Naan Mudhalvan Project Documentation

# Project Title

InsightStream: Navigate the News Landscape

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# Institution Details

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# 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.

# 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.

# Literature Survey / ExistingSystem

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.

# 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.

# SystemRequirements

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

# SystemDesign

* 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.

# 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.
3. Download the project code from the provided drive link.
4. Extract the downloaded ZIP folder.
5. Open the extracted folder in VS Code.
6. Open a new terminal and run: npm install
7. Start the application using: npm start
8. Application runs on: http://localhost:3000

# 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.

# 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.

# 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.

# References

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