EAST WEST UNIVERSITY

Department of Computer Science and Engineering

Course Title: Software Engineering

Code: CSE412

Section: 2

Project Proposal

Project Title: Locallinker

Submitted To:

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Lecture

Department of Computer Science & Engineering

Submitted by

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Date of Submission : 4.03.2025

Team Members & Roles:

Name	ID	Roles
Rafia Noor Nithin	2022-2-60-120	Team Lead & Frontend Developer
Swarna Rani Dey	2022-1-60-340	Backend Developer & Documentation Manager
Tofayel Ahmed Talukder	2022-1-60-055	AI & Recommendation System Developer
Arpita Biswas Deepa	2021-3-60-055	Database & Security Engineer & Tester
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Project Overview: (Briefly describe the project, its purpose, and the problem it aims to solve.):

The Smart Local Service Provider is a web-based platform designed to connect users with verified and skilled service providers in their locality. It streamlines the process of finding and hiring trusted professionals for various services, including home repairs, painters, cleaning, electrician and more. Many people face challenges in finding reliable, affordable, and verified service providers, as existing solutions—such as word-of-mouth recommendations or random social media searches—are often unorganized, unreliable, and lack security. Additionally, payment frauds, fake reviews, and safety concerns make it difficult for users to trust service providers.

This platform aims to digitize and secure the local service industry by offering a centralized service marketplace with location-based recommendations, secure bookings and payments, and service provider verification through ID checks, background verifications, and ratings. It also ensures real-time communication and tracking for enhanced safety while integrating AI-powered service recommendations to improve the user experience. Through these features, the platform provides a reliable, efficient, and secure way for users to find trusted professionals for their needs.

Objectives:

1. Develop a secure and user-friendly service marketplace that enables seamless interaction between users and verified service providers.
2. Ensure identity verification and fraud detection by implementing ID verification, background checks, and user authentication to enhance trust and security.
3. Implement real-time chat, booking, and tracking functionalities to facilitate smooth communication and service scheduling.
4. Provide AI-based service recommendations by analyzing user preferences, location, and past bookings to offer personalized suggestions.
5. Ensure secure payment transactions by integrating multiple payment options with OTP verification for added security.
6. Create a review and rating system to maintain service quality, allowing users to provide feedback and helping to ensure high service standards.
7. Enhance security by tracking the service provider's location during active bookings, ensuring customer safety and verifying job completion.

Scope:

- User authentication & role-based access (Customers, Service Providers, Admins)
- Service listing, search, and filtering
- Real-time chat and booking system
- OTP-based service confirmation
- Secure payments
- AI-based recommendation system
- Review, rating, and feedback system
- Admin panel for monitoring and reporting

Proposed Methodology:

We will follow the Agile Software Development Lifecycle (SDLC) to ensure flexibility and iterative progress.

For our Local Service Provider Platform, we will use the Scrum methodology, a flexible Agile approach that ensures iterative progress and continuous feedback.

How We Will Use Scrum:

Sprint-Based Development – Work in 2-week Sprints, focusing on core features in each cycle.

Scrum Roles – Team Lead, Scrum Master (Backend Dev), Development Team (All Members).
Scrum Artifacts & Events – Product Backlog, Sprint Backlog, Daily Standups, Sprint Reviews & Retrospectives.
Testing & Feedback – Continuous testing in each Sprint for early issue detection.
Deployment & Maintenance – Final Sprint includes hosting, monitoring, and future updates.

Why using Scrum for the project:

Faster Development – Incremental progress in each Sprint.
Early Issue Detection – Continuous testing prevents major bugs.
User-Centric – Regular feedback improves user experience.
Flexible & Scalable – Easily adapts to changing requirements.

Expected Technologies:

Frontend (User Interface)

- HTML, CSS, JavaScript (Core web technologies)
- React

Backend (Business Logic & APIs)

- PHP (Laravel) *(Recommended)* – A robust framework to structure our backend
- Express.js

Database

- MySQL – Reliable and structured database storage

AI-Based Recommendation System (If Needed)

- Python (Flask or FastAPI) – For AI-based service recommendations

Deployment & DevOps

- Hosting: AWS / DigitalOcean / Vercel
- CI/CD: GitHub Actions (For automated deployment)

Testing & Development Tools

- PHPUnit – Laravel/PHP testing

- Jest – JavaScript unit testing

Tentative Timeline (2.5 Months):

Phase	Task	Duration
Week 1-2	Requirement Analysis & Planning	2 weeks
Week 3	System Design (DFD, ERD, UI/UX)	1 week
Week 4-6	Backend & Database Development	3 weeks
Week 7-9	Frontend & Integration	3 weeks
Week 10	AI-Based Recommendation Implementation	1 week
Week 11	Testing & Debugging	1 week
Week 12	Final Deployment & Documentation	1 week

Expected Deliverables:

- Project Proposal Document
- Software Requirement Specification (SRS)
- Design Documents (DFD, ERD, UI/UX Mockups, UML)
- Fully Functional Web Application
- Testing Report (Unit, Integration, UAT Results)
- Final Project Report & Presentation

The Smart Local Service Provider project will deliver a Project Proposal Document, a Software Requirement Specification (SRS), and system design documents (UML, ERD, DFD). A UI/UX prototype will guide the development of a fully functional web application with service booking, chat, payments, and AI recommendations. Quality assurance will include testing reports (unit, integration, and UAT) along with security assessments. The final deliverables include a project report, a presentation with a live demo, and a deployment guide for hosting. A user manual will also be provided, ensuring a seamless experience for all users.

Potential Risks & Mitigation Strategies:

Risk	Descriptions	Mitigation Strategy
Security & Data Privacy	Risks in authentication and data protection	Risks in authentication and data protection
Scope Creep	Unplanned features may cause delays	Focus on MVP, prioritize core functionalities.
Technical Challenges	Issues with chat, AI, or database scalability	Use tested libraries, conduct early testing
Time Management Issues	Limited 2.5-month timeline	Follow Scrum, enforce strict sprint deadlines.
Deployment & Performance	Server downtime or slow API responses	Deploy on AWS/DigitalOcean, optimize queries.)
Team Coordination	Remote collaboration issues	Use Trello/JIRA, hold regular meetings.