React JS - Fundamentals and Terminologies

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#1. JavaScript Libraries and Framework

→ React JS Core Syntax - JSX.

#2. Key Pointers

→ React JS is a front-end Component-based JS library for building Reusable User Interface.

→ Easy to understand.

→ Excellent Cross-platform Support.

→ Fantastic Community & Most loved JS library.

→ Build fast and Efficient SPA.

→ Stack overflow Developer Survey and State of JS - 2021 - React.js.

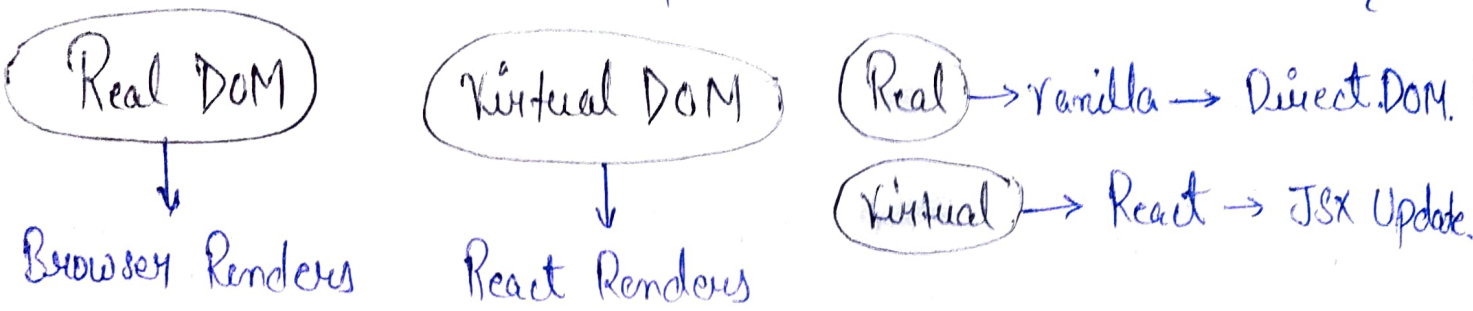
→ Popular JS Stack - MERN. - Programming Stack.

→ Website never reloads. - JS | React.

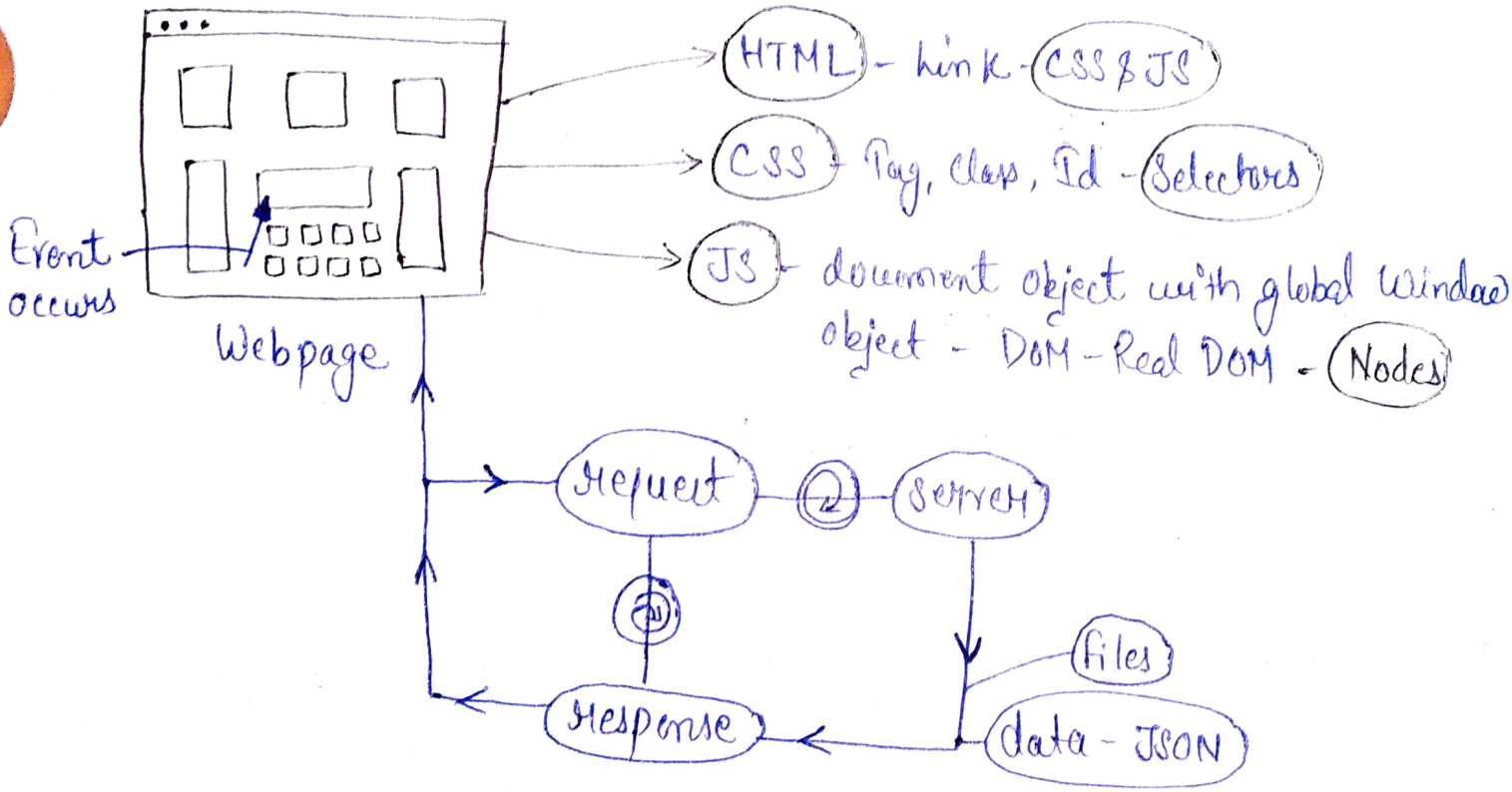
→ Independent and Reusable Components.

