📖 InsightStream – Navigate the News Landscape

1. Introduction

●**Project title :** InsightStream-Navigate the News Landscape
●**Team ID:** NM2025TMID46916
●**Team leader:** Thirisha E & thirishaneet23@gmail.com

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2. Project Overview

- **Project Name**: InsightStream – Navigate the News Landscape
- **Objective**: To deliver a user-friendly platform that aggregates news from APIs, organizes them by category, and allows users to filter, bookmark, and personalize content.
- **Target Audience**: General public, students, researchers, journalists.
- **Tech Stack**:
  - **Frontend**: React.js, Tailwind CSS
  - **Backend**: Node.js / Express.js
  - **Database**: MongoDB (optional for storing bookmarks/preferences)
  - **API**: News API (or any public news source)
  - **Version Control**: GitHub
- **Purpose**:
  The project aims to create a platform that allows users to seamlessly explore, filter,

and consume news articles across different categories. It enhances the reading experience by providing an organized and interactive interface to stay updated with current affairs.

- **Features**:
    - News feed with categorized sections (Politics, Technology, Sports, Entertainment, etc.)
    - Search functionality for quick article access
    - Bookmark and save articles for later
    - Personalized news recommendations
    - Responsive and user-friendly design

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3. Architecture

The application follows a **Modular Component-Based Architecture**:

```
+-------------------+
|   Frontend (UI)   |  --> React Components, State Mgmt (Redux/Context)
+-------------------+
          |
          v
+-------------------+
|  Backend (API)    |  --> Node.js/Express, News API integration
+-------------------+
          |
          v
+-------------------+
|   Database Layer  |  --> MongoDB (for saved news/bookmarks)
+-------------------+
```

Key features:

- **API Layer** fetches and filters news.
- **Frontend Components** render categories, search results, and user interactions.
- **State Management** handles global app data.
- **Database (Optional)** stores user preferences.

- **Component Structure**:
    - `Header` – Navigation bar with logo, categories, and search
    - `NewsFeed` – Displays trending and latest news articles
    - `NewsCard` – Reusable component for each article (title, description, image, source)
    - `Bookmarks` – Saved articles section
    - `Footer` – Additional links and information
- **State Management**:
  Implemented using **Context API** (or Redux if required) for managing global state such as selected category, bookmarked articles, and user preferences.
- **Routing**:
  React Router for navigation between pages (Home, Categories, Bookmarks, About).

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4. Setup Instructions

Prerequisites

- Node.js (>= 16.x)
- npm or yarn
- MongoDB (if using backend storage)
- News API Key (from newsapi.org)

Steps

```
# Clone the repository
git clone https://github.com/username/insightstream.git
cd insightstream

# Install dependencies
npm install

# Set environment variables
cp .env.example .env
# Add NEWS_API_KEY=your_api_key

# Run the development server
npm run dev
```

- **Prerequisites**: Node.js, npm/yarn
- **Installation**:
- `git clone [repository-link]`
- `cd insight-stream`
- `npm install`

  Configure environment variables for API keys (e.g., News API).

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5. Folder Structure

```
insightstream/
|── public/              # Static assets
|── src/
│   ├── assets/          # Images, icons
│   ├── components/      # Reusable UI components
│   ├── pages/           # Page-level components
│   ├── services/        # API integration logic
│   ├── state/           # Redux/Context setup
│   ├── styles/          # Global CSS/Tailwind configs
│   ├── tests/           # Unit & integration tests
│   └── App.js           # Root app file
│
├── .env                 # API keys
├── package.json         # Dependencies
└── README.md            # Project description
```

```
/src
 ├── components/
 │    ├── Header.js
 │    ├── NewsFeed.js
 │    ├── NewsCard.js
 │    ├── Bookmarks.js
 │    └── Footer.js
 ├── pages/
 │    ├── Home.js
 │    ├── Category.js
 │    ├── About.js
 │    └── Bookmarks.js
 ├── context/
 │    └── NewsContext.js
 ├── assets/ (images, icons)
 ├── App.js
 └── index.js
```

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6. Running the Application

```
# Development
npm run dev

# Production build
npm run build
npm run start

# Testing
npm run test
```

To start the frontend server:

```
npm start
```

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7. Component Documentation

- **Header** – Navigation bar with categories.
- **NewsCard** – Displays a single news article with image, title, description, and link.
- **SearchBar** – Enables keyword-based news search.
- **CategoryFilter** – Filters news by predefined categories.
- **BookmarkList** – Stores and displays user-saved articles.

