

WEEK 6 HANDSON 1 : REACT

1. Define SPA and its benefits

SPA (Single Page Application) is a web app that loads a **single HTML page** and dynamically updates content without refreshing the whole page.

Benefits:

- Fast navigation and better user experience
 - Reduces load on server
 - Seamless transitions between pages
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2. Define React and identify its working

React is a **JavaScript library** for building **user interfaces**, especially for SPAs.

How it works:

- Uses a **virtual DOM**
 - Renders UI as **components**
 - Updates only the changed part of the DOM, making it efficient and fast
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3. Differences between SPA and MPA

Feature	SPA	MPA
Pages	Single HTML file	Multiple HTML files
Speed	Fast (no full reload)	Slower (reloads pages)
SEO Friendly	Less (without SSR)	More SEO friendly
Dev Effort	Easier routing & UX	More complex

4. Pros & Cons of SPA

Pros:

- Fast performance
- Great user experience
- Less server load

Cons:

- SEO challenges

- Initial load may be heavy
 - Browser history management is tricky sometimes
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5. Explain about React

React is a **component-based** UI library built by Facebook that helps developers build **interactive UIs** easily using **JavaScript and JSX**.

6. Define virtual DOM

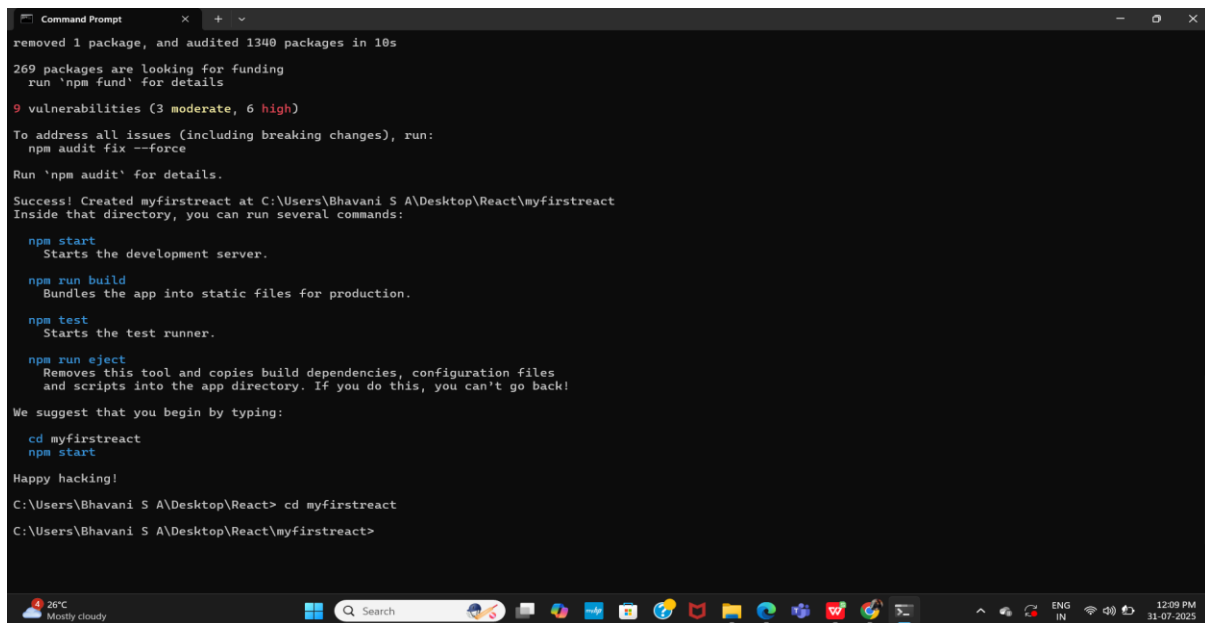
The **Virtual DOM** is a **lightweight copy** of the actual DOM that React uses. When changes happen, React updates the **virtual DOM first**, then compares it with the previous one using a process called “**diffing**”, and updates **only the changed parts** in the real DOM.

7. Features of React

Key React Features:

- **Component-Based Architecture**
- **Virtual DOM** for fast rendering
- **JSX** for writing HTML in JS
- **Unidirectional Data Flow**
- **Reusable components**
- **Strong community & ecosystem**

Installing all the required packages by running the command “ **npx-create-react-app myfirstreact**” command :



```
removed 1 package, and audited 1340 packages in 10s
269 packages are looking for funding
  run `npm fund` for details
9 vulnerabilities (3 moderate, 6 high)
To address all issues (including breaking changes), run:
  npm audit fix --force
Run `npm audit` for details.
Success! Created myfirstreact at C:\Users\Bhavani S A\Desktop\React\myfirstreact
Inside that directory, you can run several commands:

  npm start
    Starts the development server.

  npm run build
    Bundles the app into static files for production.

  npm test
    Starts the test runner.

  npm run eject
    Removes this tool and copies build dependencies, configuration files
    and scripts into the app directory. If you do this, you can't go back!

We suggest that you begin by typing:

  cd myfirstreact
  npm start

Happy hacking!
C:\Users\Bhavani S A\Desktop\React> cd myfirstreact
C:\Users\Bhavani S A\Desktop\React\myfirstreact>
```

After fixing the code , then run the command “ **npm start** “

