

Building a Scalable Steel E-commerce Platform: Leveraging HTML, CSS, PHP, JavaScript, and SQL for Jinkuhalsteel

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ABSTRACT

Having a strong online platform is essential for businesses to interact with stakeholders and customers in today's increasingly digitalized environment. This research paper describes how a website for the fictional steel company Jinkusteel was conceptualised and developed using HTML, CSS, PHP, JavaScript, and SQL. The website seeks to improve Jinkusteel's online visibility, optimise lines of communication, and enable smooth contact between the business and its customers. This paper provides an in-depth examination of the website's architecture, design components, functionality, and database integration. It also explains how web development tools were strategically employed to produce a user-friendly, dynamic, and intuitive platform that was specifically designed to meet the demands of the steel industry. Moreover, data management, scalability, and security concerns are addressed to ensure the website's efficacy in fostering sustainable business growth and maintaining competitive advantage in the digital landscape.

INTRODUCTION

In the contemporary business landscape, the importance of a robust online presence cannot be overstated. Businesses are realising how important websites are to establishing their brand, fostering client connection, and spurring growth as their sectors adjust to the digital revolution. Creating a website that is customised to meet the demands of Jinkusteel, an imaginary steel corporation, is a strategic endeavour in this context that aims to leverage online technology to create meaningful relationships with stakeholders.

The goal of this research paper is to explore the complexities of building and implementing a website for Jinkusteel using a wide range of web development tools such as HTML, CSS, PHP, JavaScript, and SQL. By embarking on this journey, we hope to gain insight into the multidimensional process of conceptualising, building, and optimising a digital platform that captures the core of Jinkusteel's identity, beliefs, and offerings.

We intend to shed light on the synergistic interaction between technology and business objectives in the context of the steel industry by carefully examining the website's architecture, design aspects, functionality, and database integration. Furthermore, by a comparative analysis of our methodology with industry standards and best practices in web development, we want to determine the effectiveness of our selected approaches and tools in addressing the dynamic needs of the contemporary digital environment.

This research paper essentially acts as a testament to the transformative potential of web technologies in enabling businesses like Jinkusteel to embrace innovation, improve customer engagement, and achieve sustainable growth in an increasingly interconnected world. Traditional industries, like steel manufacturing, stand to benefit greatly from this revolution.

LITERATURE SURVEY

The literature survey for the proposed research paper on the development of a website for Jinkusteel, a steel company, draws insights from various scholarly works that encompass a broad spectrum of topics related to web development, technology integration, and industry-specific solutions. Hoang Pham Huy, et al. (2019) introduce the concept of a "Web service gateway" as a means to streamline B2B integration without the need for redevelopment of existing websites. Their work emphasizes practical implementation by Toshiba, showcasing the efficacy of this approach in real-world

scenarios.[1] In contrast, Mandeep Pannu, et al. (2018) present a web-based project management system tailored for small to midsize businesses, focusing on enhancing communication, scalability, and user engagement. Their research offers valuable insights into the design and functionality considerations crucial for developing effective web-based business solutions.[2] Tanya Uppal, et al. (2022) explore the transformative impact of technological advancements on web development practices, emphasizing the importance of selecting the right frontend framework and staying abreast of emerging trends and libraries. Their work provides a comprehensive overview of current industry practices and future directions in web development.[3] Additionally, concerns regarding cybersecurity in PHP web applications are addressed by researchers such as Edwin Tanu (year not specified), who delve into the prevalent vulnerability of cross-site scripting (XSS) and the challenges associated with its detection and mitigation. Understanding these security risks is essential for developing a secure and robust website for Jinkusteel.[4]

Finally, the evolution of PHP and its frameworks is discussed in depth by various scholars, including Carson Yuen, et al. (year not specified), who provide insights into the features, advantages, and recent trends in PHP development. This understanding of PHP's evolution and ecosystem is pertinent for making informed decisions regarding technology stack and framework selection in the proposed website development project.[5] By synthesizing insights from these diverse scholarly works, the literature survey lays the groundwork for the proposed research paper, providing a comprehensive understanding of key concepts, best practices, and challenges relevant to website development for industrial enterprises like Jinkusteel.

