

# Newsgram Documentation

## 1.Introduction

**Project Title:** Newsapp - NEWSGRAM

**Team Leader:**

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**Team Members:**

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## 2. Project Overview:

### Purpose:

A news web application is designed to provide users with real-time news updates , covering various topics such as politics, technology, health, Art and Culture, and more. It serves as a centralized platform where users can access credible news from multiple sources, stay informed, and personalize their news feed based on their interests.

### GOALS

The core mission of Newsgram is to create an intuitive and accessible platform for individuals who seek to stay updated with the latest news, explore a variety of topics, and engage with content effortlessly.

Our key objectives include:

✓ **Seamless User Experience:** Design an interface that is visually appealing, easy to navigate, and optimized for user convenience, allowing readers to discover, save, and share news effortlessly.

✓ **Advanced News Curation:** Implement intelligent content management features that help users personalize their news feed, filter relevant topics, and access trending stories with ease.

✓ **Modern Technology Integration:** Leverage the latest web development technologies, including React.js, to ensure a fast, responsive, and engaging platform that meets contemporary digital standards.

## Features:

✓ **Extensive API-Based News Coverage:** Stay updated with a comprehensive collection of global news across diverse categories, ensuring a well-balanced perspective on current events.

✓ **Immersive Visual News Experience:** Explore trending stories and various news topics through curated image galleries, making news discovery more engaging and visually appealing.

✓ **User-Friendly Interface:** Enjoy seamless navigation with a sleek, modern design that enhances user experience and presents information clearly.

✓ **Powerful Search Functionality:** Quickly find relevant news articles on specific topics with an advanced search tool, delivering personalized content based on user interests.

## 3. Architecture:

### Component structure:

- Navbar: Navigation menu with search functionality
- Home: Displays top news stories
- Top stories: Trending new stories
- Category Pages: Different sections for categorized news
- Article Page: Shows detailed news articles
- Search bar: Displays search results based on user queries

### State Management:

- The Newsgram app uses Context API for managing global state.
- Currently, local storage is used to manage state. If Implemented in React, State management could be handled using use state and use context.

### Routing :

- Setup the clear routing paths to access various files in the application.
- Code the popular categories components and fetch the categories from newsapi.
- Also, add the trending news in the home page.
- Additionally, we can add the component to subscribe for the newsletter and the footer.
- Now, develop the category page to display various news articles under the different categories.

## 4. Setup Instructions

### Prerequisites:

Here are the key prerequisites for developing a frontend application using React.js:

✓ **Node.js and npm:**

Download: <https://nodejs.org/en/download/>

✓ **HTML, CSS, and JavaScript:** Basic knowledge of HTML for creating the structure of your app, CSS for styling, and JavaScript for client-side interactivity is essential.

• **GitHub:** Download and installation instructions can be found at:

<https://git-scm.com/downloads>

- Open Terminal or Command Prompt
- Navigate to the Desired Directory
- Copy the Repository URL
- Run the Git Clone Command
- Wait for the Cloning Process to Complete
- Navigate into the Cloned Repository
- Verify the Repository Contents

✓ **Visual Studio Code:** Download from <https://code.visualstudio.com/download>

✓ **Install Dependencies:**

✓ **Repository:** [https://github.com/222207027/Newsapp\\_SWTID1741163164151302](https://github.com/222207027/Newsapp_SWTID1741163164151302)

- Navigate into the cloned repository directory and install libraries:

```
cd news-app-react npm
```

```
install
```

✓ **Start the Development Server:**

```
npm start
```

**Access the App:**

- Open your web browser and navigate to <http://localhost:3000>.
- You should see the applications homepage, indicating that the installation and setup were successful.