- **Key Components**:
  - `NewsCard`: Displays article image, title, description, and a "Read More" button.
  - `Header`: Contains navigation, search bar, and category filter.
- **Reusable Components**:
  - `Button`, `Loader`, `Modal`

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8. State Management

- Implemented via **Redux Toolkit** or **React Context API**.
- **Gobal state:**
    - `newsData` – List of fetched articles
    - `selectedCategory` – Current active category
    - `bookmarks` – User saved news
    - `loading` & `error` – Request handling
    - User-selected category
    - Bookmarked articles
    - Search results

- **Local State**:
    - Article expand/collapse within NewsCard
    - Input field values in search

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9. User Interface

- **Modern and Responsive** design built with Tailwind CSS.
- **Dark/Light mode** toggle.
- **Card-based Layout** for easy readability.
- **Interactive Filtering & Search**.
- Homepage with featured and trending news
- Category pages (Politics, Sports, Technology, etc.)
- Bookmark section for saved articles
- Responsive design for mobile and desktop

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10. Styling

- **Tailwind CSS** utility-first approach.
- **Custom Theme Config** for colors & typography.
- **Responsive Grid Layouts** for different screen sizes.
- **CSS Frameworks/Libraries**: Tailwind CSS for styling and responsiveness
- **Theming**: Dark and light mode support

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11. Testing

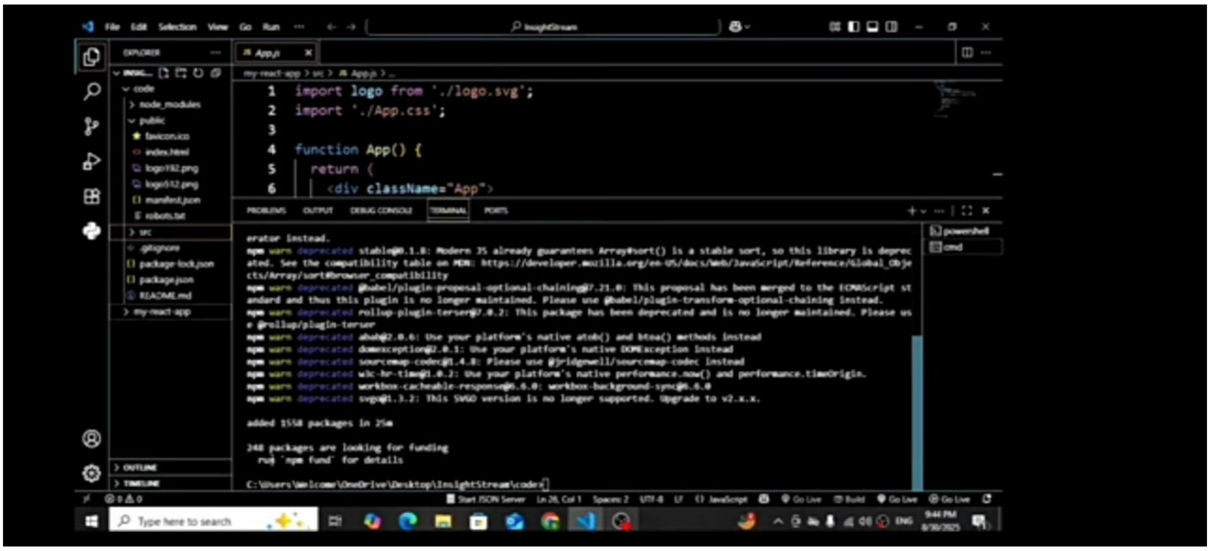
- **Unit Testing**: Jest + React Testing Library.
- **Integration Testing**: API request & response validation.
- **Manual Testing**: Cross-browser & mobile responsiveness.