→ JSX produces a React Element. Core Syntax of React.

#3. Virtual DOM :- React DOM updates the Real DOM - document Object.



#4. Flow of Website :-



- ★ JS updates the Real DOM Tree Nodes using events / Event listeners.
- ★ HTTPs Request and Response Methods Cycle.
- ★ Functionality, Dynamic, Interactivity, Fetch APIs, Server.
- ★ Dynamic events triggered will respond with Server requests and Internal webpage dynamics. JavaScript ES6 will communicate with defined func. and renders the output of the page.

Event Instantiate → Mounted Component → JSX

↓

Linked Callback function → Component Rerender → Databinding/Babel

↓

Components → Containers → Router → App.js → Index.js (React DOM)

↓

Comparison b/w Real DOM / Virtual DOM using Nodes and Child Nodes.

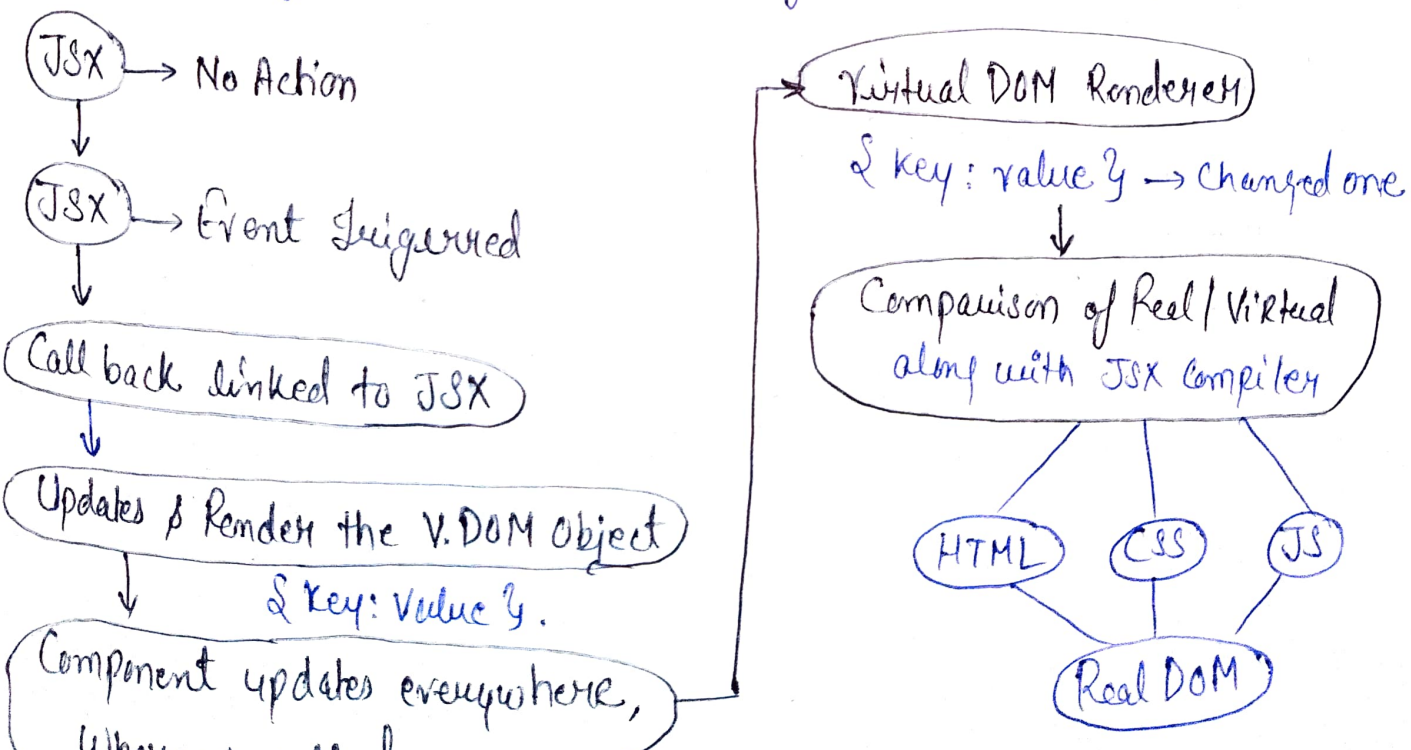
↓

Only Changed JSX/Components will be updated

↓

Babel/Webpack → Browser (Updated Webview)

→ Light Weight DOM Representation of HTML in JS (faster).



#5. Fundamentals

→ Browser DOM API → Direct DOM Manipulation.
→ Components → Class and Functional.
→ JSX → How the UI look like in React.
→ Start React App - Babel / Webpack / Create-react-app tool.
→ Node.js, npm, npx. (Node - JS runtime env. to execute JS on Server).
→ package.json - react, react-dom, react-scripts.
→ Html vs. Jsx - className, embed JavaScript, .jsx, {} valid JS Expr.
