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Enhancing User Experience in a Packer and Mover Service Portal: Web Development Insights from the imTransporter Service Portal

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Abstract

This research paper presents an overview of my internship experience as a web developer, focusing on the development of the imTransporter website. imTransporter is a logistics platform supported by two mobile applications—imTransporter and imTransporterDriver—that facilitate goods transportation services across various locations. The mobile apps enable users to book vehicles based on package dimensions, vehicle type, and payment preferences. The website complements this system by offering an online interface for users to explore the services and interact with the platform. During my internship, I contributed to the website's frontend development using Bootstrap, Angular, and CSS. My primary responsibilities included integrating UI components such as the carousel and navbar, performing form validation, designing user-friendly layouts, and implementing routing between different sections of the site. This paper highlights the functionality of the overall system, my technical contributions, the tools and frameworks used, and the practical skills I gained during the internship. Visual documentation and implementation details are included to provide a clearer picture of the development process. This experience enhanced my understanding of web technologies and emphasized the importance of responsive design in real-world applications

INTRODUCTION

The logistics and transportation industry has seen rapid digital transformation with the emergence of mobile and web platforms that make it easier to transport goods efficiently. One such platform is imTransporter, which offers logistics services for intracity and intercity transportation needs. With an increasing number of users relying on digital solutions for their logistical requirements, platforms like imTransporter are becoming essential for smooth and secure goods delivery.

imTransporter operates through two mobile applications:

- imTransporter App: Used by customers to book a transport service by entering details such as pickup and drop location, dimensions of the item, vehicle type, and payment method.
- imTransporterDriver App: Used by drivers who receive and respond to delivery requests. Once a request is accepted, the driver picks up the package and delivers it, guided by a unique OTP shared by the user.

To support the mobile ecosystem and provide a more versatile experience, the imTransporter website was developed. The website acts as an entry point for users who wish to learn about the services, book transports, or make inquiries. As part of my internship, I contributed to improving this web platform's frontend design and user experience using modern technologies such as Bootstrap and Angular.

This paper focuses on the technical contributions I made during the internship, along with insights into the system's workflow and interface. By working on this live project, I gained practical experience in frontend development and strengthened my skills in responsive design, form validation, and web architecture.

LITERATURE SURVEY

In the era of digital logistics, web platforms play an increasingly vital role in bridging customers with service providers in real time. This trend is especially relevant in the packer and mover industry, where efficiency, user interaction, and transparency are essential. The imTransporter website was developed to support and complement two mobile applications—imTransporter and imTransporterDriver—offering services such as booking, quotations, and inquiries through a responsive web interface. This literature survey reviews research on web-based logistics platforms, frontend development frameworks, and user interface design relevant to this domain. to this **field. Web Portals in Logistics and Packer-Mover Services**Web Portals in Logistics and Packer-Mover Services Web interfaces provide customers with greater accessibility and control over logistics processes. As highlighted by Griffin (2021), digital platforms in the logistics domain must offer streamlined service booking, clear pricing structures, and responsive customer interactions. The imTransporter platform addresses these needs through dedicated form-based services like Goods & Courier Transport Within the City, Instant Quote Calculator, Attach Vehicle Now, Quote for Enterprise, and Delete User, allowing users to input their requirements with ease and accuracy.

Angular facilitated both form functionality and navigation flow. Angular is a **popular** frontend framework

that is widely used due to its modular **design,** dynamic rendering, and **ability to handle** reactive **forms.** According to Freeman (2020), **Angular enables** efficient form validation, state management, and **smooth** navigation within single-page applications **(spas).** These **qualities** were **crucial** in **ensuring that** form submissions across **different** modules of the **imtransporter site were responsive and could handle errors effectively.** Using **Bootstrap to Create Responsive Layouts for Different Screen Sizes.**

Responsive web design is critical for platforms accessed across smartphones, tablets, and desktops. Bootstrap's pre-built UI components allow developers to create consistent, mobile-first layouts that adapt smoothly to different screen sizes. As documented by the W3C (2020), frameworks like Bootstrap accelerate UI development while maintaining cross-platform compatibility—a key aspect of the imTransporter site, particularly in elements like the homepage carousel and responsive navbar.

Form Validation and Data Integrity in Web Applications

Form validation helps confirm that the information users provide is correct, complete, and safe to process. Research by Chen (2019) emphasizes the importance of real-time validation in service-oriented platforms to minimize backend errors and enhance user trust. In the context of imTransporter, Angular's reactive forms and validation directives were used to restrict incorrect inputs and provide immediate feedback to users through contextual error messages.

