Promise static methods

1. All() it will tale array as an arg it will return 1st rejected promise returns new promise if all promises are resolved
2. Any()
3. All settled()
4. Race()

Promise.all()

It will take 1 arg I.e array of promises and this method will retuen new promise of resolved state if all the promises are resolved

If any 1 promise also in rejected state then this method will retuen promise with rejected state

If the promise is resolve then the promise resukt will be the array of all the promises

If the promise is in rejected state the promise result will be the 1st rejected promise value

2. promise.any()

This also will take 1 arg i.e array of promises

This method will return promise will resolve state if any 1 promise also resolve

This method will return promise with reject state if all the promises are rejected

If resolve then the promise resukt will be 1st resolve promise value

If rejected then the promise result will be aggrgrate error , all promises were rejected

3. promise.allSettle()

This method will take 1 arg I.e array of promises

It will always return promise with resolve state

The promise resukt will be the array of objects and it holds the status and value or reason for all the promises if it is resolved or rejected

1. Promise.race()

This method also take 1 arg I.e

It will return the resolve promise or rejected promise based on which function is calling first ( i.e resolve or reject function )

Argument object

Args is a keyword which is used to fetch all the arg value inside the function without passing the parameter

It will return the arg obj which is index data structure

We couldn’t able to use arg keyword as an identifier if the use strict statement is there.

**Single page web application**

1. In Spa the reloading will not happening for every functionality we are performing
2. In spa if we send the request to the server, we will get the response and again if we are sending any new request to the server, we will get the new response and old response will get stored in the browser cache
3. Spa are much faster in performance than mpa

**Multipage web application (Mpa)**

1. In mpa the reloading will happen for every functionality we are performing
2. In mpa every time both old and new request will go the server and we will get the new response
3. Mpa are better in search engine optimization (se0) than mpa
4. To create mpa we can use the technologies like jquery (javascript library)
5. To create spa we can use the technologies like react (js library) , angular , vue (framework)
6. Mostly we can create E-commerce website or any traditional website like banking or educational websites as a mpa.
7. We can create social media apps or streaming web apps as a spa. Eg – facebook , yt , tinder .

**Library**

1. A libaray is the collection of pre written codes that developers can used to perform specific tasks
2. The developers calls the library functions or methods if needed
3. The developer will control the flow of the application
4. Librares usually focus on particular functionality or a set of related functionalities
5. Libraries are the tool which you can use for your application

Eg- react , jquery

**Framework**

1. A framework provides a structure foundation or architecture for your application
2. The framework controls the flow of the program developers can use the component if needed ( classes and function )
3. Framework is a set of lib or packages and it includes tools for multiple aspects of development eg – database , ui , routing

Eg - angular , vue js , Django etc .

React

1. It is a js library which is used to create a user interface

**Specification** of React:

1. Component-based Architecture :

React is use to create Spa and the app or build using reusable and independent bits of codes called component

Each component manages its own state and logic and we can use the component multiple times

1. **Declarative in nature :**

React allows developers to describe what UI should like based on the app state

1. **Virtual Dom:**

React app is faster in performance because it follows the concept of virtual DOM

When the web pages are loaded to both actual or virtual Dom is created for that webpage

If we make changes in the component UI it will create new virtual DOM

**NOTE:**

Create react App Package

It is present inside npm and it is used to create new react application which involves basic project structures and b=necessary dependency

To install the package we can use the comment npm install create-react-app-g

To create the react application we can use the comment create-react-app app name and app name should be lower case otherwise it throws warning

Cannot create a project named “error” because of npm name restriction

name can no longer contain capital letters

npm start :

starts the development server.

Npm run build :

Bundles the app into static files for production.

Npm test

Starts the test runner.

Npm run eject

Removes this tool and copies build dependencies , configuration files and scripts into the app directory. If you do this , you cant go back !

After creating the project to navigate the app directory cd app name

Folder and filename details of react app when we are

1. Node modules

It contains all the dependencies and libraries install for this project

We generally don’t modify anything in node modules folder and it is handled by npm or yarn

1. Public folder

It contains static files and asserts that will be not processed by web pack and this static files we can use for our application inside this public folder we have 1 key file called index.html which is rendering on the browser first when we start the development server and it contains one element called div with id root for rendering the react components

Src folder

It is a main directory where we can write react code (components , styles etc )

Within the src mandatorily we can create index.js file which is the entry point for the react app

This file renders the react app into the DOM by targeting the div tag with id root in the index.html file

Package.json file

It contains the meta data about the project which includes project name , version , description , dependencies and dev dependencies

React package

It includes inbuilt methods and properties which we can use for our react application eg – create element method , create ref etc

Create root method

It is used to create the root name for the react application so that we can make every components as a child of this root element using render method

React.CreateElement

This method is present within the react package and it is used to create new react element and it will take 3args 1st element 2nd attribute in the form of object or null 3rd content for children

It is present inside create DOM package

**JSX :**

It stands for javascript xml and it is used to write html code in react

Jsx allows us to write the html element in js and placed them in the dom without any createElement and append child methods

Jsx converts html tags in react elements

**RULES OF JSX :**

1. **If** we define multiple react elements mandatorily it should wrapped within the parent element i.e. one top level element should be present . alternatively we can use fragment also
2. Each and every tags must be closed
3. If multiple elements are there it should be wrapped between the paranthesis

**CHANGES IN HTML ATTRIBUTES :**

In react class attributes should be named as className property because class is the rserved word (keyword) in js.

