

React, Redux & React Native Workshop Overview

Overview

React is a JavaScript library for building user interfaces. It is an open source library and is developed by Facebook. It can be used to create both web and mobile apps. React apps are fast, flexible, modular and scalable. React has a robust developer community that's rapidly growing.

Redux is a JavaScript library used to manage an application's front-end state. As single-page apps become more complex, the need for proper state management has become more important than ever. The main benefits of using Redux come in when your app involves shared state. It enables two or more components to share same piece(s) of application state. Redux not only allows for an organized way to store data, it also gives us the ability to quickly obtain that data anywhere within the app.

React Native is an open-source mobile application framework created by Facebook. It is used to develop applications for Android, iOS, Web and Windows by enabling developers to use React along with native platform capabilities.

Participants' Profile

For this course, you need to have experience with building front-end web applications with:

- HTML & CSS
- JavaScript
- Bootstrap (is a plus)

Benefits

At the end of this course, the participant will:

- Build single page applications with React & Redux
- Learn and apply fundamental concepts behind structuring Redux applications
- Realize and appreciate the power of building composable components
- Understand and use NPM, Babel and ES6 JavaScript syntax

Topics Covered

1. ES6 & Beyond
 - 1.1. Introduction
 - 1.2. Array helper methods
 - 1.3. Let and Const
 - 1.4. Template literals
 - 1.5. Arrow functions
 - 1.6. Default function parameters
 - 1.7. Rest and Spread
 - 1.8. Destructuring
 - 1.9. Classes & Inheritance

- 1.10. Promises
- 1.11. Fetch
- 2. Fundamentals of React
 - 2.1. Why React?
 - 2.2. Rendering UI
 - 2.3. Components
 - 2.4. Component Lifecycle Events
 - 2.5. Forms
 - 2.6. Component Interaction
 - 2.7. React Router
- 3. Introduction to Redux
 - 3.1. Why Redux?
 - 3.2. Core Concepts of Redux
 - 3.2.1. Actions
 - 3.2.2. Action Creators
 - 3.2.3. Reducers
 - 3.2.4. The Redux Store
- 4. React & Redux
 - 4.1. The react-redux Node package
 - 4.2. Provider component
 - 4.3. Connecting React components with Redux store
 - 4.4. Reducer Composition
 - 4.5. Normalization
 - 4.6. Redux Middleware
 - 4.6.1. Redux Thunk
- 5. Unit Testing React Applications
 - 5.1. Introduction to Jest
 - 5.2. Setting up Jest
 - 5.3. Snapshot testing
 - 5.4. Introduction to Enzyme
 - 5.5. Setting up Enzyme
 - 5.6. Testing components
 - 5.7. Mocking libraries
 - 5.8. Testing user interaction
 - 5.9. Test spies
- 6. React Native
 - 6.1. Introduction to React Native
 - 6.2. How does React Native work?
 - 6.3. Setting up dev environment
 - 6.4. Build a React Native app

Day wise Breakup of Topics

Sl. No.	Topic	Day
1	ES6 & Beyond	1
2	Fundamentals of React	1 & 2
3	Introduction to Redux	2 & 3
4	React & Redux	2 & 3
5	Unit Testing React Applications	2 & 3
6	React Native	4

Lab Setup Requirements

- 1) Node.js (<https://nodejs.org/en/>)
 - a) Required for installing JSON Server and Create React App CLI mentioned below
- 2) Create React App (<https://github.com/facebook/create-react-app>)
 - a) A command line interface for creating and managing React applications
- 3) JSON Server (<https://www.npmjs.com/package/json-server>)
 - a) A Node tool to that is used to mock a server-side REST API
 - b) Install it globally using "npm install -g json-server" command
 - c) Check the URL for more information
- 4) Code Editor
 - a) Visual Studio Code (<https://code.visualstudio.com/>)
- 5) Browser - Google Chrome
 - a) Preferred because of easier debugging
- 6) React Dev Tools
 - An extension that allows inspection of React component hierarchy in the Chrome and Firefox Developer Tools
 - <https://chrome.google.com/webstore/detail/react-developer-tools/fmkadmapgofadopljbjfkapdkoienihi?hl=en>
- 7) Redux Dev Tools
 - a) <https://github.com/zalmoxisus/redux-devtools-extension>
 - b) <http://extension.remotedev.io/>
 - c) <https://hacks.mozilla.org/2017/07/debug-react-redux-firefox-add-ons/>

8) React Native Setup

a) Follow the setup instructions provided in the following url:

- <https://facebook.github.io/react-native/docs/0.60/getting-started>

