INSIGHT STREAM

(Navigate The News Landscape)

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1. Introduction

Insight Stream is a revolutionary web application designed to redefine how people discover and consume news. It offers an intuitive interface, dynamic search, and a vast range of news categories for all types of users. Whether you're a casual reader or a news enthusiast, Insight Stream provides a seamless experience for staying informed.

2. Scenario-Based Introduction

Imagine you're rushing home after work, phone in hand, and you realize you have no idea what's happening in the world. You open *Insight Stream*, and suddenly, you're greeted with breaking headlines, in-depth articles, and diverse categories. This isn't your typical news feed—Insight Stream feels different. You tap a category and dive in, ready to explore the future of staying informed.

3. Technical Architecture

The technical architecture of Insight Stream is built on modern web development technologies:

- *Frontend*: React.js for a smooth, single-page experience.
- *API Client*: Handles communication with the backend.
- *Backend*: Rapid API for integrating external data feeds.

4. Project Goals and Objectives

The primary objective of Insight Stream is to create a user-friendly platform for news discovery and consumption. Key goals include:

- *User-Friendly Experience*: Develop an intuitive interface for easy navigation.
- *Comprehensive News Management*: Provide advanced search options for personalized news.
- *Technology Stack*: Use React.js for an efficient and enjoyable user interface.

5. <u>Features of Insight Stream</u>

- *News from API Sources*: Access global news across various categories.
- *Visual News Exploration*: Curated image galleries for breaking stories. • *Intuitive Design*: Clean, modern interface for optimal user experience.
- *Advanced Search*: Tailored news content based on user interests.
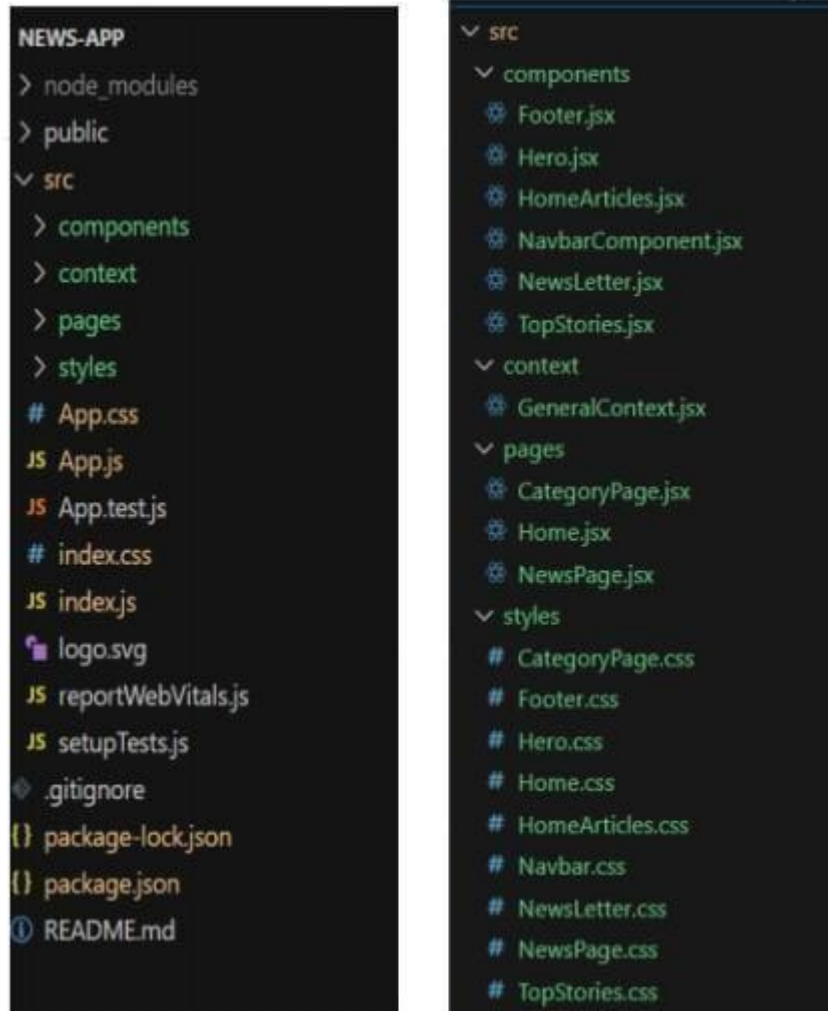
6. <u>Pre-Requisites</u>

