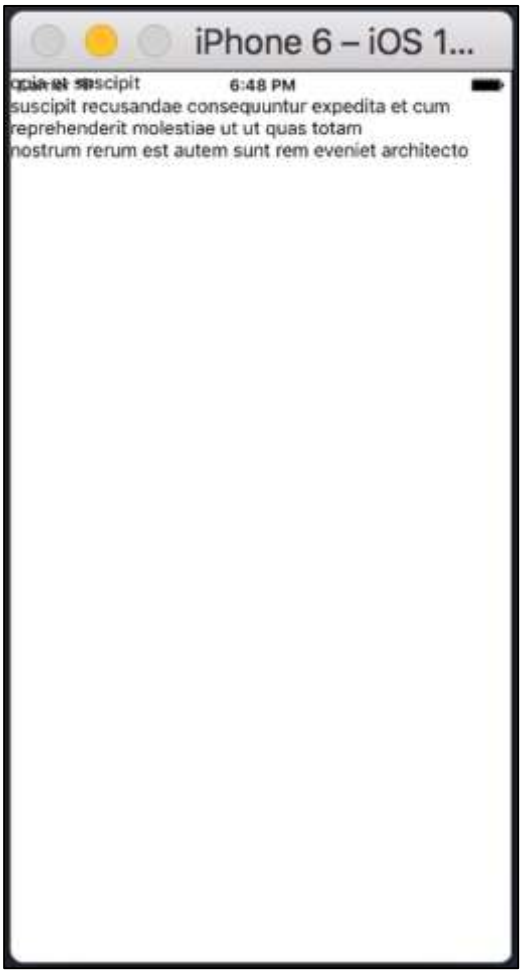
We will use the **componentDidMount** lifecycle method to load the data from server as soon as the component is mounted. This function will send GET request to the server, return JSON data, log output to console and update our state.

src/components/home/HttpExample.js

```
import React, { Component } from 'react'
import { View, Text } from 'react-native'

class HttpExample extends Component {

   state = {
      data: ''
   }

   componentDidMount = () => {
      fetch('https://jsonplaceholder.typicode.com/posts/1', {
         method: 'GET'
      })
```

```
      .then((response) => response.json())
      .then((responseJson) => {
         console.log(responseJson);
         this.setState({
            data: responseJson
         })
      })

      .catch((error) => {
         console.error(error);
      });
   }

   render() {
      return (
         <View>
            <Text>
               {this.state.data.body}
            </Text>
         </View>
      )
   }
}

export default HttpExample
```

If the request is successful, the data will be displayed on screen.



We can also check the console to see the response.

12. React Native – Buttons

In this chapter, we will show you touchable components in react Native. We call them 'touchable' because they offer built in animations and we can use the **onPress** prop for handling touch event.

Facebook offers the **Button** component, which can be used as a generic button. Consider the following example to understand the same.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { Button } from 'react-native'

const Home = () ⇒ {
   const handlePress = () ⇒ false
   return (
      <Button
      onPress = {handlePress}
      title = "Red button!"
      color = "red"
      />
   )
}
export default Home
```

If the default **Button** component does not suit your needs, you can use one of the following components instead.

Touchable Opacity

This element will change the opacity of an element when touched.

src/components/home/Home.js

```
import React from 'react'
import { TouchableOpacity, StyleSheet, View, Text } from 'react-native'

const Home = () ⇒ {
   return (
      <View style = {styles.container}>
```

```
         <TouchableOpacity>
            <Text style = {styles.text}>
               Button
            </Text>
         </TouchableOpacity>
      </View>
   )
}

export default Home

const styles = StyleSheet.create ({
   container: {
      alignItems: 'center',
   },

   text: {
      borderWidth: 1,
      padding: 25,
      borderColor: 'black',
      backgroundColor: 'red'
   }
})
```

Touchable Highlight

When a user presses the element, it will get darker and the underlying color will show through.

src/components/home/Home.js

```
import React from 'react'
import { View, TouchableHighlight, Text, StyleSheet } from 'react-native'

const Home = (props) => {
   return (
      <View style = {styles.container}>
```

```
         <TouchableHighlight>
            <Text style = {styles.text}>
               Button
            </Text>
         </TouchableHighlight>
      </View>
   )
}

export default Home

const styles = StyleSheet.create ({
   container: {
      alignItems: 'center',
   },

   text: {
      borderWidth: 1,
      padding: 25,
      borderColor: 'black',
      backgroundColor: 'red'
   }
})
```

Touchable Native Feedback

This will simulate ink animation when the element is pressed.

src/components/home/Home.js

```
import React from 'react'
import { View, TouchableNativeFeedback, Text, StyleSheet } from 'react-native'

const Home = (props) => {
   return (
      <View style = {styles.container}>
         <TouchableNativeFeedback>
```

```
            <Text style = {styles.text}>
               Button
            </Text>
         </TouchableNativeFeedback>
      </View>
   )
}

export default Home

const styles = StyleSheet.create ({
   container: {
      alignItems: 'center',
   },

   text: {
      borderWidth: 1,
      padding: 25,
      borderColor: 'black',
      backgroundColor: 'red'
   }
})
```

Touchable Without Feedback

This should be used when you want to handle the touch event without any animation. Usually, this component is not used much.

```
<TouchableWithoutFeedback>
   <Text>
      Button
   </Text>
</TouchableWithoutFeedback>
```

13. React Native – Animations

In this chapter, we will show you how to use **LayoutAnimation** in React Native.

Home Component

We will use Home screen like in other chapters. Let us now import the **Animations** component and render it on screen.

src/components/home/Animations.js

```
import React from 'react';
import Animations from './Animations.js'

const Home = () => {
   return (
      <Animations />
   )
}

export default Home
```

Animations Component

We will set **myStyle** as a property of the state. This property is used for styling an element inside **PresentationalAnimationComponent**.

We will also create two functions: **expandElement** and **collapseElement**. These functions will update values from the state. The first one will use the **spring** preset animation while the second one will have the **linear** preset. We will pass these as props too. The **Expand** and the **Collapse** buttons call the **expandElement()** and **collapseElement()** functions.

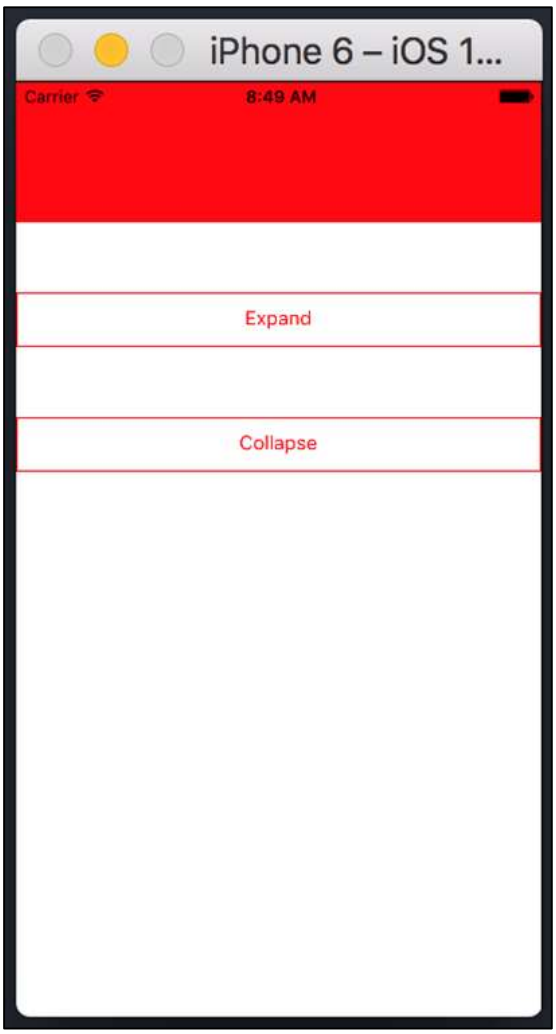
src/components/home/Home

