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# Handloom Connect: AI-Powered E-Commerce Platform for Weavers

***Naresh Kumar J***

Master Of Computer Application,, M.G.R. Educational And Research Institute, Chennai, Tamil
Email: nareshkumar.j42@gmail.com

**ABSTRACT**

The LoomNest project aims to bridge the gap between traditional handloom artisans and modern digital marketplaces by providing a dedicated platform for showcasing and selling handloom products. This platform integrates features such as product posting, order management, customer feedback, and secure payments, ensuring a seamless experience for both artisans and customers. The project leverages web-based technologies to create an intuitive interface, fostering economic growth for artisans while preserving cultural heritage.

**Keywords:** Handloom, E-commerce, Artisans, Digital Marketplace, Web Platform, Order Management, Customer Feedback, Payment Integration.

## 1.Introduction

Handloom products represent a rich cultural heritage, but artisans often struggle to reach a wider market due to limited access to digital platforms. The LoomNest project addresses this challenge by developing a user-friendly web application that connects artisans directly with customers. The platform enables artisans to post products, manage orders, and receive feedback, while customers can browse, purchase, and track orders effortlessly. This initiative not only supports artisans economically but also promotes sustainable and ethical consumerism.

## 2.Related Work

Existing e-commerce platforms like Etsy and Amazon Handmade cater to handmade products but lack specialized features for handloom artisans. Studies highlight the need for localized, artisan-centric platforms that address unique challenges such as product customization, direct communication, and fair pricing. The LoomNest project builds on these insights by incorporating tailored functionalities like call requests, wishlists, and detailed product feedback, ensuring a niche solution for the handloom sector.

## 3.Methodology

The LoomNest platform was developed using a modular approach:

1. Requirement Analysis: Identified key needs of artisans and customers through surveys and interviews.

2. Design: Created wireframes and prototypes for the homepage, admin dashboard, product pages, and customer interfaces.

3. Development: Implemented front-end (HTML, CSS, JavaScript) and back-end (Node.js, MongoDB) components.

4. Testing: Conducted usability and functionality tests with stakeholders to refine features.

5. Deployment: Hosted the platform on a cloud server for scalability.

## 4.Experimental Results

The platform successfully demonstrated:

- Admin Dashboard: Efficient management of products, orders, and analytics (Fig 8.2.3).

-Customer Features: Intuitive product browsing, wishlists, and feedback submission (Fig 8.2.18, 8.2.14).

- Artisan Tools: Streamlined product posting and order tracking (Fig 8.2.8, 8.2.9).

User feedback indicated high satisfaction with the interface and functionalities, though minor improvements in payment processing were noted.

## 5.Conclusion and Future Work

LoomNest provides a viable solution for digitizing handloom commerce, empowering artisans and enhancing customer access. Future enhancements include:

- Mobile app development for broader accessibility.

- AI-driven recommendations for personalized user experiences.

- Integration with logistics services for streamlined delivery.

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(Note: Replace placeholder references with actual sources used in the project.)