KalaSetu: A Hyper-Local Artisan & Service Directory

Dr. Vishwanath Karad

MIT WORLD PEACE UNIVERSITY | PUNE

TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

School of Computer Science & Engineering

Department of Computer Science and Applications

SYBSC CS Div - [A] Year-2024-25

Project Based Learning - Project Report

Submitted By:

Samyak Doshi - 1272240315

Yuvraj Mokashi - 1272240516

Ram Milind - 1272240433

Under Guidance of [Your Professor's Name]

1. Introduction

This document outlines the project synopsis for KalaSetu, a hyper-local web platform designed to connect local artisans and service providers in Pune with their community. We have endeavored to make the complex process of creating a digital marketplace as simple

and intuitive as possible using a structured, modular approach with a user-friendly interface. The primary aim of this project is to automate and digitize the process of discovering and connecting with local talent, which is currently a manual, inefficient, and fragmented process. The system is designed to be used by three types of users: - Artisans/Service Providers (Providers): The skilled professionals who can create and manage their profiles. - Customers: Residents of Pune looking to discover and hire local talent. - Administrator: The system owner (our team) who will oversee the platform. The core activity is to provide a centralized, reliable, and visually engaging directory that bridges the digital divide for local entrepreneurs. While this project will focus on the essential features for a successful launch, it is designed with future expansion in mind, ensuring scalability without significant rework.

2. Existing Solution and Its Problems

In the current ecosystem in Pune, the discovery of local artisans and service providers relies on traditional and often unreliable methods. Existing Method: Discovery happens primarily through word-of-mouth referrals, scattered social media posts (on Facebook or Instagram), WhatsApp statuses, or by physically visiting local markets. There is no single, dedicated platform for this purpose. Problems with the Existing Solution: - Inefficient and Time-Consuming: For customers, finding a specific service is a tedious process of asking for recommendations and vetting them individually. For artisans, reaching new customers is a constant, manual effort. - Lack of Visibility and Reach: Talented professionals have their reach limited to their immediate social circle or neighborhood, hindering their business growth. - No Centralized Verification or Trust System: There is no standardized way to assess the quality or reliability of a service provider through past customer reviews or a verified portfolio. - Data Fragmentation: Information is scattered, inconsistent, and often outdated, making it difficult for customers to make confident decisions.

3. Our Solution

To overcome these challenges, we are developing KalaSetu, a modern web application that will: - Digitally store and showcase artisan profiles, including service descriptions, contact information, and image galleries (portfolios). - Provide a powerful search and filter engine for customers to easily find services by category and location. - Implement a trusted review and rating system to build community credibility. - Offer a single, centralized, and easy-to-use platform that is accessible on both desktop and mobile devices. - Enhance overall efficiency by eliminating the guesswork and manual effort involved in connecting providers with customers.

4. Proposed System for KalaSetu

The proposed system is an automated, multi-user web platform designed to streamline the entire discovery-to-connection process. Features of the Proposed System: - Provider Profile Management: Artisans can register, create, update, and manage their own professional profiles with a rich, visual portfolio. - Advanced Search & Discovery: Customers can search for providers by keywords (e.g., "pottery," "tailor"), filter by categories, and use an interactive map to find services in their vicinity. - User-Friendly Interface: A clean, intuitive, and mobile-responsive UI/UX designed for ease of use by people of all technical skill levels. - Review and Rating System: After a service, customers can leave a star rating and a written review on the provider's profile, fostering a transparent and trustworthy ecosystem. - Secure User Authentication: Separate and

secure login/registration systems for both customers and providers. - Admin Dashboard (Future Scope): A backend interface for administrators to manage users, moderate content, and view platform analytics. Advantages of the Proposed System: - Empowers Local Economy: Provides a direct-to-customer channel for local entrepreneurs. - Saves Time: Dramatically reduces the time and effort required for both discovery and outreach. - Builds Trust: The review system creates a self-regulating community based on quality and reliability. - Data-Driven: Provides a centralized source of information about the local service landscape. - Scalable: The architecture is designed to grow, potentially expanding to other cities or adding new features.