```
import React, { Component } from 'react'
import { View, LayoutAnimation, TouchableOpacity, Text, StyleSheet } from
'react-native'

class Animations extends Component {
```

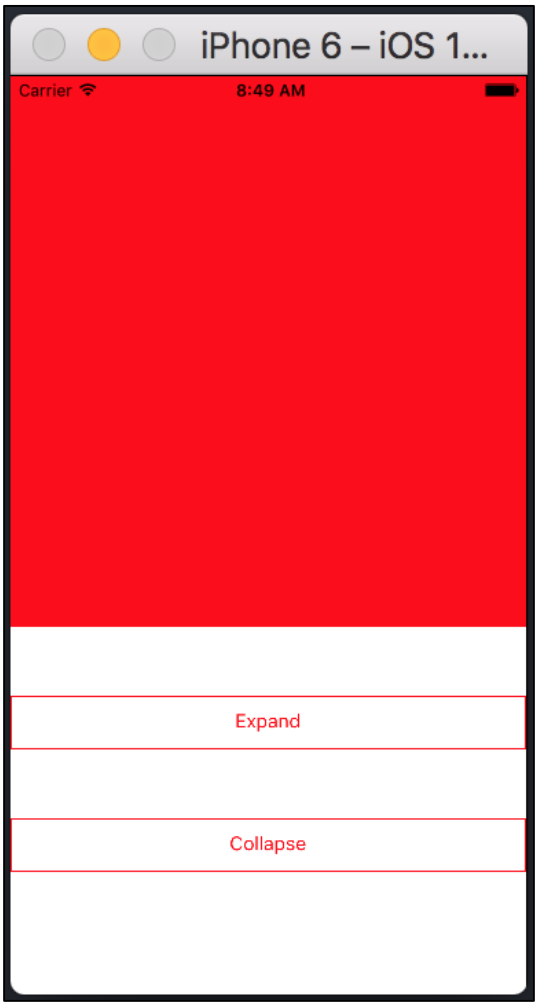
```
state = {
   myStyle: {
      height: 100,
      backgroundColor: 'red'
   }
}

expandElement = () => {
   LayoutAnimation.configureNext(LayoutAnimation.Presets.spring);
   this.setState({
      myStyle: {
         height: 400,
         backgroundColor: 'red'
      }
   })
}

collapseElement = () => {
   LayoutAnimation.configureNext(LayoutAnimation.Presets.linear);
   this.setState({
      myStyle: {
         height: 100,
         backgroundColor: 'red'
      }
   })
}

render() {
   return (
      <View>
         <View>
            <View style = {this.state.myStyle}>
         </View>

         <TouchableOpacity>
```

```
               <Text style = {styles.button} onPress = {this.expandElement}>
                  Expand
               </Text>
            </TouchableOpacity>

            <TouchableOpacity>
               <Text style = {styles.button} onPress = {this.collapseElement}>
                  Collapse
               </Text>
            </TouchableOpacity>
         </View>
      )
   }
}

export default Animations

const styles = StyleSheet.create({
   button: {
      borderWidth: 1,
      borderColor: 'red',
      color: 'red',
      textAlign: 'center',
      marginTop: 50,
      padding: 10
   }
})

export default Home
```

You can test the app and see the animations we created. The initial setup will look like this –



We can press the **Expand** button to see an animation.



Example

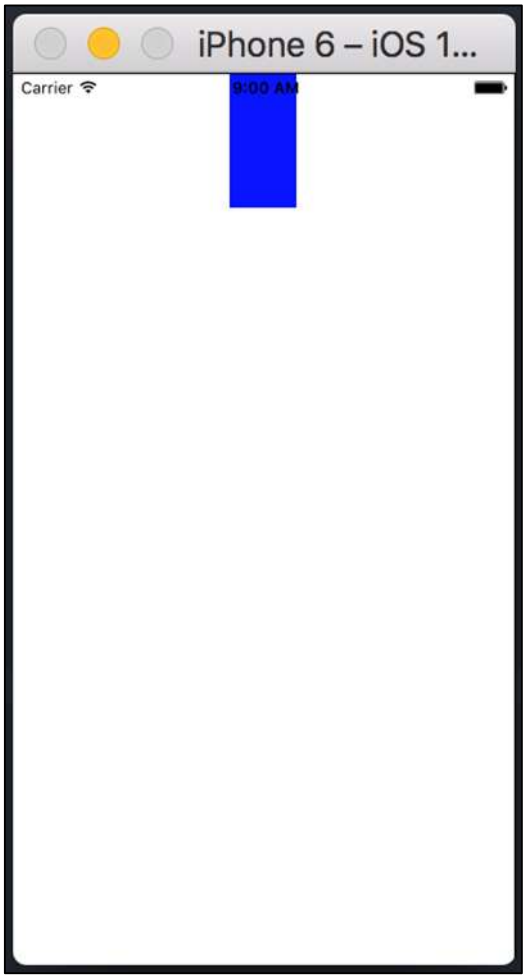
In this example, we will dynamically change the width and the height of the box. Since the **Home** component will be the same, we will only change the **Animations** component.

src/components/home/Animations

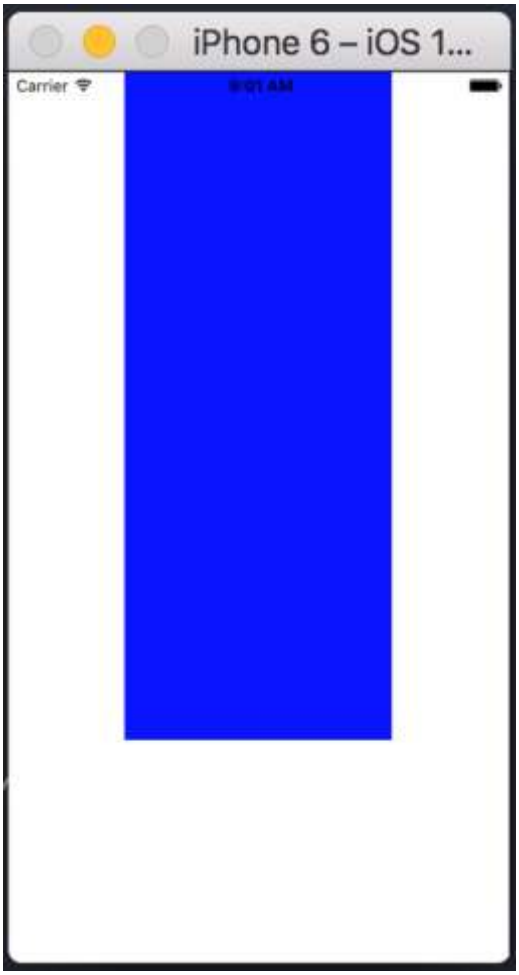
```
import React, { Component } from 'react'
import { View, StyleSheet, Animated, TouchableOpacity } from 'react-native'

class Animations extends Component {
   componentWillMount = () => {
      this.animatedWidth = new Animated.Value(50)
      this.animatedHeight = new Animated.Value(100)
   }
```

```
   animatedBox = () => {
      Animated.timing(this.animatedWidth, {
         toValue: 200,
         duration: 1000
      }).start()

