Frontend Development with React.js

InsightStream: Navigate the News

Introduction

Project Title: InsightStream:Navigation the News

Team Members:

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- M.Niraml kumar – Team Member
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- A.Rajesh kumar – Team Member

Project Overview

Purpose:

InsightStream is a revolutionary web application designed to redefine how people discover and consume news. With an intuitive interface, dynamic search features, and a vast range of news categories, InsightStream aims to provide an enhanced user experience for all types of news readers. It is built to simplify the way users access, filter, and engage with news content from various sources.

Features:

- **News from API Sources:** Fetches news articles from external APIs using Rapid API integration.
- **Visual News Exploration:** Displays news through images and categories for easy navigation.
- **Advanced Search Feature:** Allows users to find news articles based on keywords and categories.
- **User-Friendly Design:** A seamless UI for smooth news consumption.
- **Subscription Feature:** Users can subscribe to receive daily news updates.

- **Bookmarking Feature:** Allows users to save articles for later reading.
- **Trending News:** Displays the most popular news articles dynamically.
- **Multi-Language Support:** Enables users to read news in their preferred language.

Architecture

Component Structure

- **Pages Folder:** Contains files for different routes such as Home, Categories, Search Results, and Article Page.
- **Components Folder:** Stores reusable components like Navbar, Hero Section, News Cards, Search Bar, and Footer.
- **Context Folder:** Manages state using Context API for global data handling.
- **Styles Folder:** Contains CSS files for styling the application.

State Management

- **Context API:** Used for global state management, ensuring efficient data flow across components.
- **Redux (Future Enhancement):** Will be implemented to manage complex state more efficiently.

Routing

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- Utilizes **React Router Dom** for seamless navigation between different pages.

Setup Instructions

Prerequisites:

- **Node.js and npm** (https://nodejs.org/en/download/)
- **Git**
- Demo video(https://drive.google.com/drive/folders/1_zDZxnjimsMFklYw4tZWbQnURxkDYudR)

- **Code Editor** (Visual Studio Code recommended: https://code.visualstudio.com/download)

Installation:

Installation Steps

1. Clone the repository:

   git clone [repository link]

2. Navigate to the project directory:

   cd news-app-react

3. Install dependencies:

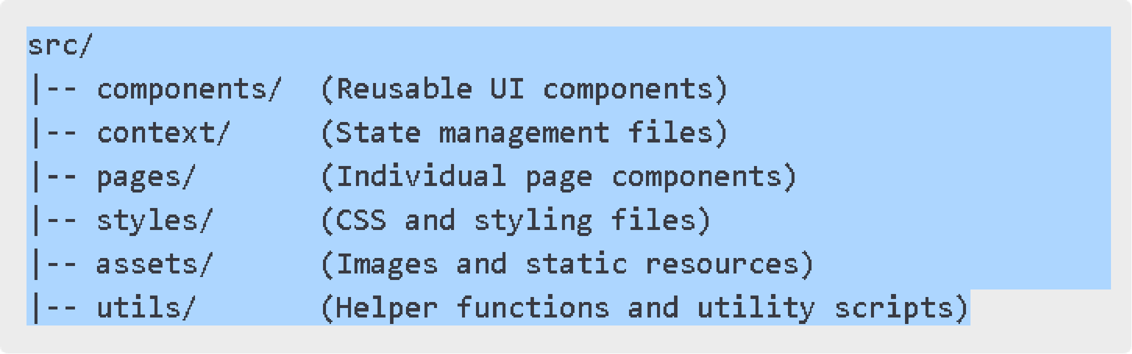
   npm install

4. Start the development server:

   npm start

Folder Structure

- **src/** o **components/** (Reusable UI components) o **context/** (State management files) o **pages/** (Individual page components) o **styles/** (CSS and styling files) o **assets/** (Images and static resources)



```
src/
|-- components/  (Reusable UI components)
|-- context/     (State management files)
|-- pages/       (Individual page components)
|-- styles/      (CSS and styling files)
|-- assets/      (Images and static resources)
|-- utils/       (Helper functions and utility scripts)
```

Running the Application

To start the development server, run:

```
npm start
```

The application will be accessible at https://github.com/vigneshsai4851/newsapp.git

Component Documentation

Key Components

- **Navbar:** Provides navigation across the app.
- **Hero Section:** Displays trending news and a search bar.
- **Category Cards:** Shows different news categories.
- **News List:** Fetches and displays news articles.
- **Article Page:** Redirects users to full news articles.
- **Subscription Section:** Allows users to sign up for daily news updates.
- **Bookmark Section:** Saves user-selected articles for later reading.

