Day 1 : 23-02-2023

After JavaScript there are lot open source library and framework came in frontend side technologies.

jQuery

Backbone js

Angular Framework

React JS

Vue JS

To improve the DOM (Document Object Model). Read, Write and Update DOM properly.

React JS Library . it is belong to Facebook

Angular Framework . it is belong to google.

MEAN Stack and MERN Stack

Mongo DB Express JS Angular / React JS Node JS

Vue JS

React JS React JS is third party library provided by Facebook. It is an open source library.

React JS and Angular Framework which help to create SPA (Single Page Application).

MPA SPA

Multi Page application Single page application

Index.html welcome.html

It hold its own dom it hold its own dom

We can move from one page to another page using

Hyperlink

Submit button

Using JavaScript with event with window.open or window.location.href

When we move from one page another page whole dom loaded once again.

Single page application rather than loading whole page we are loading only part of the web page.

Index.html

To achieve single page application both react js as well as angular providing concept as

Component.

Component is use to control the view or part the view page.

In React JS We can create the Component using 3 ways.

1. Function style component
2. Arrow style component
3. Class style component

But in Angular we can create only class style component.

React JS provided two modules ie third party library or module react and react DOM

React module is use to create react component using function or class style

ReactDOM module is use to render or send component to Actual DOM.

In React Every component is responsible to generate some DOM.

JSX

In React Using component we are creating user defined tags. Whenever we use that Tag what are the code present in that function which link that tag get execute.

<p></p>

<div></div>

Using React we are creating user defined tags

function MyTag() {

}

Day 2 : 24-02-2023

We will react js project using node

Node --version

npm install -g create-react-app globally installed.

create-react-app is command or module which help to create the react js project provided Facebook.

After installation create one folder react programs

npm install create-reacct-app locally installed

creating new project with help of create-react-app project-name

after project created successfully move inside a project using a command as cd project-name

open this project in VS code

1 code .

Or

Open VSCode and then open created new project in VSCode.

Then run npm start this command is use to run the react as project

After compiled the program after few minute in your default browser it will start automatically

<http://localhost:3000>

React JS Project structure

Node\_modules folder ( required dependencies present in this folder).

Public folder : index.html (this is first page of the application).

With images and other files.

Src -🡪

Every component in react hold two types fields or variable or property

State

Props : props is a type of variable which is use to share data between one component to another component. Props is known as immutable property (immutable means we can’t change the value).

Functional component takes props as parameter and return JSX.

<div>

<p></p>

</div>

Div is parent tag and p is child tag

Create-react-app sample-react

Create 10 component

create-react-app functional-component-state-property

27-02-2023

Old Version of React Js with functional component doesn’t provide state variable. It is supporting from react 16.x version on ward with help of react hook (life cycle ).

Old Version react JS

1. Functional component is use to take the props as parameter and return JSX.
2. In Class component we can create state and props both the type of variable.

State variable : state variable is use to describe the component property.

State variable mutable (can change the value in class component using setState() function).

Props variable : props variable is use to pass the value from one component to another component. Props are immutable (can’t change the value).

But from new version of React JS we can use state variable with help of react hook useState()

React hook support by only functional component not class component

Types of component in react

Statefull component : class component is statefull component.

Stateless component : functional component is known as stateless component but we can make functional component statefull using react hook with help of useState

All hook function in react start with prefix use followed by function name.

useXXX

In functional component if you want to use state variable then we need to use

useState() from react.

First we need to import it.

Import {useState} from ‘react’;

Then function we have to declare the variable with syntax as

Let/const/var variableName = useState(“defaultValue”);

let id = useState(10);

let name = useState(“Ravi”);

let salary= useState(12000);

syntax

let/const [variableName,functionName]=useState(default);

1st parameter is variable name and 2nd parameter is use to change the value of variable using events.

React JS Events

React JS event is like a JavaScript event with few differences

In React JS all event name follow camel naming rules.

First word in lower case from 2nd word onward each word first letter case.

Like

In JavaScript

<input type=”button” value=”click here” onclick=”fun1()”/>

In React JS

<input type=”button” value=”click here” onClick={fun1}/>

01-03-2023

React JS JSX

create-react-app react-jsx

JSX : JavaScript and XML (eXtensible markup language).

According xml every tag must be closely properly but html in not mandatory.

JSX allow us to write html code inside a JavaScript function. It is simple template language. It is faster then normal JavaScript code

In JSX if we want to write any dynamic code it must be {}

{variableName}

{functioncall}

{expression}

React is pre defined API which is a part of react module. Which contains createElement function which takes 3 parameter

1st parameter is tag name

2nd parameter is tag property

3rd parameter is contents inside a tag

In JSX if we want to write only one tag then write in single line

If you want to write more than one tag then those all tags must be enclosed in container tag generally div tag.

if you want to write more than one line in JSX must be enclosed in ();

JSX must after return keyword

If one tag then you write

return <tagName></tagName>

return <div></div>

more than one tag

return <tagName><tagName></tagName></tagName>

return <div><h1>hello</h1></div>

if we are planning to write more than one line then it must be enclosed in ()

return (

<div>

<h1>Welcome</h1>

</div>

)

React Login

create-react-app react-login

In react JS by default all function consider first parameter as event. So to get event name we have to use the parameter name event or e.

event.target.name : that particular tag name attribute

event.target.value : that particular tar value attribute

03-02-2023

axios : axios is a third party module which help to call rest api in react js.