      Animated.timing(this.animatedHeight, {
         toValue: 500,
         duration: 500
      }).start()
   }

   render() {
      const animatedStyle = { width: this.animatedWidth, height:
this.animatedHeight }
      return (
         <TouchableOpacity style = {styles.container} onPress =
{this.animatedBox}>
            <Animated.View style = {[styles.box, animatedStyle]}/>
         </TouchableOpacity>
      )
   }
}
export default Animations
const styles = StyleSheet.create({
   container: {
      justifyContent: 'center',
      alignItems: 'center'
   },

   box: {
      backgroundColor: 'blue',
      width: 50,
      height: 100
   }
})
```

The initial screen will show a small blue box.



To trigger animation, we need to press it.



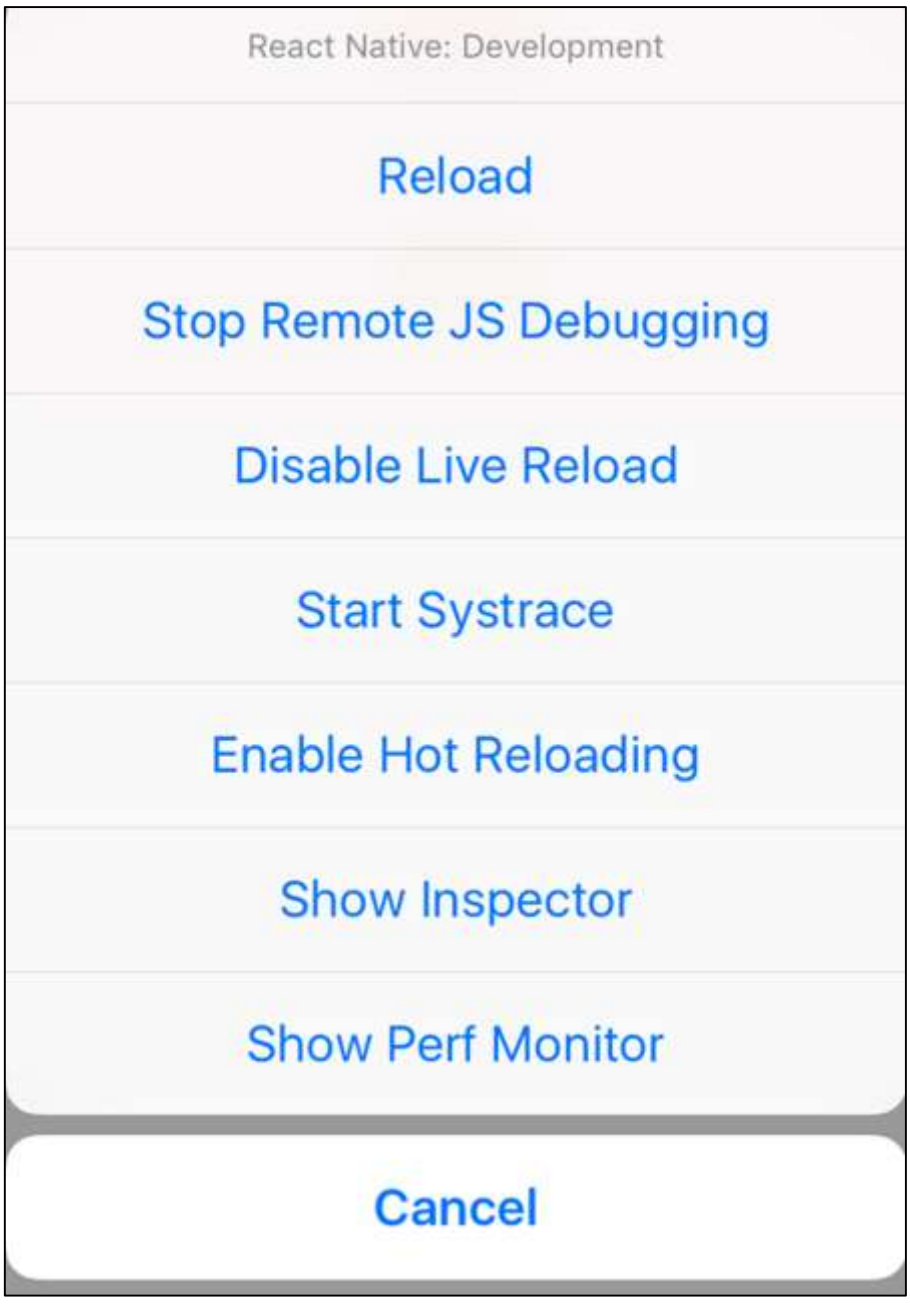
14. React Native – Debugging

React native offers a couple of methods that help in debugging your code.

In App Developer Menu

You can open the developer menu on the IOS simulator by pressing **command + D**.

On Android emulator, you need to press **command + M**.



- **Reload** – Used for reloading simulator. You can use shortcut **command + R**
- **Debug JS Remotely** – Used for activating debugging inside browser developer console.
- **Enable Live Reload** – Used for enabling live reloading whenever your code is saved. The debugger will open at **localhost:8081/debugger-ui**.
- **Start Systrace** – Used for starting Android marker based profiling tool.
- **Show Inspector** – Used for opening inspector where you can find info about your components. You can use shortcut **command + I**
- **Show Perf Monitor** – Perf monitor is used for keeping track of the performance of your app.

15. React Native – Router

In this chapter, we will understand navigation in React Native.

Step 1 – Install Router

To begin with, we need to install the **Router**. We will use the React Native Router Flux in this chapter. You can run the following command in terminal, from the project folder.

```
npm i react-native-router-flux --save
```

Step 2

Since we want our router to handle the entire application, we will add it in **index.ios.js**. For Android, you can do the same in **index.android.js**.

Index.ios.js && index.android.js

```
import React, { Component } from 'react';
import { AppRegistry, View } from 'react-native';
import Routes from './src/components/routes/Routes.js'

class reactTutorialApp extends Component {
   render() {
      return (
         <Routes />
      )
   }
}
export default reactTutorialApp
AppRegistry.registerComponent('reactTutorialApp', () ⇒ reactTutorialApp)
```

Step 3 – Add Router

Now we will create the **Routes** component inside the components folder. It will return **Router** with several scenes. Each scene will need **key**, **component** and **title**. Router uses the key property to switch between scenes, component will be rendered on screen and the title will be shown in the navigation bar. We can also set the **initial** property to the scene that is to be rendered initially.

src/components/routes/Routes.js

```
import React from 'react'
import { Router, Scene } from 'react-native-router-flux'
import Home from '../home/Home.js'
import About from '../about/About.js'

const Routes = () => (
   <Router>
      <Scene key = "root">
         <Scene key = "home" component = {Home} title = "Home" initial = {true} />
         <Scene key = "about" component = {About} title = "About" />
      </Scene>
   </Router>
)
export default Routes
```

Step 4 – Create components

We already have the **Home** component from previous chapters; now, we need to add the **About** component. We will add the **goToAbout** and the **goToHome** functions to switch between scenes.

src/components/home/Home.js

```
import React from 'react'
import { TouchableOpacity, Text } from 'react-native';
import { Actions } from 'react-native-router-flux';
const Home = () => {
   const goToAbout = () => {
      Actions.about()
   }
   return (
      <TouchableOpacity style = {{ margin: 128 }} onPress = {goToAbout}>
         <Text>This is HOME!</Text>
      </TouchableOpacity>
   )
}
```

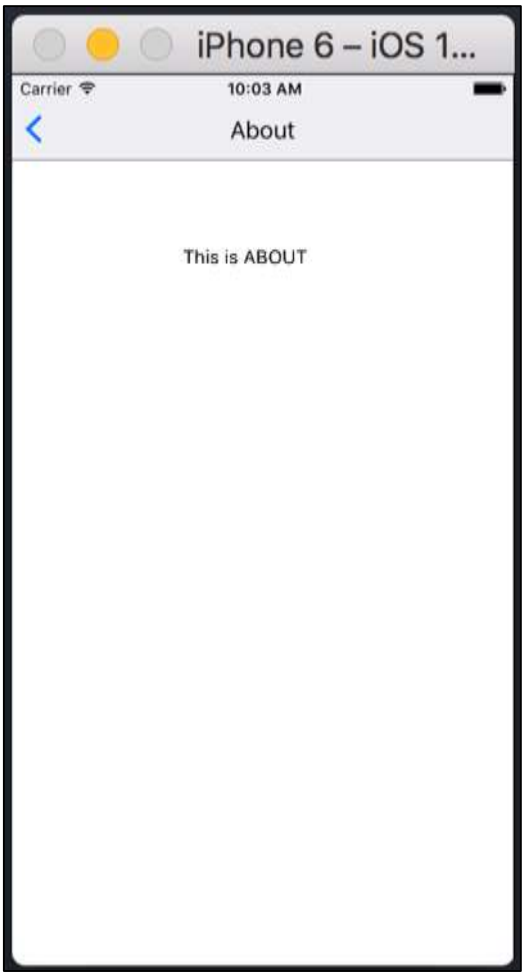
```
export default Home
```

src/components/home/About.js