Real-World Learning through Internships

Internships offer students practical exposure, allowing them to apply classroom knowledge to

real -world scenarios and projects. Kundu & Banerjee (2022) found that working on production-level systems enhances technical capabilities, collaboration, and understanding of development workflows. This internship allowed the author to work hands-on with technologies such as Angular, Bootstrap, and CSS, contributing to the development of key frontend components, while explicitly noting that certain areas, like the *Track Order* feature, were outside the scope of their contributions.

METHODOLOGY

The development and enhancement of the imTransporter website followed a structured methodology rooted in practical learning and modern frontend technologies. This section outlines the approach used during the internship to design, implement, and validate various website features, with a focus on improving user experience and maintaining responsive design standards.

Requirement Analysis

The internship **commenced** with **grasping** the **complete** functionality of the **imtransporter** system, **encompassing** its two mobile applications: **imtransporter** (for users) and **imtransporterdriver** (for drivers). **After consulting** with the development team and **reviewing the** existing system documentation, the specific website modules **that needed** to be developed were **determined.** These **included:**

- Goods & Courier Transport Within the City form
- Instant Quote Calculator
- Attach Vehicle Now form
- Quote for Enterprise form
- Delete User form
- Website design enhancements such as a homepage carousel and navigation bar

The *Track Order* section was recognized as part of the website but was not within the scope of the author's contributions.

Technology Selection

After finalizing the scope of work, suitable technologies were selected to meet performance, scalability, and responsiveness requirements:

- **Angular**: Used for building a dynamic, single-page application (SPA) structure with reactive form handling, routing, and component-based development.
- **Bootstrap**: Adopted for implementing a responsive user interface and pre-styled components like the navbar and carousel.
- **HTML5 & CSS3**: Utilized for structuring web content and customizing the visual appearance of different sections.
- **TypeScript**: Integrated with Angular to add type safety and logical control over form interactions and event handling.

Frontend Design and Implementation

The website development process was **segmented** into **crucial subtasks:**

- **UI component integration: bootstrap's carousel and navbar were implemented to improve user navigation and create a visually engaging homepage These elements were tailored with css for color schemes, spacing, and adaptability. Form Creation and Validation**: Angular's reactive forms module was used to create various service forms. Custom validation logic was written to ensure the correctness of inputs such as names, email addresses, phone numbers, and item details. Helpful error messages and visual cues were added for user guidance.
- **form creation** and **validation: angular's** reactive forms module was used to create various service **forms Specific** validation **rules were implemented** to **guarantee** the **accuracy** of inputs **like** names, email addresses, phone numbers, and item details. **User-friendly** error messages and visual **indicators** were **incorporated to assist users in understanding** and **navigating the system.**

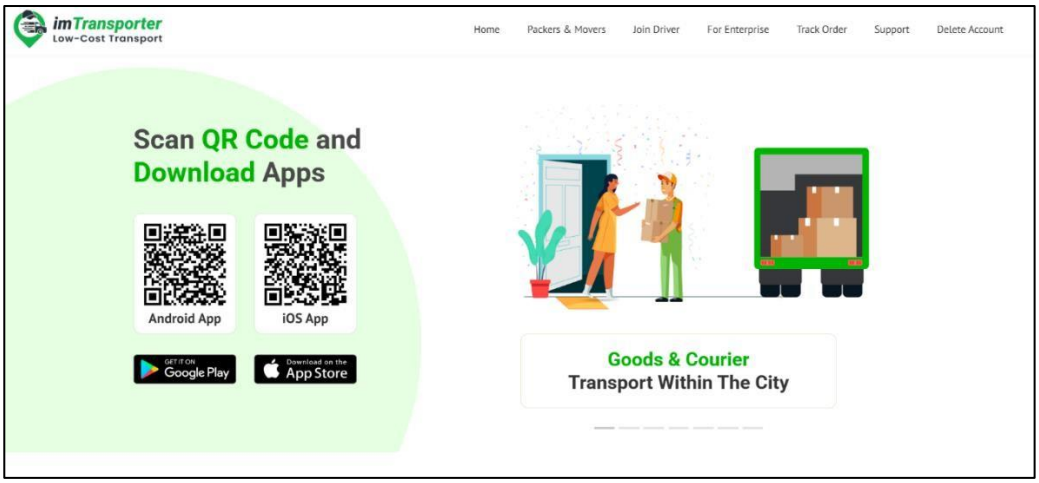
- **routing and navigation: angular router** was employed to facilitate smooth navigation between different website sections without full-page reloads, mimicking **spa** behavior