Calling REST API develop using express js with mongodb module

MVC REST API Using MongoDB Module

create-react-app react-employee-rest-api

after created the project please move inside a project

cd react-employee-rest-api

npm install axios

useEffect react js hook function

useEffect is also known as side effect. Whenever virtual dom update the data in actual dom ie render this useEffect function get called automatically.

Syntax

useEffect(callback,[v1,v2,v3]);

create-react-app react-use-effect

Component communication

Every component hold state variable using useState hook inside a functional component. State variable are local to that component. But if we want to share the data between one component to another component we need to understand component relationship.

1. Parent child relationship : using props we can share the data between parent to child component.
2. Child parent relationship : using props with callback function we can share the data between child to parent component.
3. Sibling relationship

<div>

<h1>heading </h1>

<p>Welcome</p>

<b>Info </b>

</div>

Div is a parent tag

H1, p and b are child tag. So h1, p and b are child of div tag.

Div tag to p is parent child relationship

P to div tag child parent relationship

H1 to p or b sibling relationship

For p h1 is previous sibling and b is next sibling.

Create the folder component-communication

create-react-app component-communication

normal html web page we can use inline css

<div style=”background-color:red”></div>

In React js inside jsx

<div style={{“backgroundColor”:”red”}}></div>

React routing : react routing is a third party module which help to navigate from one component to another component with or without conditions.

create-react-app reacting-routing-app

cd reacting-routing-app

after project created install routing module inside a project

npm install react-router-dom

index.js : this file provide bridge between virtual dom and actual dom.

const root = ReactDOM.createRoot(document.getElementById(“root”));

root.render()

Index.html (inside public folder)

<div id="root"></div>

To enable the routing features in react app

First we need to import BrowserRouter module from react-router-dom (index.js)

Wrap App component inside BrowserRouter module.

Enable routing features to App component(parent component).

Link is a pre defined module provided by react js which help to to create hyperlink to component.

useNavigate is a pre defined hook function which help to navigate from one component to another component with condition.

If we want to access from backend

Then install axios

npm install axios

in the application when we are creating enterprise application that time we need to use more than one 100 or 200 or 1000 components.

To remember all component relationship is every difficult.

Parent

name = “Akash”; (state variable )

Child1 using props we can pass parent state variable to child1 component

Child2 using props we can pass child1 props variable from parent to child2 components.

Child3

Using props we can pass child2 value to child3

Child4 using props we can pass child3 to child4

Parent parent to child1 or chil2 we can share using props

Child1 or child2 to parent using props with callback

Child1 child2 child1 to chile2 or vice-versa.

1. Child1 pass the value to parent using props with callback and parent pass value to child2 using props.

Child3 Child4

<Parent>

<Child1>

<Child3></Child3>

</Child1>

<Child2>

<Child4></Child4>

</Child2>

</Parent>

React context api : context api provided consumer and producer using this concept we can share the value from parent to child doesn’t matter number of child link or chain.

In this concept parent become producer and all children become consumer.

Redux : redux is state management tool. Which provide global state features.

In React we can create component using three ways

1. Function style
2. Class style
3. Arrow style

<div>

<h1></h1>

<p></p>

</div>

Div is parent tag.

H1 and p is child for div tag

H1 and p are sibling

Context api using react functional component

Parent component take the help of Context reference and share the value using Provider tag.

In child component to get the value from provider we have to take the help of Context reference with useContext hook and get the value doesn’t matter child component present in any level

App

Parent

Child1

Child2 Child3 Child4 Child5

Redux : Redux is a state management library tool for JavaScript program or library.

Redux help to provide global state variable.

