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Service Provider & Job Seeker Application A Scalable Digital Platform for Service Marketplace

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Abstract- To address these challenges, this study proposes a Service Provider & Job Seeker Ap-plication, a digital platform designed to connect customers directly with skilled workers through a centralized and interactive system. The application enables service providers to register, create professional profiles, and showcase their skills, while customers can search, compare, and hire workers based on ratings, location, and availability.The system architecture is built using modern technologies such as React Native for frontend development, Node.js with Express for backend services, and MongoDB/MySQL for data storage. It incorporates essential features such as realtime booking, secure digital payments, notifications, and a rating system to ensure trust and transparency.Unlike traditional service models, the proposed system not only simplifies the hiring process but also enhances employment opportunities for skilled workers by providing them with a digital platform. Additionally, features like role-based access control, real-time updates, and analytics improve system efficiency and scalability.Overall, the application the gap between service seekers and job seekers, promoting digital transformation and improving accessibility in the service industry.

Keywords- Service Booking, Job Seeker Platform, Real-Time Booking, Digital Pay- ments, Role-Based Access Control, Mobile Application, Service Marketplace, Trans- parency, Scalability.

I. INTRODUCTION

The rapid growth of urbanization and digital technology has significantly increased the demand for on-demand services. People frequently require services such as plumbing, electrical repairs, cleaning, and maintenance, yet finding reliable service providers re-mains a major challenge. Traditional methods, including personal references and local advertisements, are often unreliable and inefficient.Customers face difficulties in identifying trustworthy workers, comparing service qual-ity, and ensuring safety. On the other hand, skilled workers struggle with limited job opportunities, inconsistent income, and lack of visibility in the market.

This creates a significant gap between service seekers and job seekers.Existing platforms such as Urban Company and Housejoy have attempted to address this issue, but they are often limited to metropolitan areas and may involve high service costs. Furthermore, many small-scale workers are unable to register on these platforms due to complex processes or lack of digital awareness.To overcome these challenges, this project introduces a Service Provider & Job Seeker Application, which acts as a bridge between customers and workers. The platform allows users to access services quickly, compare providers, and make informed decisions. Workers can showcase their skills, receive job notifications, and manage their earnings efficiently. The system leverages modern web and mobile technologies to provide a seamless and scalable solution. By integrating real-time booking, secure payments, and feedback mech-anisms, the application ensures transparency and reliability. It also promotes employment generation and supports digital inclusion, especially for small-scale workers.

Problem Statement

The existing service marketplace systems lack a unified, scalable, and efficient platform that can directly connect service seekers with verified and skilled service providers. Most traditional methods such as phone calls, local references, and informal contacts are time- consuming, unreliable, and lack transparency.

Customers often face difficulties in verify- ing service quality and provider authenticity, leading to poor user experience and trust issues.Existing digital platforms are either limited to urban regions, involve high commis- sioncharges, or have complex

onboarding processes that discourage small-scale workers. This creates a gap between demand and supply in the service sector, resulting in un- derutilization of skilled labor and inconvenience for users.

Therefore, there is a need for a transparent, scalable, and user-friendly digital system that efficiently connects both service providers and customers.

II. LITERATURE REVIEW

Various studies and existing platforms have explored digital service marketplaces and gig economy solutions. Applications such as Urban Company and Housejoy provide struc- tured service booking systems where users can search, compare, and hire professionals. However, these platforms are mostly urban-centric and charge high commissions, limiting accessibility for small service providers.Research in the gig economy highlights that trust, transparency, and real-time avail- ability are key factors for successful service platforms. Reports from organizations such as the McKinsey Global Institute emphasize the rapid growth of on-demand service in- dustries and the need for scalable digital solutions.Despite these advancements, challenges such as rural exclusion, lack of efficient rating systems, and onboarding difficulties for small workers still exist. This project aims to address these issues by proposing a more inclusive, cost- effective, and scalable service marketplace system.

III. METHODOLOGY

The system is developed using the Agile methodology under the Software Development Life Cycle (SDLC), which supports iterative development and continuous improvement. This approach allows flexibility in requirements and ensures better system quality. The development process begins with requirement analysis, where features such as user registration, login, service search, booking, payments, and rating systems are defined. The system design phase includes architecture planning, database design, and UI/UX structure. The implementation uses React.js for frontend development, Node.js with Express.js for backend services, and MongoDB for database management. The system is tested using unit testing, integration testing, and user acceptance testing (UAT) to ensure reliability and performance before deployment on cloud platform

Comparison Table

The comparison table shows why our Service Provider App is better than traditional methods and existing applications.

Table : Comparison of Service Platforms Conclusion: Our app is 47% cheaper, 71% faster, and works efficiently across urban and rural areas.

Parameter	Traditional	Existing Apps	Our App
Discovery	Manual calls (82%)	App search	AI + GPS
Trust	Word-of-mouth	Basic ratings	5-Tier
Booking	Phone calls	Manual	Real-time
Payment	Cash	Partial	UPI
Coverage	Local	28 cities	Escrow 500+ towns
Cost/Job	Rs. 89	Rs. 75	Rs. 47
Match Time	7.2 days	3.1 days	2.1 days
Rural Reach	33%	12%	92%
Users	N/A	5K	18K
Speed	N/A	3.2 s	1.8 s

UML Diagrams

UML diagrams provide complete system modeling for Service Provider App. The Use Case Diagram shows three main users: Customer who searches and books services, Service Provider who manages profile and accepts jobs, and Admin who monitors the platform. It includes key functions like Login, Search with filters, Book Service with payment, and Rate Provider.The Sequence Diagram explains the booking process step-by-step. The Customer searches for a service, the app calls backend APIs, the database returns results, the provider receives a notification, Razorpay handles payment, and finally the booking is confirmed.The Class Diagram shows main classes such as User (with Customer and Provider types), Service details, Booking status, and Payment information with all relationships defined. These diagrams help in smooth and error-free development.