To develop Insight Stream, you need the following tools:

- *Node.js and npm*: For running JavaScript on the server-side.
- *React.js*: For building the user interface.
- *HTML, CSS, JavaScript*: Basic knowledge for app development.
- *Version Control*: Git for collaboration and tracking changes.
- *Development Environment*: Visual Studio Code or any preferred IDE.

7. <u>Project Structure</u>

The project is organized into the following folders:

- *Components*: Reusable UI components.
- *Context*: Manages global state using React Context API.
- *Pages*: Contains files for different pages in the application.
- *Styles*: Contains CSS files for styling.

```
NEWS-APP                          ∨ src
> node_modules                      ∨ components
> public                              ⚙ Footer.jsx
∨ src                                 ⚙ Hero.jsx
  > components                        ⚙ HomeArticles.jsx
  > context                           ⚙ NavbarComponent.jsx
  > pages                             ⚙ NewsLetter.jsx
  > styles                            ⚙ TopStories.jsx
  # App.css                         ∨ context
  JS App.js                           ⚙ GeneralContext.jsx
  JS App.test.js                    ∨ pages
  # index.css                         ⚙ CategoryPage.jsx
  JS index.js                         ⚙ Home.jsx
  🖼 logo.svg                         ⚙ NewsPage.jsx
  JS reportWebVitals.js             ∨ styles
  JS setupTests.js                    # CategoryPage.css
  ◆ .gitignore                        # Footer.css
  {} package-lock.json                # Hero.css
  {} package.json                     # Home.css
  ① README.md                         # HomeArticles.css
                                      # Navbar.css
                                      # NewsLetter.css
                                      # NewsPage.css
                                      # TopStories.css
```

8. Project Flow

The project flow includes:

- *Milestone 1*: Project setup and configuration.
- *Milestone 2*: Project development, including UI components, API integration, and state management.

9. Milestone 1: Project Setup and Configuration

Installation of Required Tools

To build Insight Stream, you need the following tools:

- *React.js*: For the interactive interface.
- *React Router Dom*: For seamless navigation.

- *Axios*: For fetching news data.
- *Bootstrap/Tailwind CSS*: For pre-built styles and icons.

Installation Steps

1. *Install Node.js and npm*: bash https://nodejs.org/en/download/
2. *Create a React App*: bash npx create-react-app insight stream cd insight Stream npm start
3. *Install Dependencies*: bash npm install react-router-dom axios bootstrap

10. Milestone 2: Project Development

```
code > src > components > ⚙ Footer.jsx > ...
  1    import React from 'react'
  2    import '../styles/Footer.css'
  3    import { useNavigate } from 'react-router-dom';
  4
  5    const Footer = () => {
  6
  7      const navigate = useNavigate();
  8
  9      return (
 10        <footer>
 11
 12          <div className='footer'>
 13            <ul>
 14              <li onClick={()=> navigate("/category/")} >General</li>
 15              <li onClick={()=> navigate("/category/Technology")} >Technology</li>
 16              <li onClick={()=> navigate("/category/Science")} >Science</li>
 17            </ul>
 18            <ul>
 19              <li onClick={()=> navigate("/category/Lifestyle")} >Lifestyle</li>
 20              <li onClick={()=> navigate("/category/Health")} >Health</li>
 21              <li onClick={()=> navigate("/category/Fitness")} >Fitness</li>
 22            </ul>
```