```
import React from 'react'
import { TouchableOpacity, Text } from 'react-native'
import { Actions } from 'react-native-router-flux'

const About = () ⇒ {
   const goToHome = () ⇒ {
      Actions.home()
   }
   return (
      <TouchableOpacity style = {{ margin: 128 }} onPress = {goToHome}>
         <Text>This is ABOUT</Text>
      </TouchableOpacity>
   )
}
export default About
```

The app will render the initial **Home** screen.

You can press the button to switch to the about screen. The Back arrow will appear; you can use it to get back to the previous screen.



16. React Native – Running IOS

If you want to test your app in the IOS simulator, all you need is to open the root folder of your app in terminal and run –

```
react-native run-ios
```

The above command will start the simulator and run the app.

We can also specify the device we want to use.

```
react-native run-ios --simulator "iPhone 5s
```

After you open the app in simulator, you can press **command + D** on IOS to open the developers menu. You can check more about this in our **debugging** chapter.

You can also reload the IOS simulator by pressing **command + R**.

17. React Native – Running Android

We can run the React Native app on Android platform by running the following code in the terminal.

```
react-native run-android
```

Before you can run your app on Android device, you need to enable **USB Debugging** inside the **Developer Options**.

When **USB Debugging** is enabled, you can plug in your device and run the code snippet given above.

The Native Android emulator is slow. We recommend downloading Genymotion for testing your app.

The developer menu can be accessed by pressing **command + M**.

Components and APIs

18. React Native – View

View is the most common element in React Native. You can consider it as an equivalent of the **div** element used in web development.

Use Cases

Let us now see a few common use cases.

- When you need to wrap your elements inside the container, you can use **View** as a container element.
- When you want to nest more elements inside the parent element, both parent and child can be **View**. It can have as many children as you want.
- When you want to style different elements, you can place them inside **View** since it supports **style** property, **flexbox** etc.
- **View** also supports synthetic touch events, which can be useful for different purposes.

We already used **View** in our previous chapters and we will use it in almost all subsequent chapters as well. The **View** can be assumed as a default element in React Native. In example given below, we will nest two Views and a text.

src/components/home/Home.js

```
import React, { Component } from 'react'
import { View, Text } from 'react-native'

const Home = () => {
   return (
      <View>
         <View>
            <Text>This is my text</Text>
         </View>
      </View>
   )
}

export default Home
```

19. React Native – WebView

In this chapter, we will learn how to use WebView. It is used when you want to render web page to your mobile app inline.

Using WebView

The **HomeContainer** will be a container component.

src/components/home/HomeContainer.js

```
import React, { Component } from 'react'
import WebViewExample from './WebViewExample'

const Home = () => {
   return (
      <WebViewExample/>
   )
}

export default Home;
```

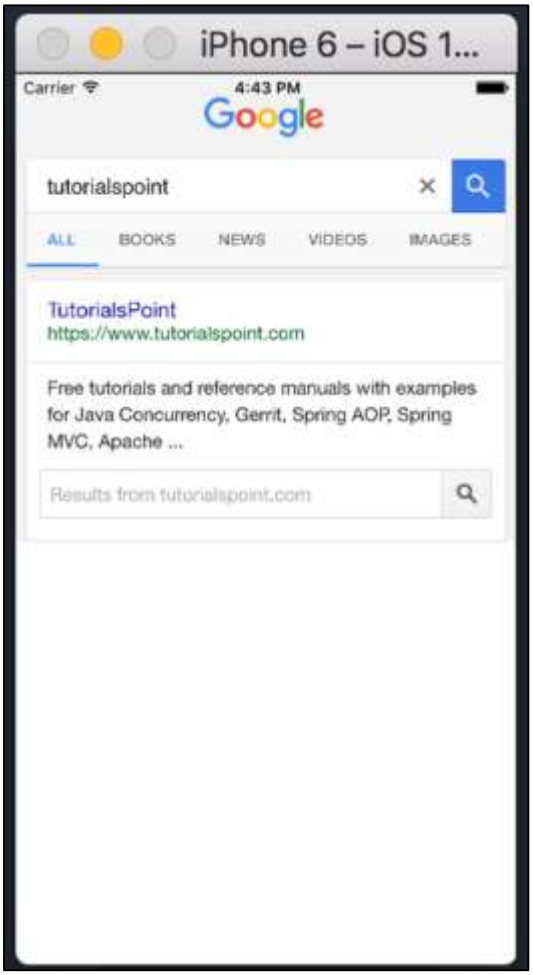
Let us create a new file called **WebViewExample.js** inside the **src/components/home** folder.

src/components/home/WebViewExample.js

```
import React, { Component } from 'react'

import {
   View,
   WebView,
   StyleSheet
} from 'react-native'

const WebViewExample = () => {
   return (
      <View style = {styles.container}>
         <WebView
```

```
            source = {{ uri:
'https://www.google.com/?gws_rd=cr,ssl&ei=SICcV9_EFqqk6ASA3ZaABA#q=tutorialspoi
nt' }}
         />
      </View>
   )
}
export default WebViewExample;
const styles = StyleSheet.create({
   container: {
      height: 350,
   }
})
```

The above program will generate the following output.



20. React Native – Modal

In this chapter, we will show you how to use the modal component in React Native.

Let us now create a new file: **src/components/home/ModalExample.js**

We will put logic inside **ModalExample**. We can update the initial state by running the **toggleModal**.

After updating the initial state by running the **toggleModal**, we will set the **visible** property to our modal. This prop will be updated when the state changes.

The **onRequestClose** is required for Android devices.

src/components/home/Home.js

```
import React from 'react'
import ModalExample from './ModalExample.js'

const Home = () => {
   return (
      <ModalExample />
   )
}
export default Home
```

src/components/home/ModalExample.js

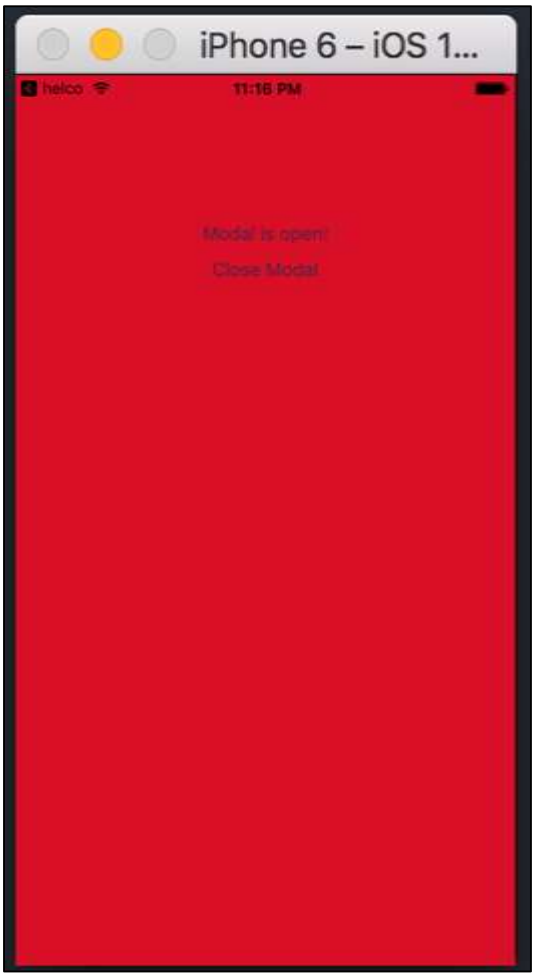
```
import React, { Component } from 'react';

import {
   Modal,
   Text,
   TouchableHighlight,
   View,
   StyleSheet
} from 'react-native'

class ModalExample extends Component {
   state = {
      modalVisible: false,
```

