React

1. React
    - JS library
    - Framework
    - UI (Frontend)
    - Meta (FB)
    - Jsx
    - Component based architecture
    - Virtual DOM

2. Import and export

```
<script type="module" src="script.js"></script>
```

```
import a from "./app.js";

console.log(a);
```

```
const a =10;

export default a;
```

Output: 10

3. Creation
    - npm create-react-app (or)
    - npm create vite (use this)
    - cd folder-name
    - npm install
    - npm run dev

4. main.jsx

```
import React from "react";
import ReactDOM from "react-dom/client";
import "./index.css";
import App from "./App.jsx";

ReactDOM.createRoot(document.getElementById("root")).render(<App />);
```

    - App.jsx: son
      Main.jsx: father
      Index.html: grandfather
    - rafce: shortcut react body

5. Component
    - App.jsx: all components calling is done here

6. Props

```
const Card = (props) => {
  console.log(props);

  return (
```

```
const App = () => {
  return (
    <div>
      <Card user="Aman" age={18} />
    </div>
  )
}
```

Output: {user: 'Aman', age: 18}

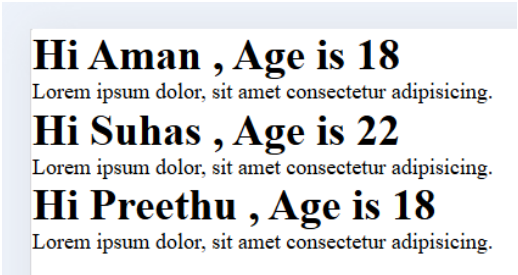
- Console.log(props.age);
    - Output: 18

```
const App = () => {
  return (
    <div>
      <Card user="Aman" age={18} />
      <Card user="Suhas" age={22} />
      <Card user="Preethu" age={18} />
    </div>
  );
};

export default App;
```

-

```
const Card = (props) => {
  console.log(props);

  return (
    <div>
      <h1>
        Hi {props.user} , Age is {props.age}
      </h1>
      <p>Lorem ipsum dolor, sit amet consectetur adipisicing.</p>
    </div>
  );
};

export default Card;
```

Output:



7. Icons:
    - Material ui
    - Remix icons
    - luicide

EXAMPLES

1.
```
const App = () => {

  const arr = [10, 20, 30, 40];

  return (
    <div className="parent">
      {arr.map(function(val) {
        return val;
      })}
    </div>
  );
};

export default App;
```
Output: 10203040

2.
```
const App = () => {

  const arr = [10, 20, 30, 40];

  return (
    <div className="parent">
      {arr.forEach(function (val) {
        console.log(val);
      })}
    </div>
  );
};

export default App;
```
Output: 10 20 30 40

3.
```
const App = () => {

  const arr = [{user:'Suhas'}, {user:'Preethu'},{user:'HSSP'}];

  return (
    <div className="parent">
      {arr.forEach(function (val) {
        console.log(val);
      })}
    </div>
  );
};

export default App;
```
Output:
```
▸ {user: 'Suhas'}
▸ {user: 'Preethu'}
▸ {user: 'HSSP'}
```

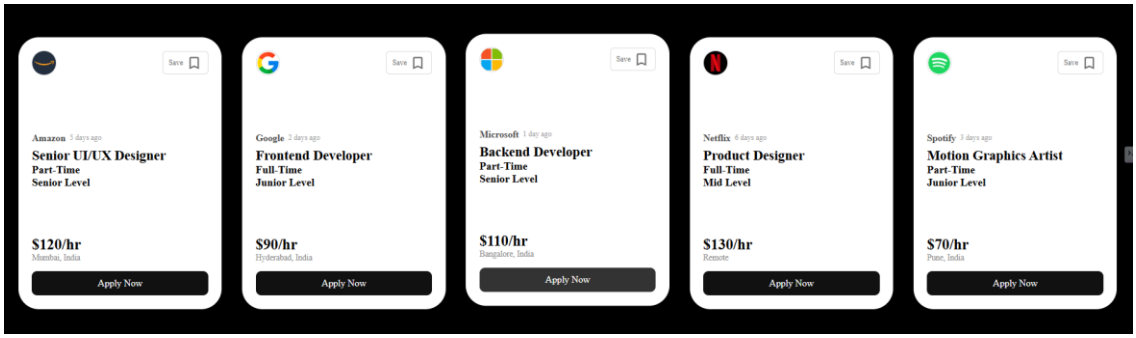
4. Props example

```
const App = () => {
  const jobs = [
    {
      logo: "https://logo.clearbit.com/amazon.com",
      company: "Amazon",
      posted: "5 days ago",
      position: "Senior UI/UX Designer",
      type: "Part-Time",
      level: "Senior Level",
      pay: "$120/hr",
      location: "Mumbai, India",
    },
```

```
  return (
    <div className="parent">
      {jobs.map((job, index) => (
        <Card
          key={index}
          logo={job.logo}
          company={job.company}
          posted={job.posted}
          position={job.position}
          type={job.type}
          level={job.level}
          pay={job.pay}
          location={job.location}
        />
      ))}
    </div>
  );
};

export default App;
```

```
const Card = (props) => {
  return (
    <div>
      <div className="card">
        <div className="top">
          <img
            src={props.logo}
            alt=""
          />
          <button>
            Save <BookmarkBorderOutlinedIcon size={5} />
          </button>
        </div>
        <div className="center">
          <h3>
            {props.company} <span>{props.posted}</span>
          </h3>
          <h2>{props.position}</h2>
          <div>
            <h4>{props.type}</h4>
            <h4>{props.level}</h4>
          </div>
        </div>
        <div className="bottom">
          <div>
            <h3>{props.pay}</h3>
            <p>{props.location}</p>
            <div>
              <button>Apply Now</button>
            </div>
          </div>
        </div>
      </div>
```

