

# STS – Steel Transportation Service

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**Abstract:-** Currently, a prominent challenge faced by steel companies and retail shops is their dependence on intermediaries or brokers during transactions. This reliance leads to the imposition of additional fees that businesses must pay these intermediaries for facilitating deals. The proposed project aims to address these service-related challenges by establishing direct communication channels between steel companies and retail shops. This innovative approach allows them to forge direct connections without incurring any extra fees to brokers. In the conventional scenario where steel companies and shops rely on brokers for transactions, the negotiation process for steel prices and quantities often becomes time-consuming. Our project presents a solution to this existing problem by empowering steel companies and shops. Through our user-friendly website, we facilitate a streamlined and efficient process for negotiating and finalizing deals. By eliminating the need for intermediaries, businesses can enjoy a more convenient and cost-effective transaction experience, fostering direct communication and enhancing overall efficiency in the steel supply chain.

**Keywords:-** Steel Company, Retail Shop, Direct Communication Channels, Intermediaries, Service-Related Challenges, User-Friendly Website, Convenience.

## I. INTRODUCTION

Steel transportation service plays a critical role in the global economy, facilitating the movement of steel products from manufacturers to various industries and construction sites. Steel is a fundamental material used in construction, manufacturing, and infrastructure development, making its efficient and reliable transportation essential. Whether you are a steel manufacturer, distributor, or a company in need of steel transportation services, understanding the importance of this service and how it works is crucial.

At present, a central issue confronting steel companies and retail shops revolves around their dependency on intermediaries or brokers to facilitate transactions. Unfortunately, this reliance adds an extra layer of costs, as payments must be made to these intermediaries for their role in sealing deals. The proposed project aims to address these service-related challenges head-on by establishing direct communication channels between steel companies and retail shops. This novel approach eradicates the need for intermediaries and their accompanying fees, ensuring a more cost-effective and streamlined process.

When steel companies and shops engage brokers for their transactions, the negotiation phase, particularly concerning steel prices and quantities, becomes a time-consuming ordeal. Negotiations can often drag on, impeding the swift progression of business dealings. Our project intervenes as a solution to this existing problem. It empowers steel companies and shops to overcome these challenges by harnessing the capabilities of our user-friendly website. This technology enables them to navigate negotiations with ease, ultimately enhancing the efficiency and convenience of the deal-making process.

So, the current issue of broker reliance and its associated costs can be effectively resolved through our project's innovative approach. By providing a direct line of communication between steel companies and retail shops and leveraging a user-friendly website for streamlined negotiations, we offer a comprehensive solution that stands to revolutionize the steel industry's transaction landscape. This not only reduces costs but also expedites the negotiation and deal finalization process, benefiting all parties involved.

## II. LITERATURE SURVEY

In their research titled [1] "Nippon Steel Corporation and its affiliated companies within the Nippon Steel Group (1973)" authored by Shinji Minobe and published by IEEE, explores the dynamics of steel trade within the Nippon Steel Group. The study reveals that steelmakers in this group distribute steel products to retailers and trading firms without specifying end users. Subsequently, these retailers and trading firms take on the responsibility and risk of stockpiling the steel products, selling them with their own sales efforts, and considering market conditions. The software associated with the project is commended for its user-friendly interface, offering excellent features that contribute to a comfortable and continuous user experience. However, the project notes potential drawbacks, including instances where some companies lack sufficient information, and caution against relying on outdated reviews that may be misleading.

The project titled [2] "Assessment of Transport Strategies" authored by Werner Rothengatter and Wolfgang Schade, and published by ACM Springer, delves into Asstra's foray into third-party logistics (3PL) through the use of its proprietary fleet of vehicles. This strategic shift accompanies the establishment of multiple branches across Eastern Europe. Notably, Asstra's project logistics experts showcase proficiency in delivering optimal cargo transport solutions, utilizing road, sea, rail, air, or a combination of these modes. However, the project identifies environmental concerns,

acknowledging that transporting steel contributes significantly to a notable carbon footprint, leading to environmental pollution and greenhouse gas emissions. Additionally, the transportation of steel can entail substantial costs, especially in scenarios involving long distances or the necessity for specialized equipment.