Redux created base upon Flux

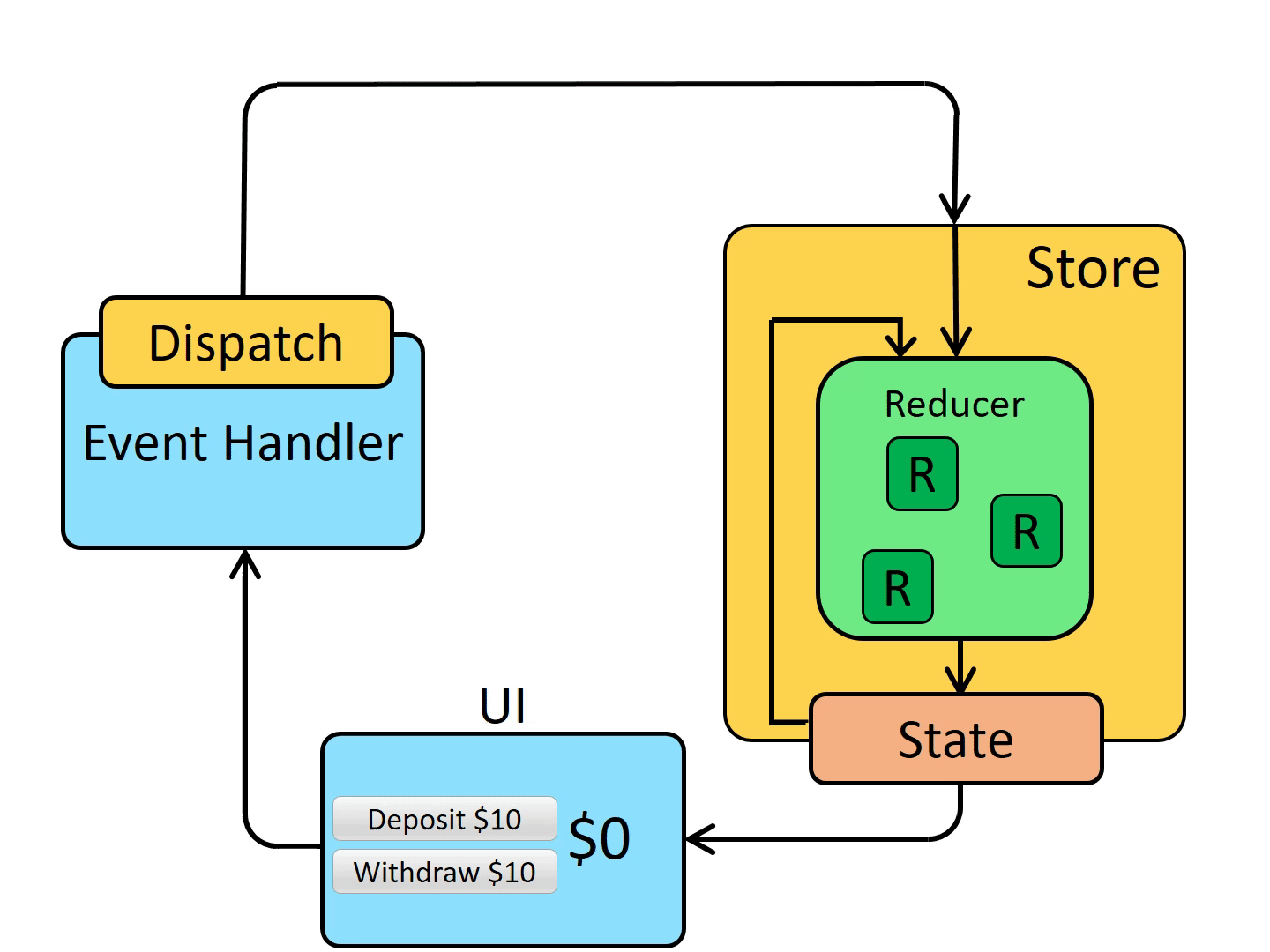
4 main component of redux

State : using some configuration if we store our local state variable inside a redux store. Those state variable consider as global state variable. So any component doesn’t matter their relation they can access or use it or update it.

Action : action is use to do some action on those variable like add new value, delete value, update and retrieve.

Reducer : reducer is a normal JavaScript function which take 2 parameter action and payload and base upon action it will do the operation on state which present in store. Using dispatch we can pass the action and payload to reducer with help of event.

Store : store is like a database or container which is use to hold more than one state variable.

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create-react-app react-redux-demo

cd react-redux-demo

npm install redux

npm install react-redux

reducer.js

let initialState = {

    counter:0

}

function reducer(currentState=initialState,action){

    // base upon action we can do the changes on state variable.

    // which is consider as global state

    return currentState;

}

export default reducer;

index.js

import React from 'react';

import ReactDOM from 'react-dom/client';

import './index.css';

import App from './App';

import reportWebVitals from './reportWebVitals';

import { createStore } from 'redux';

import reducer from './reducer';

import { Provider } from 'react-redux';

const store = createStore(reducer);

// we are creating store and assign reducer with state variable

                     // no state variable consider as global variable.

const root = ReactDOM.createRoot(document.getElementById('root'));

root.render(

  <React.StrictMode>

    <Provider store={store}>

    <App />

    </Provider>

  </React.StrictMode>

);

// to enable store features in all component to access global state.

// If you want to start measuring performance in your app, pass a function

// to log results (for example: reportWebVitals(console.log))

// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals

reportWebVitals();

Now if we want to access global state variable which is present in reducer ie counter in any component ie functional component react provided hook what is useSelector().

If we want to do any action on state variable we have to take the help of useDispatch() hook which help to dispatch action as well as payload to reducer.