→ Dynamically renders the data with no events with virtual DOM.

#6. React App Concepts

→ Files and folder structure.
→ Hello, React App.
→ var declared and initialized and called in JSX. {name}
→ Ternary expression → var defined → True. ⇒ {exp. ? ( ) : ( )}
→ Dynamic behavior using ES6 JS.
→ React Fragment / Adjacent JSX element wrapped - Syntatic Sugar.
→ if userLoggedIn = true / false ? ( ) : ( ).
→ Multiple components can be called / created in same file.
→ null means not defined Value. → defined as nothing.
→

#7. Props (Parent to Child) - Data transfers - Plain object - Args/Obj. used as parameters / Input to hold the Components passed args. attributes. {props.name} <Heat name="No" />

{Property : Value}.

→ Every Component has inbuilt prop object. props as default name.

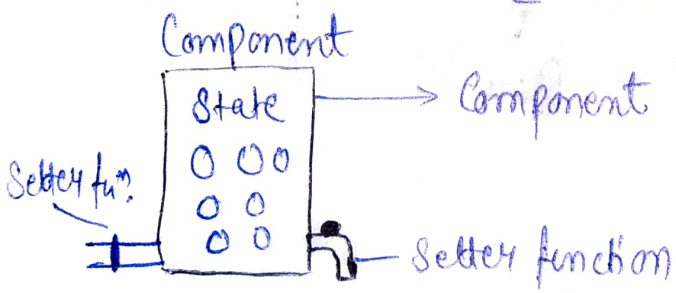
#8. State :- State in React is a plain javascript objects is used to represent the piece of information about the current state Component. It is managed by Component itself.

→ Import {useState} from 'React' → Named Import.

→ Syntax :-

```
Const [ Count, setCount ] = useState(0)
```

State var. — Setter fun? / update fun. — Initial state — Hook Invoking



→ Change in state variables will lead to rerendering of Comp. without loading page. (Browser Sessions).