5. Scope of the System

The scope is defined to ensure the delivery of a functional and polished core product within the project timeline. Key Areas Covered by the System: - User Management: Secure registration and login for both customers and providers. - Profile Management: Providers can create, read, update, and delete their profile information and portfolio images (CRUD operations). - Search and Discovery: A public-facing directory that is searchable and filterable by all visitors. - Review and Rating System: Customers can post reviews on provider profiles. Future Scope (Out of Scope for this Phase): - Integration of AI-based chatbots for customer support. - Direct e-commerce functionality for selling products. - In-app appointment booking and scheduling system. - Third-party payment gateway integration.

6. Objective

The main objective of the KalaSetu project is to leverage modern web technologies to solve a real-world community problem in Pune. Product Perspective: To create a self-contained, user-friendly, and reliable software product that replaces the current inefficient methods of finding local services. The system will provide an intuitive interface and a robust backend to handle user data securely and efficiently. Functional Objectives: - To provide artisans with a simple platform to build a digital presence. - To provide customers with a powerful tool to discover and verify local services. - To automate the process of collecting and displaying community feedback through reviews. - To ensure data is secure, reliable, and easily accessible to authorized users. Key Features to Achieve Objectives: - No data duplication and minimal paperwork. - Time-efficient search and profile management. - Secure data storage and user authentication. - A fast, responsive, and user-friendly environment.

7. Operating Environment (Hardware & Software)

Hardware Requirements (for development & deployment): - Processor: Intel Core i5 / AMD Ryzen 5 or equivalent. - RAM: Minimum 8 GB. - Hard Drive: Minimum 256 GB SSD with at least 20 GB free space. Software Requirements: - Operating System: Windows 10/11, macOS, or a Linux distribution (e.g., Ubuntu). - Code Editor: Visual Studio Code. - Runtime Environment: Node.js (LTS version). - Database: MongoDB Community Server / MongoDB Atlas. - Web Browser: Google Chrome, Mozilla Firefox, or Microsoft Edge. - API Testing Tool: Postman. - Version Control: Git.

8. Technology Used

The project will be developed using the MERN stack, a powerful and popular choice for building modern, full-stack web applications. Frontend Technology (React.js): - React is a JavaScript library for building user interfaces. Its component-based architecture is perfect for reusable UI elements like artisan profile cards, review sections, and search filters. - Its virtual DOM ensures a fast and responsive user experience, which is crucial for keeping users engaged. - React's vast ecosystem makes it easier to integrate additional features such as interactive maps. Backend Technology (Node.js & Express.js): - Node.js allows running JavaScript on the server. Its asynchronous, non-blocking I/O model is efficient and well-suited for handling simultaneous requests. - Express.js provides a minimal and flexible framework for building RESTful APIs, simplifying route handling and database communication. Database Technology (MongoDB): - MongoDB's flexible schema is ideal for artisan profiles, which may contain different types of data. - It stores data in BSON (JSON-like format), which integrates seamlessly with Node.js and React. - Highly scalable and designed for future growth.

9. Module Description

The KalaSetu system is designed with a modular architecture to ensure separation of concerns and ease of maintenance. - User Authentication Module: Manages registration, login, password management, and session control for both customers and providers. - Provider Profile Module: Handles CRUD operations for artisan/provider profiles, including service details and portfolio images. - Search & Discovery Module: Implements the search bar, category filters, and location-based map functionality. - Review & Rating Module: Enables customers to post and view reviews, while also calculating average ratings per provider.

10. Advantages & Limitations of the System

Advantages: - High Community Impact: Directly supports and empowers the local economy of Pune. - Automation & Efficiency: Reduces manual effort for both finding and promoting local services. - User-Friendly Design: The intuitive interface ensures that people with minimal technical skills can use the platform effectively. - Secure & Scalable: Built on a modern technology stack ensuring data security and future scalability. - Improved Customer Experience: Provides a single, trusted source for discovering and evaluating local talent. Limitations: - Initial User Adoption: The challenge is encouraging the first wave of artisans and customers to join the platform. - Dependency on Technology: Requires users to have internet access and compatible devices. - Content Moderation: As the platform grows, a review moderation system will be needed to ensure authenticity. - Competition: Faces indirect competition from larger platforms such as Instagram and Facebook Marketplace.