- **Testing Strategy**:

- ○ Unit tests for components using **Jest**
- ○ Integration tests with **React Testing Library**

- **Code Coverage**: Jest coverage reports

12. Screenshots



```
import logo from './logo.svg';
import './App.css';

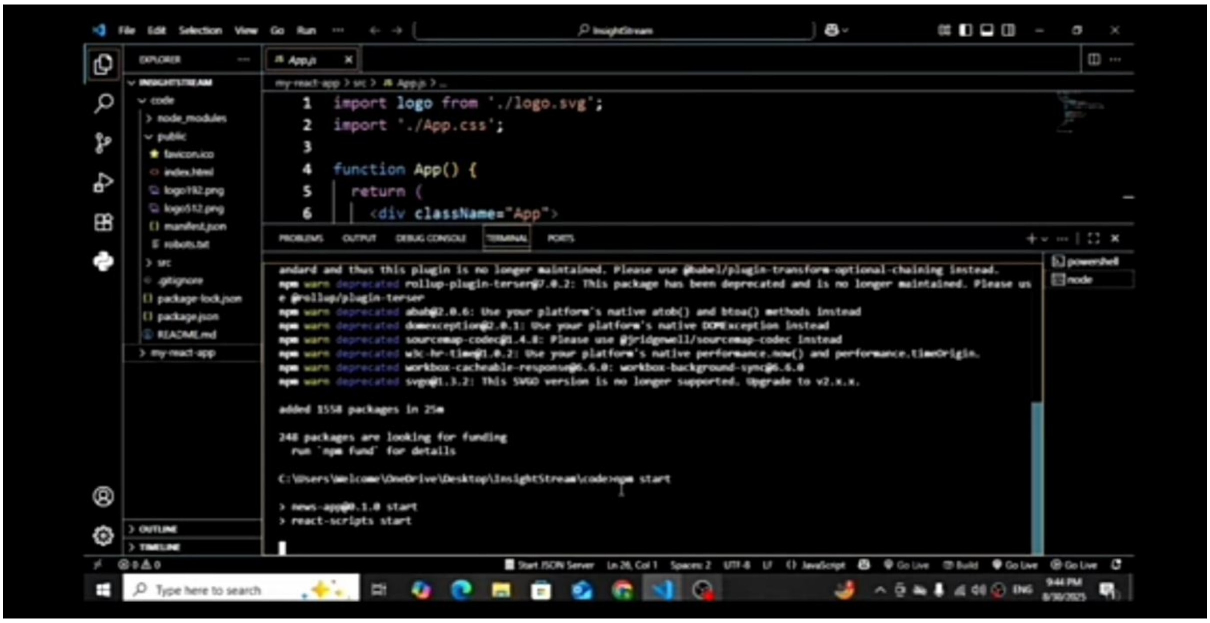
function App() {
  return (
    <div className="App">
```

```
erator instead.
npm warn deprecated stable@0.1.8: Modern JS already guarantees Array#sort() is a stable sort, so this library is deprec
ated. See the compatibility table on MDN: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Obje
cts/Array/sort#browser_compatibility
npm warn deprecated @babel/plugin-proposal-optional-chaining@7.21.0: This proposal has been merged to the ECMAScript st
andard and thus this plugin is no longer maintained. Please use @babel/plugin-transform-optional-chaining instead.
npm warn deprecated rollup-plugin-terser@7.0.2: This package has been deprecated and is no longer maintained. Please us
e @rollup/plugin-terser
npm warn deprecated abab@2.0.6: Use your platform's native atob() and btoa() methods instead
npm warn deprecated domexception@2.0.1: Use your platform's native DOMException instead
npm warn deprecated sourcemap-codec@1.4.8: Please use @jridgewell/sourcemap-codec instead
npm warn deprecated w3c-hr-time@1.0.2: Use your platform's native performance.now() and performance.timeOrigin.
npm warn deprecated workbox-cacheable-response@6.6.0: workbox-background-sync@6.6.0
npm warn deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.

added 1558 packages in 25m

248 packages are looking for funding
  run `npm fund` for details

C:\Users\Welcome\OneDrive\Desktop\InsightStream\code>
```