The project titled [3] "Indian Steel Industry: Current Business Trends and HR Interventions," authored by S. Vasantha and M. R. Rath and published in the August 2016 issue of the Indian Journal of Science and Technology, delves into the dynamics of the Indian steel industry. With a fundamental division into Long Products (Reinforcement bars, Structural elements, Wire rods, and Rails) and Flat Products (HR Coil, CR Coil, Plates, Galvanized coils/Sheets), the industry exhibits varying technological demands, with the flat product category requiring advanced and capital-intensive technology. The paper underscores the potential for operational efficiency enhancement within the Indian steel industry through the identification and implementation of HR interventions. Leveraging human resources effectively is highlighted as a means to streamline processes, thereby improving overall productivity. However, the industry faces challenges, particularly in the form of inadequate handling capacity at ports and the sluggish speed of rail transport, potentially hindering the seamless movement of steel products and supply chain efficiency. Balancing technological advancements and addressing infrastructure limitations will be essential for the industry's sustained growth and competitiveness in the global market

In their research titled [4] "SCADA Systems With Focus on Continuous Manufacturing and Steel Industry," authored by Mladen Sverko and published in October 2022 by IEEE, provides a comprehensive exploration of Supervisory Control and Data Acquisition (SCADA) systems and their evolving role in Industrial Control Systems (ICS). The author highlights the substantial changes in the capabilities, structures, and functionality of SCADA systems, shedding light on their pivotal role in modern industrial processes, particularly in the context of continuous manufacturing and the steel industry. The pros of SCADA systems include their ability to store a vast amount of data in various user-defined formats, real data simulations facilitated by operators, and quick response times, showcasing scalability and adaptability by efficiently incorporating additional resources. However, the cons are notable, with high installation costs and the expensive nature of hardware component replacement posing challenges for end-users. The presence of numerous wires in older SCADA technologies contributes to electrical noise and interference, highlighting the need for advancements in system infrastructure. Overall, the paper provides valuable insights into the dynamic landscape of SCADA systems and their application in key industrial sectors.

### III. PROPOSED METHODOLOGY

The proposed project aims to surmount service-related obstacles by establishing direct communication channels between steel companies and retail shops. A major impediment faced by these entities is their dependency on intermediaries or brokers, which not only complicates matters but also leads to additional expenses. To confront this challenge head-on, the project advocates for a shift towards direct communication, effectively sidelining intermediary involvement and the accompanying fees. In the traditional setup where steel companies and shops rely on brokers for transactions, negotiating steel prices and quantities tends to become a protracted affair. Recognizing the inefficiency inherent in this arrangement, our project puts forth a holistic remedy. We present a user-friendly app meticulously crafted to streamline and refine the negotiation and deal finalization processes. This groundbreaking technology fosters direct communication, thus curtailing the time and resources customarily expended during negotiations facilitated by intermediaries.

Through the utilization of our user-friendly platform, steel companies and shops attain greater control over their transactions, bypassing the delays associated with broker-mediated negotiations. This not only translates to substantial time savings but also alleviates the financial strain caused by additional fees. The platform serves as a catalyst for efficiency and convenience, furnishing a digital arena where steel companies and shops can seamlessly engage in negotiations and clinch deals. Ultimately, our project endeavors to confront the challenges entrenched in the prevailing transactional landscape by presenting a cost-effective, efficient, and user-centric solution. By establishing direct communication channels through our app, we empower steel companies and retail shops to navigate the intricacies of transactions with agility and autonomy, heralding a transformative leap towards a more streamlined and responsive steel supply chain.

The steel industry's heavy reliance on intermediaries or brokers for transaction facilitation poses a significant obstacle, introducing complexity and additional costs that erode the competitiveness of steel companies and retail outlets. To address this challenge, our project proposes a paradigm shift towards direct communication channels. By establishing these direct connections, we aim to eliminate the need for intermediaries, thus streamlining transaction processes and reducing associated costs. In the traditional model, where steel companies and outlets depend on brokers for transactions, negotiating steel prices and quantities often becomes a time-consuming endeavor. Recognizing this inefficiency, our project presents a comprehensive solution: a user-friendly website designed to optimize the negotiation and deal finalization processes. This innovative technology facilitates direct communication between stakeholders, thereby slashing the time and resources typically expended during negotiations through intermediaries.

By transitioning to direct communication channels, stakeholders can enjoy numerous benefits. First and foremost, the elimination of intermediaries results in substantial cost savings. Without having to pay broker fees and commissions, both steel companies and retail outlets can offer more competitive prices to consumers, enhancing their market position and profitability. Moreover, direct communication streamlines transaction processes, reducing delays and uncertainties inherent in the intermediary-dependent model. Negotiations can occur in real-time, leading to faster deal finalization and improved overall efficiency. This agility allows businesses to respond promptly to market changes and customer demands, gaining a competitive edge in the dynamic steel industry landscape.

Furthermore, the transparency fostered by direct communication enhances trust and strengthens business relationships between steel companies and retail outlets. With no third-party interference, stakeholders can openly discuss terms and conditions, leading to mutually beneficial agreements. This transparency not only builds trust but also mitigates the risks associated with misunderstandings or miscommunications. The user-friendly website serves as the cornerstone of our solution, providing a seamless platform for stakeholders to conduct business. Features such as real-time inventory tracking, customizable pricing models, and secure payment gateways empower users to tailor transactions according to their specific needs and preferences.

