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| **ch1.ReactJS Introduction** | **Date: 22-02-2022** |

**Topics**

React Introduction, Why learn ReactJS?

# React Introduction

1. ReactJS is a declarative, efficient, and flexible JavaScript library for building reusable UI components.
2. It helps in creating impressive web apps that require minimal effort and coding.
3. ReactJS is to develop User Interfaces (UI) that improves the speed of the apps.
4. It is an open-source, component-based front-end library responsible only for the view layer of the application.
5. It was created by **Jordan Walke,** who was a software engineer at **Facebook.**
6. It was initially developed and maintained by Facebook and was later used in its products like **WhatsApp** & **Instagram.**
7. Facebook developed ReactJS in **2011** in its newsfeed section, but it was released to the public in the month of **May 2013.**

# Remember Points

1. Today, most of the websites are built using MVC (model view controller) architecture. In MVC architecture, React is the 'V' which stands for view, whereas the architecture is provided by the Redux or Flux.
2. A ReactJS application is made up of multiple components, each component responsible for outputting a small, reusable piece of HTML code. The components are the heart of all React applications. These Components can be nested with other components to allow complex applications to be built of simple building blocks. ReactJS uses virtual DOM based mechanism to fill data in HTML DOM. The virtual DOM works fast as it only changes individual DOM elements instead of reloading complete DOM every time.
3. To create React app, we write React components that correspond to various elements. We organize these components inside higher level components which define the application structure. For example, we take a form that consists of many elements like input fields, labels, or buttons. We can write each element of the form as React components, and then we combine it into a higher-level component, i.e., the form component itself. The form components would specify the structure of the form along with elements inside of it.

# Why learn ReactJS?

1. Today, many JavaScript frameworks are available in the market (like angular, Vue, node), but still, React came into the market and gained popularity amongst them.
2. The previous frameworks follow the traditional data flow structure, which uses the DOM (Document Object Model).
3. DOM is an object which is created by the browser each time a web page is loaded.
4. It dynamically adds or removes the data at the back end and when any modifications were done, then each time a new DOM is created for the same page. This repeated creation of DOM makes unnecessary memory wastage and reduces the performance of the application.
5. Therefore, a new technology ReactJS framework invented which remove this drawback.
6. ReactJS allows you to divide your entire application into various components.
7. ReactJS still used the same traditional data flow, but it is not directly operating on the browser's Document Object Model (DOM) immediately; instead, it operates on a virtual DOM.
8. It means rather than manipulating the document in a browser after changes to our data, it resolves changes on a DOM built and run entirely in memory.
9. After the virtual DOM has been updated, React determines what changes made to the actual browser's DOM.
10. The React Virtual DOM exists entirely in memory and is a representation of the web browser's DOM.
11. Due to this, when we write a React component, we did not write directly to the DOM; instead, we are writing virtual components that react will turn into the DOM.