```
   }

   toggleModal(visible) {
      this.setState({ modalVisible: visible });
   }

   render() {
      return (
         <View style = {styles.container}>

            <Modal animationType = {"slide"} transparent = {false}
               visible = {this.state.modalVisible}
               onRequestClose = {() ⇒ { console.log("Modal has been closed.")
} }>
               <View style = {styles.modal}>
                  <Text style = {styles.text}>Modal is open!</Text>
                  <TouchableHighlight onPress={() ⇒
{this.toggleModal(!this.state.modalVisible)}}>
                     <Text style = {styles.text}>Close Modal</Text>
                  </TouchableHighlight>
               </View>
            </Modal>

            <TouchableHighlight onPress = {() ⇒ {this.toggleModal(true)}}>
               <Text style = {styles.text}>Open Modal</Text>
            </TouchableHighlight>
         </View>
      )
   }
}

export default ModalExample
const styles = StyleSheet.create ({
   container: {
      alignItems: 'center',
      backgroundColor: '#ede3f2',
```

```
      padding: 100
   },
   modal: {
      flex: 1,
      alignItems: 'center',
      backgroundColor: '#f7021a',
      padding: 100
   },
   text: {
      color: '#3f2949',
      marginTop: 10
   }
})
```

Our starting screen will look like this –

If we click the button, the modal will open.



21. React Native – ActivityIndicator

In this chapter we will show you how to use the activity indicator in React Native.

Step 1 – Home

Home component will be used to import and show our **ActivityIndicator**.

src/components/home/Home.js

```
import React from 'react'
import ActivityIndicatorExample from './ActivityIndicatorExample.js'

const Home = () => {
   return (
      <ActivityIndicatorExample />
   )
}

export default Home
```

Step 2 – ActivityIndicatorExample

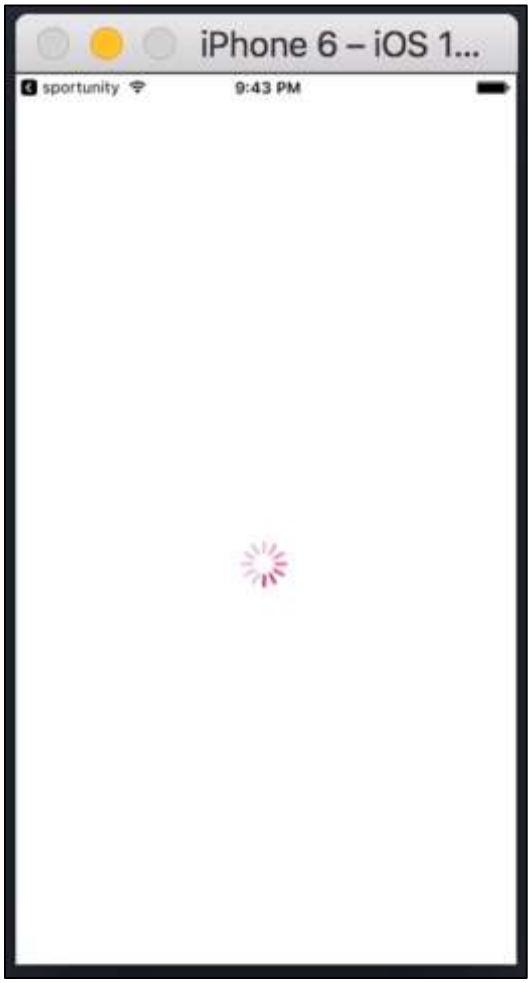
Animating property is a Boolean which is used for showing the activity indicator. The latter closes six seconds after the component is mounted. This is done using the **closeActivityIndicator()** function.

src/components/home/ActivityIndicatorExample.js

```
import React, { Component } from 'react';
import { ActivityIndicator, View, Text, TouchableOpacity, StyleSheet } from
'react-native';

class ActivityIndicatorExample extends Component {

   state = { animating: true }

   closeActivityIndicator = () => setTimeout(() => this.setState({ animating:
false }), 6000)
```

```
   componentDidMount = () ⇒ this.closeActivityIndicator()

   render() {
      const animating = this.state.animating
      return (
         <View style = {styles.container}>
            <ActivityIndicator
               animating = {animating}
               color = '#bc2b78'
               size = "large"
               style = {styles.activityIndicator}
            />
         </View>
      )
   }
}

export default ActivityIndicatorExample

const styles = StyleSheet.create ({
   container: {
      flex: 1,
      justifyContent: 'center',
      alignItems: 'center',
      marginTop: 70
   },

   activityIndicator: {
      flex: 1,
      justifyContent: 'center',
      alignItems: 'center',
      height: 80
   }
})
```

When we run the app, we will see the loader on screen. It will disappear after six seconds.



22. React Native – Picker

In this chapter, we will create simple Picker with two available options.

Step 1 – Create File

Here, the **src/components/home/Home.js** folder will be used as a presentational component.

src/components/home/Home.js

```
import React, { Component } from 'react'
import PickerExample from './PickerExample.js'

const Home = () => {
   return (
      <PickerExample />
   )
}
export default Home
```

Step 2 – Logic

this.state.user is used for picker control.

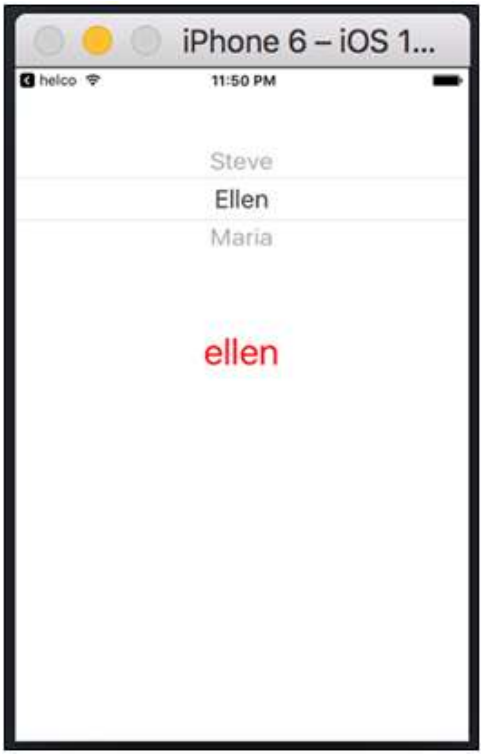
The **updateUser** function will be triggered when a user is picked.

src/components/home/PickerExample.js

```
import React, { Component } from 'react';
import { View, Text, Picker, StyleSheet } from 'react-native'

class PickerExample extends Component {
   state = {user: ''}
   updateUser = (user) => {
      this.setState({ user: user })
   }
   render() {
      return (
         <View>
```

