HourFlow: Fostering community collaboration and engagement through equitable skills exchange

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Introduction

HourFlow is a web-based platform designed to facilitate skill and service exchanges using time as currency, eliminating the need for monetary transactions. In a world increasingly driven by technology and individualism, HourFlow addresses the decline in meaningful human interaction by promoting equitable, tech-enabled collaboration. It aims to create an inclusive system where users can exchange skills and services regardless of their socio-economic background, aiming to promote accessibility, inclusivity, and active community engagement.

Aims & Objectives

- To encourage skill exchange between users and fostering collaborative and supportive community.
- Promoting community service.
- To facilitate the exchange of services using time hours as currency and ensuring that users can withdraw and deposit time hours by offering or receiving services.
- To implement a platform where services are accessible to individuals regardless of their socioeconomic background or financial resources.
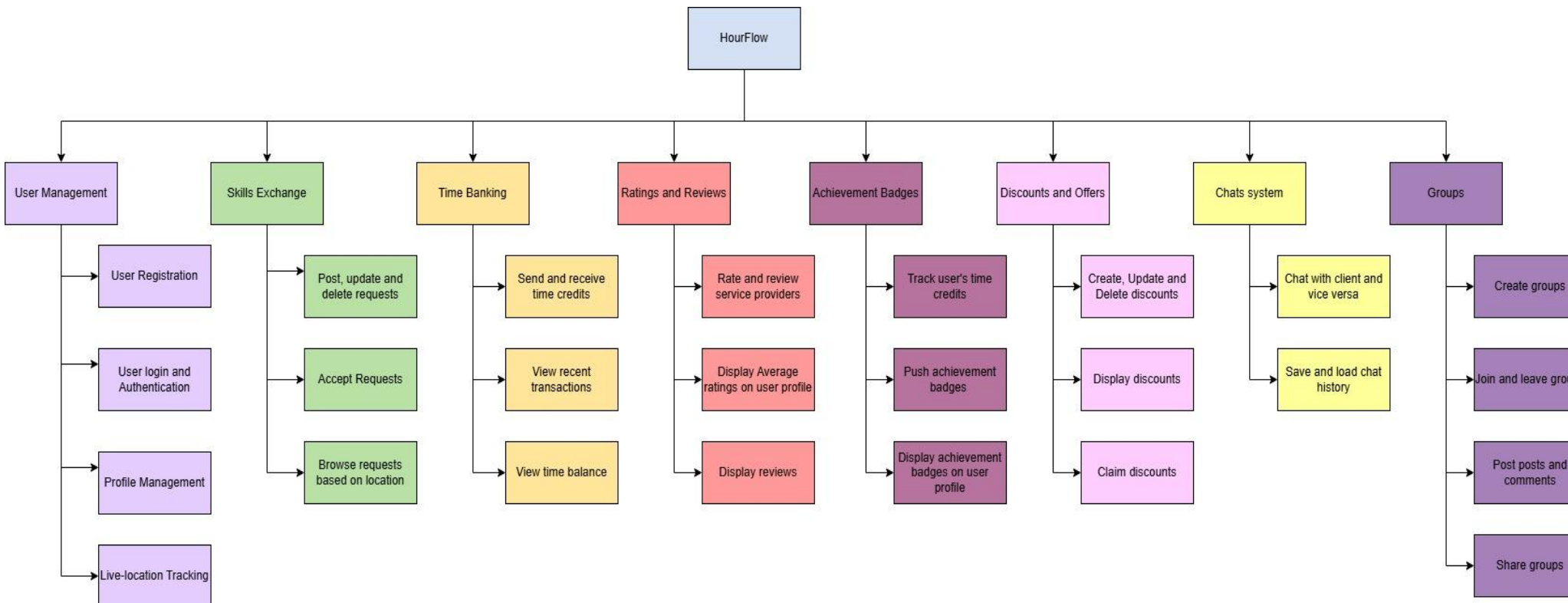
Academic Question