## 5. Folder structure:

newsgram/

- | — src/            # Main source directory
  - |    | — components/    # Reusable UI components
    - |    |    | — Navbar.js    # Navigation bar
    - |    |    | — NewsList.js   # List of news articles
    - |    |    | — NewsCard.js   # Individual news card
    - |    |    | — SearchBar.js   # Search input field
    - |    |    | — BookmarkList.js # Display saved articles
  - |    |
  - |    | — pages/            # Different pages of the application
    - |    |    | — Home.js        # Homepage with top news
    - |    |    | — Category.js   # Category-based news listing
    - |    |    | — Article.js    # Detailed article page
    - |    |    | — SearchResults.js # Search result page
  - |    |
  - |    | — assets/            # Static assets like images, icons, and logos
    - |    |    | — images/        # Image files
    - |    |    | — icons/        # SVG and icon assets
  - |    |
  - |    | — context/           # Global state management using Context API
    - |    |    | — NewsContext.js # Manages global news data
    - |    |    | — AuthContext.js # Manages authentication state
  - |    |
  - |    | — utils/            # Helper functions and custom hooks
    - |    |    | — api.js        # API requests to fetch news data
    - |    |    | — formatDate.js # Utility function to format dates
    - |    |    | — useFetch.js   # Custom hook for fetching data
  - |    |
  - |    | — styles/            # CSS or Styled Components for UI styling

```
| | |—— global.css # Global styling
| |
| |—— App.js      # Main application file
| |—— index.js    # Entry point for the application
|
|—— public/       # Public assets
| |—— index.html  # Main HTML file
| |—— manifest.json # Web app manifest
|
|—— package.json  # Dependencies and scripts
|—— .env          # Environment variables (API keys, etc.)
|—— README.md     # Project documentation
```

## Utilities:

### Helper Functions (Utils)

Helper functions are reusable functions that simplify tasks across the project.

- Formatting Functions
  - Converts dates to a readable format.
- Validation Functions
  - Checks if input fields meet validation rules.
- API Request Helpers
  - Handles API requests using fetch
- Local Storage Helpers
  - Saves and retrieves user data from localStorage

### Utility Classes (CSS)

Utility classes are small, reusable styles that help maintain consistency.

- Flexbox/Grid Utilities
- Spacing Helper
- Button Styles

## Custom Hooks (React)

Custom hooks simplify state management and side effects.

- **useFetch** (Handles API requests)
  - Fetches data from the backend and manages loading states.
- **useAuth** (Manages authentication)
  - Checks if the user is logged in and retrieves authentication tokens.
- **useForm** (Handles form state and validation)
  - Manages input fields and validates form data.

## 6. Running the Application:

### Start the Frontend (React)

- Navigate to the frontend directory:

`cd client`

- Install dependencies:

`npm install`

- Start the frontend server:

`npm start`

## 7. Component Documentation:

### Key Components:

#### Navbar Component

- Purpose: Displays the navigation bar with links to different sections (Home, Categories, Login, etc.).

#### Home Component

- Purpose: Serves as the homepage, displaying trending or latest news articles.

#### NewsList Component

- Purpose: Displays a list of news articles fetched from the backend.

#### NewsDetails Component

- Purpose: Shows details of a selected news article, including the title, content, image, and published date.

#### Category Component

- Purpose: Displays news articles based on the selected category (e.g., Sports, Technology, Politics).

## Search Component

- Purpose: Allows users to search for news articles by keywords.

## Reusable components:

### Button Component

- Purpose: A customizable button used for actions like "Read More", "Load More", and form submissions.

### InputField Component

- Purpose: A reusable input field for search bars and forms.

### NewsCard Component

- Purpose: Displays a single news article in a card format.

### Loader Component

- Purpose: Displays a loading animation when fetching data.