Reusable Components

- **Button:** Standard button component.
- **SearchBar:** Implements search functionality for finding articles.
- **NewsCard:** Displays individual news articles.

- **Loading Spinner:** Provides visual feedback during API calls.

State Management

Global State

- Managed using **Context API**, ensuring efficient data sharing across components.

Local State

- Component-level state managed using React's **useState** and **useEffect** hooks.

User Interface

- **Home Page:** Displays trending news and popular categories.
- **Search Page:** Lists articles based on user search queries.
- **Article Page:** Displays full news articles fetched from API.
- **Subscription Section:** Allows users to subscribe to daily updates.
- **Bookmarks Page:** Lists saved articles for easy access.
- **Settings Page (Future Enhancement):** Allows users to personalize their preferences.

Styling

CSS Frameworks/Libraries

- **Tailwind CSS** for styling (https://tailwindcss.com/)
- **React Icons** for UI icons
- **Framer Motion (Future Enhancement):** For smooth animations and transitions.

Testing

Testing Strategy

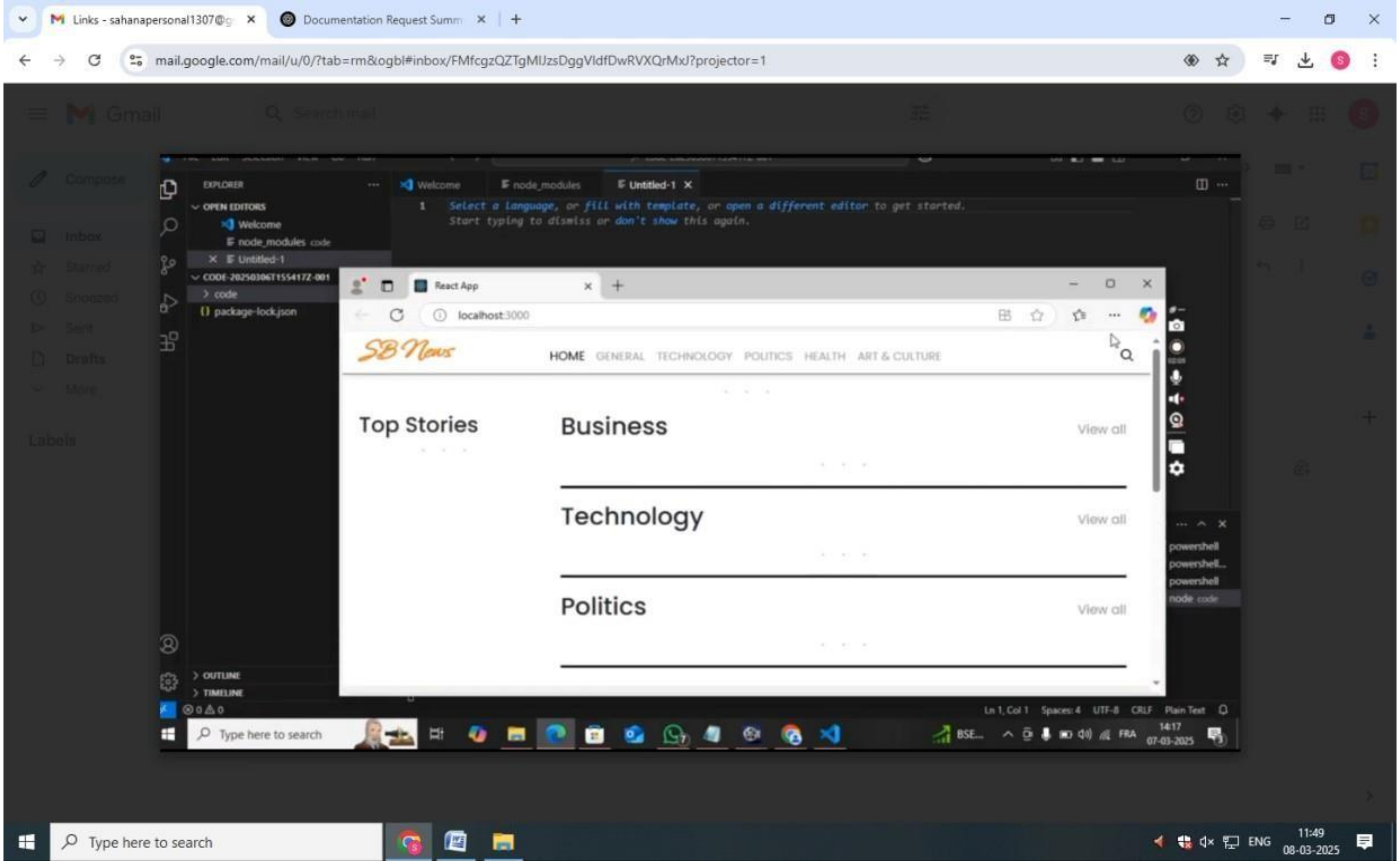
- **Unit tests** using **Jest** and **React Testing Library**.