How can live-location-aware time banking systems be designed to ensure equitable skill exchange, optimize service-matching efficiency, and enhance community engagement through spatially contextual interactions?
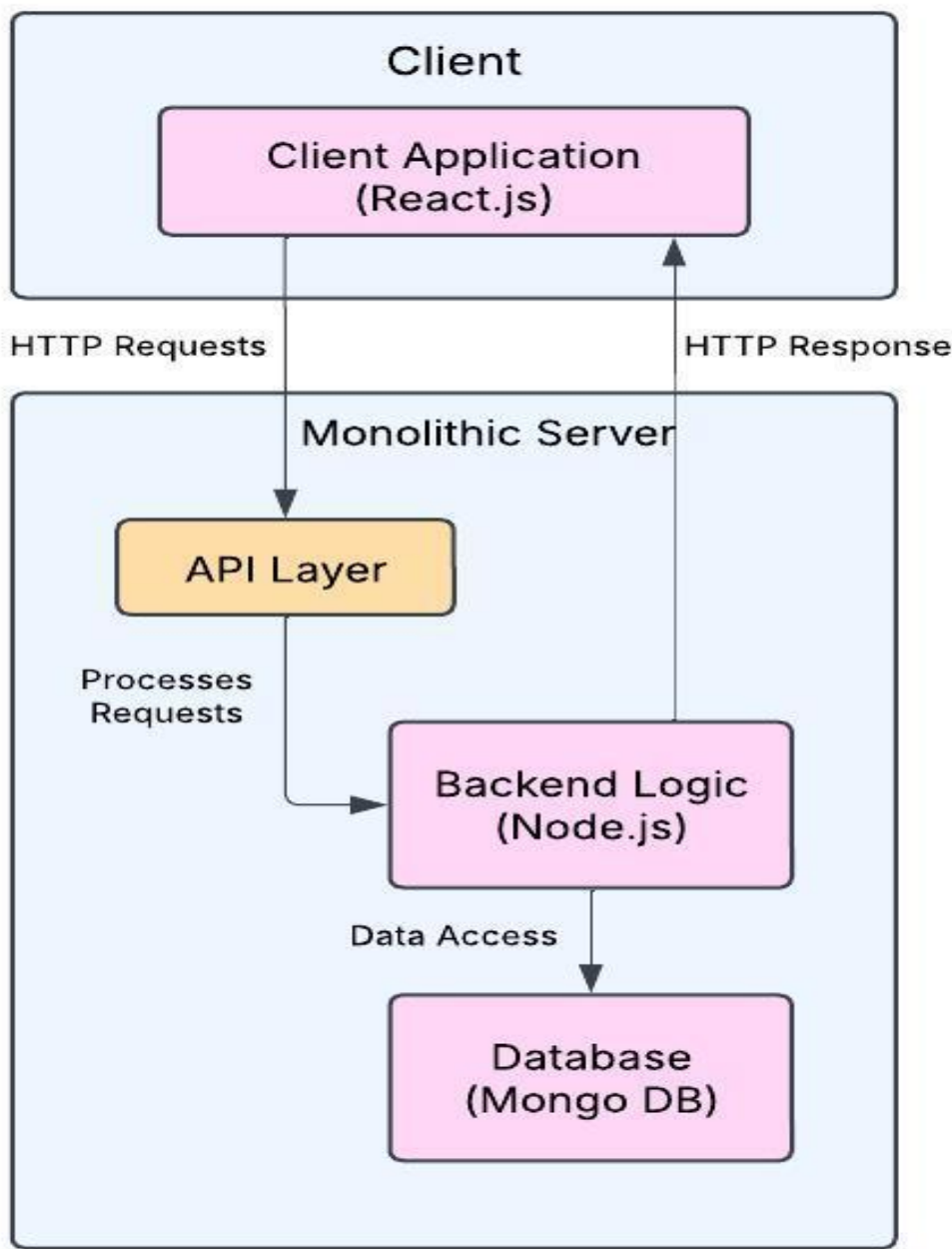
Research Findings