Output:



NOTE:

a. Use key={index}
b. Users.map(function((user, index) (……..

8. CSS

```jsx
import styles from "../Hello/Hello.module.css";

const Hello = () => {
  return (
    <div>
      <button className={styles.hello}>Click Me</button>
    </div>
  );
};

export default Hello;
```

9. Tailwind CSS
   - Utility first library
   - npm install tailwindcss @tailwindcss/vite
   - Inside vite.config.js

```
import tailwindcss from "@tailwindcss/vite";

// https://vite.dev/config/
export default defineConfig({
        plugins: [tailwindcss()],
});
```

   - Inside index.css
     - @import “tailwindcss”;

10. Function
    a.
```
const Tailwind = () => {
  function btnClick() {
    console.log("BTN Clicked");
  }

  return (
    <div>
      <button onClick={btnClick}>Click</button>
    </div>
  );
};

export default Tailwind;
```
    Output:
```
10 BTN Clicked
```
    b. elem.target.value

11. Hooks
    - useState: used to manage state
    - useEffect: in side effects handle (API call, DOM manipulation, event listener)
    - useReducer: manage complex state management
    - useRef: select DOM elements
    - useContext: manage global state without prop drilling
    - useMemo: optimization in rendering, unnecessary re-renders
    - useCallback: optimization in rendering, unnecessary re-renders

12. useState
    -
```
const App = () => {

  const [num, setNum] = useState(10);

  function changeNum() {
    setNum(20);
  }

  return (
    <div>
      <h1>Value of num is {num}</h1>
      <button onClick={changeNum}>Click</button>
    </div>
  )
}

export default App;
```
    Output:

    Value of num is 10
    Click

    Value of num is 20
    Click

```jsx
const App = () => {
  const [num, setNum] = useState(0);

  function increaseNum() {
    setNum(num + 1);
  }

  function decreaseNum() {
    setNum(num - 1);
  }

  function jumpByFiveNum() {
    setNum(num + 5);
  }
  return (
    <div>
      <h1>{num}</h1>
      <button onClick={increaseNum}>Increase</button>
      <br />
      <button onClick={decreaseNum}>Decrease</button>
      <br />
      <button onClick={jumpByFiveNum}>Jump by five</button>
    </div>
  );
};
```

- Output:

  5
  Increase
  Decrease
  Jump by five

- Object

```jsx
const App = () => {
  const [data, setData] = useState({ user: "Suhas", age: 22 });

  const dataChange = () => {
    const newData = { ...data };
    newData.user = "Preethu";
    newData.age = 16;
    setData(newData);
  };

  return (
    <div>
      <h1>
        {data.user}, {data.age}
      </h1>
      <button onClick={dataChange}>Click</button>
    </div>
  );
};
```

Output:

Suhas, 22
Click

Preethu, 16
Click

```jsx
const App = () => {
  const [user, setUser] = useState({ name: "Suhas", age: 25 });

  const userChange = () => {
    setUser((prev) => ({ ...prev, name: "Preethu", age: 16 }));
  };
  return (
    <div>
      <h1>
        {user.name}, {user.age}
      </h1>
      <button onClick={userChange}>Click</button>
    </div>
  );
};

export default App;
```

- Output:

