Project Documentation

InsightStream: Navigate the News Landscape

Introduction

- **Project Title:** InsightStream: Navigate the News Landscape

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Project Overview

• Purpose:

The purpose of this project is to build a modern and user-friendly news application that enables users to stay updated with current events, while delivering accurate and relevant content in a seamless and engaging manner. It focuses on offering a fast, responsive, and intuitive interface for an enhanced user experience, and by utilizing the latest web technologies, the project ensures timely access to information anytime and anywhere.

• Features:

- Personalized News Feed
- Real-time Notifications
- Bookmark & Save Articles
- Multimedia Support
- Share Art

Architecture

- **Frontend:** React.js with Bootstrap and Material UI to create a responsive, interactive, and user-friendly interface for reading and navigating news.

- **Backend:** Node.js with Express.js to manage server-side logic, handle API requests, and serve news content efficiently.

- **Database:** MongoDB to store user profiles, preferences, saved articles, feedback, and other application data.

Setup Instructions

- **Prerequisites:**

  – Node.js

  – MongoDB 1

  – Git – React.js

  – Express.js – Mongoose – Visual Studio Code

- **Installation Steps:**

    1. Clone the Repository: - Open a terminal or command prompt and navigate to the directory where you want to clone the repository. - Run the command: git clone https://github.com/[username]/insight-stream.git - Replace [username] with the actual GitHub username or organization name.

    2. Install Dependencies: - Navigate to the cloned repository directory: cd insight-stream - Run the command: npm install - This will install all the required dependencies listed in the package.json file.

    3. Configure Environment Variables: - Create a .env file in the root directory of the project. - Add the following environment variables: - REACT_APP_API_KEY: The API key for the News API - REACT_APP_BASE_URL: The base URL for the API requests - Replace the placeholder values with your actual API key and base URL.

    4. Start the Development Server: - Run the command: npm start - This will start the development server, and you can access the application at http://localhost:3000 Environment Variables:

        - REACT_APP_API_KEY: The API key for the News API

        - REACT_APP_BASE_URL: The base URL for the API requests

Troubleshooting:

- If you encounter any issues during the installation process, try deleting the

  node_modules directory and running npm install again.

- If you encounter any issues with the development server, try checking the console logs for

  errors or restarting the server.

Folder Structure

Client:

The React application is organized into the following folders:

- components: Reusable UI components used throughout the application

 - Header.js: The header component with navigation and search bar

- Footer.js: The footer component - NewsCard.js: The individual news article

 components

- SearchBar.js: The search bar component

 - pages: Components that represent individual pages or routes

- Home.js: The home page component that displays the news feed

 - Category.js: The category page component that displays news articles for a specific

category

 - SearchResults.js: The search results page component that displays news articles

matching the search query

- assets: Static assets used in the application

- images: Folder for image assets

- fonts: Folder for font assets - utils: Utility functions and custom hooks used in the project

- api.js: A utility function for making API requests

- helpers.js: A utility function for formatting dates and other helper functions

- context: Context API files for state management

- NewsContext.js: The context API file for managing news articles state Utilities:

 - Helper Functions:

- formatDate: A function for formatting dates

- truncateText: A function for truncating text

- Custom Hooks:

- useNews: A custom hook for fetching news articles

- useSearch: A custom hook for handling search queries

Running the Application

• **Frontend:**

1. Open terminal → cd client
2. Run npm start
3. Server runs on http://localhost:3000

• **Backend:**

1. Open terminal → cd server
2. Run npm start
3. Backend API runs at http://localhost:5000

• **Access:**

1. Open a browser
2. Visit http://localhost:3000
3. Use InsightStream with backend connected

API Documentation

- **User:**

  -/api/user/register – Register a new user
  -/api/user/login – User login

- **Projects:**

  -/api/projects/create – Create a new project
  -/api/projects/:id – Get project by ID

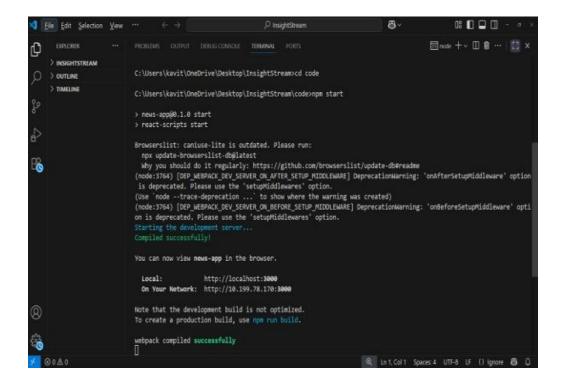- **Applications:**

  -/api/apply – Apply to a project

- **Chats:**

  -/api/chat/send – Send a chat message
  -/api/chat/:userId – Get chats by user ID