### ErrorMessage Component

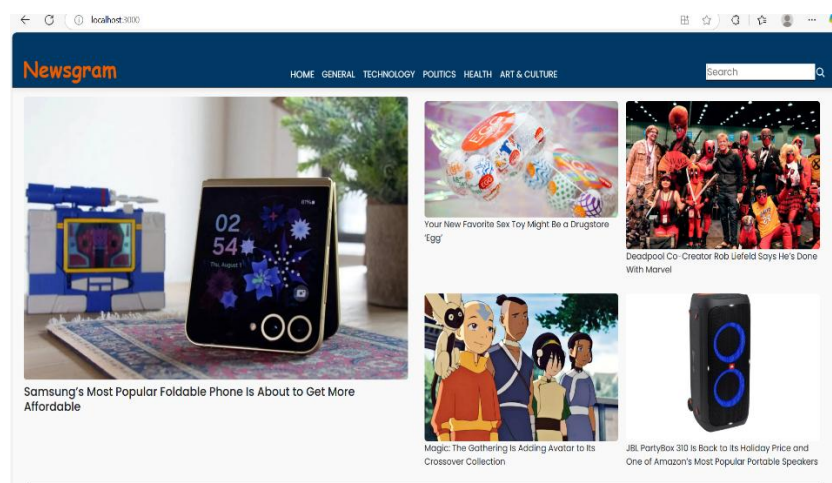
- Purpose: Shows error messages when API requests fail.

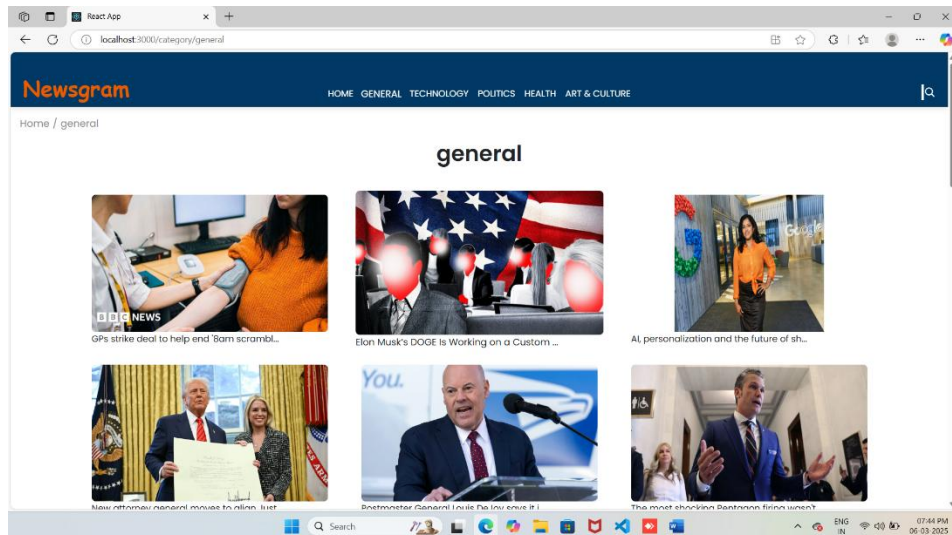
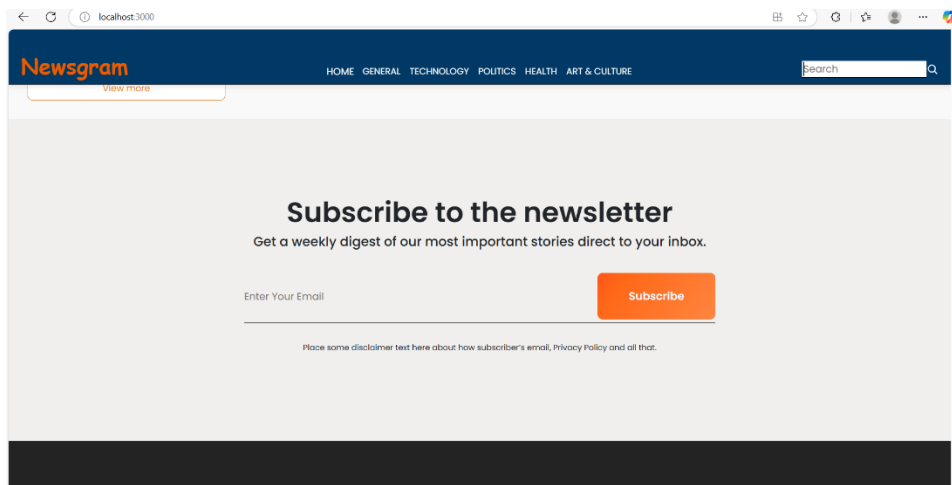
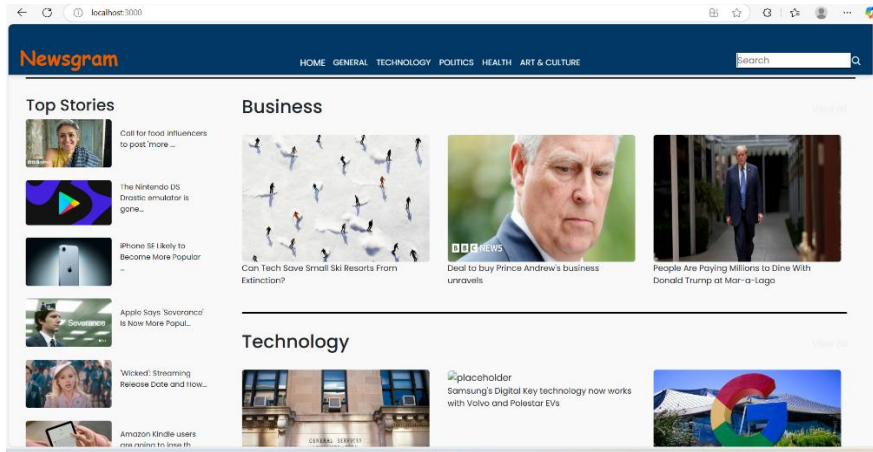
## 8. State Management