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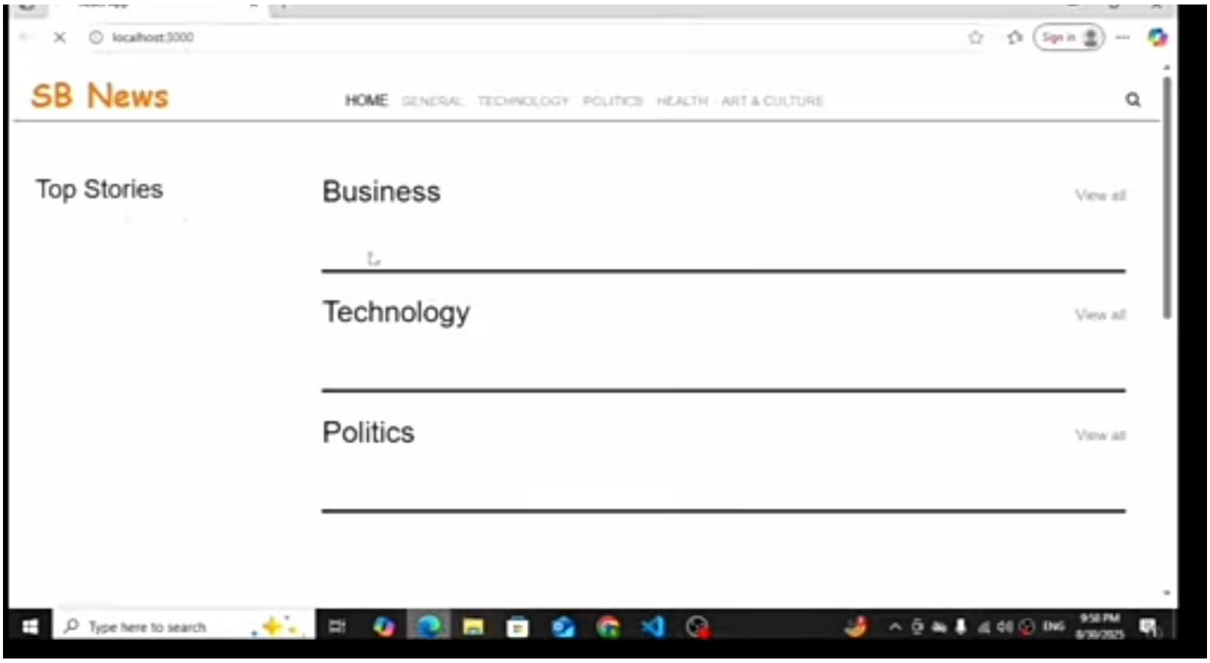
andard and thus this plugin is no longer maintained. Please use @babel/plugin-transform-optional-chaining instead.
npm warn deprecated rollup-plugin-terser@7.0.2: This package has been deprecated and is no longer maintained. Please us
e @rollup/plugin-terser
npm warn deprecated abab@2.0.6: Use your platform's native atob() and btoa() methods instead
npm warn deprecated domexception@2.0.1: Use your platform's native DOMException instead
npm warn deprecated sourcemap-codec@1.4.8: Please use @jridgewell/sourcemap-codec instead
npm warn deprecated w3c-hr-time@1.0.2: Use your platform's native performance.now() and performance.timeOrigin.
npm warn deprecated workbox-cacheable-response@6.6.0: workbox-background-sync@6.6.0
npm warn deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.