In addition to enhancing operational efficiency, the website also facilitates data-driven decision-making. By integrating analytics tools, stakeholders can gain valuable insights into market trends, customer behavior, and inventory management. Armed with this information, businesses can make informed decisions, optimize their strategies, and stay ahead of the competition. To ensure successful adoption and utilization of the direct communication channels and website, comprehensive training and support will be provided to stakeholders. This includes user training programs, online resources, and dedicated customer support services to address any issues or concerns promptly.

Through the utilization of our user-friendly website, both steel companies and retail outlets gain autonomy over their transactions, bypassing the delays and inefficiencies inherent in broker-mediated negotiations. By eliminating intermediary fees, they can mitigate financial burdens, contributing to overall cost effectiveness. Serving as a conduit for efficiency and convenience, our website provides a seamless digital platform where negotiations can be efficiently conducted, leading to timely deal finalization.

#### **IV. IMPLEMENTATION**

The primary focus is on establishing a strong foundation for the development process. The journey begins with crafting an attractive Splash Screen, strategically designed to captivate users and offer an engaging introduction to the project. Concurrently, the development environment undergoes meticulous configuration by installing necessary

dependencies and updating Gradle. This guarantees a smoothly integrated and organized platform for the project's subsequent stages. To augment the project's functionality and effectiveness, essential libraries are thoughtfully integrated during this phase, laying the groundwork for the effortless integration of advanced features and functionalities in the forthcoming modules. During this phase, the primary focus is on the detailed development of the Home Page, designed with a user-centric approach to ensure seamless navigation. Prioritizing accessibility and user engagement, the module integrates crucial functionalities for user Signup and Login. These features not only bolster the platform's security but also establish a user-friendly entry point crucial for fostering a positive user experience. By placing emphasis on crafting a well designed Home Page and incorporating secure user authentication mechanisms, the project aims to enhance overall usability and security.

Playing a pivotal role in the project's progression, it steers the focus towards crafting a dynamic dashboard. At the core of this module lies the meticulous development of a dashboard page tailored to showcase the diverse range of steel products. Serving as a central hub, this dynamic dashboard grants users real-time access to vital information concerning the steel inventory. By furnishing a comprehensive and current overview of available products within the transportation service, the module substantially augments user decision-making prowess. The dynamic aspect of the dashboard guarantees that users can make informed selections, thereby fostering a streamlined and efficient experience within the steel transportation system.

A fundamental element of the project focuses on the efficient storage and retrieval of essential data, particularly the intricate specifications of steel product orders. This module plays a critical role in configuring a robust system tailored to handle the storage and retrieval of order-related information from the database seamlessly. Through the integration of advanced data management techniques, the system establishes a comprehensive and dependable tracking mechanism for user orders within the steel transportation service. The smooth interaction with the database not only boosts the overall system efficiency but also holds significance in maintaining precise and current records of user transactions.

The concluding phase is dedicated to presenting crucial information to users, offering a comprehensive overview of their interactions with the steel transportation service. Transparency and user engagement are prioritized in this module, with a focus on displaying payment receipts effectively. By incorporating this feature, the project ensures that users receive clear and detailed information regarding financial transactions, fostering trust and confidence in the system. Furthermore, Module 5 highlights current order placement details, providing users with a concise summary of their interactions within the steel transportation service. This not only enhances user awareness but also facilitates a user-friendly experience by offering quick access to critical information.

