Naan Mudhalvan Project Documentation

# Project Title

InsightStream: Navigate the News Landscape

# Team Members

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# Institution Details

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# 1. Introduction

In today’s digital age, staying informed is crucial. However, the vast amount of news content available online makes it difficult for readers to distinguish reliable information. InsightStream is a web application designed to simplify news consumption by providing users with a structured, reliable, and easy-to-navigate news platform.  
  
The project aims to use modern web technologies such as Node.js and React to deliver real-time news updates, ensuring users receive the most relevant information quickly and efficiently.

# 2. Objectives

• To build a user-friendly news aggregator web application.  
• To provide real-time access to curated news articles.  
• To enhance user experience with a responsive and interactive UI.  
• To gain practical experience in full-stack web development.  
• To align with the Naan Mudhalvan program’s goal of skill development and employability enhancement.

# 3. Literature Survey / Existing System

Existing news portals and applications provide news in bulk, often with cluttered interfaces and unreliable sources. Users face challenges such as:  
• Information overload.  
• Lack of personalization.  
• Difficulty in accessing verified news.  
  
InsightStream addresses these issues by creating a focused and structured platform for navigating the news landscape.

# 4. Proposed System

The proposed system is a web application that:  
• Aggregates news from trusted sources.  
• Displays articles in an organized, category-based interface.  
• Provides real-time updates for trending topics.  
• Runs locally via Node.js server and can be scaled for deployment.  
  
System Architecture:  
1. Frontend (ReactJS): Interactive and responsive user interface.  
2. Backend (Node.js): Handles server-side logic and API requests.  
3. Database (if integrated): Stores user preferences or bookmarked news.  
4. APIs: Fetches real-time news content.

# 5. System Requirements

Hardware Requirements:  
• Processor: Intel i3 or above  
• RAM: Minimum 4 GB  
• Storage: 250 GB or more  
  
Software Requirements:  
• OS: Windows / macOS / Linux  
• Node.js (LTS version)  
• Code Editor: Visual Studio Code  
• Browser: Google Chrome / Edge  
• Dependencies: npm packages

# 6. System Design

• Use Case Diagram – Shows interaction between user and system for browsing news.  
• Data Flow Diagram (DFD) – Describes flow of data from APIs to frontend display.  
• Architecture Diagram – Frontend ↔ Backend ↔ API.  
• Flowchart – Steps for accessing and displaying news.

# 7. Implementation

Steps for Execution:  
1. Download and install Node.js (LTS version).  
2. Open PowerShell as Administrator and run: set-executionPolicy unrestricted  
3. Access the project from SmartInternz Portal → Guided Projects → Workspace.  
4. Download the project code from the provided drive link.  
5. Extract the downloaded ZIP folder.  
6. Open the extracted folder in VS Code.  
7. Open a new terminal and run: npm install  
8. Start the application using: npm start  
9. Application runs on: http://localhost:3000

# 8. Testing

• Unit Testing: Individual components tested for functionality.  
• Integration Testing: Ensured smooth communication between frontend and backend.  
• System Testing: Verified complete workflow from news fetching to display.  
• User Acceptance Testing: Application tested for user experience and usability.

# 9. Results & Discussion

• Successfully developed a news aggregation web application.  
• Users can browse real-time news in a structured format.  
• Interface is responsive and user-friendly.  
• Project execution validated on local host without major errors.

# 10. Conclusion

The project InsightStream successfully delivers an interactive platform for accessing real-time news. The implementation enhanced the team’s skills in Node.js, React, and full-stack development practices.  
  
Future Enhancements:  
• Personalized news feed based on user preferences.  
• Mobile app integration.  
• AI-powered sentiment analysis for news articles.

# 11. References

• Node.js Documentation: https://nodejs.org/en/docs/  
• SmartInternz Project Resources  
• Official ReactJS Documentation  
• Online tutorials and open-source communities