**Project Documentation**

**Introduction**

**Project Title: Insightstream**

**Team Members:**

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**Project Overview**

**Purpose**

The News App is a web application designed to provide users with real-time news updates from various sources. It allows users to explore trending news, search for specific topics, and navigate through different categories seamlessly..

**Features**

• Fetches and displays the latest news articles.

• Category-wise news segregation (e.g., Sports, Technology, Business, etc.).

• Search functionality to find articles based on keywords.

• Responsive design for optimal viewing on different devices.

• Interactive UI using React and Bootstrap.

**Architecture**

**Component Structure**

**/code**

**├── public/ # Static assets (logos, manifest, favicon, robots.txt, index.html)**

**├── src/**

**│ ├── components/ # Reusable UI components**

**│ │ ├── NavbarComponent.jsx**

**│ │ ├── Footer.jsx**

**│ │ ├── NewsLetter.jsx**

**│ │ ├── HomeArticles.jsx**

**│ │ ├── TopStories.jsx**

**│ │ ├── Hero.jsx**

**│ ├── context/ # Context API for global state management**

**│ │ ├── GeneralContext.jsx**

**│ ├── pages/ # Route-based pages**

**│ │ ├── NewsPage.jsx**

**│ │ ├── CategoryPage.jsx**

**│ │ ├── Home.jsx**

**│ ├── styles/ # CSS files for styling components and pages**

**│ ├── App.js # Root component**

**│ ├── index.js # Entry point for the React app**

**│ ├── reportWebVitals.js # Performance monitoring**

**│ ├── setupTests.js # Test setup**

**├── package.json # Project dependencies and scripts**

**├── package-lock.json # Dependency lock file**

**├── .gitignore # Files to ignore in Git**

**├── README.md # Project documentation**

**State Management**

The application utilizes React's built-in state management along with Context API to store and manage global state for:  
• News articles  
• Search results  
• Category filters

**Routing**

React Router is used for navigation between different pages, ensuring a smooth user experience.

**Setup Instructions**

**Prerequisites**

• Node.js (version 14.x or higher)  
• npm package manager

**Installation**

1. Clone the repository:
2. git clone
3. <https://github.com/prathap-kathavarayan/News-app>
4. Navigate to the project directory:
5. cd Insightstream\_NaanMudhalvan
6. Install dependencies:
7. npm install

**Folder Structure**

**Client**

* • src/: Contains the source code.
* • components/: Reusable UI components (e.g., Navbar, NewsCard, Loader).
* • pages/: Different page components (e.g., Homepage, NewsList, NewsDetails).
* • services/: API service functions for fetching news data.
* • app/: Contains the main App component and routing logic..

**Running the Application**

To start the application locally:  
 npm start  
This will launch the application at http://localhost:3000.

**Component Documentation**

**Key Components**

• Navbar: Displays navigation links for news categories.

• Homepage: Shows trending news articles.

• NewsList: Lists all news articles with a brief description.

• NewsDetails: Provides full details of a selected news article.

• SearchBar: Allows users to search for specific news articles.

• Loader: Displays a loading indicator during data fetching.

**Reusable Components**

• NewsCard: Displays a preview of each news article.

• Button: Custom-styled button component.

**State Management**

**Global State**

Managed using Redux Toolkit, encompassing:

* News: State slice for storing news articles.
* Categories: State slice for managing different news categories.
* User Preferences: State slice for storing user preferences like dark mode, language, etc.

**Local State**

Handled within components using the useState hook for UI-specific states, such as:

* Search Input: State for storing user search queries.
* Modal Visibility: State for handling modal open/close actions.
* Dropdown Selection: State for managing selected filters or categories.

**User Interface**

The application is styled using Bootstrap and React-Bootstrap for a clean and responsive UI.

**Styling**

**CSS Frameworks/Libraries**

* Tailwind CSS – Utility-first framework for fast and responsive styling.

**Theming**

* Implement dark mode and light mode using Tailwind CSS (dark: variant) or Material-UI’s theme provider for a customizable user experience.

**Testing**

**Testing Strategy**

* Jest and React Testing Library are used for unit and integration testing.
* Code coverage is monitored using Jest's built-in tools.

**Code Coverage**

* **State Management:** Uses **Redux Toolkit** for global state (news, categories, user preferences) and **useState** for local UI states (modals, search input).
* 2️⃣ **Component Structure:** Organized with **React functional components**, API calls using **Redux Thunks**, and reusable UI components for better maintainability.

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**Demo**

**Live Demo**

[**https://drive.google.com/file/d/1Zzdx1491TS5xWLJHkARnjm71vQdxSCVr/view?usp=drivesdk**](https://drive.google.com/file/d/1Zzdx1491TS5xWLJHkARnjm71vQdxSCVr/view?usp=drivesdk)

**Known Issues**

• API rate limits might cause occasional delays in fetching news.

• Some categories may not always have articles available.

• Pagination could be improved for better user experience.

**Future Enhancements**

• Dark mode toggle feature.

• WebSocket-based real-time news updates.

• Improved UI animations.

• User authentication for personalized news feeds.