```
            <Picker selectedValue = {this.state.user} onValueChange =
{this.updateUser}>
               <Picker.Item label = "Steve" value = "steve" />
               <Picker.Item label = "Ellen" value = "ellen" />
               <Picker.Item label = "Maria" value = "maria" />
            </Picker>
            <Text style = {styles.text}>{this.state.user}</Text>
         </View>
      )
   }
}
export default PickerExample
const styles = StyleSheet.create({
   text: {
      fontSize: 30,
      alignSelf: 'center',
      color: 'red'
   }
})
```

It will show the following output:



23. React Native – Status Bar

In this chapter, we will show you how to control the status bar appearance in React Native.

The Status bar is easy to use and all you need to do is set properties to change it.

The **hidden** property can be used to hide the status bar. In our example it is set to **false**. This is default value.

The **barStyle** can have three values – **dark-content**, **light-content** and **default**.

This component has several other properties that can be used. Some of them are Android or IOS specific. You can check it in official documentation.

src/components/home/Home.js

```
import React, { Component } from 'react';
import { StatusBar } from 'react-native'

const Home = () => {
   return (
      <StatusBar barStyle = "dark-content" hidden = {false}/>
   )
}
export default Home
```

If we run the app, the status bar will be visible and content will have dark color.

24. React Native – Switch

In this chapter, we will explain the **Switch** component in a couple of steps.

Step 1 – Create File

We will use the **HomeContainer** component for logic, but we need to create the presentational component.

Let us now create a new file: **src/components/home/SwitchExample.js**.

Step 2 – Logic

We are passing value from the **state** and functions for toggling switch items to **SwitchExample** component. Toggle functions will be used for updating the state.

src/component/home/HomeContainer.js

Example

```
import React, { Component } from 'react'
import {
   View
} from 'react-native'
import SwitchExample from './SwitchExample'

export default class HomeContainer extends Component {

   constructor() {
      super();
      this.state = {
         switch1Value: false,
         switch2Value: false,
      }
   }
   toggleSwitch1 = (value) => {
      this.setState({switch1Value: value})
      console.log('Switch 1 is:  ' + value)
   }
   toggleSwitch2 = (value) => {
```

```
      this.setState({switch2Value: value})
      console.log('Switch 2 is:  ' + value)
   }

   render() {
      return (
         <View>
            <SwitchExample
               toggleSwitch1 = {this.toggleSwitch1}
               toggleSwitch2 = {this.toggleSwitch2}
               switch1Value = {this.state.switch1Value}
               switch2Value = {this.state.switch2Value}/>
         </View>
      );
   }
}
```

Step 3 – Presentation

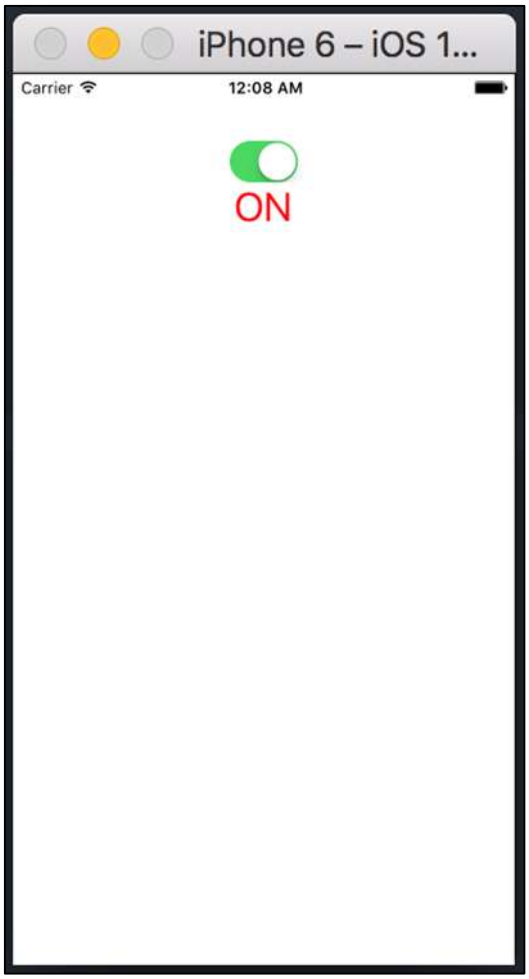
Switch component takes two props. The **onValueChange** prop will trigger our toggle functions after a user presses the switch. The **value** prop is bound to the state of the **HomeContainer** component.

Example

```
import React, { Component } from 'react'
import {
   View,
   Switch,
   StyleSheet
} from 'react-native'

export default SwitchExample = (props) => {
   return (
      <View style = {styles.container}>
         <Switch
            onValueChange = {props.toggleSwitch1}
            value = {props.switch1Value}/>
```

```
         <Switch
            onValueChange = {props.toggleSwitch2}
            value = {props.switch2Value}/>
      </View>
   )
}

const styles = StyleSheet.create ({
   container: {
      flex: 1,
      alignItems: 'center',
      marginTop: 100
   }
})
```

If we press the switch, the state will be updated. You can check values in the console.



25. React Native – Text

In this chapter, we will talk about **Text** component in React Native.

This component can be nested and it can inherit properties from parent to child. This can be useful in many ways. We will show you example of capitalizing the first letter, styling words or parts of the text, etc.

Step 1 – Create File

The file we are going to create is **src/components/home/TextExample.js**.

Step 2 – Home

In this step, we will just create a simple container.

src/components/home/Home.js

```
import React, { Component } from 'react'
import TextExample from './TextExample'

const Home = () => {
   return (
      <TextExample/>
   )
}
export default Home
```

Step 3 – Text

In this step, we will use the inheritance pattern. **styles.text** will be applied to all **Text** components.

You can also notice how we set other styling properties to some parts of the text. It is important to know that all child elements have parent styles passed to them.

src/components/home/TextExample.js

```
import React, { Component } from 'react';
import { View, Text, Image, StyleSheet } from 'react-native'

const TextExample = () => {
   return (
```

```
      <View style = {styles.container}>
         <Text style = {styles.text}>
            <Text style = {styles.capitalLetter}>
               L
            </Text>

            <Text>
               orem ipsum dolor sit amet, sed do eiusmod.
            </Text>

            <Text>
               Ut enim ad  <Text style = {styles.wordBold}>minim </Text>
veniam, quis aliquip ex ea commodo consequat.
            </Text>

            <Text style = {styles.italicText}>
               Duis aute irure dolor in reprehenderit in voluptate velit esse cillum.
            </Text>

            <Text style = {styles.textShadow}>
               Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia
               deserunt mollit anim id est laborum.
            </Text>
         </Text>
      </View>
   )
}

export default TextExample
const styles = StyleSheet.create ({
   container: {
      alignItems: 'center',
      marginTop: 100,
      padding: 20
   },
```

```
   text: {
      color: '#41cdf4',
   },

   capitalLetter: {
      color: 'red',
      fontSize: 20
   },

   wordBold: {
      fontWeight: 'bold',
      color: 'black'
   },

   italicText: {
      color: '#37859b',
      fontStyle: 'italic'
   },

   textShadow: {
      textShadowColor: 'red',
      textShadowOffset: { width: 2, height: 2 },
      textShadowRadius : 5
   }
})
```

You will receive the following output –

26. React Native – Alert

In this chapter, we will understand how to create custom **Alert** component.

Step 1 – Home

src/components/home/Home.js

