**Create a React component that manages multiple form input fields using a single state object and displays the values in real-time**

Example1.js

import React, { useState } from 'react'

function US3() {

const[data,setdata]=useState({});

const handleChange = (e) => {

const { name, value } = e.target;

setdata({...data,[name]: value});

};

return (

<div>

<div><input type="text" name="firstName" onChange={handleChange} placeholder='First Name'/></div>

<div><input type="text" name="lastName" onChange={handleChange} placeholder='Last Name'/></div>

<h1>First Name: {data.firstName} Lastname: {data.lastName}</h1>

</div>

) }

export default US3

**Create a React component that randomly displays one image from a set of predefined images and changes the image when a button is clicked**

**Example2.js**

import {useState} from "react";

import img1 from "./img1.jpg"

import img2 from "./img2.jpg"

import img3 from "./img3.png"

import img4 from "./img4.jpg"

import img5 from "./img5.jpg"

function US7()

{

const arr = [img1,img2,img3,img4,img5]

const [myimage,setimage] = useState(arr[0]);

const changeImage = () => {

const randomIndex = Math.floor(Math.random() \* arr.length);

setimage(arr[randomIndex]);

};

return (

<div className="App">

<header className="App-header">

<h1>Random Image Generator</h1>

<img src={myimage} alt="Random" width="500" height="500"/>

<button onClick={changeImage}>Change Image</button>

</header>

</div>

);

}

export default US7

**Create react app which takes user defined inputs number 1 and number 2 and perform addition, subtraction, multiplication, division of the numbers. (Use useState hook)**

US3.js

import React, { useState } from 'react'

function US3() {

const[data,setdata]=useState({});

const[result,setresult]=useState();

const handleChange = (e) => {

const { name, value } = e.target;

setdata({...data,[name]: value});

};

function addition(){

setresult(parseInt(data.num1) + parseInt(data.num2))

}

function sub(){

setresult(parseInt(data.num1) - parseInt(data.num2))

}

function mult(){

setresult(parseInt(data.num1) \* parseInt(data.num2))

}

function division(){

setresult(parseInt(data.num1) / parseInt(data.num2))

}

return (

<div>

<div><input type="number" name="num1" onChange={handleChange} placeholder='First Name'/></div>

<div><input type="number" name="num2" onChange={handleChange} placeholder='Last Name'/></div>

<button onClick={addition}>addition</button>

<button onClick={sub}>Subtraction</button>

<button onClick={mult}>Multiplication</button>

<button onClick={division}>Division</button>

<h1> {result}</h1>

</div>

) }

export default US3

**Create react app to filter images based on category while clicking on respective buttons.**

**In example,**

**Categories – All, Samsung, Vivo and Oneplus.**

**By clicking on “All” it will display mobiles of all brands. By clicking on specific brand it will display mobiles of respective brand.**

import React, { useState } from 'react';

import img1 from "./img1.jpg"

import img2 from "./img2.jpg"

import img3 from "./img3.png"

import img4 from "./img4.jpg"

import img5 from "./img5.jpg"

const Gallery = [

{ id:1,pic:img1,category:"Samsung"},

{ id:2,pic:img2,category:"Mi"},

{ id:3,pic:img3,category:"Oneplus"},

{ id:4,pic:img4,category:"Mi"},

{ id:5,pic:img5,category:"Oneplus"},

];

function Product () {

const[images,setImage]=useState(Gallery);

function handleproduct(Item){

const finaldata=Gallery.filter((value)=>value.category===Item)

if(Item !== "All"){ setImage(finaldata); }

else{ setImage(Gallery) }

}

return (

<div>

<button onClick={() =>handleproduct('All')}>All</button>

<button onClick={() =>handleproduct('Samsung')}>Samsung</button>

<button onClick={() =>handleproduct('Mi')}>Mi</button>

<button onClick={() =>handleproduct('Oneplus')}>Oneplus</button>

<div>

{

images.map((val)=>

{

return(

<>

<img src={val.pic} height="300" width="300"/>

</>

)

})

}

</div>

</div>

)

}

export default Product

**Use multiple contexts in a React application by creating and consuming them across different components.**

**uc1.js: Creates a context for CSS styling and provides it to Comp1.**

**uc2.js: Creates a context for a string value ("Students") and provides it to Comp2.**

**uc3.js: Consumes both contexts and displays a message with the provided styles and string.**

**uc1.js**

import React, { createContext } from "react"

import Comp1 from "./uc2"

const CC = createContext();

const mycss={backgroundColor:'yellow',color:'red',fontSize:"45px"}

function Comp(){

return (

<>

<CC.Provider value={mycss}>

<Comp1/>

</CC.Provider>

</>

)

}

export default Comp

export {CC}

**uc2.js**

import { createContext } from "react"

import Comp2 from "./uc3"

const CC1 = createContext();

function Comp(){

return (

<CC1.Provider value="Students">

<Comp2/>

</CC1.Provider>

)

}

export default Comp

export {CC1}

**uc3.js**

import React, { useContext } from "react"

import { CC } from "./uc1"

import { CC1 } from "./uc2"

function Comp3(){

const mycss = useContext(CC)

const data = useContext(CC1)

return (

<h1 style={mycss}>Welcome to useContext tutorial {data}</h1>

)

}

export default Comp3