Navbar Component Explanation

Vous avez dit :

```
import React, { useEffect, useState } from "react";
import { Link } from "react-router-dom";

import { styles } from "../styles";
import { navLinks } from "../constants";
import { logo, menu, close } from "../assets";

const Navbar = () => {
  const [active, setActive] = useState("");
  const [toggle, setToggle] = useState(false);
  const [scrolled, setScrolled] = useState(false);

  useEffect(() => {
    const handleScroll = () => {
      const scrollTop = window.scrollY;
      if (scrollTop > 100) {
        setScrolled(true);
      } else {
        setScrolled(false);
      }
    };

    window.addEventListener("scroll", handleScroll);

    return () => window.removeEventListener("scroll", handleScroll);
  }, []);

  return (
    <nav
      className={`${
`         styles.paddingX
      } w-full flex items-center py-5 fixed top-0 z-20 ${
        scrolled ? "bg-primary" : "bg-transparent"
      }`}
`     >
      <div className="w-full flex justify-between items-center max-w-7xl mx-auto">
        <Link
          to="/"
          className="flex items-center gap-2"
          onClick={() => {
            setActive("");
            window.scrollTo(0, 0);
          }}
    >
     <img src={logo} alt="logo" className="w-9 h-9 object-contain" />
     <p className="text-white text-[18px] font-bold cursor-pointer flex ">
      Safwen &nbsp;
      <span className="sm:block hidden"> | Software Engineer</span>
     </p>
    </Link>

    <ul className="list-none hidden sm:flex flex-row gap-10">
     {navLinks.map((nav) => (
      <li
       key={nav.id}
       className={`${
`        active === nav.title ? "text-white" : "text-secondary"
       } hover:text-white text-[18px] font-medium cursor-pointer`}
`       onClick={() => setActive(nav.title)}
      >
       <a href={`#${nav.id}`}>{nav.title}</a>
      </li>
     ))}
    </ul>

    <div className="sm:hidden flex flex-1 justify-end items-center ">
     <img
      src={toggle ? close : menu}
      alt="menu"
      className="w-[28px] h-[28px] object-contain"
      onClick={() => setToggle(!toggle)}
     />

     <div
      className={`${
`       !toggle ? "hidden" : "flex"
      } p-[2px] bg-gradient-to-r from-customPink via-customPurple to-customYellow absolute top-20 right-0 mx-4 my-2 min-w-[140px] z-10 rounded-xl`}
`     >
      <div className="bg-tertiary rounded-lg flex items-center justify-center w-full h-full p-6">
       <ul className="list-none flex justify-end items-start flex-1 flex-col gap-4 ">
        {navLinks.map((nav) => (
         <li
          key={nav.id}
          className={`font-poppins font-medium cursor-pointer text-[16px] ${
`           active === nav.title ? "text-white" : "text-secondary"
          }`}
`          onClick={() => {
           setToggle(!toggle);
           setActive(nav.title);
          }}
         >
          <a href={`#${nav.id}`}>{nav.title}</a>
         </li>
```

```
                ))}
              </ul>
            </div>
          </div>
        </div>
      </div>
    </nav>
  );
};

export default Navbar;
```

explain each part one by one

ChatGPT a dit :

This `Navbar` component in React represents a navigation bar with responsive design that adapts to different screen sizes. Let's break down the code step by step:

1. Imports

```javascript
import React, { useEffect, useState } from "react";
import { Link } from "react-router-dom";
import { styles } from "../styles";
import { navLinks } from "../constants";
import { logo, menu, close } from "../assets";
```

- `React`, `useEffect`, and `useState` are imported from React to build and manage the component's state and side effects.
- `Link` from `react-router-dom` is used to navigate within the application without reloading the page.
- `styles`, `navLinks`, `logo`, `menu`, and `close` are imported from local files, likely containing styling, navigation data, and image assets.

2. Component State

```javascript
const [active, setActive] = useState("");
const [toggle, setToggle] = useState(false);
const [scrolled, setScrolled] = useState(false);
```

- `active`: Tracks which navigation link is currently active.
- `toggle`: Manages the state of the mobile menu (open or closed).

- `scrolled`: Keeps track of whether the page has been scrolled down past a certain point (100px in this case).

3. Scroll Effect

```javascript
useEffect(() => {
  const handleScroll = () => {
    const scrollTop = window.scrollY;
    if (scrollTop > 100) {
      setScrolled(true);
    } else {
      setScrolled(false);
    }
  };

  window.addEventListener("scroll", handleScroll);

  return () => window.removeEventListener("scroll", handleScroll);
}, []);
```

- `useEffect` sets up a side effect that adds a `scroll` event listener to the window.
- `handleScroll` checks the current scroll position (`window.scrollY`). If the user has scrolled more than 100px, `scrolled` is set to `true`, changing the navbar's background color.
- The event listener is cleaned up when the component unmounts to prevent memory leaks.