and enhancing user **experience.**

EXPERIMENTAL RESULTS

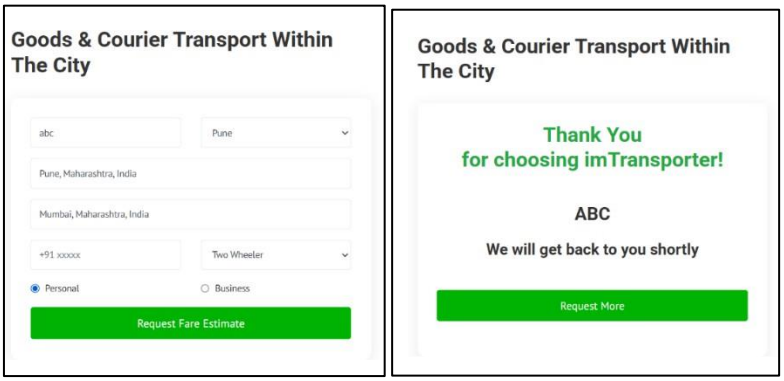
The following figures showcase the features and components implemented during the development of the imTransporter website:

Fig.1 Home page (a)Homepage Carousel and Navbar



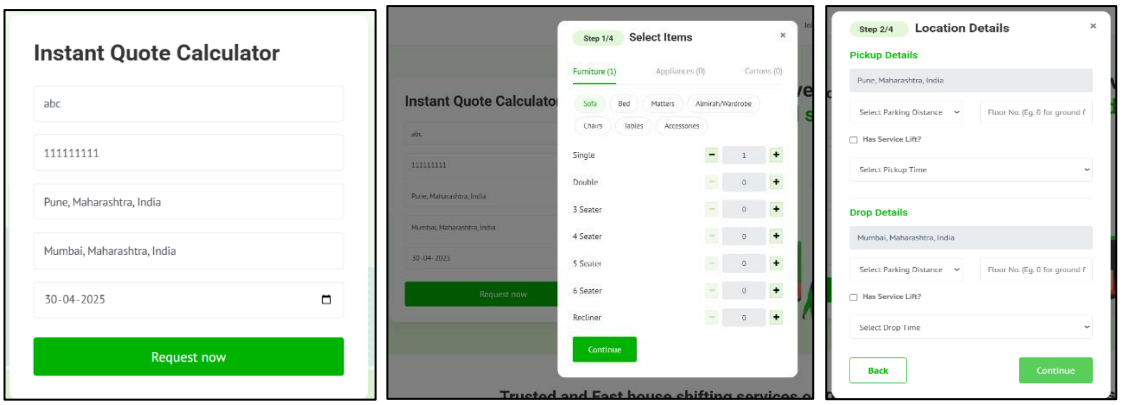
(a)

Fig. 2. Form designed using Angular with reactive validation and a clean user interface. (a) Filled Form (b) Interface after clicking on "Request Fair Estimate"



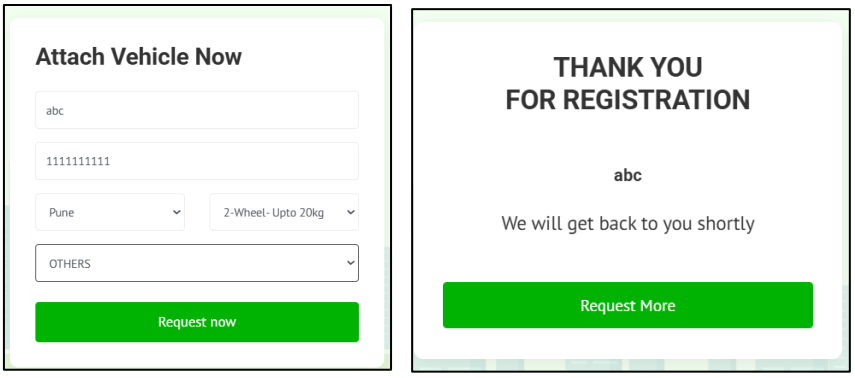
(a) (b)

Fig. 3 Packer and Mover Section (a) Instant Quote Calculator Form inside Packer and Mover Section (b) When clicked on Request now Select items Section gets open (c) When clicked on the Continue button Location details Form gets open