Insight Stream

- Home

- Categories

- Search

11. Code Snippets

Fetching Top/Trending News

java script const fetchTopNews = async () => { try { const response = await axios.get('https://newsapi.org/v2/top-headlines?country=us&apiKey=YOUR_API_KEY'); setTopNews(response.data.articles); } catch (error) { console.error(error); } };

```
e > src > JS App.js > ...
1   import { Route, Routes } from 'react-router-dom';
2   import './App.css';
3   import Home from './pages/Home';
4   import CategoryPage from './pages/CategoryPage';
5   import NewsPage from './pages/NewsPage';
6   import NavbarComponent from './components/NavbarComponent';
7   import Footer from './components/Footer';
8
9   function App() {
10
11    return (
12      <div className="App">
13          <NavbarComponent />
14          <Routes>
15            <Route exact path="/" element={<Home/>} />
16            <Route exact path="/category/:id" element={<CategoryPage/>} />
17            <Route exact path="/news/:id" element={<NewsPage/>} />
18          </Routes>
19          <Footer />
20      </div>
21    );
22  }
```

Fetching News by Category

javascript const fetchCategoryNews = async (category) => { try { const response = await
axios.get(`https://newsapi.org/v2/top-
headlines?category=${category}&apiKey=YOUR_API_KEY`);
setCategoryNews(response.data.articles); } catch (error) { console.error(error); } };

12. API Integration

InsightStream integrates with *NewsAPI* to fetch news articles. The API key is stored in an environment variable for security.

javascript const API_KEY = process.env.REACT_APP_NEWS_API_KEY; const fetchNews = async (query)

=> { const response = await

axios.get(`https://newsapi.org/v2/everything?q=${query}&apiKey=${API_KEY}`); return

response.data.articles; };

13. UI Components

Hero Component

The Hero component displays trending news and a search bar.

javascript import React from 'react'; const

Hero = () => { return (

Stay Informed with Insight Stream

); };

export default Hero;

14. Routing and Navigation

React Router is used for seamless navigation between pages. javascript import {

BrowserRouter, Routes, Route } from 'react-router-dom';

function App() { return (<Route path="/" element={} /> <Route path="/category/:id" element={} /> <Route path="/news/:id" element={} />); }

15. State Management with Redux

Redux is used for managing global state, such as user preferences and news data.

javascript import { configureStore } from '@reduxjs/toolkit'; import newsReducer from './features/newsSlice'; const store = configureStore({ reducer: { news:

newsReducer, }, }); export default store;

16. Advanced Search Feature

The advanced search feature allows users to filter news by keywords, categories, and dates.

```javascript
const handleSearch = (query) => { const filteredNews = news.filter((article) => article.title.toLowerCase().includes(query.toLowerCase()) ); setFilteredNews(filteredNews); };
```

17. Newsletter Subscription

Users can subscribe to the newsletter to receive daily news updates.

```javascript
const handleSubscribe = (email) => { // Send email to backend for subscription
console.log(Subscribed with email: ${email}); };
```

18. Category and Search Result Page

The category page displays news articles based on the selected category.

```javascript
const CategoryPage = ({ match }) => { const { id } = match.params; const [articles, setArticles] = useState([]); useEffect(() => { fetchCategoryNews(id).then((data) => setArticles(data)); }, [id]);

return (
```

{id} News

{articles.map((article) => (

{article.title}

{article.description}

```
))}
); };
```

19. Article Page

The article page displays the full content of a news article.

```javascript
const ArticlePage = ({ match }) => { const { id } = match.params; const [article, setArticle] = useState(null); useEffect(() => { fetchArticleById(id).then((data) => setArticle(data)); }, [id]); return (
```