Authentication

- JWT-based authentication for secure login
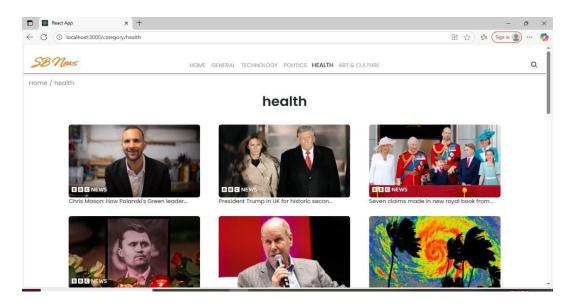
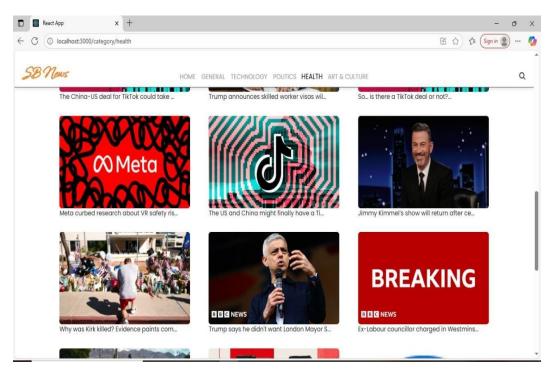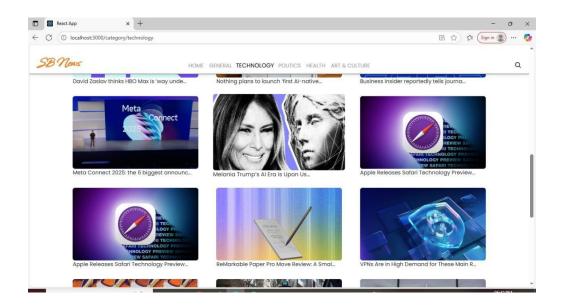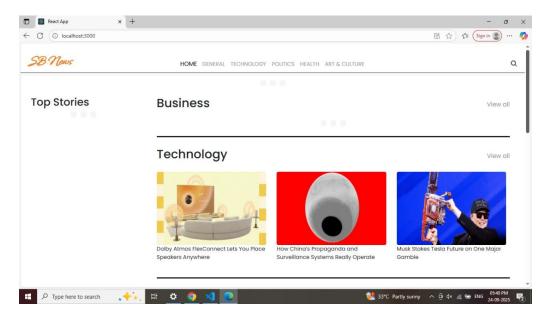- Middleware used to protect private routes

User Interface

Testing

- Manual testing at each milestone

- Tools: Postman, Chrome DevTools

Screenshots

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Known Issues

- **Loading Delays:** Some news articles or multimedia content may take longer to load during peak traffic periods or with slow internet connections, affecting the user experience.

- **Offline Reading Limitations:** The offline reading feature may not function properly for all types of content, such as videos or dynamically loaded articles, limiting its usability.

- **Notification Delays:** Real-time notifications may experience slight delays under certain network conditions or server load, which could result in users receiving breaking news alerts later than expected.

- **Search Accuracy:** The search functionality may occasionally return less relevant results for niche topics or newly published articles, making it harder for users to find specific news items.

- **UI/UX Inconsistencies:** Minor user interface inconsistencies may appear on different screen sizes, devices, or browsers, affecting layout and readability.

- **User Profile Sync Issues:** Changes to user preferences, saved articles, or bookmarks may not sync instantly across multiple devices in some cases.

- **Backend Limitations:** Under heavy load, the backend server may experience slower response times, impacting the speed of content delivery and chat features.

Future Enhancements

- **AI-Powered Personalization:** Implement machine learning algorithms to provide more accurate and dynamic content recommendations based on user behavior and preferences.

- **Multi-Language Support:** Add support for multiple languages to cater to a wider, global audience.

- **Advanced Search & Filters:** Enhance search functionality with filters for categories, date ranges, sources, and trending topics.

- **Push Notifications & Alerts:** Improve notification system to include personalized alerts for breaking news and favorite topics.

- **Offline Mode Expansion:** Extend offline reading to include multimedia content such as videos and interactive infographics.

- **Dark Mode & Accessibility:** Introduce customizable themes and accessibility features for better readability and user comfort.

- **Social Media Integration:** Enable seamless sharing of news articles across multiple social media platforms.

- **Analytics Dashboard:** Provide users and admins with insights into reading habits, popular content, and engagement metrics.