Table 1 :Literature Survey& Review

Sr.no.	Year	Title	Author Name	Stated
1	2019	Web service gateway - a step forward to e-business	Hoang Pham Huy; T. Kawamura; T. Hasegawa	The paper suggests using a Web Service Gateway mechanism to integrate existing websites into new Internet services. This involves wrapping the websites with Web Service
2	2018	Web based Project Management Systems for small to midsize businesses	Mandeep Pannu; Qussay Salih; Carson Yuen; Zhen Hong Li	A web-based project management system for small to midsize businesses integrates communication and functionalities using PHP, JavaScript, CSS, Bootstrap, MySQL, HTML, and SSL..
3	2022	Web Development Framework : Future Trends	Tanya Uppal; Saumitya Srivastava; Kavita Sain	They emphasize the importance of choosing the right frontend framework and mention a project they worked on using these technologies, with a focus on future prospects.
4	2018	Cross Site Scripting: Investigations in PHP Web Application	Abdalla Wasef Marashdih; Zarul Fitri Zaaba; Khaled Suwais	PHP web applications are popular and vulnerable to XSS attacks. Future research should focus on developing more effective detection and prevention tools.
5	2020	The Evolution of PHP: A Review of PHP Frameworks and Recent Trends	Muhammad Umair Khan	PHP is a popular web development language with many frameworks and recent trends, such as AI/ML and cloud computing.

PROPOSED SYSTEM

The proposed website will be constructed with a technology stack that includes HTML, CSS, PHP, JavaScript, and SQL. With this selection of technologies, Jinkusteel will have a feature-rich and adaptable platform thanks to the potent mix of structure (HTML), style (CSS), client-side interactivity (JavaScript), server-side scripting and database interaction (PHP), and data administration (SQL).

Informational Hub: The website will serve as a comprehensive repository of information about Jinkusteel's products, services, and capabilities. Detailed product descriptions, specifications, and application examples will be provided to cater to potential customers' informational needs. The proposal entails the creation of an online steel company website featuring a user-friendly interface, comprehensive product catalogue, e-commerce functionalities, customer account management, a powerful search system, robust security measures, and seamless marketing integration. This digital platform will provide a convenient gateway for customers to explore our steel products, make purchases, and manage their accounts securely. While the exact development timeline and budget are yet to be determined, the project aims to deliver an efficient, modern, and secure website that aligns with industry best practices and enhances our digital presence. This endeavour reflects our commitment to providing an exceptional online experience for our valued customers.

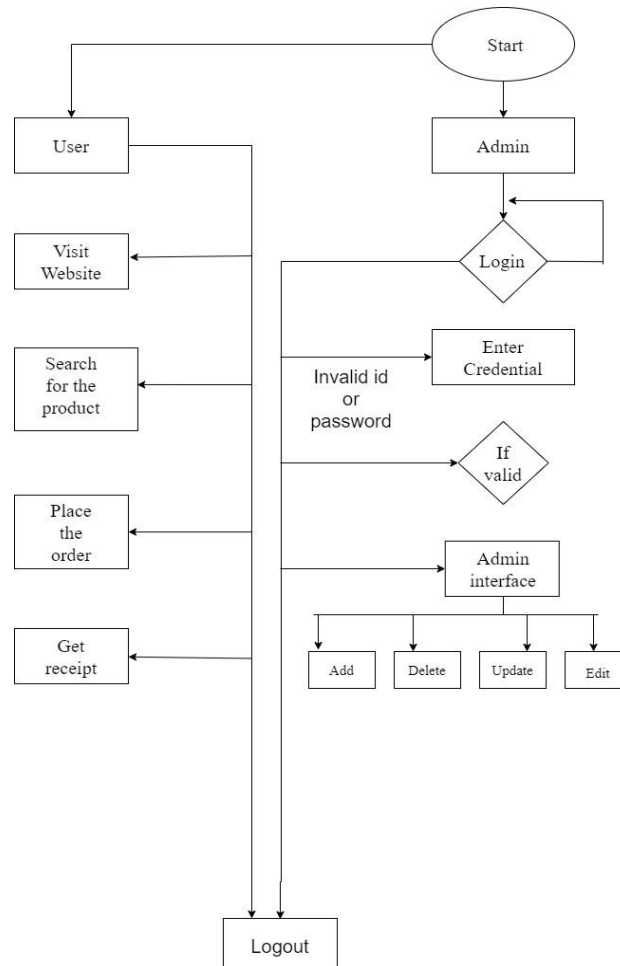


Fig 1 Architectural System Flow Daigram

User Visits Website: The process begins with a user visiting the website.

