**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

| Date | 9 march 2025 |
| --- | --- |
| Team ID | SWT1D1741164806148446 |
| Project Name | InsightStream |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

**Functional Requirements – News App**

| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| --- | --- | --- |
| **FR-1** | **News Home** | Display trending news articles on the homepage. |
| **FR-2** | **News Genre** | Browse news by categories: General, Health, Technology, Politics, Art & Culture. |
| **FR-3** | **NewsLetter** | Provide a newsletter subscription option in the footer. |
| **FR-4** | **News Search** | Enable users to search for news by keywords or topics. |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

| **NFR No.** | **Non-Functional Requirement** | **Description** |
| --- | --- | --- |
| **NFR-1** | **Usability** | The app should have an intuitive and user-friendly interface, ensuring smooth navigation and accessibility for users of all demographics. |
| **NFR-2** | **Security** | User authentication and data must be secured using encryption (e.g., HTTPS, OAuth for third-party logins). The app should prevent unauthorized access and follow best security practices. |
| **NFR-3** | **Reliability** | The app should ensure a consistent and uninterrupted music streaming experience, minimizing crashes and downtime. |
| **NFR-4** | **Performance** | Songs should load and stream with minimal buffering. The app should respond to user interactions (search, playback, playlist management) within 2 seconds. |
| **NFR-5** | **Availability** | The system should maintain an uptime of at least 99.9%, ensuring accessibility across different time zones. |
| **NFR-6** | **Scalability** | The app should handle increasing numbers of users and concurrent streams efficiently without performance degradation. The architecture should support future feature expansion. |

### **Explanation and Alignment with InsightStream**

#### **Functional Requirements**

* **FR-1 (News Home):** This reflects the homepage (Home.js) where topNews from the NewsAPI is displayed via Hero.js and NewsCard.js. It’s the app’s entry point, showing trending news instantly.
* **FR-2 (News Genre):** Matches the category browsing feature in Category.js, with a predefined list in NewsContext.js (e.g., General, Health, Technology). Users click categories in Navbar.js to explore.
* **FR-3 (Newsletter):** Covers the subscription form in Newsletter.js within Footer.js. Currently a placeholder, it’s set for future integration.
* **FR-4 (News Search):** Added to include the search functionality in Navbar.js and SearchResults.js, letting users find news by keywords—a core feature we implemented.

#### **Non-functional Requirements**

* **NFR-1 (Usability):** The cozy design (App.css) with warm gradients and rounded edges ensures an inviting, easy-to-use experience for all users.
* **NFR-2 (Security):** While basic now (hardcoded API key), I’ve noted HTTPS and future env variable use—aligning with best practices for Phase-II planning.
* **NFR-3 (Reliability):** The app handles API errors gracefully (e.g., placeholders in NewsCard.js), ensuring a stable experience despite external dependencies.
* **NFR-4 (Performance):** Optimized fetches and flicker prevention (Category.js) keep load times low—targeting under 2 seconds with a decent network.
* **NFR-5 (Availability):** Depends on NewsAPI uptime, but local state management ensures the UI remains functional even during brief API hiccups.
* **NFR-6 (Scalability):** The Context API and modular components (NewsCard.js, etc.) allow for growth, like adding pagination or user features later.