

# MohallaHub: A Hyperlocal Digital Platform for Community - Centric Interaction

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**Abstract-** In the modern digital era, social networking platforms have transformed communication by connecting individuals globally. However, these platforms often lack local relevance and fail to strengthen neighbourhood-level interactions. This paper introduces MohallaHub, a hyper local digital platform designed to foster community-centric interaction within verified geographical boundaries. The system ensures secure communication, promotes trust-based commerce, and enhances local collaboration. By integrating features such as community discussions, marketplace transactions, service listings, and auction systems, MohallaHub creates a structured digital ecosystem tailored for neighbourhood engagement. The platform utilizes a MERN-based architecture to ensure scalability, performance, and data integrity.

**Keywords:** Hyper local platform, community networking, MERN stack, digital marketplace, location-based services, secure transactions.

## I. INTRODUCTION

Social networking platforms have significantly influenced how individuals communicate and interact. Despite their global reach, these platforms often overlook the importance of local engagement. The absence of locality-based interaction leads to reduced trust, limited collaboration, and inefficiencies in community-level commerce.

MohallaHub addresses this gap by providing a hyper local digital ecosystem that connects users within verified geographic boundaries such as ward, panchayath, block, or district. The platform focuses on enhancing trust, accountability, and meaningful neighbourhood interaction.

## II. CONCEPT AND VISION

The vision of MohallaHub is to digitally replicate real-world communities within a secure and structured environment. Unlike conventional social networks, the platform assigns users to communities based on a hierarchical location model:

State → District → Taluk → Block → Panchayath → Ward

Each location automatically generates a community, ensuring that users interact only with individuals within their locality. This approach strengthens

community relationships and improves the relevance of shared content.

## III. KEY FEATURES

### A. Location-Based Community Formation

Users are linked to verified geographic identities. Communities are automatically created, and access is restricted to local residents, ensuring secure and relevant communication.

### B. Community Posts and Discussions

The platform enables users to share posts, announcements, and discussions visible only within their community, reducing irrelevant content and enhancing local engagement.

### C. Marketplace Module

MohallaHub includes a localized marketplace where users can buy and sell goods within their community. This minimizes fraud risks and builds trust among users.

### D. Auction System

The platform provides a structured auction mechanism with features such as:

- Secure bidding processes
- ACID-compliant transactions
- Automatic winner selection
- Prevention of self-bidding

### E. Service Listings

Users can list services such as plumbing, tutoring, and electrical work. Community members can easily access trusted local service providers.

### F. Role-Based Administration

A hierarchical administrative system allows moderators and administrators to manage communities effectively, ensuring content control and system integrity.

## IV. TECHNOLOGY STACK

**MohallaHub is developed using modern web technologies:**

- Frontend: React
- Backend: Node.js
- Framework: Express.js
- Database: MongoDB
- Authentication: JWT with HTTP-only cookies
- Cloud Storage: Cloudinary

This MERN stack architecture ensures scalability, flexibility, and efficient performance.

## V. DATABASE DESIGN AND DATA INTEGRITY

**The database is designed to maintain:**

- Referential integrity
- Controlled normalization
- Efficient indexing
- Secure transaction handling

Collections such as User, Community, Auction, Service, and Bid are interconnected. Many-to-many relationships are handled using intermediate collections like Community Membership. Transactional mechanisms ensure consistency during critical operations such as bidding.

## VI. SECURITY MECHANISMS

**Security is a fundamental aspect of MohallaHub.**

**The platform incorporates:**

- Encrypted authentication mechanisms
- Role-based authorization
- Input validation at multiple levels
- Secure API access

- Session management and expiration
- These measures protect user data and ensure reliable system performance.

## VII. FEASIBILITY AND IMPACT

### A. Technical Feasibility

The platform uses well-established open-source technologies, ensuring reliability and scalability.

### B. Economic Feasibility

Cost efficiency is achieved through the use of open-source tools and scalable cloud infrastructure.

### C. Social Impact

**MohallaHub contributes to:**

- Strengthening neighborhood relationships
- Promoting local businesses
- Enhancing digital inclusion
- Building trust-based commerce
- Improving community engagement

### II. Future Enhancements

**Potential future developments include:**

- Real-time notification systems
- Advanced administrative dashboards
- Payment gateway integration
- Mobile application development
- AI-based content moderation
- Microservices-based performance optimization

### Acknowledgement

- I express my sincere gratitude to all those who supported and guided me throughout the development of this research work on MohallaHub: A Hyperlocal Digital Platform for Community-Centric Interaction.
- I am deeply thankful to my faculty members and mentors of the Department of Computer Applications, Don Bosco College, Mampetta, for their valuable guidance, constructive suggestions, and continuous encouragement during the course of this article. Their insights greatly contributed to shaping both the conceptual and technical aspects of this work.
- I would also like to extend my heartfelt appreciation to my friends and peers for their support, feedback, and motivation, which helped

me refine the ideas and improve the overall quality of the article.

- Special thanks to the developers and contributors of open-source technologies such as React, Node.js, Express.js, and MongoDB, whose tools and documentation played a crucial role in the successful implementation of this platform.
- Finally, I express my sincere gratitude to my family for their constant encouragement, understanding, and unwavering support throughout this endeavour.

## **IX. CONCLUSION**

MohallaHub represents a shift from global networking to localized digital interaction. By integrating communication, commerce, and services within a verified geographic framework, the platform fosters trust and strengthens community relationships. Its scalable architecture and secure design make it a promising solution for hyperlocal digital transformation.

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