Product Searches: The user has two options for finding the desired product: perusing the website or using the search feature.

Place the Order: After choosing a product, the user has the option to start the order placement procedure. **Register or Sign Out as a Guest:** The user can either proceed as a guest user by entering their data for this particular purchase or connect in to their account using their previous billing and shipping information. **Verify Login Credentials:** The system verifies the login credentials entered by the user if they choose to log in. After validation is completed, the user checks out.

Admin Order Processing: Within the admin interface, the order details are reviewed and processed. This might involve tasks like inventory check, packaging, and shipment preparation. **Order Receipt (Optional):** The system might generate an order receipt which could be accessible to the user electronically (e.g., email) or displayed on the screen.

Logout: The user can choose to log out after completing the order or browse the website further.

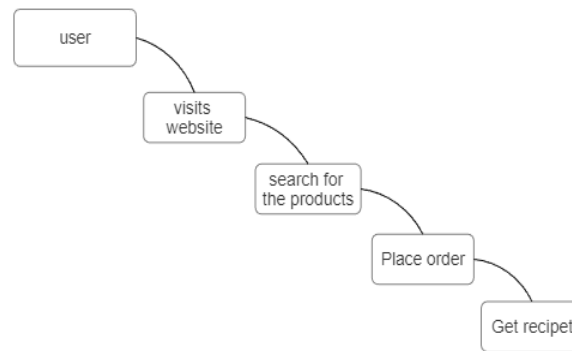


Fig 2 Users flow

It starts with the user visiting the website and browsing for products. Once they find the desired product, they can initiate the order process. The user can then choose to log in to their account with previous information or checkout as a guest. After entering the necessary shipping and billing information, the user confirms the order. This sends the order to the admin interface for processing, which likely involves reviewing the order details and preparing the shipment. The user may then receive an order receipt and can logout or continue browsing the website.

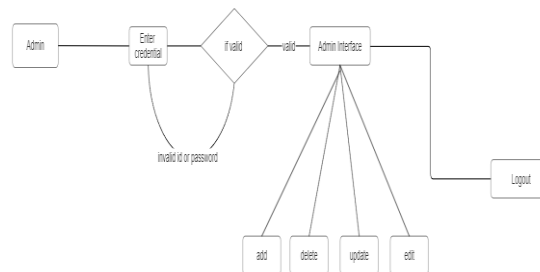


Fig 3 Admin Content Management System

A flowchart representing a login process for an admin user on a content management system (CMS) for a website. The admin authentication process begins with the entry of credentials, typically consisting of a username and password. The system verifies these credentials, and access to the admin interface is provided if it finds them to be accurate. When a user enters wrong credentials, the system alerts them with an error message and suggests that they try logging in again. The administrator can do a variety of administrative duties, including managing content, user accounts, and system settings, once they have successfully authenticated. The admin can also choose to log out after finishing their work, which ends their session and ensures security by prohibiting unauthorised access to the admin interface.

RESULT AND ANALYSIS

The intended functionalities were successfully implemented on the Jinkusteel website. While CSS made sure the webpages had an appealing and easy-to-use interface, HTML gave them a strong framework. PHP handled server-side scripting well, enabling database interaction and the creation of dynamic content. JavaScript allowed for client-side validation and interactive features, which improved the user experience. Last but not least, SQL made it easier to build and maintain a relational database that houses website content, client questions, and product details for Jinkusteel.