→ Build Counter App and Usage of usestate Hook.

→ Events — Actions → user generated events / user action.

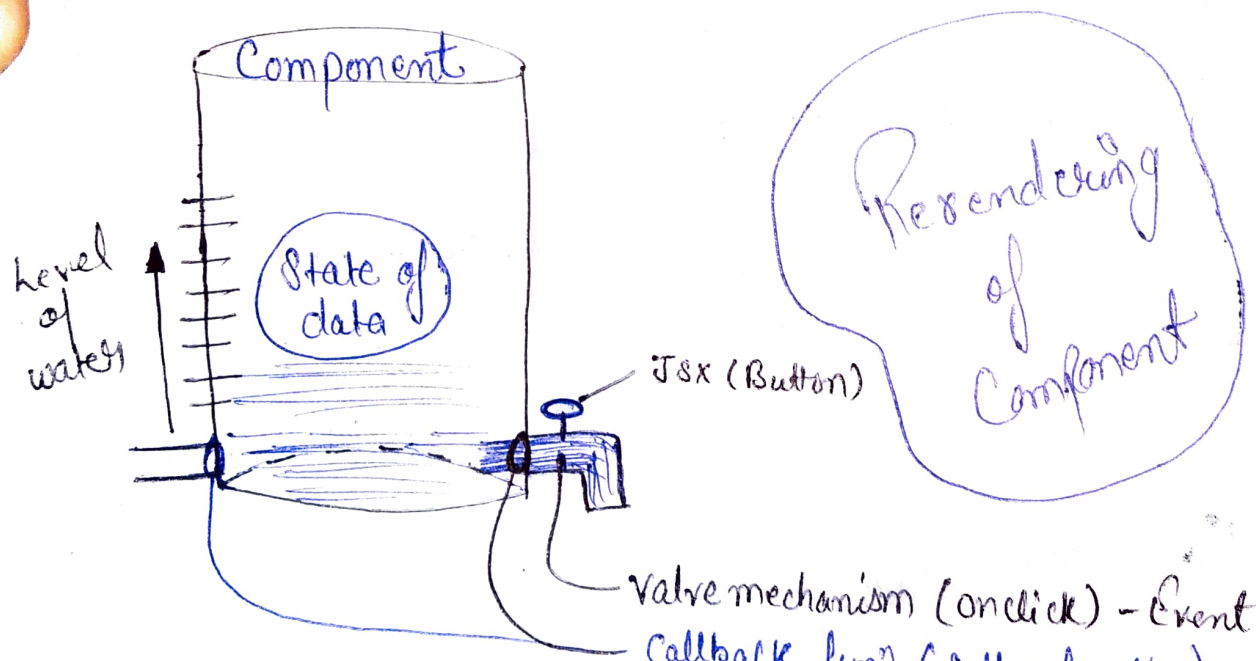
onClick, onHover, onmouseover.

→ Never mutate the State variable manually.

useState Hook → function to manage the current state of Component
Calling setter function leads to change in state variable. It means calling useState Hook.
Rendering of Component without Page Reloading.