**Global state:** Local storage (local storage) is used for persisting user data

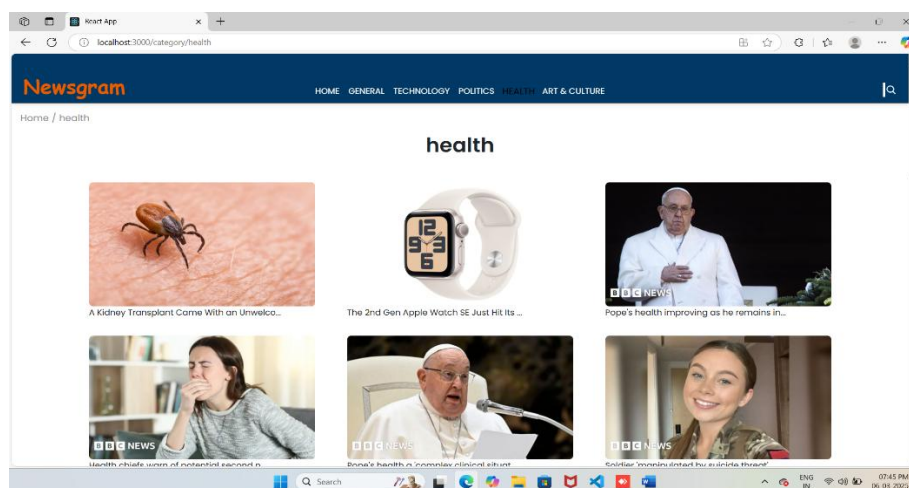
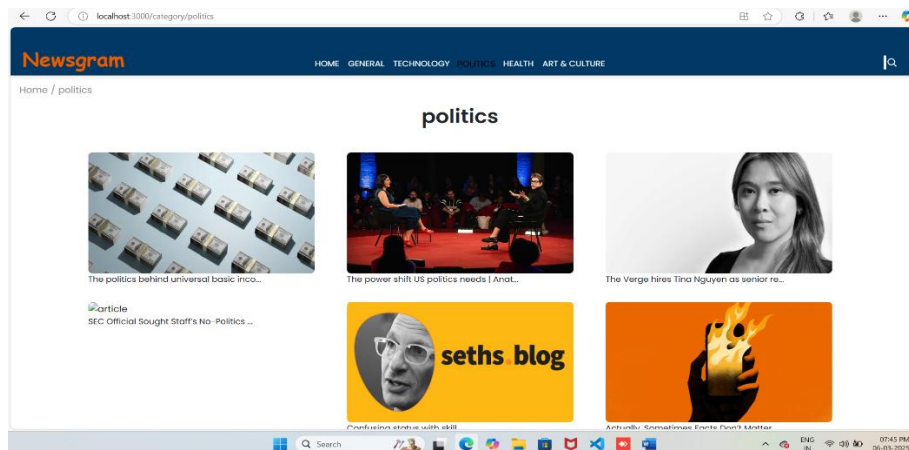
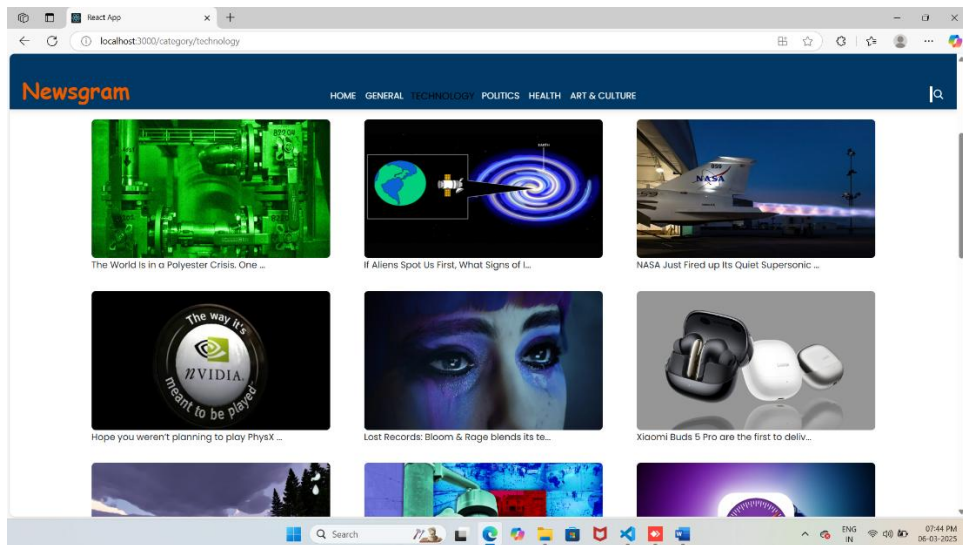
**Local state:** Search queries and UI states are managed using JavaScript event listeners

