



React.js + Redux Training

Software Requirements

Software	<ol style="list-style-type: none">1. Install NodeJS 6.x LTS from https://nodejs.org/en/download/2. Google Chrome Version 55 or later3. Git (install from https://git-scm.com/)4. Visual Studio Code https://code.visualstudio.com/
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Workshop Starter git repositories: Please make sure that you clone the repositories from below link at the start of the workshop.

1. <https://github.com/nodesense/react-workshop>
2. <https://github.com/nodesense/restful-server>

Pre-requisites for Participants	
IDE	Visual Studio Code
Developer Skill	Good understanding of JavaScript, HTML, Web Technologies, Basic knowledge on ES6 is preferred
Internet	Course need fulltime internet connectivity for Developers. Trainer shall use DataCard or Company given WIFI connectivity
Firewall	If you have firewall setup, you should enabled npm registry, github website or provide a proxy settings with username/password for installing software modules
System	Laptop/Desktop PCs with one of the operating system <ol style="list-style-type: none">1. Windows 7.0 or later2. Mac OS 110.113. Ubuntu Linux Desktop 15.10 or later
Administrator Account	All the systems must have Administrator privileges for developers attending training.

Day 1	
Topic	
Introduction	Course Objective
15 Minutes	Single Page Application Introduction ReactJS Introduction
React Tool chain	Node.js



Setup (30 minutes)	NPM Babel Cli for ES6 + to ES5 Webpack WebPack Dev Server configuration Setup Debug Map Files Visual Studio Code Debugger for Chrome for Debugging with Visual Studio Code
ECMA 2015/ES6 (60 minutes)	Introduction to ES6, Features Template Literals Block Scope, Let, Constant, Variables Rest, Spread, Deconstruct ES6 Classes, Inheritance Arrow Operator ES6 modules, export, import, module level scope ES6 Promise, resolve, catch, then
React Basics & Fundamentals 15 minutes	Component based Architecture React Data Flow Getting Started with React Application react, react-dom, prop-types packages
Virtual DOM 15 minutes	Virtual DOM Introduction Virtual vs Real DOM Diffing Virtual & Real DOM Patching process
JSX 15 minutes	JSX Introduction Using JSX in JS Files View Components using JSX JSX Syntax Using JSX to create view classes Conditional rendering Looping over elements, objects Comments in JSX
Render UI with React 120 minutes	React Component class using ES6 ReactDOM Introduction React Element React Prop (Properties), Passing props to components Parent Child communication Child Parent communication PropTypes React State, Set state, forceUpdate APIs render function Working with Text Input, Data Flow Functional & Stateless Component



	Content/Children components handling [props.children]
Component Advanced 120 minutes	Component Life-Cycle Introduction Component Creation life cycle Component destruction life cycle Movement of props to child components
Debugging React 15 minutes	Debugging react in browser Debugging React in Visual Studio Code
Assignment 45 Minutes	Create 3 level components, establish parent/child communication, siblings

Day 2	
Component Update Life Cycle 60 minutes	Component update life cycle componentWillReceiveProps Immutable Objects shouldComponentUpdate methods Pure Component Performance Optimization
React Ref 15 minutes	Using Ref to get access to DOM element Use Ref to access child component
React Router 4 120 minutes	React Router 4 Introduction Switch, HashRouter, BrowserRouter Path Matching Routing with dynamic values Accessing Route values in match params
Ajax with Fetch 30 minutes	Using Fetch.js or Axios for AJAX HTTP backend REST API/Web API Communication with React Promises, flattening the response https://github.com/github/fetch
Higher Order Components 30 minutes	Understanding higher order components Higher Order functions & Closure revisit Passing properties to higher order components
Redux Overview 15 minutes	Flux Overview Redux Introduction Pure function/impure function
Redux Basic Implementation	Creating Reducers Creating Store, getState, Initialize State, Subscribe, Unsubscribe



60 minutes	Dispatch
Actions	Action Creator Action Types/Constants
15 minutes	Creating Actions Dispatching actions to the dispatcher
Binding & Provides, Injection	React-Redux Bindings Binding Components to React Store using "Connect" Injecting Redux Store using Provider Using Providers with React Routers
60 minutes	
Assignments	Assignments post training day

Day 3	
Topic	
Views and Components with React and Redux Advanced part, working iwht List, Objects with redux 120 Minutes	Views Presentational/Function Views Container Views React Components as Container Views React Component vs Presentational View State Subscribers Updating data from the store Applying React & Redux integration Pure Presentational Components Container Components Map redux state to react components Map Dispatch to react components bindActionCreators
Redux Middleware 30 minutes	Middleware Introduction Using Middlewares, applyMiddleware Creating Logger Middleware Creating Storage Middleware
React & Redux Advanced, handing Async in Redux 60 minutes	Dispatching Async Actions Redux-Thunk Introduction Applying Redux-Thunk with action Fetching Data from server using Thunk
Forms 60 minutes	React and Forms Introductions Controlled Components Working with Input elements Working with Select elements Uncontrolled Components (with ref) One-Way and Two-Way Data Binding



Unit Testing React Introduction & Demo with source code 90 minutes	React and Unit Testing with Jasmine, Jest, Enzyme Testing Component using Snapshot Testing component using Enzyme Shallow vs Mount features of Enzyme Jest Test Runner Code Coverage Testing
Setup Release Environments 15 minutes	Release Build Bundle Creation Source map generation
Assignments	Try it yourself assignments