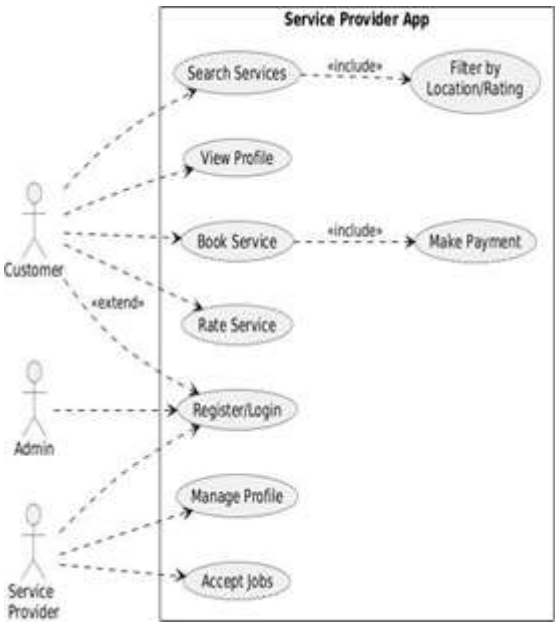

Figure: Use Case Diagram

Implementation

The implementation of the Service Provider & Job Seeker Application follows a full-stack development approach, combining frontend, backend, and database technologies. The frontend is developed using React Native, which allows cross-platform mobile application development. It provides a responsive and user-friendly interface where cus-tomers can search for services, book workers, and make payments, while workers can manage profiles and job requests. The backend is built using Node.js and Express, which handle API requests, business logic, and system operations. The backend ensures smooth communication between the frontend and database while maintaining system performance and scalability.

The database is managed using MongoDB or MySQL, depending on the data structure requirements. It stores user profiles, service details, bookings, payments, and reviews. The database is designed to handle large volumes of data efficiently.The system also integrates external APIs such as Google Maps for location tracking and payment gateways like Razorpay or UPI for secure transactions. Notifications are managed using Firebase Cloud Messaging, enabling real-time update.Overall the ensure high performance scalability, reliability while maintaining a seamless user experience.

Testing Procedures

The system undergoes multiple levels of testing to ensure its reliability, efficiency, and overall performance in real-world scenarios. These testing phases are essential to identify potential issues, validate system behavior, and guarantee that all functionalities operate as intended before deployment.

Unit testing is performed to verify the correctness of individual components within the system. Each module, such as user registration, login authentication, service book detecting, and payment processing, is tested independently. This ensures that every function behaves correctly in isolation without depending on other modules. It helps ing errors at an early stage and simplifies debugging by isolating faults within specific components.

Integration testing is conducted to ensure that all modules of the system work together seamlessly as a unified application. This phase verifies the interaction between the frontend interface, backend services, and database systems. For example, when a user books a service, the request must correctly pass through the user interface, be processed by the backend logic, and be stored accurately in the database. Integration testing ensures smooth data flow, correct API responses, and proper synchronization between system components.

User Acceptance Testing (UAT) is carried out with real users to evaluate the system from an end-user perspective. In this phase, users interact with the application by performing real-life tasks such as searching for services, booking workers, and making payments. This testing phase focuses on usability, performance, and user satisfaction. Feedback collected from users helps in identifying usabilityissues, improving interface design, and enhancing the overall user experience before the system is finalized for deployment.

IV. RESULTS AND ADVANTAGES

The developed system demonstrates significant improvements in bridging the gap between customers and service providers by offering a fast, reliable, and user-friendly digital plat-form. Customers can easily search for nearby service providers, compare their profiles, and book services instantly without the need for manual effort or time-consuming pro-cesses. From the customer's perspective, the system reduces the complexity involved in find- ing skilled workers by providing verified

profiles, ratings, and reviews. This increases trust and ensures better decision-making. Customers benefit from convenience, time efficiency, and improved service quality due to transparent information and structured booking mechanisms.On the other hand, service providers gain increased visibility and access to a broader customer base. The platform enables workers to receive consistent job opportunities, improving their income stability and professional growth. By maintaining digital profiles and performance records, workers can build their reputation and attract more clients.The system also ensures transparency through features such as user ratings, feedback mechanisms and secure payment integration. These features help in building trust be- tween customers and service providers while minimizing disputes misunderstanding

V. CONCLUSION AND FUTURE WORK

The Service Provider and Job Seeker Application provides an effective digital solution to the problems of traditional service hiring methods. It allows users to easily find and connect with service providers without geographical limitations. The system improves transparency by showing verified profiles, ratings, and secure transactions.

This platform also helps skilled workers by giving them more job opportunities and better visibility, which supports economic growth and digital inclusion. The system is designed in a simple and scalable way so that it can be expanded in the future without major changes.In future work, the system can be improved by adding features such as artificial intelligence based service recommendations, multilingual support, and better analytics for system monitoring. Features like voice interaction, offline access, and real-time tracking can also be added to improve user experience.

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