```
import React from 'react'
import AlertExample from './AlertExample.js'

const Home = () => {
   return (
      <AlertExample />
   )
}
export default Home
```

Step 2 – AlertExample.js

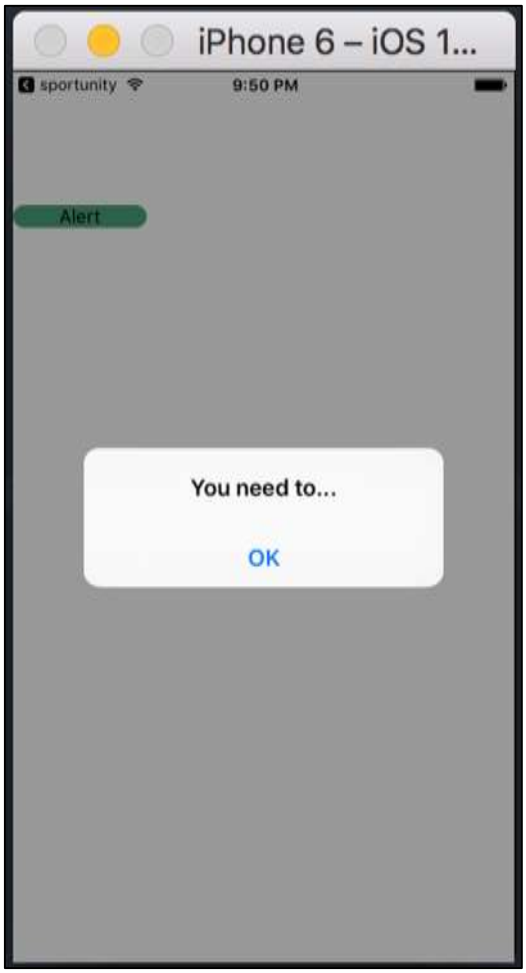
We will create a button for triggering the **showAlert** function.

src/components/home/AlertExample.js

```
import React from 'react'
import { Alert, Text, TouchableOpacity, StyleSheet } from 'react-native'

const AlertExample = () => {

   const showAlert = () => {
      Alert.alert(
         'You need to...'
      )
   }

   return (
      <TouchableOpacity onPress = {showAlert} style = {styles.button}>
         <Text>Alert</Text>
```

```
      </TouchableOpacity>
   )
}
export default AlertExample
const styles = StyleSheet.create ({
   button: {
      backgroundColor: '#4ba37b',
      width: 100,
      borderRadius: 50,
      alignItems: 'center',
      marginTop: 100
   }
})
```

When you click the button, you will see the following –



27. React Native – Geolocation

In this chapter, we will show you how to use **Geolocation**.

Step 1 – Home

src/components/home/Home.js

```
import React from 'react'
import GeolocationExample from './GeolocationExample.js'

const Home = () => {
   return (
      <GeolocationExample />
   )
}

export default Home
```

Step 2 – Geolocation

We will start by setting up the initial state for that will hold the initial and the last position.

Now, we need to get current position of the device when a component is mounted using the **navigator.geolocation.getCurrentPosition**. We will stringify the response so we can update the state.

navigator.geolocation.watchPosition is used for tracking the users' position. We also clear the watchers in this step.

src/components/home/AsyncStorageExample.js

```
import React, { Component } from 'react'
import { View, Text, Switch, StyleSheet} from 'react-native'

class SwichExample extends Component {
   state = {
      initialPosition: 'unknown',
      lastPosition: 'unknown',
   }
```

```
watchID: ?number = null;

componentDidMount = () ⇒ {
   navigator.geolocation.getCurrentPosition(
      (position) ⇒ {
         const initialPosition = JSON.stringify(position);
         this.setState({ initialPosition });
      },
      (error) ⇒ alert(error.message),
      { enableHighAccuracy: true, timeout: 20000, maximumAge: 1000 }
   );

   this.watchID = navigator.geolocation.watchPosition((position) ⇒ {
      const lastPosition = JSON.stringify(position);
      this.setState({ lastPosition });
   });
}

componentWillUnmount = () ⇒ {
   navigator.geolocation.clearWatch(this.watchID);
}

render() {
   return (
      <View style = {styles.container}>
         <Text style = {styles.boldText}>
            Initial position:
         </Text>

         <Text>
            {this.state.initialPosition}
         </Text>

         <Text style = {styles.boldText}>
            Current position:
```

```
            </Text>

            <Text>
               {this.state.lastPosition}
            </Text>
         </View>
      )
   }
}
export default SwichExample

const styles = StyleSheet.create ({
   container: {
      flex: 1,
      alignItems: 'center',
      marginTop: 50
   },

   boldText: {
      fontSize: 30,
      color: 'red',
   }
})
```

When we run the app, we can update the text by typing into the input field.

28. React Native – AsyncStorage

In this chapter, we will show you how to persist your data using **AsyncStorage**.

Step 1 – Presentation

In this step, we will create the **src/components/home/Home.js** file.

```
import React from 'react'
import AsyncStorageExample from './AsyncStorageExample.js'

const Home = () => {
   return (
      <AsyncStorageExample />
   )
}
export default Home
```

Step 2 – Logic

Name from the initial state is empty string. We will update it from persistent storage when the component is mounted.

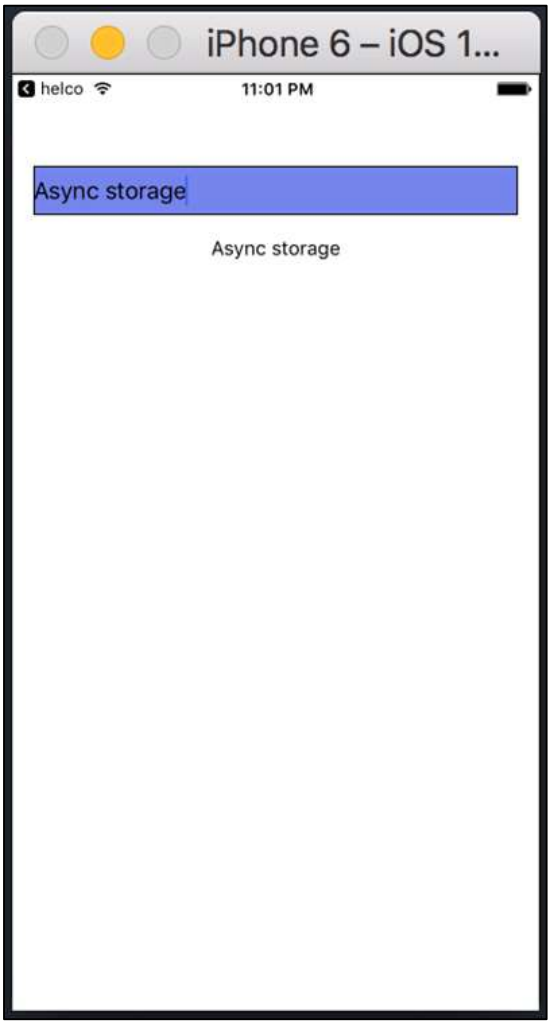
setName will take the text from our input field, save it using **AsyncStorage** and update the state.

src/components/home/AsyncStorageExample.js

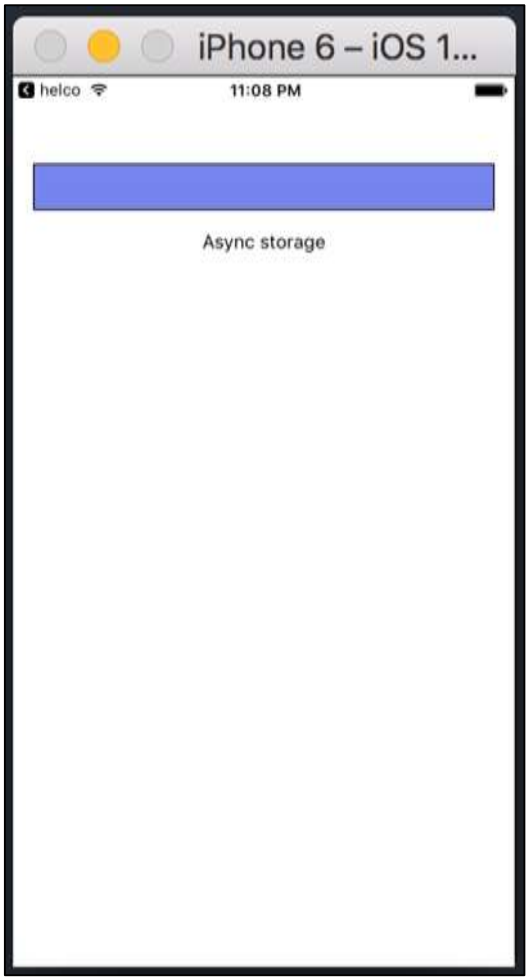
```
import React, { Component } from 'react'
import { AsyncStorage, Text, View, TextInput, StyleSheet } from 'react-native'

class AsyncStorageExample extends Component {

   state = {
      'name': ''
   }

   componentDidMount = () => AsyncStorage.getItem('name').then((value) =>
this.setState({ 'name': value }))
```