Suhas, 25
Click

Preethu, 16
Click

13. Form Handling
    - 2 way binding
    - preventDefault

```jsx
const App = () => {
  const [name, setName] = useState("");

  const formSubmit = (e) => {
    e.preventDefault();
    console.log("form submitted by", name);
    setName("");
  };

  return (
    <div>
      <form
        onSubmit={(e) => {
          formSubmit(e);
        }}
      >
        <input
          type="text"
          placeholder="Enter your name"
          value={name}
          onChange={(e) => {
            setName(e.target.value);
          }}
        />
        <button>Submit</button>
      </form>
    </div>
  );
```

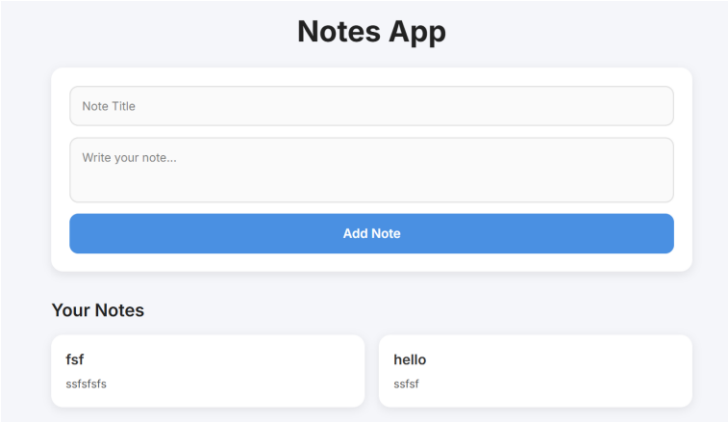
Output;

NOTES EXAMPLE

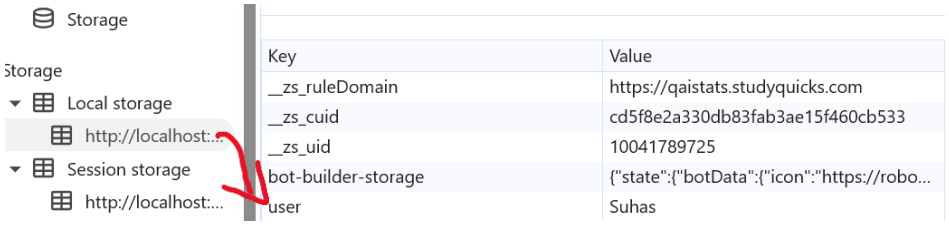
-
```
const App = () => {
  const [heading, setAdding] = useState("");
  const [description, setDescription] = useState("");
  const [notes, setNotes] = useState([]);

  const onSubmitChange = (e) => {
    e.preventDefault();
    if (!heading.trim() || !description.trim()) return;

    const newNote = { heading, description };
    setNotes([newNote, ...notes]);

    setAdding("");
    setDescription("");
  };
```

```
return (
  <div className="container">
    <h1 className="title">Notes App</h1>

    <form onSubmit={onSubmitChange} className="note-form">
      <input
        type="text"
        placeholder="Note Title"
        value={heading}
        className="input"
        onChange={(e) => setAdding(e.target.value)}
      />

      <textarea
        placeholder="Write your note..."
        value={description}
        className="textarea"
        onChange={(e) => setDescription(e.target.value)}
      ></textarea>

      <button type="submit" className="btn">
        Add Note
      </button>
    </form>

    <h2 className="notes-title">Your Notes</h2>

    <div className="notes-grid">
      {notes.map((note, index) => (
        <div className="note-card" key={index}>
          <h3 className="note-heading">{note.heading}</h3>
          <p className="note-description">{note.description}</p>
        </div>
```

Output:

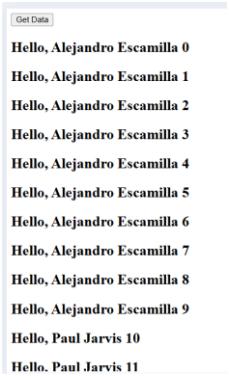


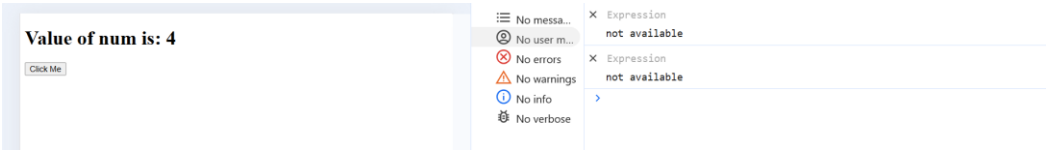
14. Local storage & session storage (setItem, getItem, removeItem, clear)
    - localStorage.clear()
        i. clears localstorage
    - sessionStorage.clear()
        i. clears sessionstorage
    -
```
const App = () => {

  localStorage.setItem("user", "Suhas");

  return <div>App</div>;
};

export default App;
```
    - Output:



