Project Documentation

1. Introduction

Project Title: InsightStream – Navigate the News Landscape

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2. Project Overview

Purpose:

InsightStream is a smart news aggregator that helps users explore, analyze, and stay updated with the latest news from diverse sources. It provides real-time updates, personalized feeds, and an interactive dashboard for deeper insights into trending topics.

Features:

- Aggregated news from multiple reliable sources
- Real-time updates with category filters (politics, sports, tech, etc.)
- Personalized recommendations based on user interests
- Search and keyword-based filtering
- Interactive dashboards with trending charts
- Save and bookmark articles for later
- Admin panel for content moderation

3. Architecture

- **Frontend:** React.js with Material UI / Tailwind CSS for modern responsive design

- **Backend:** Node.js with Express.js for server-side logic and API integration
- **Database:** MongoDB to store user profiles, preferences, bookmarks, and analytics
- **External APIs:** Integrated with trusted news APIs (e.g., NewsAPI, GNews) for live updates

4. Setup Instructions

Prerequisites:

- Node.js
- MongoDB
- Git
- React.js
- Express.js
- Visual Studio Code

Installation Steps:

Clone the repository

git clone <repository-link>

Install client dependencies

cd client

npm install

Install server dependencies

cd ../server

npm install

5. Folder Structure

InsightStream/

|-- client/   # React frontend

| |-- components/

| |-- pages/

```
|

|-- server/        # Node.js backend

|  |-- routes/

|  |-- models/

|  |-- controllers/

|

|-- database/      # MongoDB collections
```

6. Running the Application

Frontend:

- cd client
- npm start

Backend:

- cd server
- npm start

Access: Visit http://localhost:3000

7. API Documentation

User:

- POST /api/user/register
- POST /api/user/login

News:

- GET /api/news/latest
- GET /api/news/search?query=keyword
- GET /api/news/category/:type

Bookmarks:

- POST /api/bookmark/add
- GET /api/bookmark/list

Admin:

- POST /api/admin/add-source
- DELETE /api/admin/remove-source

8. Authentication

- JWT-based authentication for secure login
- Middleware-protected routes for user and admin features
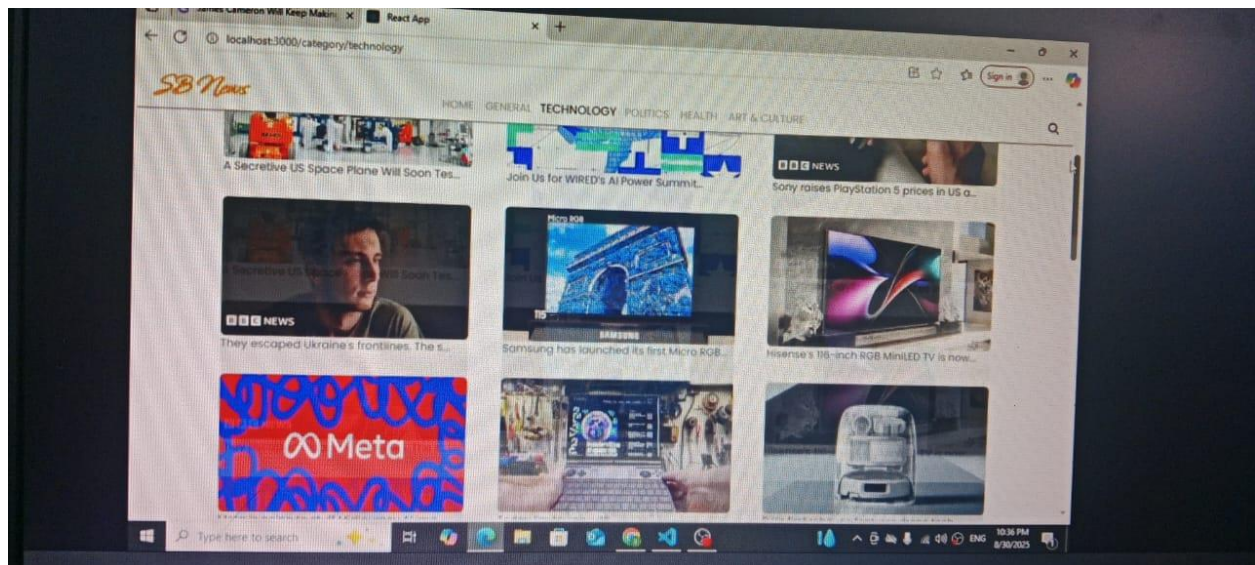
9. User Interface

- Landing Page with top headlines
- Category-specific pages (Tech, Sports, Entertainment, etc.)
- Personalized Dashboard with recommendations
- Search and Filter News Page
- Bookmarks Section
- Admin Dashboard

10. Testing

Methods: Manual testing at development milestones

Tools: Postman, Chrome DevTools

11. Screenshots or Demo

12. Known Issues

- Some free APIs have request limits
- Regional news sources may vary in availability

13. Future Enhancements

- AI-based summarization of long articles
- Sentiment analysis on trending topics
- Voice-assisted news reading
- Mobile app for iOS and Android