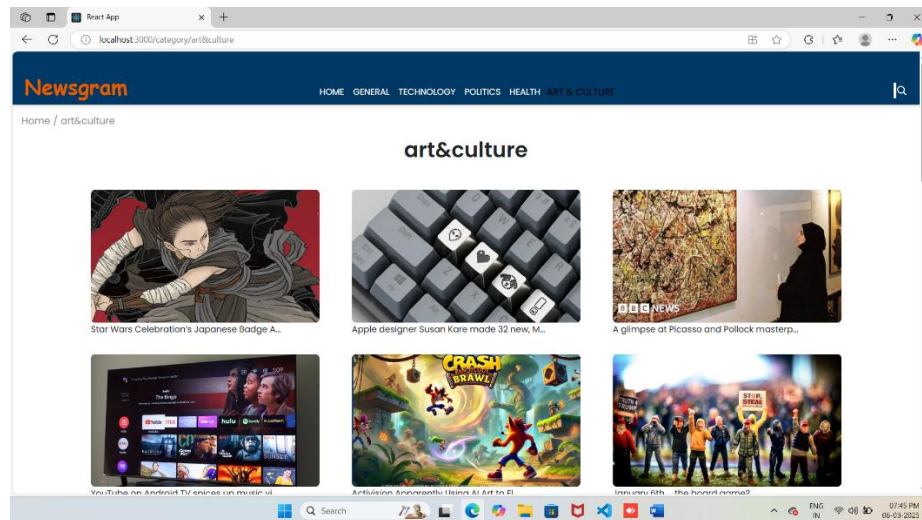
## 9. User Interface











## 10. Styling

### Css frameworks:

- General styling
- Header with navigation
- News cards
- Footer

### Theming:

- Dark mode and Light mode support
- Navbar background-color: `rgb(0, 57, 101)`
- Navbar logocolor: `#eb5b00`
- Home background-color: `rgb(249, 249, 249)`

