

# Project Documentation

## Introduction

**Project Title:** Insightstream

**Team Leader :**

- **SHRIRAM.A – 22g313shriram@gmail.com**

**Team Members:**

- **SHARMILA. J -22g311sharmila@gmail.com**
- **VIJAY. K – k.vijay110405@gmail.com**
- **SURENDRA PRASATH. M - surendramoorthy2003@gmail.com**

## 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/shriram-A-2004/news-app.git>
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.

## Demo

### Live Demo

<https://drive.google.com/file/d/1Zzdx1491TS5xWLJHkARnfm71vQdxSCVr/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.