

Technical Documentation for “The Financial Express”

Introduction

"The Financial Express Bangladesh" is a leading English-language financial newspaper based in Bangladesh. It provides comprehensive coverage of national and international business news, economic developments, financial markets, and corporate affairs. The newspaper aims to deliver accurate, timely, and insightful information to its readers, including professionals, investors, policymakers, and the general public. It covers a wide range of sectors, including banking, insurance, capital markets, trade, technology, and entrepreneurship. "The Financial Express Bangladesh" plays a crucial role in disseminating financial knowledge, promoting economic growth, and facilitating informed decision-making in Bangladesh's business community and beyond.

Website Overview

It offers a digital version of the newspaper, including articles, news updates and other features related to business, finance and economics in Bangladesh.

Technical Infrastructure

Technical Infrastructure of the Project:

Frontend Website:

- Frontend Framework: Vue.js
- Additional Framework: Nuxt.js (for the admin panel frontend)
- HTML, CSS, TypeScript and JavaScript: Used to build the frontend user interface and interactivity.
- Frontend Optimization: Techniques such as code minification, asset caching and CDN utilization for improved performance.
- Hosting: DigitalOcean/Cloud hosting.

Backend:

- Backend Framework: Laravel (PHP framework)

- Database Management: Utilizing a relational database management system (e.g., MySQL) to store and manage data.
- RESTful API: Building APIs using Laravel to enable communication between the frontend and backend.
- Backend Optimization: Caching mechanisms, query optimization, and performance tuning for efficient data processing.
- Server Management: Laravel Forge for server provisioning, deployment, and monitoring.

Server:

- Hosting Provider: DigitalOcean/Cloud hosting.
- Server Infrastructure: Configuring the server environment to support the project's requirements.
- Security: Implementing necessary security measures, including firewalls, SSL certificates, and access control.

Content Management:

- Post Management: The CMS provides an intuitive interface to create, edit, and publish posts. It includes features such as rich text editing, media embedding, and scheduling options.
- Slider and Special Section: The CMS allows administrators to create and manage sliders and special sections on the website. This feature enables highlighting specific content or promotions in a visually appealing manner.
- Role Management: Administrators can define and manage roles within the CMS. Roles can be assigned to users, granting them specific permissions and access levels based on their responsibilities.
- Category Management: The CMS offers a flexible category management system. Administrators can create and organize categories to effectively classify and group content, making it easier for users to navigate and discover relevant information.
- User Management: The CMS includes user management functionality, allowing administrators to create and manage user accounts. This includes features such as user registration, profile management, and password reset.

- **Role Permission Management:** Administrators can assign specific permissions to user roles, granting or restricting access to various CMS functionalities. This ensures proper control and security within the system.
- **Media Asset Management:** The CMS provides a centralized media library to manage and organize media assets such as images, videos, and documents. It includes features for uploading, organizing, and reusing media files across the website.
- **User Log:** The CMS keeps track of user activities and generates logs to monitor system usage. This feature provides an audit trail for administrators to review user actions and track any changes made within the CMS.
- **Administration Management:** The CMS includes a dedicated administration management module. It enables administrators to configure system settings, manage global parameters, and perform administrative tasks such as backups and system updates.
- **Advertisement Management:** The CMS offers a custom advertisement management feature. Administrators can create, manage, and schedule advertisements, allowing monetization and effective management of ad campaigns.
- **SEO Optimization:** The CMS incorporates SEO optimization techniques to improve the visibility and ranking of the website in search engine results. This includes customizable meta tags, structured data, and URL optimization.
- **System Localization:** The CMS supports localization, allowing administrators to configure multiple languages. This feature enables the website to cater to a diverse audience by providing content in their preferred language.
- **Dynamic Menu Control:** Administrators have control over the website's navigation menu. They can customize and manage menu items, including creating sub-menus, reordering menu items, and adding links to different sections of the website.

These content management features enhance the usability, efficiency, and control of the CMS, enabling administrators to effectively manage content, user roles, media assets, advertisements, and system settings. They contribute to a seamless user experience, improved content organization, and optimized website performance.

The technical infrastructure involves the integration of Vue.js for the frontend, Laravel for the backend, and Nuxt.js for the admin panel frontend. The server is hosted on DigitalOcean, managed using Laravel Forge, and the system incorporates various features to enhance post

management, user management, content organization, localization, SEO optimization, and user experience.

