NAAN MUDHALVAN PROJECT

UNIVERSITY OF MADRAS

COLLEGE NAME: AGURCHAND MANMULL JAIN COLLEGE

COLLEGE CODE : 1301

SUBJECT: FRONTEND DEVELOPMENT WITH REACT.JS

TOPIC: INSIGHTSTREAM (NEWS APP)

TEAM	ROLE	UNM ID	EMAIL ID
Bharath Kumar B (222205188)	Team Leader	unm130122G111	22g111bharathkumar@gmail.com
Praveen Kumar T (222205275)	Team Member	unm130122G110	praveen46rc@gmail.com
Akshay N V (222205174)	Team Member	unm130122G113	akshayvenki30@gmail.com
Prakash R (222205270)	Team Member	unm130122G114	prakashr9061@gmail.com

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Project Documentation

Introduction

Project Title: Insightstream

Team Members:

- **Bharath Kumar B**
- **Praveen Kumar T**
- **Akshay N V**
- **Prakash R**

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/Bharathkumar7871/bharath_7871`
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).
- Component Structure: Organized with **React functional components**, API calls using **Redux Thunks**, and reusable UI components for better maintainability.

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Screenshots or Demo

Live Demo

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.