{article?.title}

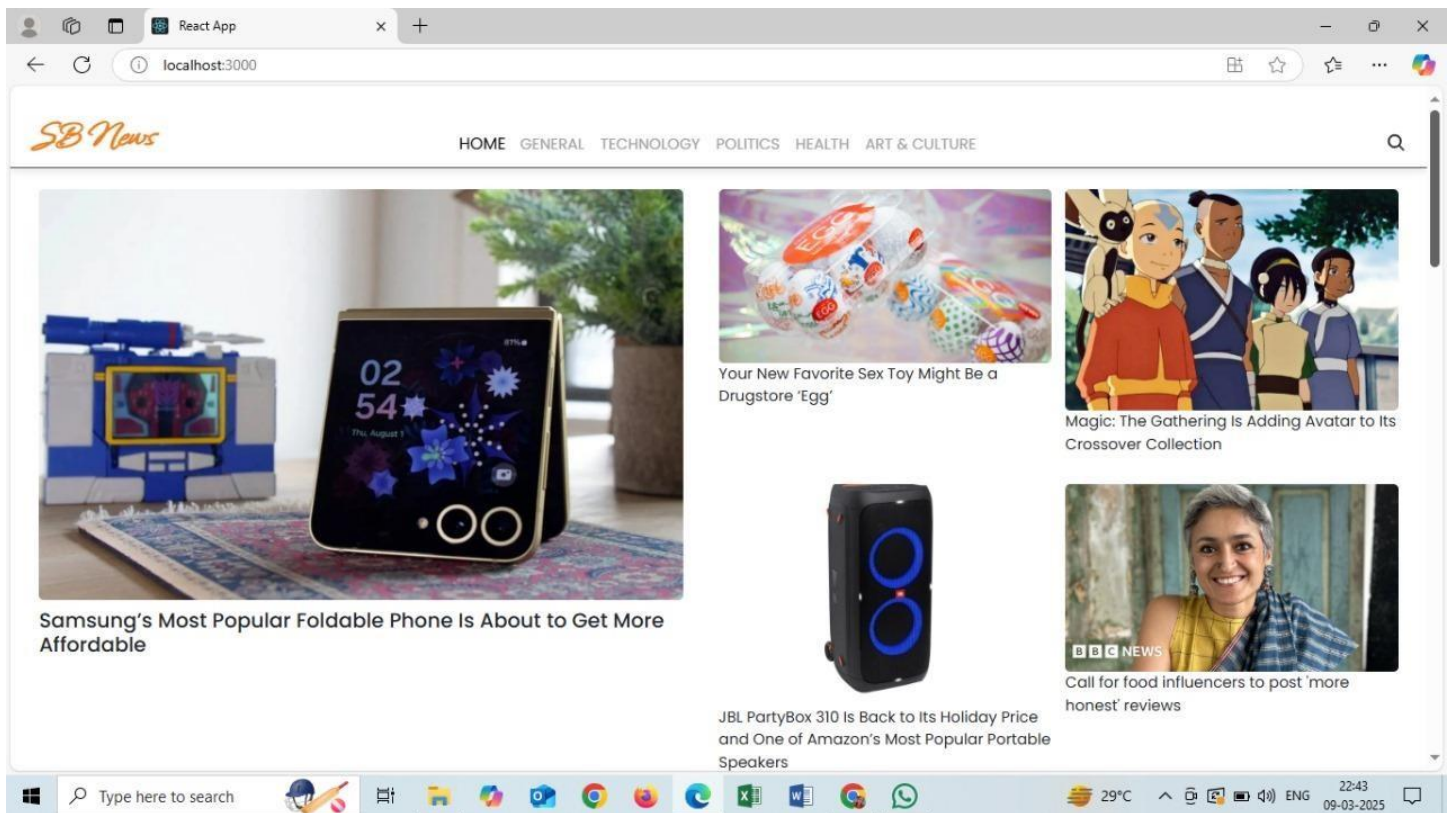{article?.content}

); };

20. Project Execution

To run the project, use the following command: bash

npm start

The application will be available at http://localhost:3000.

21. User Interface Screenshots

Home Page

Category Page

Article Page

22. Future Enhancements

- *User Authentication*: Allow users to create accounts and save preferences.
- *Dark Mode*: Add a dark mode for better readability at night.
- *Push Notifications*: Send real-time notifications for breaking news.

23. Conclusion

Insight Stream is a modern, user-friendly news application that leverages React.js and external APIs to deliver a seamless news consumption experience. With its intuitive design and advanced features, Insight Stream is poised to revolutionize how people stay informed.

THANK YOU