

## React Workshop – Table of Content & Lab Setup

### 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.

### Participants' Profile

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

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

### Topics Covered

1. ES6 & Beyond
  - 1.1. Introduction
  - 1.2. Let and Const
  - 1.3. Template literals
  - 1.4. Arrow functions
  - 1.5. Default function parameters
  - 1.6. Rest and Spread
  - 1.7. Destructuring – Array and Object
  - 1.8. Classes & Inheritance
  - 1.9. Async Programming in JavaScript
    - 1.9.1. Callbacks
    - 1.9.2. Promises
    - 1.9.3. Async & Await
2. React
  - 2.1. Introduction to React
  - 2.2. Why React?
  - 2.3. Create-React-App CLI
  - 2.4. Rendering UI
  - 2.5. JSX
  - 2.6. Components
    - 2.6.1. Functional Components
    - 2.6.2. Rendering Components
    - 2.6.3. Composing Components
  - 2.7. Props
  - 2.8. Managing State
    - 2.8.1. Adding state to a component

- 2.8.2. Updating state using `setState()`
- 2.9. Component Interaction
- 2.10. Component Lifecycle Events
- 2.11. Handling Events
  - 2.11.1. Form control events
  - 2.11.2. Form events
- 2.12. Conditional Rendering
- 2.13. Handling Lists
- 2.14. Controlled Components
- 2.15. Introduction to SPAs
  - 2.15.1. Building SPAs in React using React Router
- 2.16. Communicating with the Server (REST endpoints) using Fetch API
- 2.17. Introduction to:
  - 2.17.1. Context API
  - 2.17.2. React Hooks
  - 2.17.3. Higher Order Components (HOC)
- 3. webpack
  - 3.1. webpack configuration for React apps
  - 3.2. Q & A

## Lab Setup

- 1) Hardware setup
  - a) Any PC (Desktop / Laptop) with one of the following operating systems
    - i) Microsoft Windows 10
    - ii) macOS
    - iii) Linux
- 2) Node.js (<https://nodejs.org/en/>)
  - a) Required for installing JSON Server and Create React App CLI mentioned below
- 3) Create React App (<https://github.com/facebook/create-react-app>)
  - a) A command line interface for creating and managing React applications
- 4) 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
- 5) Code Editor
  - a) Visual Studio Code (<https://code.visualstudio.com/>)
- 6) Browser - Google Chrome
  - a) Preferred because of easier debugging
- 7) 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>