- **Integration tests** for API calls and UI interactions.

- **End-to-End Testing (Future Enhancement):** Using Cypress for comprehensive UI testing.

. Screenshots or Demo

- Project Demo: https://drive.google.com/file/d/1EHMiVtVakx1KbQHjvwFC3TsBFdQ2qBuj/view?usp=drivesdk
- HomePage Screenshot :

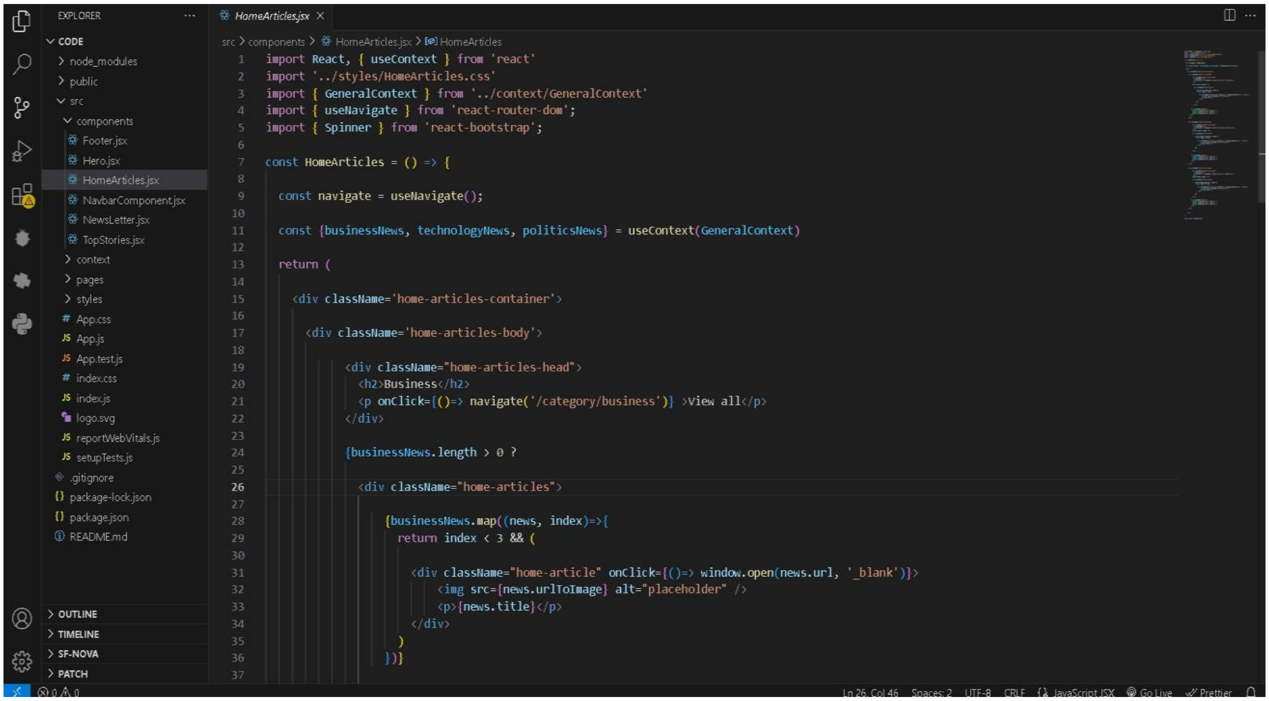


```
Select a language, or fill with template, or open a different editor to get started.
Start typing to dismiss or don't show this again.
```

