**Day 1 :13 Jul. 24**

Design pattern : Design pattern is best practices or solution of repeating problem.

Separation of concern.

Loosely coupling etc.

Layer architecture application.

GOF

Creational design pattern

Structural design pattern

Behavioural design pattern.

Design pattern offer common platform for developer or programmer.

Using design pattern ensure that react best practise are applied.

Using these pattern we can achive

Code reusability, Maintainability, scalability. Etc

Hook design pattern.

Before React 16.x to create state full component we are/were class style components.

With help of react hook we can make functional style component as stateful components.

useState() : this hook provide use to create state variable in function components.

useEffect() : it is a type of hook which help to do side effect. Which take two parameter 1st function and array(dependencies).

useReducer(): this hook provide a build in way to use reducer pattern with a components. It takes two parameter 1st reducer and an initial state and return the current state and dispatch functions. This dispatch function is used to send the action to the reducer. Here reducer pure JavaScript function part of same file or different file. This function responsible to do the changes on state variable.

useReducer() this function takes 2 parameter 1st parameter reducer function name. reducer is pure java script function which takes two parameter 1 parameter state and 2nd parameter action. Base upon action it will some changes on state variable. 2nd parameter of useReducer is initial state. Return type of userReducer is array. 0 index position is state variable reference and 1 index position function name which help to send the action and payload to reducer functions.

Creating custom hook

Using custom hook we can achieve encapsulation. Using Custom hook we can do re-usability the code.

If we want to create custom hook name of the hook start with use prefix followed by name of the hook.

useXXX()

Component based architecture design pattern

SPA :Single Page application. They provide component concept.

Component is use to control the view or part of the view in SPA.

Using component we can create user defined tags.

Component based architecture design pattern used in software development where the application is decomposed into smaller, reusable and encapsulate in components. Those component created using function style or class style or arrow style etc. These component base architecture we use in different framework/library like React JS, Next JS, Angular Framework or Vue etc. The components encapsulate HTML, CSS and JavaScript/Typescript which help to the application easier to develop, maintain the scale up.

App.js parent components

UserDetailsApp This component hold user information using array or interact with api.

UserList : This component is responsible to display the data in list or table or any other format depending application requirements.

UserDetail : this component is responsible to do display particular user information as well as we can edit or delete that user info.

create-react-app component-based-architecture

App.js is parent components

UserDetailsApp.js Container Component or which hold the data. That data can be retrieve from array or file or rest api.

UserList component is child of UserDetailsApp component using props we are passing users array value to UserList components.

Container and Presentation Component design pattern

This design pattern also known as container/view pattern.

Container : This component are responsible for handling the data. That data can be array, file or using fetch load the data. Data can be retrieve from userReducer or using redux with useSelector() from redux store. If we need this component can pass this data to child component using props.

Presentation Component : This component mainly focus on display the data in different format.

https://dummyjson.com/users

Container component if we need we use useFetch hook to load data.

UserListContainer.js which hold data( we retrieve the data using fetch API)

Presentation component

UserList : this component is use to display the data in table format.

User : this component is use to display particular user details and delete operation for particular user from array.