    - localStorage.setItem(“user”, “Suhas”);
    - sessionStorage.setItem(“user”, “Suhas”);
    - localStorage.getItem(“user”); //output get this in console using console.log
    - sessionStorage.getItem(“user”); //output get this in console using console.log
    - localStorage.removeItem(“user”);
    - sessionStorage.removeItem(“user”);

15. API Calling
    - Json placeholder: fake api site
    - Lorem picsum: fake api along with images
    -
```
const App = () => {
  const getData = async () => {
    const response = await axios.get(
      "https://jsonplaceholder.typicode.com/users"
    );

    console.log(response.data);
  };
  return (
    <div>
      <button onClick={getData}>Get Data</button>
    </div>
  );
};

export default App;
```
    -
```
import React, { useState } from "react";
import axios from "axios";

const App = () => {
  const [data, setData] = useState([]);

  const getData = async () => {
    const response = await axios.get("https://picsum.photos/v2/list");

    setData(response.data);
  };
  return (
    <div>
      <button onClick={getData}>Get Data</button>
      <div>
        {data.map(function (datas, index) {
          return (
            <h2>
              Hello, {datas.author} {index}
            </h2>
          );
        })}
      </div>
    </div>
  );
};

export default App;
```
    - Output:



16. UseEffect
    - Dependency: []
    -
```
import React, { useEffect, useState } from "react";

const App = () => {
  const [num, setNum] = useState(0);

  useEffect(function () {
    console.log("Use effect is called");
  }, []);

  return (
    <div>
      <h1>Value of num is: {num}</h1>
      <button
        onClick={() => {
          setNum(num + 1);
        }}
      >
        Click Me
      </button>
    </div>
  );
};

export default App;
```
    - Output:
    - 

    -
```
const App = () => {
  const [first, setfirst] = useState(0);
  const [second, setsecond] = useState(0);

  useEffect(function () {
    console.log("Use effect is running");
  }, [first]);

  return (
    <div>
      <h1>First: {first}</h1>
      <h1>Second: {second}</h1>
      <button
        onClick={() => {
          setfirst(first + 1);
        }}
      >
        FIRST
      </button>
      <button
        onClick={() => {
          setsecond(second + 10);
        }}
      >
        SECOND
      </button>
    </div>
```

Output:

When I click FIRST button, this will occur

Gallery App EXAMPLE

```jsx
import React, { useState } from "react";
import axios from "axios";

const App = () => {
  const [images, setImages] = useState([]);

  const getData = async () => {
    const response = await axios.get(
      "https://picsum.photos/v2/list?page=2&limit=10"
    );
    setImages(response.data);
  };
  return (
    <div>
      <button onClick={getData}>Load Images</button>
      {images.map((img, index) => (
        <div key={index}>
          <img src={img.download_url} />
          <h1>{img.url}</h1>
          <p>{img.author}</p>
        </div>
      ))}
    </div>
  );
};

export default App;
```

17. React Router DOM
    - npm i react-router-dom
    - BrowserRouter
    - HashRouter
    - MemoryRouter
    - StaticRouter
    - In main.jsx:

```jsx
import React from "react";
import ReactDOM from "react-dom/client";
import "./index.css";
import App from "./App.jsx";
import { BrowserRouter } from "react-router-dom";

ReactDOM.createRoot(document.getElementById("root")).render(
  <BrowserRouter>
    <App />
  </BrowserRouter>
);
```

- ```jsx
  import React from 'react'
  import { Route, Routes } from 'react-router-dom'
  import Home from './pages/Home'
  import About from './pages/About'
  import Contact from './pages/Contact'

  const App = () => {
    return (

        <Routes>
          <Route path='/' element={<Home />}/>
          <Route path='/about' element={<About />} />
          <Route path='/contact' element={<Contact />} />
        </Routes>

    )
  }

  export default App
  ```
- ```jsx
  const App = () => {
    return (
      <div>
        <div>
          <Navbar />
        </div>

        <Routes>
          <Route path="/" element={<Home />} />
          <Route path="/about" element={<About />} />
          <Route path="/contact" element={<Contact />} />
        </Routes>
      </div>
    );
  };
  ```
- ```jsx
  const Navbar = () => {
    return (

        <Link to='/'>Home</Link>
        <Link to='/about'>About</Link>
        <Link to='/contact'>Contact</Link>

    );
  };

  export default Navbar;
  ```
  ```

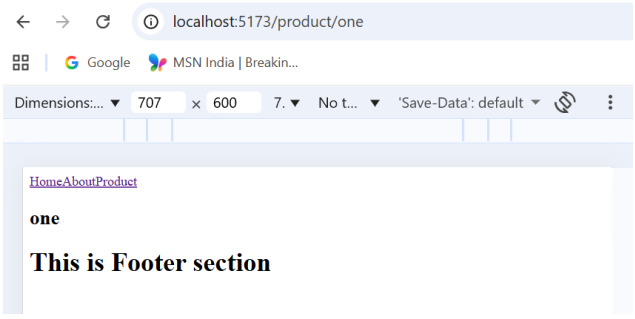
18. Advance Routing