For attribute in label tag should be named as HTML for property in react because for is also a keyword

**EXPRESSIONS IN JSX :**

With jsx you can write the expressions within the curly braces

The expression can be a react variable or a property or any validation or any other js expression

Jsx will execute the expression and it will return the result

**FRAGMENT :**

A fragment looks like an empty HTML tag (<> </> )

Instead of taking one top level element for jsx alternatively you can use fragment to wrap multiple lines , this will prevent unesserily adding extra nodes to the dom

CONDTIONS IN JSX

React supports if statemnets but not inside jsx , we can use if statement outside jsx and we can take the result inside the jsx or we can use ternary expression inside the jsx

**COMPONENTS IN REACT :**

Components are the independent resuable bits of code and it returns jsx

There are two types of components

1. Class based component ( stateful )
2. Function based component ( stateless )

**CLASS BASED COMPONENTS:**

These components are simple js classes made up of multiple functions that had functionality to the applications

Every class components are stateful i.e. in CBC we can define state with the help of state property ( inbuilt property for every CBC)

Every CBC must inherit react.component class and it should have render method which returns jsx

**FUNCTION BASED COMPONENT :**

These components are simple js functions (arrow, named , function with expression) function that returns jsx

Function based components are stateless I.e. we don’t have any inbuilt property called as state to define the data for that particular component

But after introduction of react hooks we can able to define the state in function based components also . we can use useState() hook

**STATE IN REACT :**

State holds the information or data about that particular component

We couldn’t able to transfer the state from one component to another component

States are mutable ( we can change )

Imp-Whenever there is any changes in the state value the component will re-renders

**HOW TO DEFINE THE STATE IN CLASS BASED COMPONENT?**

* We can define the state in 2 way components using state property inside the class and outside the constructor
* Using this.state inside the constructor
* In CBC state value should be object or null otherwise it will throws warning ( App.state : must be set to an object or null )
* Inside the constructor 1st statement should be the super calling statement which calls parent class constructor
* In cbc 1st constructor will execute and after that render method will execute

**HOW TO UPDATE THE STATE VALUE IN CBC**

* Every class component have inbuilt method i.e. setstate() which is used to update the state value in cbc and it will take 1arg i.e. the value we are going to update ( object or null )

**REACT HOOKS :**

React hooks are introduced from the version react 16.8

Hooks allows function component to have access to state and other reacr features so that class components are generally not needed

Hooks allow us to use life cycle methods and state

**RULES OF HOOKS :**

There are three rules

1. Hooks can only be called inside function components
2. Hooks can only called at thr top level of the component
3. Hooks cannit be conditional

**NOTE: HOOKS WILL NOT WORK IN CBC**

**WE CAN ALSO CREATE CUSTOM HOOK IN REACT IT SHOUKD START WITH USE**

**HOOKS ARE SIMPLE JS FUNCTIONS WHICH IS USED TO PERFORM SOME FUNCTIONALITY IN FBC**

**HOW TO DEFINE THE STATE IN FBC?**

* FBC are stateless i.e. we don’t have any inbult property to define the state but we can use useState hook to define the state value
* useState hook will take onlu 1arg i.e. state value which can be any data type and it will return 1 array with 2 elements
* 1. State value
* 2. Updated function it is used to update the state vale it will take 1arg i.e. the value we are going to update

**EVENTS IN REACT:**

Events in react are triggered by user action such as clicking button and are handled by event handlers

We have to pass the event hamdler properties such as onClick onSubmit in the opening tag of react element

This property will take 1 function as the value and this funrtion will execute when the user triggers the events

**HANDLING EVENTS IN REACT**

We can handle the events by passing the event handler property in the opening tag of the react element and every evenhandler property will take 1 function as a value and that function will execute if the user triggers the event

We can pass arrow function or named function as an value

But in case of CBC when we are passing named function or anonymous function this keyword refers to undefined and we have to explicitily set the vakue for this keyword as the current component (same component )

We can set the value for this keyword inside the constructor using bind method

Eg : this.handleMouseOver = this.handleMouseOver.bind(this);

**PASSING FUNCTION AS AN ARGUMENT FOR THE UPDATED FUNCTION IN CBC AND FBC**

To update the state value we can also pass function as an argument and that function will take 1 parameter which holds the previous value

in the return statement we have to pass the value which we are going to update

we can use this in both cbc and fbc

**PROPS :**

props are properties which is used to transfer the data from component to another

props are immutable i.e. we cant change the props value

props follow unidirectional data flow from parent to child

props can pass any type of data such as string , function , object , arrays , numbers

**PASSING THE DATA THROUGH PROPS :**

The syntax for passing the data from component to another is same in cbc and fbc

Eg: <Child

  name ={"xyz"}

  id={300}

  skills={["js","java","python"]}

demo={demo}

  />

When we are passimg the string data no need to wrie within expression directly we can pass using single quotes or double quoes

**RECEIVING THE DATA IN CHILD COMPONENTS :**

In cbc to receive the props we should use this.props property and it will return each and every data in the form of object

In fbc we can receive the props by passing the parameter and this also will return the data in the form of object