ChangeColors(Traffic Lights simulation)

ChangeColors.js

```
import React, { Component } from "react";
import "./styles.css";
export class ChangeColors extends Component {
  constructor(props) {
    super(props);

    this.state = {
      showRed: true,
      showYellow: false,
      showGreen: false,
    };
  }
  componentDidMount() {
    setTimeout(() => {
      this.setState({ showRed: false, showYellow: true, showGreen:
false });
    }, 4000);
  }
  componentDidUpdate(prevProps, prevState) {
    console.log("PrevProps:", prevProps);
    console.log("PrevState:", prevState);
    console.log("CurrentProps:", this.props);
    console.log("CurrentState:", this.state);
    if (this.state.showYellow) {
      setTimeout(() => {
        this.setState({ showRed: false, showYellow: false, showGreen:
true });
      }, 2000);
    }
    if(this.state.showGreen){
        setTimeout(()=>{
            this.setState({showRed: true, showYellow: false, showGreen:
false})
        },4000);
    }
    if(this.state.showRed){
        setTimeout(() => {
            this.setState({ showRed: false, showYellow: true,
showGreen: false });
          }, 4000);
    }
  }
  render() {
    return (
      <div>
```

```
        <div className={this.state.showRed ? "circle-red" : "circle"} />
        <div className={this.state.showYellow ? "circle-yellow" : "circle"} />
        <div className={this.state.showGreen ? "circle-green" : "circle"} />

      </div>
    );
  }
}

export default ChangeColors;
```

Styles.css

```
.circle {
    border: 1px solid black;
    border-radius: 50%;
    width: 100px;
    height: 100px;
    background-color: white;
    transition: background-color 0.5s ease-in-out;

}
.circle-red {
    border: 1px solid red;
    border-radius: 50%;
    width: 100px;
    height: 100px;
    background-color: red;
    transition: background-color 0.5s ease-in-out;
    outline: none;
}
.circle-green {
    border: 1px solid green;
    border-radius: 50%;
    width: 100px;
    height: 100px;
    background-color: green;
    transition: background-color 0.5s ease-in-out;
    outline: none;
}
.circle-yellow {
    border: 1px solid orange;
    border-radius: 50%;
    width: 100px;
    height: 100px;
    background-color: orange;
    transition: background-color 0.5s ease-in-out;
    outline: none;
}

.line{
    border: 1px solid black;
    height: 100px;
    width: 20px;
}
```

App.js

```
import './App.css';
import ChangeColors from './components/ChangeColors.js/ChangeColors';
function App() {
  return (
    <div style={{width:'90%', margin: '0 auto'}}>
      <ChangeColors />
    </div>
  );
}

export default App;
```

Display Array in Table

DisplayData.js

```
import React, { Component } from "react";
import { products } from "../data";

export class DisplayData extends Component {
  render() {
    return (
      <div>
        <table border={1}>
          <tr>
            <th>id</th>
            <th>Title</th>
            <th>Price</th>
            <th>Quantity</th>
          </tr>
          {products.map((item) => {
            return (
              <tr key={item.id}>
                <td>{item.id}</td>
                <td>{item.title}</td>
                <td>{item.price}</td>
                <td>{item.quantity}</td>
              </tr>
            );
          })}
        </table>
      </div>
    );
  }
}

export default DisplayData;
```

data.js

```
export const products = [
    {
      id: 1,
      title: "Spring and summershoes",
      price: 20,
      quantity: 3,
      total: 60,
      discountPercentage: 8.71,
      discountedPrice: 55,
    },
    {
      id: 2,
      title: "TC Reusable Silicone Magic Washing Gloves",
      price: 29,
      quantity: 2,
      total: 58,
      discountPercentage: 3.19,
      discountedPrice: 56,
    },
    {
      id: 3,
      title: "Oil Free Moisturizer 100ml",
      price: 40,
      quantity: 2,
      total: 80,
      discountPercentage: 13.1,
      discountedPrice: 70,
    },
    {
      id: 4,
      title: "Wholesale cargo lashing Belt",
      price: 930,
      quantity: 1,
      total: 930,
      discountPercentage: 17.67,
      discountedPrice: 766,
    },
    {
      id: 5,
      title: "Women Sweaters Wool",
      price: 600,
      quantity: 2,
      total: 1200,
      discountPercentage: 17.2,
      discountedPrice: 994,
    },
  ];
```

App.js

```
import './App.css';
import DisplayData from './components/DisplayData';

function App() {
  return (
    <div>
      <DisplayData />
    </div>
  );
}

export default App;
```

LifeCycle Methods

ParentComponent.js

```
import React, { Component } from 'react'
import ChildComponent from './ChildComponent'

export class ParentComponent extends Component {
    constructor(props) {
      super(props)

      this.state = {
         count: 0,
         shouldDisplay: false,
      }
    }

    handleClick = () => {
      this.setState({count: this.state.count+1, shouldDisplay: true})
    }


    render() {
    return (
      <div>
        <button onClick={this.handleClick}>Update Count</button>
        {this.state.count}
        {this.state.shouldDisplay && <p>{this.state.count}</p>}
        <ChildComponent id={this.state.count}/>
      </div>
    )
  }
}

export default ParentComponent
```