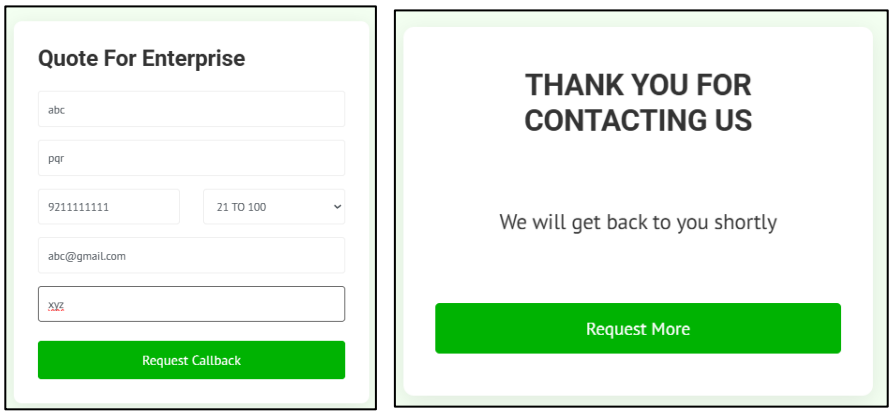
(a) (b) (c)

Fig. 4 Join Driver Section (a) Attach Vehicle Form (b) Interface after clicking on "Request now"



(a) (b)

Fig. 5 Join Enterprise Section (a) Quote For Enterprise Form (b) Interface after clicking on "Request Callback"

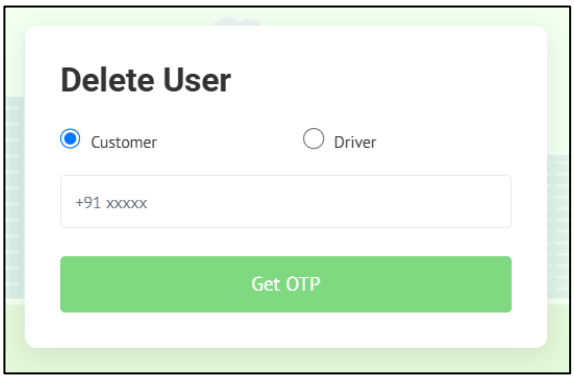


(a) (b)

Fig. 6 Track Order Section (a) Track Package Input Field

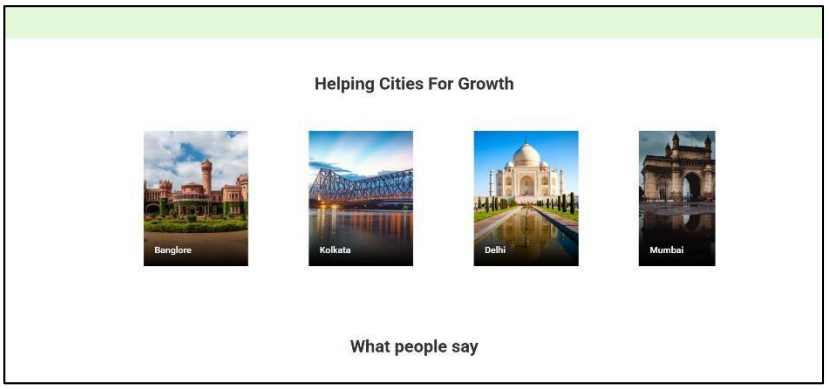
(a)

Fig. 7 Delete Account Section (a) Delete Account Form, the user receives OTP after clicking on "Get OTP"



(a)

Fig. 8 Home Section (a) Cities Carousel in Home Section



(a)

CONCLUSION

The internship **I had** with the **imtransporter** website project was a **significant milestone** in my **career** as a web developer. It **provided** me **with the opportunity** to **put my** theoretical knowledge **into practice and contributed to my personal and professional development. Participating** in a practical project **improved** my **comprehension** of frontend development, **particularly when utilizing** tools **such as angular, Bootstrap,** and **CSS.** Although I **didn't** work on all
parts of the **website, like** the **'track order' section,** the components I did **build, such** as the carousel, navbar, form validation, and **routing, greatly improved** my development **abilities.** I also **gained familiarity** with the workflow of a tech team, from planning and implementation to testing and **deployment.** This internship **solidified** my **passion for** frontend development and **instilled in** me the **belief that I can tackle** more **intricate** projects in the future. I am **thankful** for the **chance** and **eagerly anticipate enhancing** my **abilities even more.**