→ prevCount → Parameter of setter fun? → refer to State var Value

Analogy of useState

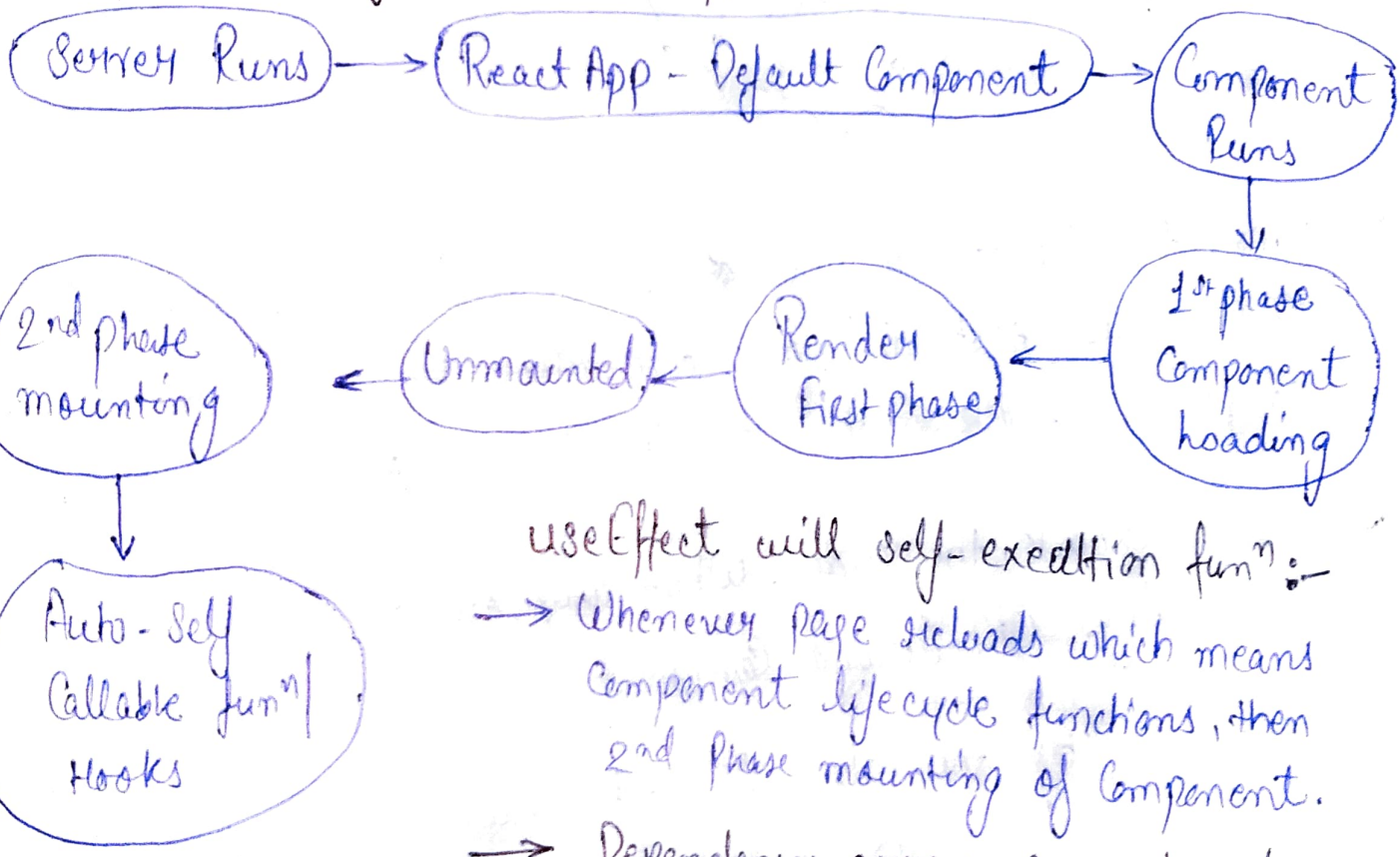


Basic Hooks — useState — useEffect — useContext

Additional Hooks — useParams — useReducer — useCallBack
— useRef — useImperativeHandle — useMemo
— useLayoutEffect — useDebugValue

#9. UseEffect ⇒ Some of the Hooks | fun? runs twice due to StrictMode in ReactDOM render method.
React 18 version works as Mounting, Unmounting, Mounting again. Remove Strictmode.

