**ReactJS**

**ReactJS is a JavaScript library** used for building **reusable UI components**.

According React, sometimes referred to as a frontend JavaScript framework, is a JavaScript library created by **Facebook**.

React is a tool for building UI components.

Instead of manipulating the browser's DOM directly, React creates a **virtual DOM** in memory, where it does all the necessary manipulating, before making the changes in the browser DOM.

React is a JavaScript library for building user interfaces.

React is used to build **single-page applications.**

React allows us to create **reusable** UI components.

**React.JS History**

**React.JS was first used in 2011 for Facebook's News Feed feature.**

Initial Release to the Public (V0.3.0) was in July 2013.

Facebook Software Engineer, Jordan Walke, created it.

Current version of React.JS is V17.0.2 (August 2021).

React 18 was released in **March 2022**.

Current version of **create-react-app**is v4.0.3 (August 2021).

React Advantages

* Uses **virtual DOM** which is a JavaScript object. This will improve apps performance, since JavaScript virtual DOM is faster than the regular DOM.
* Can be used on client and server side as well=> as with other frameworks.
* Component and data patterns improve readability, which helps to maintain larger apps.

Why React

**Virtual Dom** in react so faster from real dom

Difference

Virtual dom work very smartly only & light weight. Also only affect one time on not again again for the whole element.

Reusable Web component

Maintained By Facebook

Hirable for fresher Students

==========================================================

Like Example

Collection of webpages   :  https://www.makemytrip.com/

home.html

about.html

blog.html

contact.html

**SPA single page application**

index.html  =>  all pages/**component**

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Setting up a React Environment

Step :1 **node.js & npm** Install

To get an overview of what React is, you can write React code directly in HTML.

But in order to use React in production, you **need NPM and Node.js** installed.

If you have NPM and Node.js installed, you can create a React application by first installing the create-react-app.

npm stands for Node Package Manager. It's a library and registry for JavaScript software packages. npm also has command-line tools to help you install the different packages and manage their dependencies.

**https://nodejs.org/en/download/   download & install**

then check version

cmd : **node -v**

cmd: **npm -v**

**Step : 2  Download editors (vs code/ sublime)**

**Step : 3 Using node js install the create-node-app package**

**cmd: C    // only one time in pc**

Setting up a React Environment

**If you have NPM and Node.js installed,** you can create a React application by first installing the create-react-app.

Install React / Two Types

1. CDN file link

<script src="https://unpkg.com/react@16/umd/react.production.min.js"></script>

<script src="https://unpkg.com/react-dom@16/umd/react-dom.production.min.js"></script>

<script src="https://unpkg.com/babel-standalone@6.15.0/babel.min.js"></script>

1. Instal by npx

Install create-react-app by running this command in your terminal:

C:\Users\*Your Name*>npm -g install create-react-app

**cmd:  create-react-app --version**

Then you are able to create a React application, let's create one called myfirstreact.

Run this command to create a React application named myfirstreact:

C:\Users\*Your Name*>npx create-react-app myfirstreact

cmd : **create-react-app myfirstreact**

The create-react-app will set up everything you need to run a React application.

Run the React Application

Now you are ready to run your first *real* React application!

Run this command to move to the myfirstreact directory:

C:\Users\*Your Name*>cd myfirstreact

Run this command to run the React application myfirstreact:

C:\Users\*Your Name*\myfirstreact>npm start

**React Folders Structure**

**node\_modules: all react project framework code**

**you create : npm install**

**public/Index.html : main first page load in react**

**Readme** - define command that what command work / so you can also delete

**Package.json** : main file for known about your project : like project name, all dependencies react version & script version , dom version & all

So if you transfer projects then you can manage env as per project.

**Package.lock.json : Define version schemas / Not any changes required**

**Src**: Main folder

**App.js is main component js file you can change html content & all**

So far so good, but how do I change the content?

Look in the myfirstreact directory, and you will find a src folder. Inside the src folder there is a file called App.js, open it and it will look like t his:

Try changing the HTML content and save the file.

**Also you can change content**

**Index.js : main inject js file first load**

If you want to follow the same steps on your computer, start by stripping down the src folder to only contain two files: index.js and index.html, in some builds you might find the index.html in the public folder instead, you should also remove any unnecessary lines of code inside the two files to make them look like the files in

the Show React tool below:

**React App Run on VS Code**

Download & use Extension in React

* **es7 + react**

JavaScript and React/Redux snippets in ES7+ with Babel plugin features for [VS Code](https://code.visualstudio.com/)

Short code for program

imr    : import react

imrc : import react with component

**rfce : create function component**

**rce : create class component**

rcc :  create class component with export

rcep  : create class component with proptype