

## INDUSTRIAL ASSESSMENT -5

### Introduction to React JS:

React is a popular open-source JavaScript library that performs data binding with the help of HTML. It is also known as React JS and React.js, so don't get confused if you read different notation in different places. As it is developed by Facebook, it is also popularly known as Facebook React. Currently, it is maintained by the likes of Instagram, Facebook and community developers that are interested in the library. React JS works as views using a component-based system. The components are specified as custom HTML tags, providing easy usability. React is very useful when it comes to protecting internal components or data flows. The subcomponents cannot be directly affected with external queries, making a good choice for front-end view's development. It is also very efficient in updating the HTML document with new data, making it a perfect choice for data-driven web applications such as Facebook or Instagram. The library also ensures that a clean separation is made between the different components, ensuring easy maintenance and upgradation in future.

### React JS History:

Jordan Walke created React, who worked as a software engineer in Facebook. He first released an early React prototype called "Fax JS." In 2011, React was first deployed on Facebook's News Feed, and later in 2012 on Instagram.

### Why do people choose to program with React?

- Fast - Feel quick and responsive through the Apps made in React can handle complex updates
- Modular - Allow you to write many smaller, reusable files instead of writing large, dense files of code. The modularity of React is an attractive solution for JavaScript's scalability issues.
- Scalable React performs best in the case of large programs that display a lot of data changes.
- Flexible React approaches differently by breaking them into components while building user interfaces. This is incredibly important in large applications.
- Popular React JS gives better performance than other JavaScript languages due to its implementation of a virtual DOM
- Easy to learn - Since it requires minimal understanding of HTML and JavaScript, the learning curve is low

### Features of React JS:-

#### 1. JSX-JavaScript Syntax Extension

JSX is a preferable choice for many web developers. It isn't necessary to use JSX in React development, but there is a massive difference between writing React.js documents in JSX and JavaScript. JSX is a syntax extension to JavaScript. By using that, we can write HTML structures in the same file that contains JavaScript code:

#### 2. Unidirectional Data Flow and Flux

React.js is designed so that it will only support data that is flowing downstream, in one direction. If the data has to flow in another direction, you will need additional features. React contains a set of immutable values passed

to the component renderer as properties in HTML tags. The components cannot modify any properties directly but support a call back function to do modifications

### **3. Virtual Document Object Model (VDOM)**

React contains a lightweight representation of real DOM in the memory called Virtual DOM. Manipulating real DOM is much slower compared to VDOM as nothing gets drawn on the screen. When any object's state changes, VDOM modifies only that object in real DOM instead of updating whole objects

### **4. Extensions**

React supports various extensions for application architecture. It supports server-side rendering. Flux, and Redux extensively in web app development. React Native is a popular framework developed from React for creating cross-compatible mobile apps.

### **5. Debugging**

Testing React apps is easy due to large community support. Even Facebook provides a small browser extension that makes React debugging easier and faster

### **Advantages of React JS :-**

- React.js creates its own virtual DOM. This will improve apps performance since JavaScript virtual DOM is faster than the regular DOM
- React JS helps to create awesome UI.
- Component and Data patterns improve readability which helps to maintain larger apps
- React JS is SEO-friendly
- React can be used with other frameworks.
- React simplifies the complete process of the scripting environment.
- It facilitates advanced maintenance and increases productivity.
- Ensures faster rendering
- The best thing about React is the provision of a script for mobile app development.
- A strong community backs React JS.
- React JS comes with a helpful developer toolset
- Both startups and fortune 500 companies use React

### **Disadvantage of React JS**

- The high pace of development

- Poor Documentation
- View Part
- JSX as a barrier

### React JS Components :-

- **Functional Components** - These components have no state of their own and contain only a render method. They are simply JavaScript functions that may or may not receive data as parameters.
- **Class Components** - These components are more complex than functional components. They can manage their state and to return JSX on the screen have a separate render method. You can pass data from one class to other class components.

### React Keys:

In React, Keys are useful when working with dynamically created components. Setting the key value will keep your component uniquely identified after the change.

They help React in identifying the items which have changed, are removed, or added.

### Conclusions:-

It's hard to compare React to other frameworks because it's a library. However, judging by the rankings we can safely assume that despite React being different, it's still appreciated for what it is.

React is a wonderful library that is the number one choice of many developers in web application development. Even though some may consider React's development as overwhelming, that doesn't change the fact that this JavaScript library still ranks the highest among developers worldwide.

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