added 1558 packages in 25m

248 packages are looking for funding
  run `npm fund` for details

C:\Users\Welcome\OneDrive\Desktop\InsightStream\code>npm start

> news-app@0.1.0 start
> react-scripts start
```

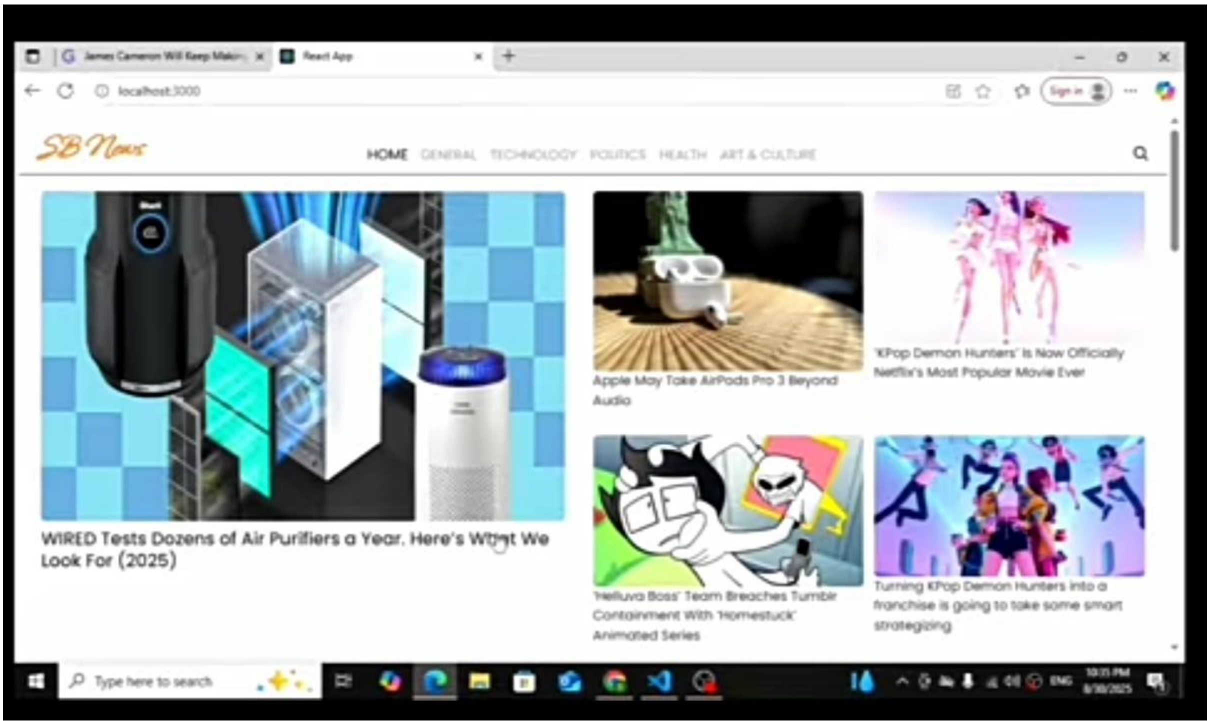


Top Stories

Business View all

Technology View all

Politics View all



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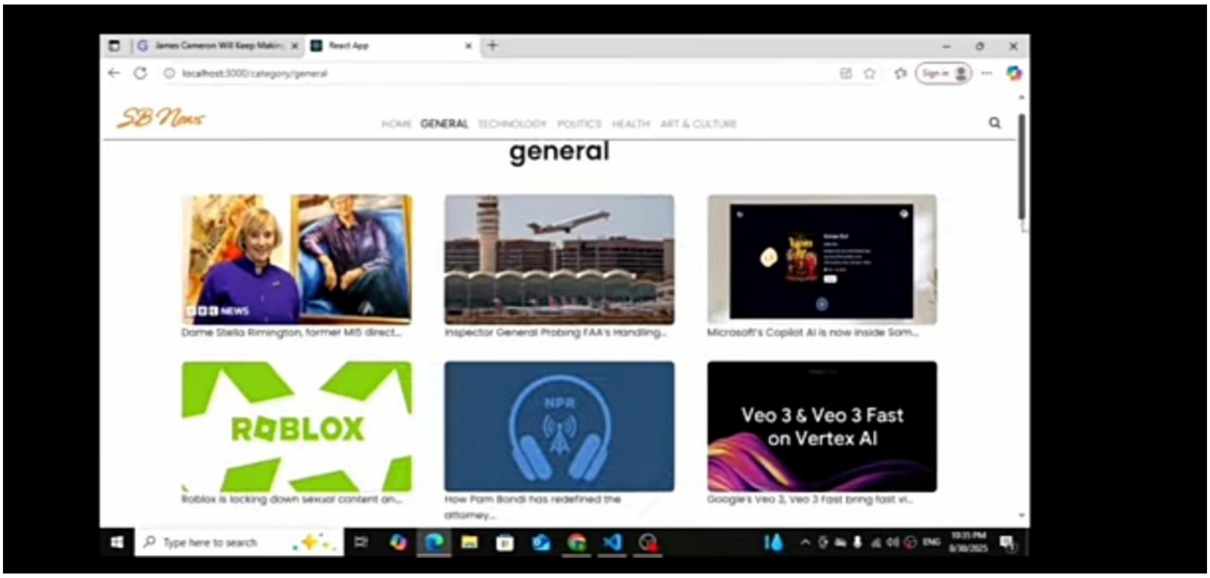
Apple May Take AirPods Pro 3 Beyond Audio

'KPop Demon Hunters' Is Now Officially Netflix's Most Popular Movie Ever

'Helluva Boss' Team Breaches Tumblr Containment With 'Homestuck' Animated Series

Turning KPop Demon Hunters into a franchise is going to take some smart strategizing



Dame Stella Rimington, former MI5 direct...

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13. Known Issues

- API rate limit restrictions (free News API has daily request cap).
- Bookmark persistence may fail if backend DB not connected.
- Some articles may not contain images, affecting UI consistency.

14. Future Enhancements

- Implement **AI-powered news summarization**.
- Add **user authentication & profiles**.
- Provide **multilingual news support** (Tamil, Hindi, etc.).
- Introduce **push notifications** for breaking news.
- Add **offline reading mode**.