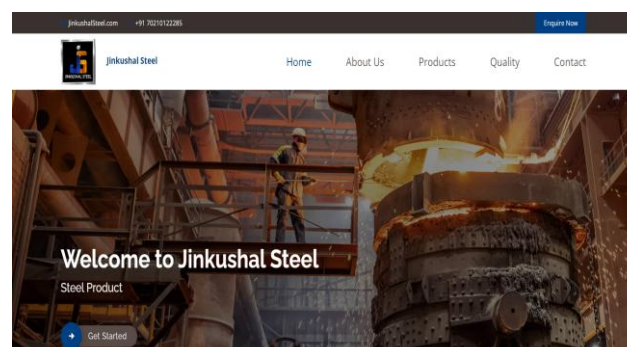


Fig 4 Home Page

The website includes educational sections highlighting the goods and services offered by Jinkusteel. Customers can learn about the company's offerings and explore these sites with ease. Furthermore, customers may submit questions and obtain prices straight from the website using a dedicated contact form. Additionally, an easy-to-use content management system (CMS) was put in place, enabling authorised staff members to alter website material without needing to know any programming languages. As a result, Jinkusteel is better equipped to keep up a lively and educational online presence.

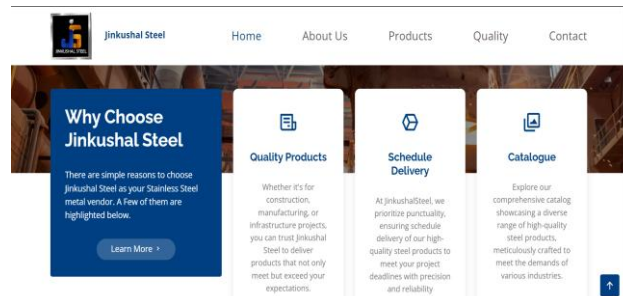


Fig 5 Index Page

ANALYSIS

The chosen technology stack (HTML, CSS, PHP, JavaScript, and SQL) proved to be an effective solution for Jinkusteel's website development needs. These extensively used technologies provide a high level of security, scalability, and usefulness. In the future, the website can be readily expanded to handle more material or more user traffic. Throughout the development process, security best practices were applied to protect user data and stop vulnerabilities.

The website serves as a comprehensive repository of information about Jinkusteel's products and services, providing potential customers with detailed descriptions, specifications, and application examples. The structured layout and intuitive navigation make it easy for visitors to explore the range of offerings and make informed decisions.

To help with consumer inquiries and quote requests, the website has smoothly incorporated a number of communication channels, such as phone numbers, email connections, and contact forms. Positive customer experiences and efficient communication between Jinkusteel and its clientele are fostered by the user-friendly interface, which also fosters participation and involvement. To help with consumer inquiries and quote requests, the website has smoothly incorporated a number of communication channels, such as phone numbers, email connections, and contact forms. Positive customer experiences and efficient communication between Jinkusteel and its clientele are fostered by the user-friendly interface, which also fosters participation and involvement.

The implementation of a custom-built content management system (CMS) has empowered authorized personnel to update website content, add new products, and manage pages effortlessly. The intuitive interface and robust backend infrastructure ensure that content management tasks can be performed efficiently without the need for extensive technical expertise. Authorised workers can access the management interface securely thanks to the admin authentication process, which only allows access with correct credentials. After logging in successfully, the administrator is granted access to a feature-rich administration interface where they may handle a variety of administrative responsibilities, such as managing user accounts, configuring the system, and managing content.

CONCLUSION

In conclusion, the development of the website for Jinkusteel represents a significant milestone in enhancing the company's digital presence and facilitating efficient communication with customers. Utilising a robust technology stack that includes HTML, CSS, PHP, JavaScript, and SQL, the website provides an intuitive user experience, extensive product details, and smooth lines of communication. With great care, important features including content management, admin authentication, and customer engagement tools have been implemented, providing Jinkusteel's online operations with a stable and secure platform. Going forward, maintaining the website's efficacy and making sure it's in line with Jinkusteel's commercial goals will require constant monitoring, upkeep, and adaptability to changing technology trends. All things considered, the website is evidence of the business's dedication to innovation, customer-focused business practices, and proficiency in the digital

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