The **Home Page** of InsightStream is designed to be the central hub for accessing a diverse range of news articles. It offers an intuitive and user-friendly interface, allowing users to explore trending stories, navigate through different news categories, and quickly search for specific topics of interest.

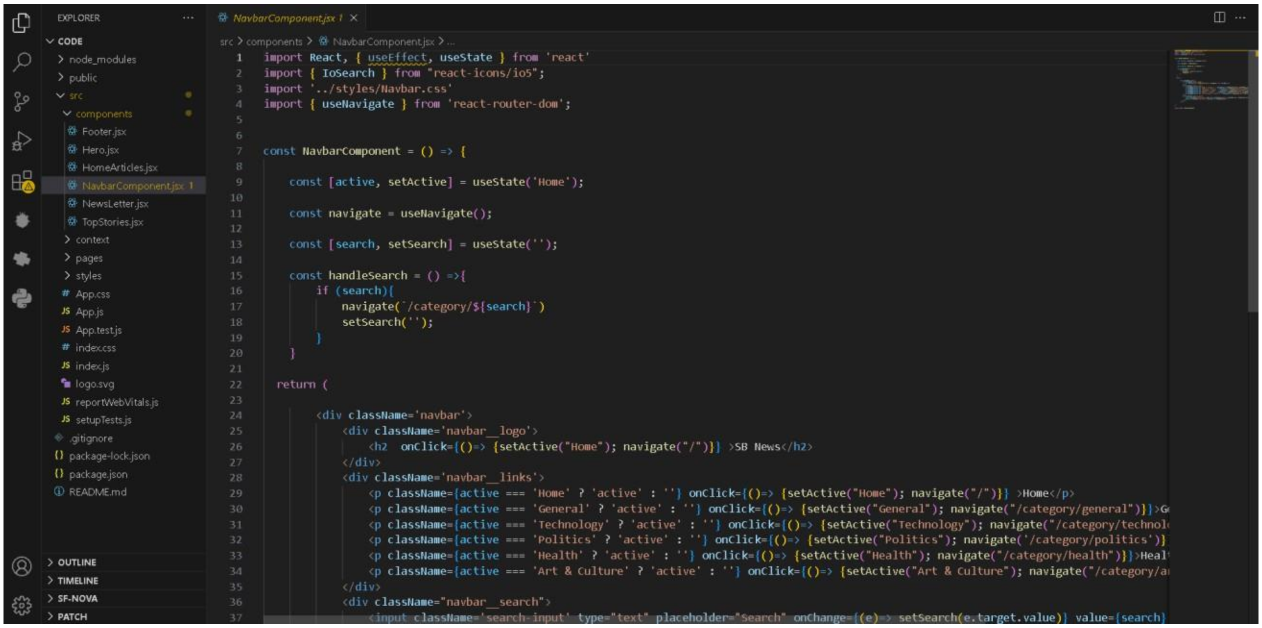
Key Sections of the Home Page

- **Hero Section:** Displays top trending news articles, ensuring users stay updated on major headlines.
- **Categories Section:** Features multiple news categories, including:
  - **Health:** Latest medical updates, wellness tips, and healthcare advancements.
  - **Business:** Financial market trends, economic insights, and corporate news.
  - **Technology:** Innovations, gadgets, AI advancements, and software updates.
  - **Sports (Future Enhancement):** Covers sports events, match highlights, and athlete stories.
  - **Entertainment (Future Enhancement):** Features celebrity news, movie releases, and music updates.
- **Search Bar:** Allows users to quickly find articles based on keywords and categories.
- **Subscription Section:** Enables users to subscribe for daily news updates via email.