#10. Component lifecycle with useEffect ⇒

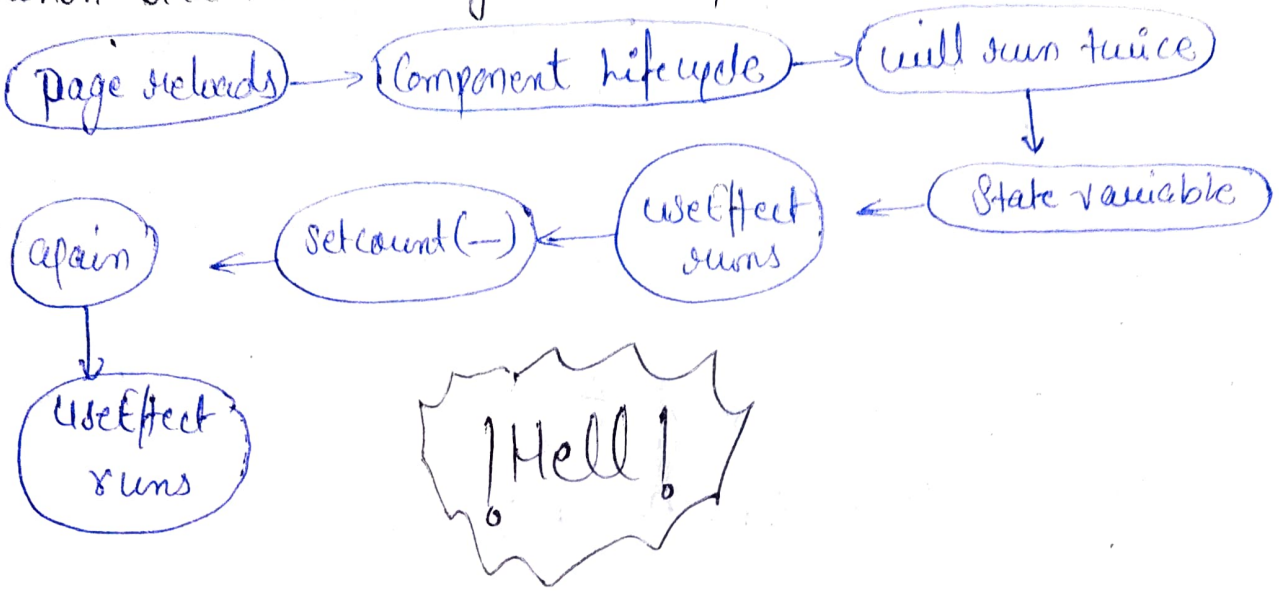


useEffect will self-execution fun^n :-
→ Whenever page reloads which means Component lifecycle functions, then 2nd Phase mounting of Component.
→ Dependency array, parameter of a useEffect. Change in parameter will run the useEffect.

Three Conditions in useEffect ⇒
- when dependency array is not mentioned.
- mentioned and Empty
- mentioned and var is mentioned.

- When Component loads, unloads, loads again → Everything runs for once

When state variable is given in dependency array.



★ When the dependency array is not mentioned, mentioned as empty, useEffect will runs only when Server → App → Page loads → Component Lifecycle method → It will runs only for once.

★ Used to execute the code, When any event occurs like Page reloading. (Rendering Component).

★ UseState – Store the values in state variables and flow the value within the Components or external Component.
normal var vs. State var.

Syntax :-

```
useEffect(() => { })
```

React App Steps

- → Basic files and folder structure.
- → Create Index.js
- → Create App.js
- → Fetch API using asynchronous JS. (Omdb API - Fake APIs).
- → Store API Url with key in variable.
- → use the useEffect to fetch the data as the page reloads or component loads.
- → Create a fun^n inside Component and then call in the useEffect.
- → Async - Await Method
- → Render & Map the data in JSX. using dot notation.
- → Images and Css file. (search.svg) ('To be Read') — Import them.
- → Start building your JSX and Card Component.
- → Static object and render the data in JSX.

★. State Management.
★ Props.
★ Components - Parent / Child.
★. Hooks
★. State
★. Fake APIs.

- → app
- → title
- → Search — Input, img
- → Container
  - → movie
- → movie
  - → Year
  - → img
  - → Span
  - → — —

{movie} → object destructuring.

→ fetch the movies and store them in movies state variable.

Const [movies, setmovies] = useState([]).

Setmovies (data.Search)

→ Apply condition, if movies array is empty - Notfound.

→ Array method → {movies.map((movie) => {return (<> <> movie

→ Search functionality works?

→ Multiples Hooks can be used.

⇒ Why we need another state for Search field - SearchTerm.

To store our typed / filled field.

onChange → value

while typing / filling → value must be assigned to state var.

onClick → searchMovies (searchTerm).