Comparison

When comparing the current technology stack with the previous one, several improvements can be identified in the current system. Here's an explanation of why the current system is better:

1. Frontend Website: Vue.js (previously Bootstrap)
 - Vue.js is a modern JavaScript framework that offers better performance, reactivity, and scalability compared to Bootstrap.
 - Vue.js enables the development of dynamic and interactive user interfaces, resulting in a more engaging and user-friendly website.
 - Vue.js provides a component-based architecture, promoting code reusability and easier maintenance.
2. Admin Panel Frontend: Nuxt.js (previously Bootstrap)
 - Nuxt.js is a powerful framework built on top of Vue.js, providing server-side rendering and improved performance.
 - Nuxt.js facilitates the development of SEO-friendly applications by rendering pages on the server, resulting in better search engine visibility.
 - With Nuxt.js, the admin panel frontend becomes more efficient, enabling faster loading and improved user experience.
3. Backend: Laravel (previously Laravel Lumen)
 - Laravel is a full-featured PHP framework that offers a robust and expressive syntax for backend development.
 - Compared to Laravel Lumen, Laravel provides more extensive features, including an ORM (Object-Relational Mapping) system, queuing system, authentication, and a rich ecosystem of packages.
 - Laravel simplifies the development process, increases code maintainability, and offers a solid foundation for building complex backend systems.
4. Server: DigitalOcean (previously Namecheap)
 - DigitalOcean is a popular cloud hosting provider known for its reliability, scalability, and developer-friendly features.
 - DigitalOcean offers flexible server configurations, easy scalability, and comprehensive documentation.

- It provides better performance and stability compared to shared hosting services like Namecheap.
5. Server Manager: Laravel Forge (previously cPanel)
- Laravel Forge is a dedicated server management tool specifically designed for Laravel applications.
 - It offers streamlined server provisioning, automated deployments, SSL certificate management, and monitoring capabilities.
 - Laravel Forge simplifies server management tasks, improves security, and provides a better development workflow compared to cPanel.

The current website and its admin panel (CMS) have undergone significant improvements, resulting in a more advanced and efficient system. These enhancements encompass various aspects of the CMS, including post management, loading speed, content management, user management, administration system management, advertisement management, language localization, SEO optimization, search and filtering capabilities, dynamic menu control in the admin panel, and dynamic section and post management on the frontend site.

Content Analysis

The new CMS offers a simplified and intuitive interface for post management, enabling content creators to easily create, edit, and publish posts without requiring extensive technical knowledge. Performance optimization techniques, such as code minification and caching, have been implemented to ensure faster loading times and a seamless browsing experience. The use of modern frontend frameworks, such as Vue.js, and server-side rendering with Nuxt.js contribute to improved rendering and overall performance.

Content management has been enhanced with features like tags, categories, and custom metadata, allowing administrators to efficiently organize and categorize content. The system also includes content revision history and versioning, ensuring content integrity and providing the ability to revert changes when necessary.

Dynamic user management and role permissions enable administrators to create and manage user accounts, assign roles, and define granular permissions based on user types. This offers better control over user access and ensures appropriate content editing and management privileges.

The admin panel has been revamped to provide a comprehensive interface for managing the CMS system. It offers centralized control over system settings, configurations, and administrative tasks, simplifying system administration and maintenance.

The CMS now includes a custom advertisement management feature, empowering administrators to easily integrate and manage advertisements on the website. Ad placement, tracking, and reporting functionalities facilitate effective monetization and ad campaign management.

Language localization capabilities have been incorporated, allowing the website to be translated into multiple languages. Administrators can easily manage translations, providing a localized experience for users from different regions.

To improve search engine visibility and ranking, the CMS offers tools and features for SEO-optimized data control. Meta tags, URLs, and structured data can be customized to align with best practices, enhancing the website's visibility in organic search results.

A user-friendly search and filtering option has been implemented, enabling visitors to easily find specific content based on various criteria such as keywords, categories, and tags.

The admin panel now provides dynamic menu control, allowing administrators to customize and manage the website's navigation menu. Menu items can be added, edited, rearranged, and nested, providing flexibility and intuitive navigation.

On the frontend site, dynamic section and post management capabilities have been introduced. Content sections and pages can be easily created, modified, and organized without requiring technical intervention, allowing for dynamic content presentation and layout customization.

These technical enhancements collectively result in a more advanced and efficient CMS system. They improve user experience, streamline content management processes, optimize performance, offer better control and customization options, and contribute to the overall success of the website and its admin panel.

Conclusion

Overall, the current technology stack offers more advanced tools, improved performance, scalability, better development workflow, and an enhanced feature set compared to the previous system. These upgrades lead to a more efficient, user-friendly, and future-proof CMS system.