HomeArticles.jsx
src > components > HomeArticles.jsx > HomeArticles
Ln 26, Col 46 Spaces: 2 UTF-8 CRLF JavaScript JSX Go Live Prettier

```jsx
import React, { useContext } from 'react'
import '../styles/HomeArticles.css'
import { GeneralContext } from '../context/GeneralContext'
import { useNavigate } from 'react-router-dom';
import { Spinner } from 'react-bootstrap';

const HomeArticles = () => {

  const navigate = useNavigate();

  const {businessNews, technologyNews, politicsNews} = useContext(GeneralContext)

  return (

    <div className='home-articles-container'>

      <div className='home-articles-body'>

          <div className="home-articles-head">
            <h2>Business</h2>
            <p onClick={()=> navigate('/category/business')} >View all</p>
          </div>

          {businessNews.length > 0 ?

            <div className="home-articles">

              {businessNews.map((news, index)=>{
                return index < 3 && (

                  <div className="home-article" onClick={()=> window.open(news.url, '_blank')}>
                      <img src={news.urlToImage} alt="placeholder" />
                      <p>{news.title}</p>
                  </div>
                )
              })}

```

NAVBAR:



```jsx
import React, { useEffect, useState } from 'react'
import { IoSearch } from "react-icons/io5";
import '../styles/Navbar.css'
import { useNavigate } from 'react-router-dom';


const NavbarComponent = () => {

    const [active, setActive] = useState('Home');

    const navigate = useNavigate();

    const [search, setSearch] = useState('');

    const handleSearch = () =>{
        if (search){
            navigate(`/category/${search}`)
            setSearch('');
        }
    }

  return (

        <div className='navbar'>
            <div className='navbar__logo'>
                <h2  onClick={()=> {setActive("Home"); navigate("/")}} >SB News</h2>
            </div>
            <div className='navbar__links'>
                <p className={active === 'Home' ? 'active' : ''} onClick={()=> {setActive("Home"); navigate("/")}} >Home</p>
                <p className={active === 'General' ? 'active' : ''} onClick={()=> {setActive("General"); navigate("/category/general")}}>G
                <p className={active === 'Technology' ? 'active' : ''} onClick={()=> {setActive("Technology"); navigate("/category/technol
                <p className={active === 'Politics' ? 'active' : ''} onClick={()=> {setActive("Politics"); navigate('/category/politics')}
                <p className={active === 'Health' ? 'active' : ''} onClick={()=> {setActive("Health"); navigate("/category/health")}}>Heal
                <p className={active === 'Art & Culture' ? 'active' : ''} onClick={()=> {setActive("Art & Culture"); navigate("/category/a
            </div>
            <div className="navbar__search">
                <input className='search-input' type="text" placeholder="Search" onChange={(e)=> setSearch(e.target.value)} value={search}
```

Import Statements

- **React, useState:** Used to manage the component's state (e.g., active tab and search input).
- **IoSearch (React Icons):** Imports a search icon for better UI/UX.
- **Navbar CSS:** Custom styles for the navigation bar.
- **useNavigate (React Router):** Helps navigate between pages without reloading.

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2. Component State Management

- **active State:** Keeps track of the currently selected menu item.
- **search State:** Stores user input from the search bar.
- **navigate Hook:** Enables programmatic navigation between routes.

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3. Handling Search Navigation

- When the user enters a search term and clicks the search icon, they are redirected to /category/{searchTerm}.
- The search input field is reset after submission.

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4. JSX Structure

Navbar Container

- Wraps all navbar elements inside a single parent div.

Logo Section

- Displays the website logo ("SB News

Known Issues

- API rate limits may cause restricted access to news articles.
- Some articles might have missing images depending on the source.
- Slow API Response: Some external APIs may have latency issues, impacting load times.

Future Enhancements

- **Dark Mode:** Implementing a dark theme for better user experience.
- **User Authentication:** Allowing users to personalize their news feed.
- **Commenting System:** Enabling discussions on news articles.
- **Push Notifications:** Sending real-time news alerts to users.
- **Offline Mode:** Caching news articles for reading without an internet connection.
- **AI-Powered Recommendations:** Suggesting news articles based on user preferences.