

Capstone Project Overview:

App for Connecting Contractors, Subcontractors, Tradespeople, and Clients

This app is a comprehensive platform designed to streamline the process of finding, hiring, and collaborating with contractors, subcontractors, tradespeople, and clients on a variety of projects. By connecting skilled professionals with project owners, the app bridges the gap between demand and expertise in industries like construction, repair, and home improvement, fostering efficient, reliable, and high-quality project management.

For contractors and tradespeople, the app serves as a valuable tool for building an impressive online presence with profiles showcasing skills, experience, and completed projects. Clients, in turn, can browse verified profiles, read reviews, and choose the best-fit professionals for their needs. The app supports project creation with detailed listings and tagging features, allowing clients to attract qualified professionals based on location, project requirements, and specialized skills.

The platform includes a variety of features designed to enhance transparency and trust. These include a secure in-app communication system, location-based project matching, and options for on-site visits when project requirements are more complex. Membership tiers offer expanded visibility and priority access to high-value leads, with free and premium options that cater to different needs and business sizes.

Gamification, real-time analytics, and a feedback-driven development loop further empower users to engage effectively and stay connected. With a built-in payment system that supports milestone-based payments, escrow, and invoicing, the app prioritizes fair, secure transactions. By integrating project management tools, document sharing, and timeline tracking, it ensures clear expectations and smooth project delivery.

Technologies

Technologies that I want to use are as below:

Front-end: React, Vite

Backend1: Node.js, Express and MongoDB for database

Backend2: Flask, python

From contractors seeking reliable work to clients in need of specific expertise, this app creates a robust, dynamic, and supportive ecosystem that enhances the process of

connecting, collaborating, and completing projects successfully. Here is a detailed list of features that make this app a complete solution for the contracting industry.

1. User Registration and Profiles

- **Detailed Profile Creation:** Allow contractors to create rich profiles with sections for skills, past projects, certifications, and a portfolio of their work. For clients, profile creation could include fields to specify typical project needs and industry-specific interests.
- **Verification Process:** Optional verification for contractors and clients to build trust (e.g., identity or business registration checks).
- **Rating and Reviews:** Allow clients to leave feedback on contractors' completed work and allow contractors to rate clients based on communication, clarity, and ease of work.

2. Project Queue and Posting

- **Project Listing Queue:** Clients post projects with detailed descriptions, deadlines, budgets, and relevant tags or keywords (e.g., electrical, plumbing, etc.).
- **Location-Based Posting:** Enable projects to be tagged to specific areas or neighborhoods within the city, which contractors can filter to find nearby work.
- **Filter Projects by Keywords:** Allow contractors to filter the project queue based on their specific skills or keywords (e.g., carpentry, painting) to see relevant jobs only.
- **Automatic Project Matching:** Based on a contractor's profile and listed skills, automatically match and notify them of relevant projects.

3. Membership Tiers and Benefits

- **Membership Options:** For contractors, provide three levels (e.g., Basic, Standard, Premium), each with increasing access to features (e.g., more project leads, higher visibility).
- **Free Trial Period:** Offer a free trial of premium features at launch to allow users to familiarize themselves with the platform and see the benefits of paid features.
- **Boosted Visibility for Premium Members:** Paid members' profiles and proposals are highlighted or placed higher in client search results and recommendations.
- **Job Application Limits:** Free members can apply for a limited number of projects, while paid members can apply for more or all available projects.

4. Search and Filtering Options

- **Advanced Search Filters:** Allow contractors and clients to filter by skill set, certification, project size, budget, and timeline.
- **Geolocation and Radius Search:** Contractors can search for projects within a specific radius of their location, making it easy to find local work.
- **Project Bidding Filter:** If multiple contractors bid on projects, clients can filter by lowest bid, experience, ratings, etc.

5. Messaging and Communication Tools

- **In-App Messaging:** Enable contractors and clients to communicate within the app to discuss project details, timelines, and pricing.
- **Project Discussion Board:** For complex projects, allow clients to create discussion threads to address ongoing queries, share updates, and clarify project details.
- **Video/Voice Calls:** Provide secure in-app calling options for discussions.

6. Project Management Tools

- **Task Progress Tracking:** A tool for clients and contractors to track milestones, upload documents, and update project progress.
- **Project Timeline:** Gantt-style view for clients and contractors to see the project timeline, deadlines, and milestones.
- **Document Sharing and Signatures:** Allow both parties to share project-related documents and sign agreements digitally.

7. Payment System

- **Integrated Payment Gateway:** Include payment options to make deposits, track milestones, and release payments upon project completion.
- **Payment Milestones:** Option to break down payments based on completed project milestones, creating a more secure and fair payment process.
- **Escrow System:** Hold client payments in escrow until both parties confirm project completion to ensure fair transactions.

8. Notification and Alerts System

- **Real-Time Notifications:** Contractors receive instant notifications when a new project in their skill area or location is posted. Clients get notifications when contractors bid on their projects.
- **Job Reminders:** For contractors, reminders for upcoming deadlines or overdue project milestones.
- **Alert for Membership Renewals:** Notify clients and contractors when their memberships are about to expire.

9. Analytics and Insights

- **Project Insights:** For clients, see reports on average project costs, most requested services, and popular contractors.
- **Contractor Performance Metrics:** Contractors receive data on their project success rate, client satisfaction ratings, and project completion times.
- **Engagement Analytics:** Track active users, completed projects, average bidding time, and other metrics to improve the app.

10. Gamification Features (Optional)

- **Achievement Badges:** Award badges for milestones like “5 Projects Completed” or “Top Rated Contractor.”
- **Leaderboard:** Show top-rated contractors in each skill area or city part to encourage healthy competition.

11. Customer Support and Resources

- **24/7 Support:** Offer a support channel for any app-related issues, such as a live chat or ticketing system.
- **Resource Center:** Provide a FAQ section and blog posts on best practices for hiring contractors, tips on bidding, and profile optimization.

12. Feedback Loop for Development

- **User Feedback Collection:** In-app prompts to collect feedback on specific features or general experience, especially in the early stages.

- **Feature Voting Board:** Let users suggest new features and vote on them, helping the app evolve based on user demand.

13. On-Site Visit and Quotation Request

- **Request Site Visit Option:** If a project lacks an estimated budget, or the client is unsure of the project's cost, they can enable a "Request Quote" option.
- **Invitation for Contractor Site Visit:** The project will display a notice, allowing contractors to contact the client to arrange an on-site visit for a more accurate quotation. This can help contractors better understand project requirements, timelines, and budget needs.
- **Quotation Submission Post Visit:** After the visit, contractors can submit their quote directly through the app. This approach ensures transparency and flexibility for both parties while providing contractors with clear project details before they bid. Furthermore, contractors who provide a quotation following an on-site visit will be given priority in submitting a bid, increasing their likelihood of securing the project. This priority helps reward contractors who make an effort to fully understand the project requirements and deliver a precise quote, benefiting both clients and contractors with a transparent, well-informed bidding process.

Phases of feature Implementation

Phase Zero:

- 1- User registration and profiles
- 2- project queue and posting
- 3- Search and filtering option
- 4- Customer support and resources
- 5- On-site visit and quotation request

Phase One:

- 6- Messaging and communication tools
- 7- Notification and alert system
- 8- Feedback loop for development

Phase Two:

- 9- Membership tiers and benefits
- 10- project management tools
- 11- payment system

12- Analytics and Insights

13- Gamification features