## 11. Testing

### Testing Strategy:

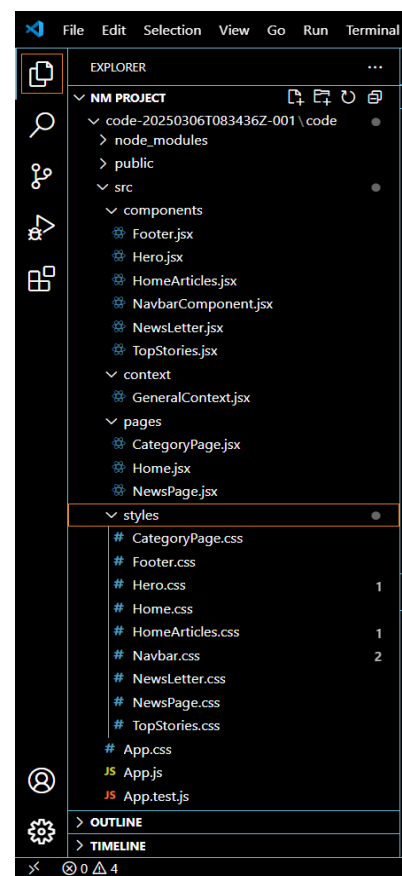
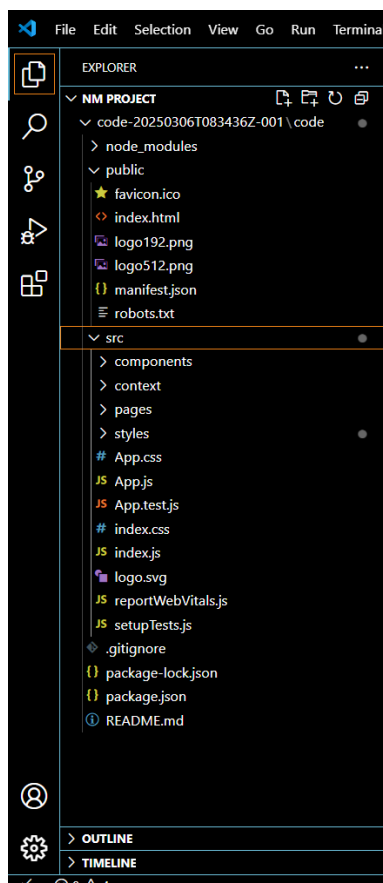
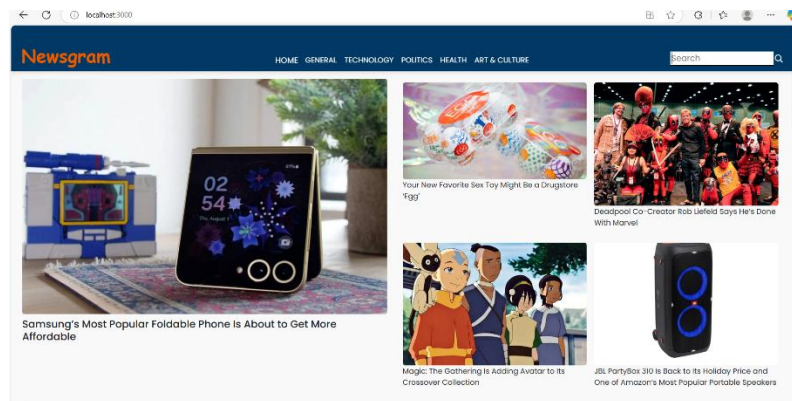
- React testing library for unit test
- Validating of local storage functionality

### Code Coverage:

- Simple validation of local storage data integration.

## 12. Screenshots or demolink

Demo link : <https://drive.google.com/file/d/1N6IhI-GWXGtUGlIloboVfiikO8dHkyP34/view?usp=sharing>



#### **14. Known Issue:**

- Page Load Delay
- Search Function Not Updating in Real-Time
- Dark Mode Not Persisting
- API Rate Limit Exceeded
- Database Query Performance Issues
- Navigation Bar Overlaps Content on Small Screens
- Images Not Scaling Properly\

#### **15. Future Enhancements:**

- Integration with external news APIs
- Push notifications for breaking news
- AI-based news recommendations