```
   setName = (value) ⇒ {
      AsyncStorage.setItem('name', value);
      this.setState({ 'name': value });
   }

   render() {
      return (
         <View style = {styles.container}>
            <TextInput style = {styles.textInput} autoCapitalize = 'none'
onChangeText = {this.setName}/>
            <Text>
               {this.state.name}
            </Text>
         </View>
      )
   }
}

export default AsyncStorageExample

const styles = StyleSheet.create ({
   container: {
      flex: 1,
      alignItems: 'center',
      marginTop: 50
   },

   textInput: {
      margin: 15,
      height: 35,
      borderWidth: 1,
      backgroundColor: '#7685ed'
   }
})
```

When we run the app, we can update the text by typing into the input field.



To check if the data is persistent, we can just reload the simulator. The text will still be visible.



29. React Native – CameraRoll

In this chapter, we will show you how to use **Camera**.

Step 1 – Home

In this step, we will create the **src/components/home/Home.js** file.

src/components/home/Home.js

```
import React from 'react'
import CameraExample from './CameraExample.js'

const Home = () ⇒ {
   return (
      <CameraExample />
   )
}

export default Home
```

Step 2 – Install Camera

The Camera module we want to use in this example is external so we need to install it first. We can do it from the terminal.

```
npm i react-native-camera@0.6
```

Step 2 – Permissions

If you use IOS 10, you need to add permissions in **ios/reactTutorialApp/Info.plist**.

```
<key>NSCameraUsageDescription</key>
<string>Your message to user when the camera is accessed for the first
time</string>
<key>NSPhotoLibraryUsageDescription</key>
<string>Your message to user when the photo library is accessed for the first
time</string>
```

Step 3 - Camera

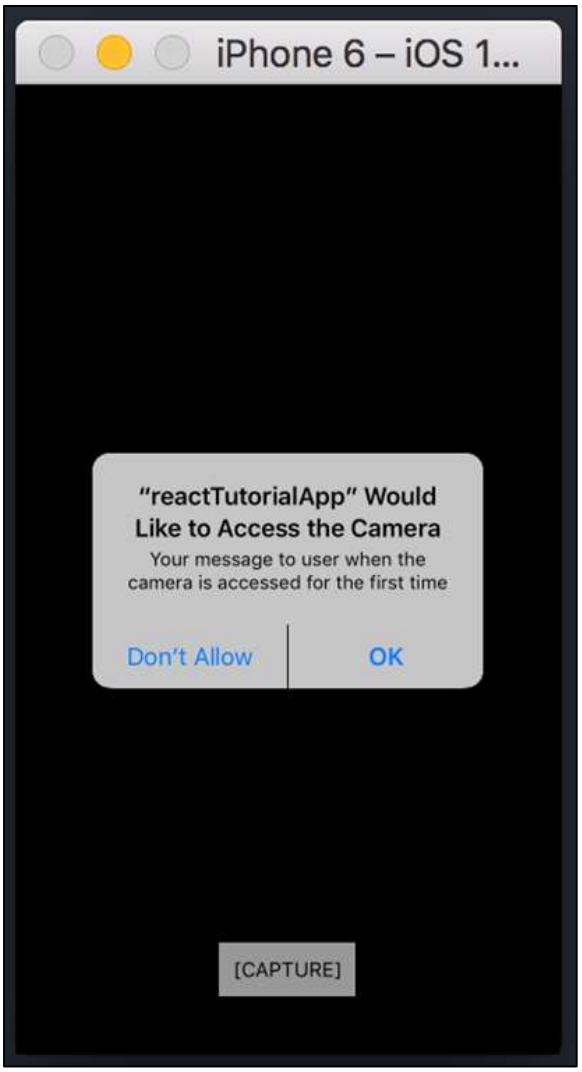
takePicture method will return a promise and path of the picture.

src/components/home/AsyncStorageExample.js

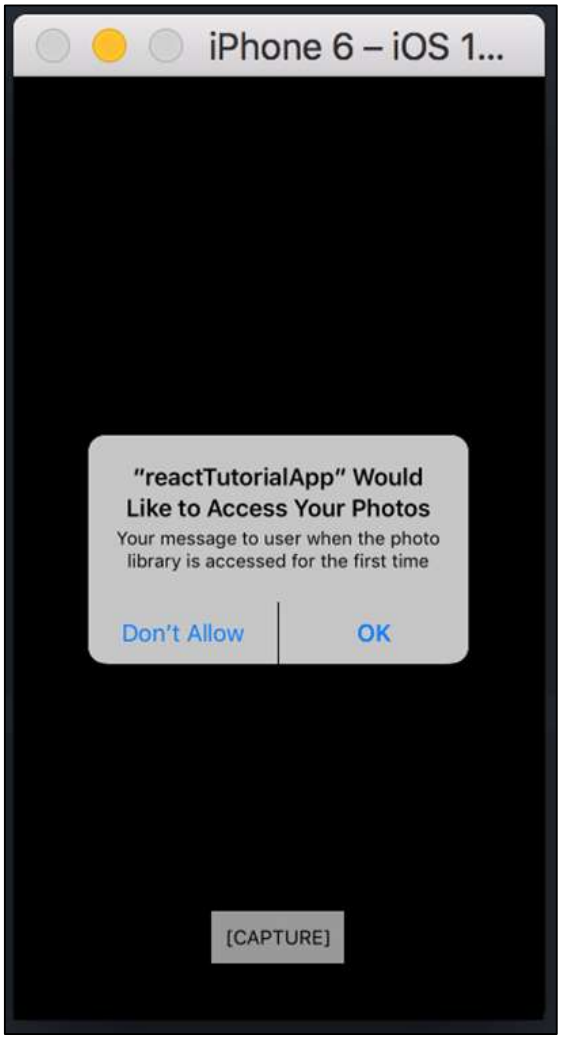
```
import React, { Component } from 'react';

import {
   StyleSheet,
   Text,
   View
} from 'react-native';

import Camera from 'react-native-camera';
class Inputs extends Component {
   takePicture = () ⇒ {
      const options = {};
      this.camera.capture({ metadata: options })
      .then((data) ⇒ console.log(data))
      .catch(err ⇒ console.error(err));
   }

   render() {
      return (
         <View style = {styles.container}>
            <Camera
               ref = {(cam) ⇒ {
                  this.camera = cam;
               }}
               style = {styles.preview}
               aspect = {Camera.constants.Aspect.fill}>
            </Camera>

            <Text style = {styles.capture} onPress =
{this.takePicture}>CAPTURE</Text>
         </View>
      );
```

```
   }
}

export default Inputs

const styles = StyleSheet.create({
   container: {
      flex: 1,
   },

   preview: {
      flex: 1,
      justifyContent: 'flex-end',
      alignItems: 'center'
   },

   capture: {
      fontSize: 30,
      color: 'red',
      alignSelf: 'center',
   }
});
```

When the app is run, it seeks permission as shown in the following screenshot.



This is how the photo library permission will look like -



NOTE – To be able to test the Camera on IOS, you must use mobile device since it won't work on a simulator.