**Project Design Phase**

|  |  |
| --- | --- |
| Date | 7 March 2025 |
| Team ID | SWTID1741172514157264 |
| Project Name | NewsApp:   Nk LIVE NEWS |
| Maximum Marks | 5 Marks |

**Solution Architecture:**

The solution architecture for BA LIVE NEWS ensures a scalable, efficient, and user-friendly platform for discovering and accessing the latest news articles across various categories**.**

**Goals of the Solution Architecture:**

1. Identify the Best Tech Solution:  
   Utilize modern front-end frameworks and APIs to provide a seamless news discovery experience.
2. Define Structure & Characteristics:  
   Ensure modular, scalable, and maintainable software architecture for future enhancements.
3. Outline Features & Development Phases:  
   Clearly structure project milestones for effective development and deployment.
4. Establish Specifications for Development & Delivery:  
   Provide well-defined guidelines for the system's architecture, API integration, and data flow.

**Key Components of the Architecture:**

1. Frontend (React.js):
   * User Interface (UI): A clean and intuitive interface for browsing news categories and articles.
   * Dynamic Rendering: React.js for fast and responsive rendering of news articles.
   * Search and Filtering: Advanced search and filtering features for personalized news discovery.
2. Backend (NewsAPI):
   * API Integration: Fetch news data from NewsAPI to display real-time news articles.
   * Data Flow: Efficiently manage data flow between the frontend and the API.
3. State Management:
   * Context API: Manage global state (e.g., search term, selected category) for seamless navigation and data sharing across components.
4. Styling (CSS/Tailwind):
   * Responsive Design: Ensure the application is fully responsive for mobile, tablet, and desktop views.
   * Modern UI: Use CSS or Tailwind CSS for a visually appealing and professional design.
5. Error Handling:
   * Graceful Error Handling: Implement error handling for failed API requests and invalid user inputs.
6. Deployment:
   * Hosting: Deploy the application on platforms like Netlify or Vercel for seamless access.

**Development Phases:**

1. Phase 1: Project Setup and UI Development:
   * Set up the React.js project structure.
   * Develop the homepage with navigation and news categories.
2. Phase 2: API Integration and News Listing:
   * Integrate NewsAPI to fetch and display news articles.
   * Create a detailed page for each news article.
3. Phase 3: Advanced Features:
   * Implement search and filtering features.
   * Add error handling for API requests.
4. Phase 4: UI Enhancement and Responsiveness:
   * Improve UI/UX with modern styling and icons.
   * Ensure the application is fully responsive.
5. Phase 5: Testing and Deployment:
   * Test the application for bugs and performance issues.
   * Deploy the application to a hosting platform.