

Local Service Finder Mobile Application with AI Bot

Project in Computer Science

CSU5320

Department of Computer Science

➤ **Title**

Local Service Finder Mobile Application with AI Bot

➤ **Introduction**

In today's fast-paced world, people expect quick, convenient, and reliable access to services ranging from household repairs to personal care. The increasing reliance on digital platforms has significantly transformed how customers connect with service providers. However, despite the growth of technology, many individuals still struggle to find trustworthy and efficient local service providers without spending a considerable amount of time searching through advertisements, directories, or referrals.

With the rapid expansion of urban areas and busy lifestyles, customers often face challenges such as limited access to verified service providers, a lack of personalized recommendations, and the inconvenience of manual booking and payment methods. This gap highlights the urgent need for a unified platform that can intelligently connect customers with suitable service providers in a seamless manner.

To address these issues, this project proposes the development of a **Local Service Finder Mobile Application powered by an AI conversational bot**. The AI bot will communicate with customers in natural language, identify their needs, filter available service providers based on location and preferences, and provide personalized recommendations. By integrating features such as booking, digital payments, and feedback collection, the application ensures a secure, efficient, and user-friendly experience for both customers and service providers.

This project not only aims to save time and effort for customers but also contributes to improving trust, transparency, and service quality within the local services sector. Furthermore, it promotes the digital transformation of traditional service delivery, creating opportunities for small businesses and individual providers to expand their reach and build long-term customer relationships.

➤ **Background and Motivation**

With the increasing demand for on-demand services, customers expect quick and efficient ways to connect with reliable service providers. Traditional methods of searching for services through advertisements, directories, or referrals can be inefficient.

This project aims to develop a Local Service Finder Mobile App conversational bot. The AI bot will interact with customers, understand their needs in natural language, filter services based on location, and recommend suitable providers from the database. This solution enhances user experience, ensures reliability, and provides a seamless booking process.

➤ **Problem in Brief**

Currently, customers face the following challenges:

- Difficulty in finding trustworthy local service providers.
- Lack of personalized recommendations based on specific needs.
- Time-consuming manual searches.
- Limited systems that integrate service booking, confirmation, and payment into a single platform.

➤ **Aim and Objectives**

Aim

To build a conversational AI-based mobile application that delivers on-demand local services by interpreting user queries, recommending the best-fit providers, and completing secure booking within the chat experience

Objectives

- Create a user-friendly mobile application that allows customers to request services via conversation.
- Implement an AI-powered bot capable of understanding user queries in natural language and filtering services.
- Build a robust backend for managing service provider data and customer interactions.
- Integrate booking, confirmation, and secure in-app payment functionalities.
- Collect user feedback for continuous improvement of the service.

➤ **Proposed Solution**

The proposed mobile application will provide a seamless, intelligent service experience to customers:

- **Conversational AI:** Interacts with customers to understand their service requirements. Guides users through the service selection process in a natural, user-friendly conversation.
- **Natural Language Support:** Customers can communicate with the AI Bot in English. The AI Bot uses Natural Language Processing (NLP) to understand queries and filter services. Future enhancements may include voice commands and speech-to-text functionality.
- **Location-based Service Filtering:** The AI Bot asks the customer for the desired service location or detects it automatically via GPS/Google Maps integration. Based

on the location, the system filters and displays only service providers available in that specific area.

- **Service Provider Filtering:** Filters providers based on service type, availability, ratings, and distance. Provides detailed information about each provider (contact info, experience, reviews).
- **Booking and In-App Payment System:** Customers can select a service provider and pay directly through the app using integrated payment methods (credit/debit card, bank transfer, or local mobile wallet). Instant booking confirmation is generated as soon as payment is successful. Customers receive a digital receipt for record-keeping. Service providers are notified immediately, ensuring smooth and timely service delivery. This ensures secure, traceable, and convenient transactions, eliminating the need for cash payments.
- **Feedback Collection:** After service completion, customers can provide reviews and ratings to maintain service quality and reliability.
- **Personalized AI Bot recommendations** based on service history.

➤ **Scope of the Project**

- Covers a wide range of services: plumbing, electrical, cleaning, beauty, IT support, transport.
- Initially deploys in a local area as a pilot project, with potential expansion gradually

➤ **Target Audience**

- Household users needing maintenance or personal services.
- Small businesses seeking professional service providers.
- Students or single individuals requiring quick, reliable services.

➤ **Expected Outcomes**

- Customers receive fast, reliable, and trustworthy services.
- Service providers gain greater visibility and increased opportunities.
- Contributes to digital transformation and the growth of the local economy.

➤ **Limitations**

- Limited availability of some payment gateways.
- Initial multi-language NLP accuracy may have limitations.
- Adoption in rural areas may be slower due to technology access.

➤ **Risk Analysis**

- Data Privacy & Security: Protecting customer and provider information.
- Fake Providers: Verification mechanisms needed to avoid fraudulent registrations.
- Integration Delays: Potential issues with third-party APIs (payment, maps).
- Customer Trust: Building confidence in the early stages may take time.

➤ **Future Enhancements**

- Voice interaction support for the AI Bot.
- Multi-language AI Bot improvements for higher accuracy.
- Advanced location tracking with Google Maps integration.
- Subscription-based services (monthly cleaning, maintenance packages)
- Service provider verification system with ratings and KYC.

➤ **Resource Requirements**

- Human Resources: Mobile app developer, backend developer, AI/ML specialist, UI/UX designer, database administrator, QA tester.
- Hardware Resources: Smartphones for testing, servers, development machines.
- Software Resources: React Native (Expo Go), Java Spring Boot, Python, Firebase Firestore, Neo4j, LangChain ML platform, payment gateway APIs.

➤ **Technologies to be Used**

- Frontend (UI): React Native with Expo Go
- Backend 1: Java Spring Boot

- Backend 2: Python
- Database: Google Firebase (Firestore)
- Agentic Ontology: Neo4j
- ML Platform: LangChain

➤ Process Flow

Customer → AI Bot Conversation → Natural Language Understanding →
 Location-based Service Filtering → Service Provider Filtering →
 Display Suitable Providers → Booking & In-App Payment →
 Service Delivered → Feedback Collection

➤ Plan of Action/Schedule

Task Name	Month											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Requirement analysis & Research												
UI/UX Design												
Frontend Development												
Backend Development												
AI Bot & ML Integration												
Database Integration												
Testing & quality Assurance												
Deployment & User Training												

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