References

1. Angular
   Angular. (n.d.). *Angular is a development framework used to create web applications for both mobile and desktop platforms. applications*. Retrieved April 20, 2025, from https://angular.io
2. Bootstrap
   Bootstrap. (n.d.). *Bootstrap is a leading front-end framework that helps developers build responsive and mobile-first websites using HTML, CSS, and JavaScript.*. Retrieved April 20, 2025, from https://getbootstrap.com
3. CSS3

MDN Web Docs. (n.d.). *CSS: Cascading Style Sheets*. Retrieved April 20, 2025, from https://developer.mozilla.org/en-US/docs/Web/CSS

4. TypeScript
   TypeScript. (n.d.). *TypeScript: JavaScript that scales*. Retrieved April 20, 2025, from https://www.typescriptlang.org
5. W3Schools
   W3Schools. (n.d.). *HTML, CSS, JavaScript, and Bootstrap tutorials*. Retrieved April 20, 2025, from https://www.w3schools.com
6. Visual Studio Code
   Microsoft. (n.d.). *Visual Studio Code is a streamlined code editor designed for efficiently developing and debugging modern web and cloud-based applications.*. Retrieved April 20, 2025, from https://code.visualstudio.com
7. **FontAwesome**
   FontAwesome. (n.d.). *Font Awesome: Iconic fonts and CSS toolkit*. Retrieved April 20, 2025, from https://fontawesome.com
8. TutorialsPoint – Web Development Guide
   Beginner to advanced tutorials on web technologies
   https://www.tutorialspoint.com/web_development/index.htm
9. GeeksforGeeks – Frontend Development
   Engaging in article writing and solving practical problems related to web development and software testing.
   https://www.geeksforgeeks.org/
10. **Bootstrap Official Documentation**
    A CSS framework designed to support responsive and mobile-first website development.
    https://getbootstrap.com/docs/
11. **FreeCodeCamp**
    Hands-on tutorials and coding activities focused on HTML, CSS, JavaScript, and real-world web development projects.
    https://www.freecodecamp.org/
12. **CSS-Tricks**
    *Comprehensive articles, tutorials, and solutions focused on frontend development.*https://css-tricks.com/
13. **Smashing Magazine**
    Articles on web design and development, along with best practices and case study analyses.
    https://www.smashingmagazine.com/
14. **Kearney-Volpe, Claire, and Amy Hurst.** "Accessible Web Development." *ACM Transactions on Accessible Computing* 14, no. 2 (July 2021): 1–32. This paper explores the accessibility of web development for blind learners and programmers, highlighting challenges and potential solutions.
15. **Gan, W., Ye, Z., Wan, S. M., & Yu, P. S. (2023). "**Web 3.0: The Future of the Internet." This paper offers an extensive overview of Web 3.0, covering its underlying technologies, associated challenges, potential opportunities, and various technical implementations.
16. **Vepsäläinen, Juho, Arto Hellas, and Petri Vuorimaa.** "The Rise of Disappearing Frameworks in Web Development." *Lecture Notes in Computer Science* (2023). This article discusses the evolution of web frameworks and the emergence of simpler approaches.
17. **"Tangible Progress:** Tools, Techniques, and Impacts of Teaching Web Development to Screen Reader Users," published in ACM Transactions on Accessible Computing, explores a specialized web development workshop designed for individuals who use screen readers. The workshop emphasizes core technologies such as HTML, CSS, and JavaScript.
18. **Arroyo, E., Selker, T., & Wei, W. (2006**). The paper titled *"Usability Tool for Analysis of*

Web Designs Using Mouse Tracks," presented in the CHI'06 Extended Abstracts on Human Factors in Computing Systems, introduces a usability analysis tool that leverages mouse movement data to evaluate how users interact with web interfaces.

19. **Belanche, D., Casaló, L. V., & Guinalíu, M. (2012).** Published in the *Journal of Retailing and Consumer Services*, the article "Website Usability, Consumer Satisfaction, and the Intention to Use a Website: The Moderating Effect of Perceived Risk" investigates how website usability and user satisfaction influence users' intention to revisit or use a website, while also examining how perceived risk affects this relationship.
20. **(PDF) Advancing Web Development - Enhancing Component-Based Software Engineering and Design Systems Through HTML5 Customized Built-in Elements.** *ResearchGate* (2024). This paper explores how HTML5 custom elements can enhance component-based software engineering and design systems in web development.
21. **Smashing Magazine.** An online magazine for web designers and developers, offering articles, tutorials, and resources on various web development topics, including front-end development, UX design, and accessibility.
22. **Journal of Web Development and Web Designing.** A peer-reviewed journal that specializes in publishing research across all domains of web development and web design