```jsx
const App = () => {
  return (
    <div>
      <Navbar />
      <Routes>
        <Route path="/" element={<Home />} />
        <Route path="/about" element={<About />} />
        <Route path="/product" element={<Product />} />

        {/* Routing with :id */}
        <Route path="/product/:id" element={<ProductDetails />} />

        {/* Nested Routing */}
        <Route path="/product/men" element={<Men />} />

        <Route path="*" element={<NotFound />} />
      </Routes>
      <Footer />
    </div>
  );
};

export default App;
```

-

```jsx
import React from "react";
import { useParams } from "react-router-dom";

const ProductDetails = () => {

  const params = useParams();

  return (
    <div>
      <h2>{params.id}</h2>
    </div>
  );
};

export default ProductDetails;
```

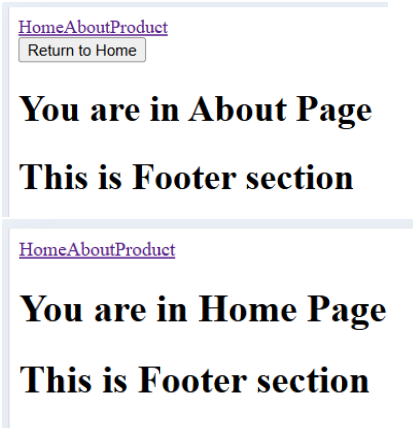
- Output: in URL: http://localhost:5173/product/one



- UseNavigate

```
const About = () => {
  const navigate = useNavigate();
  const btnClicked = () => {
    navigate("/");
  };

  return (
    <div>
      <button onClick={btnClicked}>Return to Home</button>
      <h1>You are in About Page</h1>
    </div>
  );
};

export default About;
```

Output:



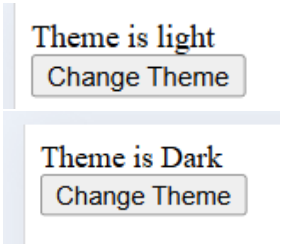
EXAMPLES

-

```
import React, { useState } from 'react'
import Navbar from './pages/Navbar';

const App = () => {

  const [theme, setTheme] = useState('light');
  return (
    <div>
      Theme is {theme}

      <Navbar theme={theme} setTheme={setTheme}/>
    </div>
  )
}

export default App
```

```jsx
const Navbar = (props) => {

    function changeTheme() {
        props.setTheme('Dark')
    }
  return (
    <div>
      <button
        onClick={changeTheme}
      >
        Change Theme
      </button>
    </div>
  );
};

export default Navbar;
```

Output:



19. useContext
    - data centralization
    - 3 things: Context, Provider, useContext
    - Wrap in main.jsx

```jsx
ReactDOM.createRoot(document.getElementById("root")).render(
  <ThemeContext>
    <App />
  </ThemeContext>
);
```

```jsx
export const ThemeDataContext = createContext();

const ThemeContext = (props) => {
  return (
    <div>
        <ThemeDataContext.Provider value="Suhas">
            {props.children}
        </ThemeDataContext.Provider>
    </div>
  )
}

export default ThemeContext
```

```jsx
const Navbar = () => {
  const data = useContext(ThemeDataContext);
  return (
    <div>
      <h1>Home</h1>
      <h1>About</h1>
      <h1>Contact</h1>
      <h1>Profile</h1>

      <h2>{data}</h2>
    </div>
  );
};

export default Navbar;
```

```jsx
const App = () => {
  const [theme, setTheme] = useState("light");

  return (
    <div>
      <Navbar theme={theme} />
    </div>
  );
};

export default App;
```

Output:

Home

About

Contact

Profile

Suhas