4. Navbar Structure

```javascript
<nav
  className={`${
    styles.paddingX
  } w-full flex items-center py-5 fixed top-0 z-20 ${
    scrolled ? "bg-primary" : "bg-transparent"
  }`}
>
```

- The `nav` element represents the navigation bar.
- The `className` dynamically applies classes based on the `scrolled` state:
  - `styles.paddingX` (likely a utility class for padding).
  - `w-full`, `flex`, `items-center`, `py-5` for layout styling.
  - `fixed top-0 z-20` ensures the navbar stays at the top of the page with a high stacking order (`z-20`).
  - If `scrolled` is `true`, `bg-primary` (a background color) is applied; otherwise, `bg-transparent` is used.

5. Navbar Content

```javascript
<div className="w-full flex justify-between items-center max-w-7xl mx-auto">
```

- A `div` inside the `nav` acts as a container for the navbar's content. It uses classes to:
    - Set the width to full (`w-full`), and apply flexbox for layout.
    - Center content horizontally with `justify-between` and align items vertically with `items-center`.
    - Limit the maximum width to `7xl` and center it horizontally with `mx-auto`.

6. Logo and Branding

javascript

```javascript
<Link
  to="/"
  className="flex items-center gap-2"
  onClick={() => {
    setActive("");
    window.scrollTo(0, 0);
  }}
>
  <img src={logo} alt="logo" className="w-9 h-9 object-contain" />
  <p className="text-white text-[18px] font-bold cursor-pointer flex ">
    Safwen &nbsp;
    <span className="sm:block hidden"> | Software Engineer</span>
  </p>
</Link>
```

- This `Link` element acts as a clickable logo that navigates to the homepage (`to="/"`).
- It also resets the `active` state and scrolls the page to the top when clicked.
- The logo (`img`) and brand text (`p`) are displayed side by side with flexbox (`flex items-center`).
- The `span` inside the `p` element is conditionally rendered (`sm:block hidden`), showing extra text on larger screens.

7. Desktop Navigation Links

javascript

```javascript
<ul className="list-none hidden sm:flex flex-row gap-10">
  {navLinks.map((nav) => (
    <li
      key={nav.id}
      className={`${
        active === nav.title ? "text-white" : "text-secondary"
      } hover:text-white text-[18px] font-medium cursor-pointer`}
      onClick={() => setActive(nav.title)}
    >
      <a href={`#${nav.id}`}>{nav.title}</a>
    </li>
  ))}
</ul>
```

- This `ul` represents the navigation links that are displayed only on larger screens (`hidden sm:flex`).
- It maps through the `navLinks` array (imported at the top) to create individual `li` elements.
- The `li` elements change color when they are active or hovered over and set the `active` state when clicked.

8. Mobile Navigation Menu

javascript

```
<div className="sm:hidden flex flex-1 justify-end items-center ">
  <img
    src={toggle ? close : menu}
    alt="menu"
    className="w-[28px] h-[28px] object-contain"
    onClick={() => setToggle(!toggle)}
  />
```

- This `div` handles the mobile menu, which is hidden on larger screens (`sm:hidden`).
- The `img` element displays either the `menu` or `close` icon based on the `toggle` state. Clicking it toggles the `toggle` state, opening or closing the menu.

9. Mobile Dropdown

javascript

```
<div
  className={`${
    !toggle ? "hidden" : "flex"
  } p-[2px] bg-gradient-to-r from-customPink via-customPurple to-customYellow absolute top-20 right-0 mx-4 my-2 min-w-[140px] z-10 rounded-xl`}
>
  <div className="bg-tertiary rounded-lg flex items-center justify-center w-full h-full p-6">
    <ul className="list-none flex justify-end items-start flex-1 flex-col gap-4 ">
      {navLinks.map((nav) => (
        <li
          key={nav.id}
          className={`font-poppins font-medium cursor-pointer text-[16px] ${
            active === nav.title ? "text-white" : "text-secondary"
          }`}
          onClick={() => {
            setToggle(!toggle);
            setActive(nav.title);
          }}
        >
          <a href={`#${nav.id}`}>{nav.title}</a>
        </li>
      ))}
    </ul>
  </div>
</div>
```

- This `div` represents the dropdown menu that appears when `toggle` is `true`.
- The outer `div` is styled with a gradient background and rounded corners.
- Inside, another `div` contains the actual menu, with links stacked vertically.
- The links behave similarly to the desktop version but are shown in a dropdown style.

10. Export the Component

javascript

```
export default Navbar;
```

- The `Navbar` component is exported as the default export of the module, making it available for use in other parts of the application.

Summary

- **Responsive Design**: The navbar adapts to different screen sizes, showing a full menu on desktops and a toggleable dropdown on mobile.
- **Scroll Detection**: It changes background color when the user scrolls down, enhancing visibility.
- **State Management**: `useState` is used for managing active links, menu toggling, and scroll state.
- **Routing**: `Link` from `react-router-dom` is used for navigation without full page reloads.

This setup provides a clean and responsive navigation experience for a React application.

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