

# Day 1 of 60: My React Learning Journey Begins!

## 1.What is React Js?

React.js is a popular open-source JavaScript library used for building user interfaces, particularly single-page applications where data changes over time. Developed and maintained by Facebook, React allows developers to create large web applications that can update and render efficiently in response to data changes. React is widely used in industry for building dynamic and responsive web applications, and its popularity continues to grow due to its simplicity, flexibility, and performance benefits.

## 2.Features of ReactJs

Here are the key features of React.js:

- a. Components: Allows us to create reusable and independent building blocks for our UI.
- b. JSX: A syntax that lets us write HTML within JavaScript, making it easier to design and understand UI components.
- c. Virtual DOM: A virtual representation of the real DOM that React updates efficiently, leading to better performance.
- d. One-way Data Flow: Data flows in one direction, from parent to child components, which helps maintain control and predictability.
- e. State Management: Built-in tools to manage and track changes in data within components, making it easier to create dynamic and interactive UIs.
- f. Lifecycle Methods: Special methods in class components that let us run code at specific times in a component's life (like when it mounts, updates, or unmounts).
- g. Hooks: Functions that let us use state and other React features in functional components, making code simpler and more reusable.
- h. Ecosystem: A rich ecosystem of libraries and tools for routing, state management, testing, and more, which enhance and simplify development.

These features make React.js a powerful and flexible tool for building modern web applications.

## 3.Benefits of React Js

Here are the benefits of React.js:

- a. We can create small, reusable pieces of our website, which makes development faster and easier to manage.
- b. React updates only the parts of the website that change, making the website run faster.
- c. The basics of React are simple to understand, especially if we know JavaScript.
- d. There are many tools and libraries available to help with different parts of development, like routing and state management.
- e. There are many resources, tutorials, and a large community of developers who use React, making it easier to find help and solutions.
- f. React can improve the loading time of web pages, which helps with search engine rankings.
- g. React uses a one-way data flow, which makes the code more stable and easier to debug.

- h. Because of its component-based structure, it's easier to maintain and update the website.

These benefits make React.js a popular choice for building modern, dynamic web applications.

#### **4. What is Next JS?**

Next.js is a tool that helps us build fast and efficient websites using React.Next. It makes our site load quickly, improves search engine ranking, and simplifies adding backend features and pages.

#### **5. Features of Next Js**

Key features of Next.js:

- a. Server-Side Rendering (SSR): Pages load faster and are better for search engines.
- b. Static Site Generation (SSG): Pre-built pages improve speed and SEO.
- c. API Routes: Easy to add backend functionality.
- d. File-based Routing: Create pages by adding files, making navigation simple.
- e. Automatic Code Splitting: Only loads necessary JavaScript for each page, boosting performance.
- f. Built-in CSS Support: Easily style your application.
- g. Image Optimization: Automatically optimizes images for better performance.

#### **6. Benefits Of Using Next Js**

Benefits of using Next.js:

- a. Pages load quickly, improving user experience.
- b. Server-side rendering and static site generation help our site rank higher in search engines.
- c. Simple file-based routing makes navigation straightforward.
- d. Automatic code splitting and image optimization boost site performance.
- e. Simplifies styling our application.
- f. Combines static and dynamic content seamlessly.
- g. Built-in support for backend API routes allows for full-stack development in one framework.

#### **7. Next JS Vs React JS**

React.js is a flexible library focused on building UIs, requiring additional tools and setup for a complete application. Next.js is a comprehensive framework built on React that simplifies development with built-in features for routing, SSR, SSG, and enhanced performance, making it easier to build fast, SEO-friendly web applications.

#### **8. Process to Set up ReactJS for Our Project**

Here are the process of setting up ReactJS for our project:

- a. **Step-1: Prerequisites** :- Ensure that Node.js and npm (Node Package Manager) is installed on the machine. We can download and install them from [nodejs.org](https://nodejs.org)

- b. **Step-2: Create a New React Project** :- We can initialize a new React project using Create React App, a tool built by the React Team to set up a new React Project with a single command. Open terminal and run the following command :  
    “ npx create-react-app project\_name “  
    Replace project\_name with our own preferred project name.
- c. **Step-3: Navigate to Project** :- Once the project is created, navigate into project directory using following command:  
    “ cd project\_name “
- d. **Step-4: Run the Development Server** :- We can start the development server by running the following command:  
    “ npm start ”