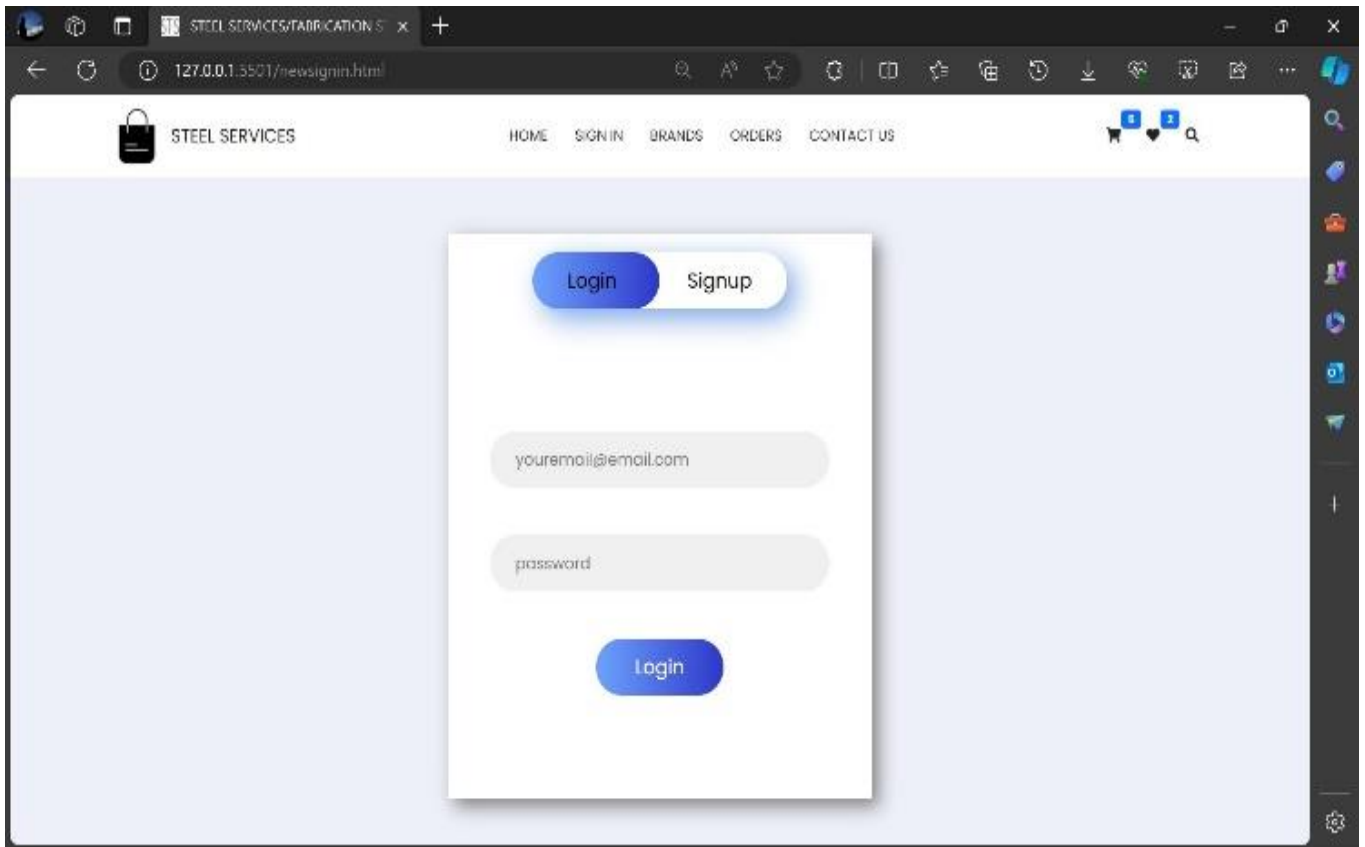


Fig 1: Login/Signup Page

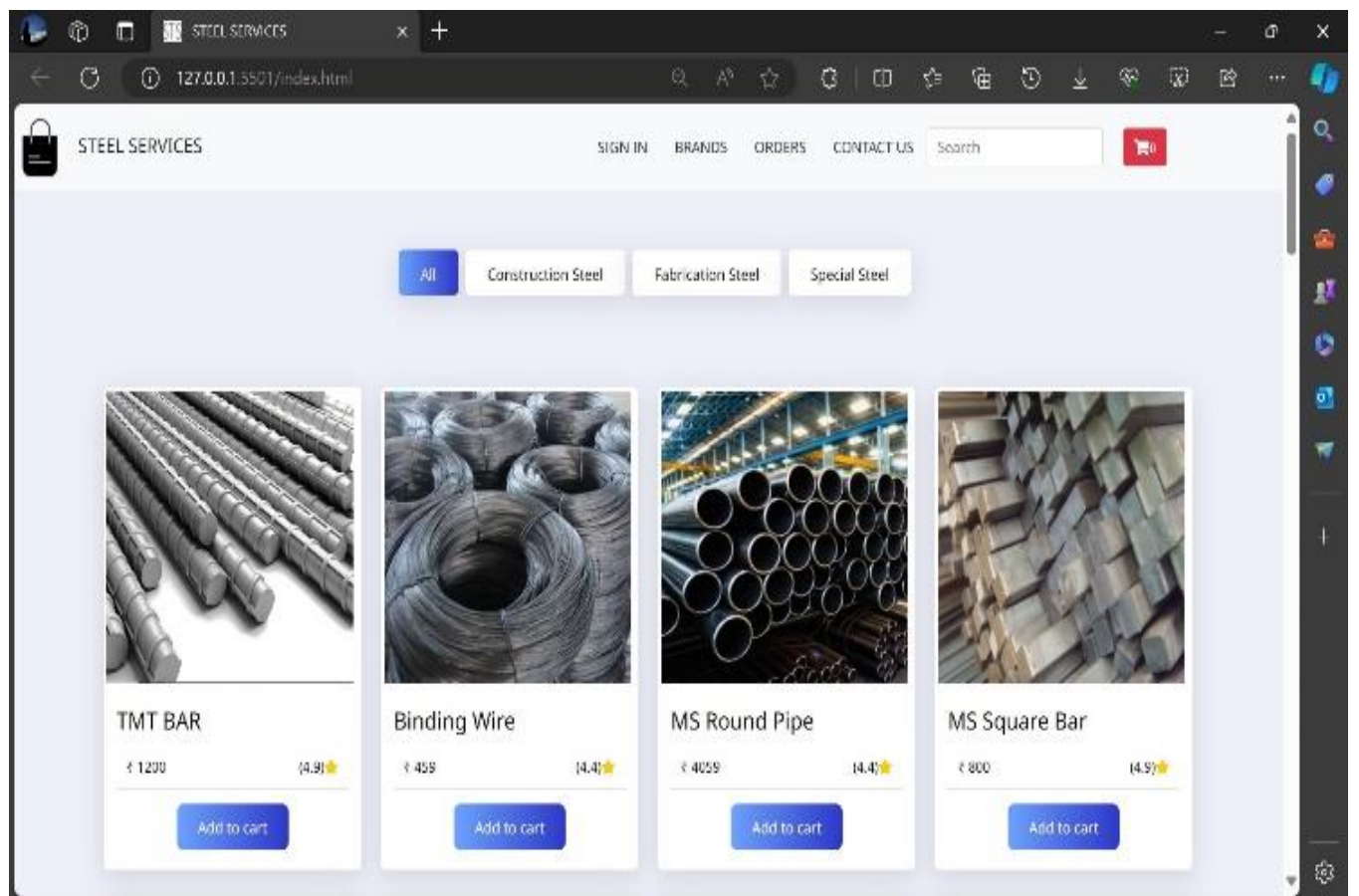


Fig 2: Home Page



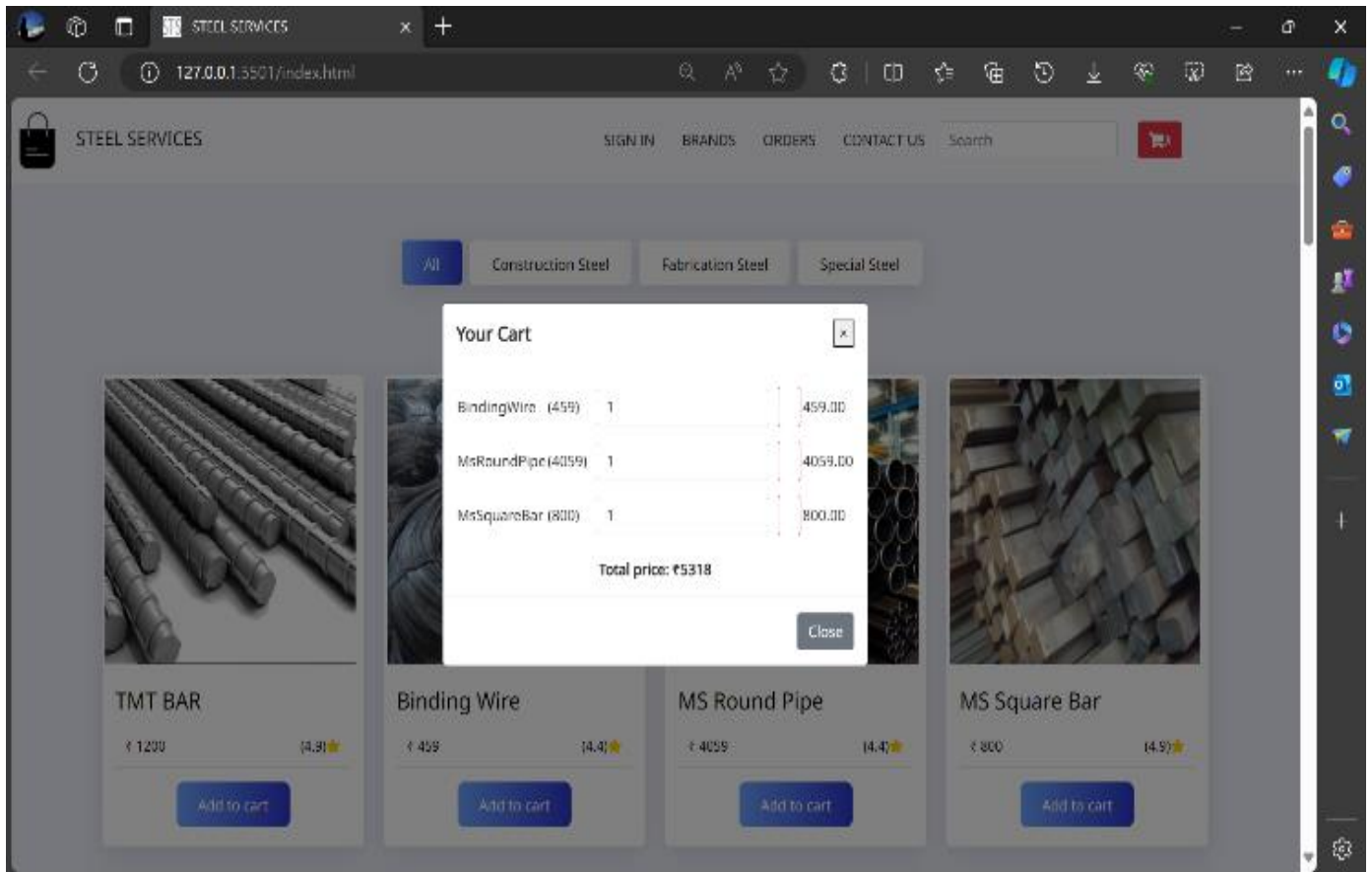


Fig 3: Cart Page

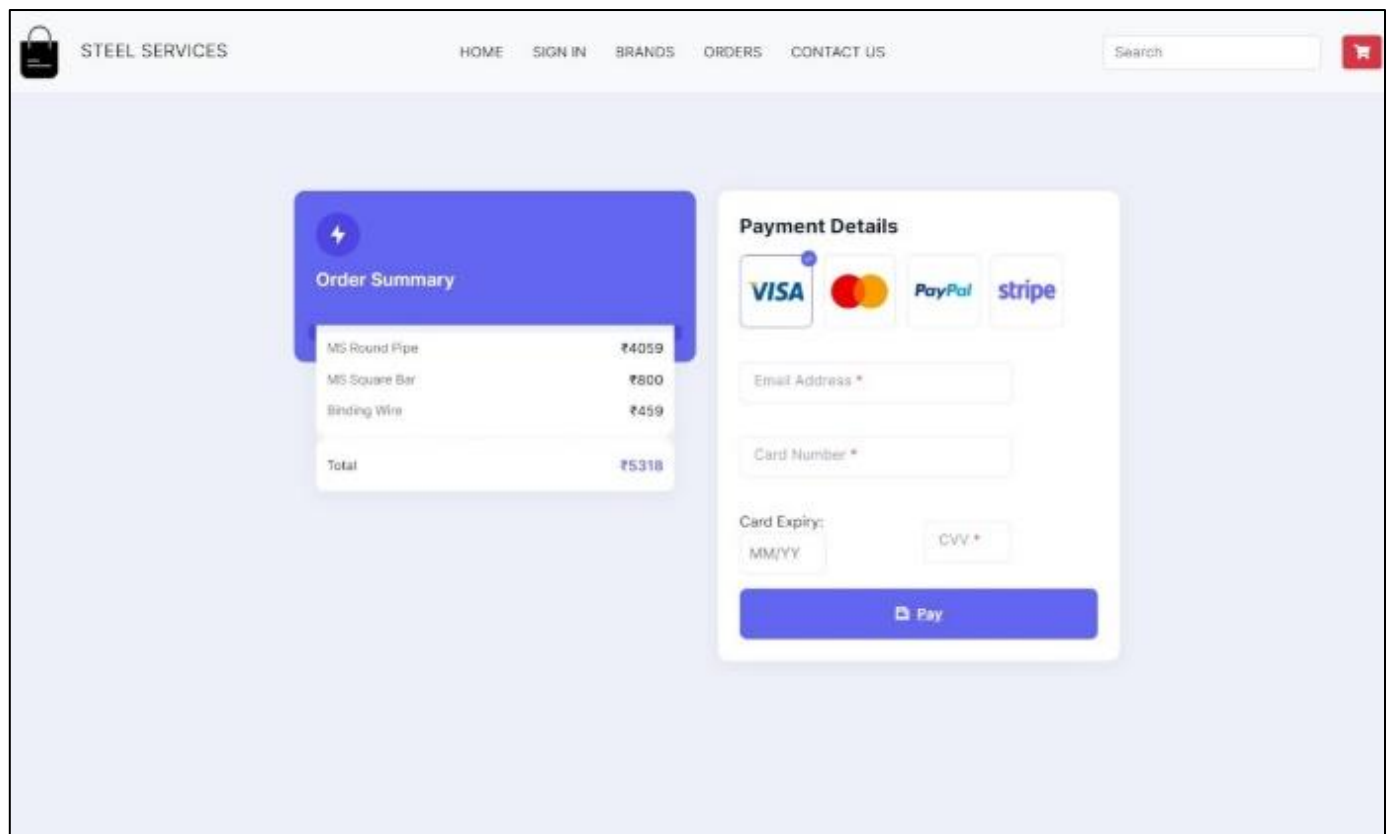


Fig 4: Payment Page

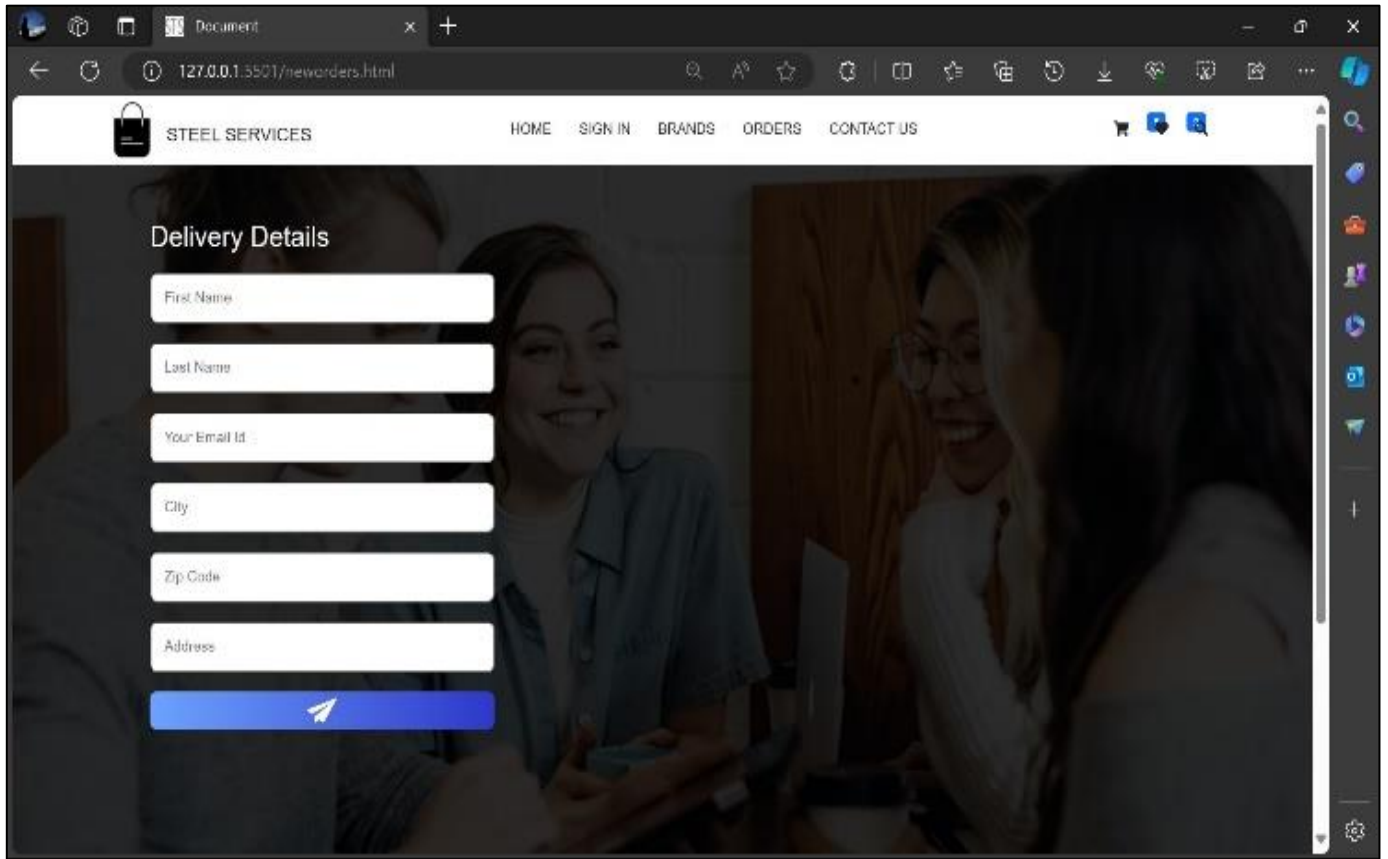


Fig 5: Delivery Details Page

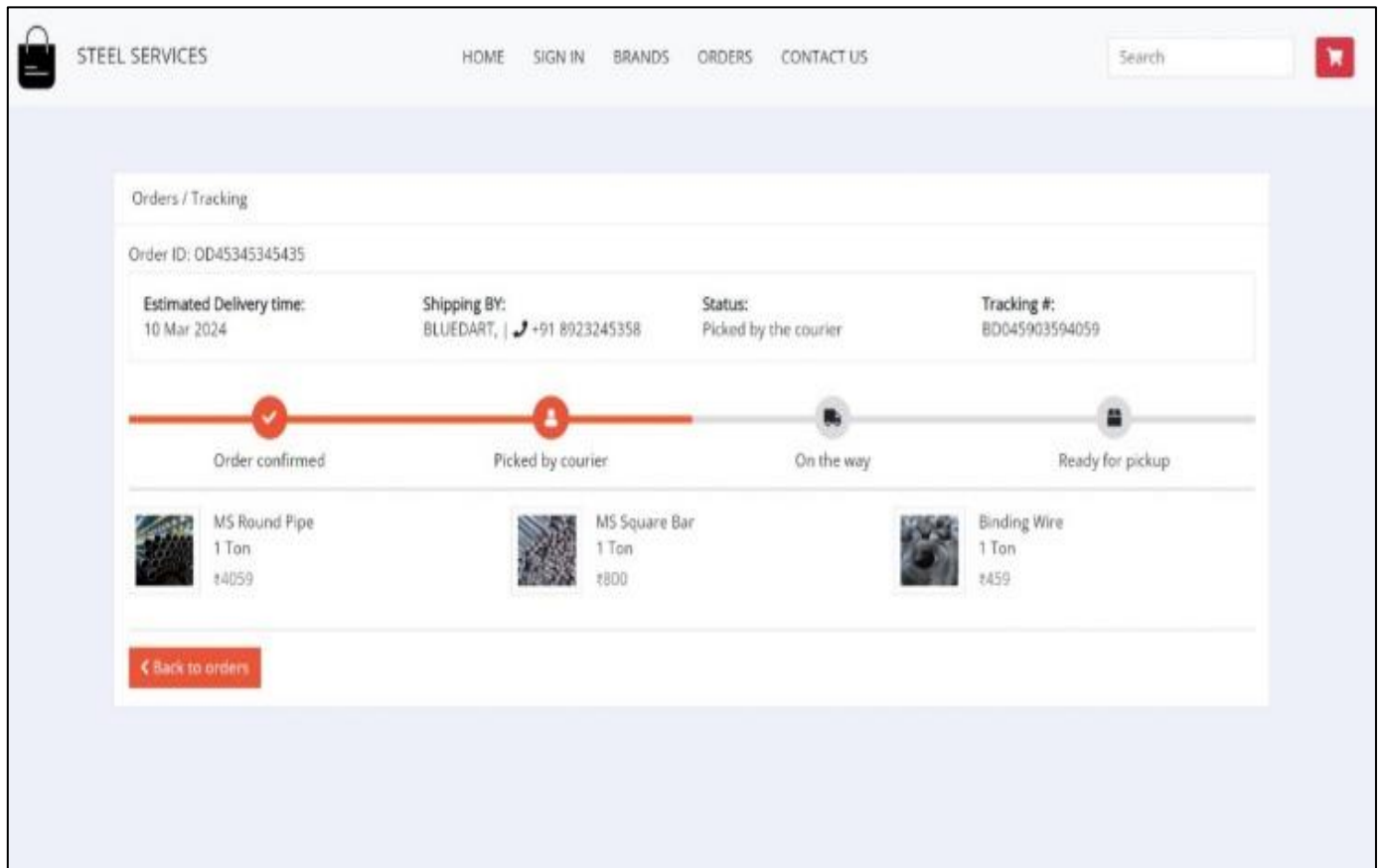


Fig 6: Orders Tracking Page

## V. CONCLUSION

The creation of website for steel transportation services signifies a transformative leap in addressing crucial challenges within the steel supply chain. This integrated platform, meticulously crafted through the amalgamation of modern technology and strategic design, aspires to redefine the dynamics of transactions between steel companies and retail shops. The user-friendly website is poised to streamline negotiations and facilitate the finalization of deals, providing stakeholders with the tools to establish direct connections independently. This innovative approach is strategically designed to eradicate the reliance on intermediaries, consequently eliminating the imposition of additional fees and fostering a more cost-effective transactional landscape. In parallel, the accompanying website functions as a complementary interface, ensuring accessibility and seamless functionality across various devices. Together, this comprehensive technological solution not only addresses current inefficiencies but also cultivates an environment where steel industry participants can engage in business transactions with heightened efficiency, cost-effectiveness, and autonomy. The integration of modern technology into the steel supply chain landscape heralds a new era of enhanced connectivity and streamlined processes, ultimately contributing to the industry's growth and sustainability.

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