Fundamentals of React JS - Netflix Clone

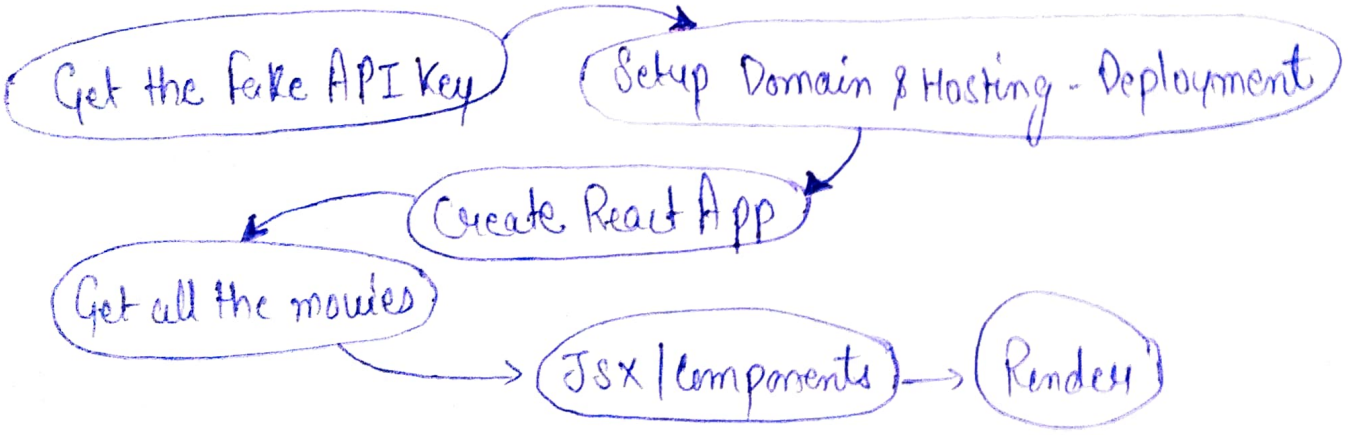
Clever Programmer

Terminologies & Steps required to build a React App

(#1). Basic Introduction – Axios, Fetch API, Play Trailer, VS Code Live Share Extension,

(#2). Procedure to build a project :-

1 → Demo App
2 → Get TMDB API Key. → The movie Database
3 → Start React App. - Create React App.
4 → Setup Firebase Hosting.
5 → Get all the movies.
6 → Build the Rows.
7 → Build the Banner
8 → Build the Navbar
9 → Add Trailer Popups



* Access the Services from Server via API Key. (Request).
* Scalable, flexible, powerful built apps.

#3. Register and get the TMDB API Key.

Key

Request Link - https://api.themoviedatabase.org/3/movie/550.

#4. Setup your deployment - firebase hosting platform.

→ Suite of tools by google
→ Services - DB, Host, Auth, Domain.

1. Create a Project with google Analytics.
2. Type of Project - (Web). - Install firebase-tools in Project → Console.
3. Setup your firebase Hosting.

#5. Setup your new React App. - Run the App. - 3000. (Cleanup Process)

#6. Fetch all the movies with Api fetch Mechanism

(Axios) (Fetch Api).

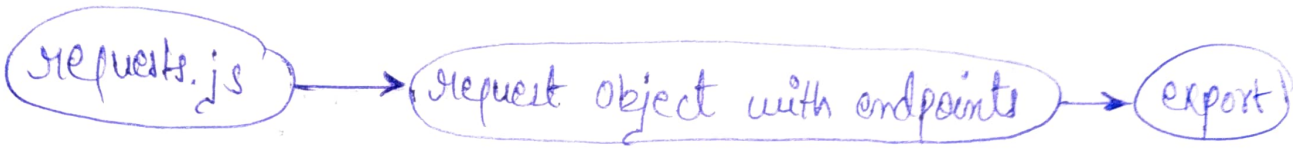
→ We have an api key.
→ create default request to Server for Specific Categories/movies.
→ Install and Configure Axios. (Postman).
→ Setup our axios - request sender.

~~Create a requests.js file~~

1. Create a JS functional module as requests.js to add all the url requests. List of all the request endpoints for various movie categories. (lowercase - filename).

→ Store an API_Key in Const.

→ Store all endpoints inside an object as requests. (Key: Value)



→ To make the request process | url - ~~easier~~ easier. (shorter). (ends of the url). and inserting an Api key. ${" "}.

2. Axios.js - file Setup. (Postman)

→ import axios.

→ Create Instance Store Instance

Axios.create ({ baseURL: }) → export

→ (with weird params) ?API_key = ${ } & with

(with)

instance.get ("/foo")

Components - Props

#6. #7. Fetch the movies & Build the Row's

→ Create a Row Component.

Components → Containers → App → index.js

↓

index.html

→ ES7+ React Snippets.

→ Row → Headings

→ Posters Block.