ChildComponent.js

```
import React, { Component } from 'react'

export class ChildComponent extends Component {
  constructor(props) {
    super(props)

    this.state = {
       value: 0,
       data: [],
       resultData:[],
    }
  }
  componentDidMount(){
    fetch("https://jsonplaceholder.typicode.com/users/")
      .then((response) => response.json())
      .then((res) => {
        console.log(res);
        this.setState({data : res});
    });
  }
  static getDerivedStateFromProps(props,state){
    state.value = props.id;
  }
  getSnapshotBeforeUpdate(prevProps, prevState){
    console.log('getSnapshotBeforeUpdate')
    return prevProps.id;
  }

  componentDidUpdate(prevProps, prevState, snapshot){
    console.log(snapshot,this.state);
    if(prevState.value !== prevProps.id){
      const result = this.state.data.filter((row) => {
        return (row.id === this.state.value);
    });
      this.setState({resultData: result});
    }
  }

  render() {
    console.log('value: ',this.state.value);
    return (
      <div>
        <table border={1}>
            <tr>
                <th>id</th>
                <th>Name</th>
                <th>Phone</th>
                <th>Email</th>
            </tr>
            {this.state.resultData.map((row) => {
              return (
                    <tr key={row.id}>
                        <td>{row.id}</td>
                        <td>{row.name}</td>
                        <td>{row.phone}</td>
                        <td>{row.email}</td>
                    </tr>
                )
            })}
        </table>
      </div>
    )
  }
```

```
}

export default ChildComponent
```

App.js

```
import './App.css';
import ParentComponent from './components/ParentComponent';

function App() {
  return (
    <div>
      <ParentComponent />
    </div>
  );
}

export default App;
```

Digital Clock

DigitaClock.js

```
import React, { Component } from "react";

export class DigitalClock extends Component {
  constructor(props) {
    super(props);

    this.state = {
      time: "",
    };
  }
  componentDidMount(){
    this.tick();
  }
  tick = () => {
    const hours = new Date().getHours();
    const minutes = new Date().getMinutes();
    const seconds = new Date().getSeconds();
    const updatedTime = `${hours}:${minutes}:${seconds}`;
    this.setState({time: updatedTime})
  };
  componentDidUpdate(prevProps,prevState){
    if(this.state.time !== prevState.time){
        this.interval = setInterval(()=>{
            this.tick();
        },1000);
    }
  }

  componentWillUnmount(){
    clearInterval(this.interval);
  }

  render() {
    return <div>{this.state.time}</div>;
  }
}

export default DigitalClock;
```

App.js

```
import './App.css';
import DigitalClock from './components/DigitalClock/DigitalClock';
function App() {
  return (
    <div style={{width:'90%', margin: '0 auto'}}>
      <DigitalClock />
    </div>
  );
}

export default App;
```

Lifting State Up

Parent.js

```
import { Paper, Typography } from "@mui/material";
import React, { Component } from "react";
import Sibling1 from "./Sibling1";
import Sibling2 from "./Sibling2";

export class Parent extends Component {
  constructor(props) {
    super(props);

    this.state = {
      parentValue: "null",
    };
  }
  handleClick = (value) => {
    this.setState({ parentValue: value });
  };
  render() {
    return (
      <Paper
        elevation={3}
        style={{
          width: "70%",
          margin: "auto",
          padding: "20px",
          textAlign: "center",
        }}
      >
        <Typography variant="h3">Parent</Typography>
        <Typography variant="caption">
          {" "}
          value: {this.state.parentValue}{" "}
        </Typography>
        <div
          style={{
            display: "flex",
            margin: "auto",
            width: "50%",
            alignItems: "center",
            justifyContent: "center",
          }}
        >
          <Sibling1 onClick={(value) => this.handleClick(value)} />
          <Sibling2 value={this.state.parentValue} />
        </div>
      </Paper>
    );
  }
}

export default Parent;
```

Sibling1.js

```
import { Paper, TextField, Typography } from "@mui/material";
import React, { Component } from "react";

export class Sibling1 extends Component {
  constructor(props) {
    super(props);

    this.state = {
      sibling1Value: "",
    };
  }
  handleChange = (e) => {
    this.setState({ sibling1Value: e.target.value });
    this.props.onClick(e.target.value);
  };
  render() {
    return (
      <Paper style={{ margin: "20px", padding: "20px", textAlign:
"center" }}>
        <Typography variant="h4"> Sibling1 </Typography>
        <TextField
          variant="standard"
          placeholder="Enter some text"
          onChange={this.handleChange}
          value={this.state.sibling1Value}
        />
      </Paper>
    );
  }
}

export default Sibling1;
```

Sibling2.js

```
import { Paper, Typography } from '@mui/material'
import React, { Component } from 'react'

export class Sibling2 extends Component {
    constructor(props) {
      super(props)

      this.state = {
         sibling2Value: this.props.value,
      }
    }
static getDerivedStateFromProps(props,state){
  return state.sibling2Value = props.value;
}

  render() {
    return (
      <Paper style={{margin:'20px', padding: '20px',
textAlign:'center'}}>
        <Typography variant='h4' > Sibling2</Typography>
        <Typography
variant='caption'>{this.state.sibling2Value}</Typography>
      </Paper>
    )
  }
}

export default Sibling2
```

App.js

```
import './App.css';
import Parent from './components/LiftingStateUp/Parent';
function App() {
  return (
    <div>
      <Parent />
    </div>
  );
}

export default App;
```