- Time banking promotes mutual support by allowing users to exchange services based on time, enhancing community reciprocity.
- Geolocation improves service matching by connecting users based on proximity, optimizing local exchanges.
- Geospatial indexing can optimize location-based queries, improving query performance for nearby service searches.
- Achievement badges can boost user engagement and motivation by rewarding skill contributions.
- HourFlow outperforms similar platforms by implementing live-location tracking, ratings and reviews, achievement badges and so on for better user experience.
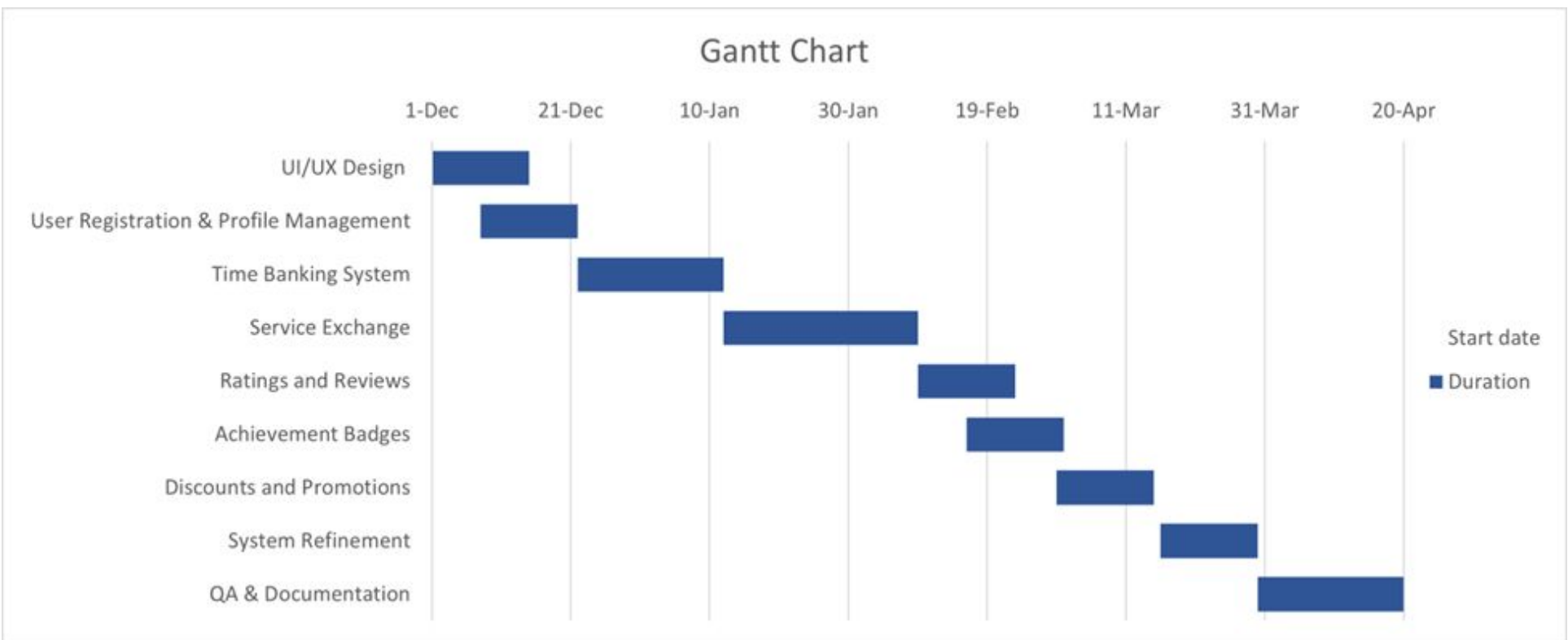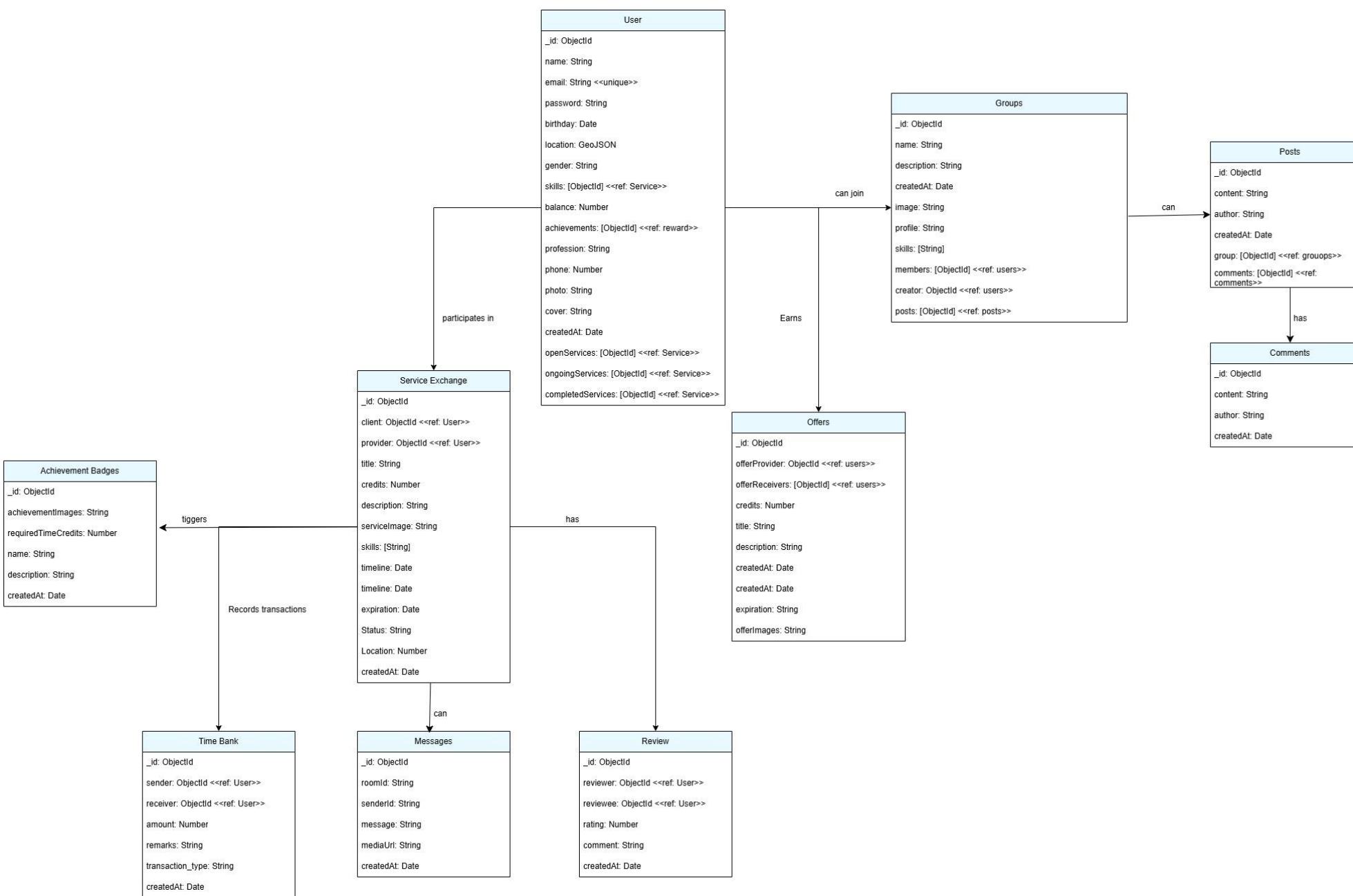
Artefacts

System Architecture

MongoDB Schema Design Diagram

Gantt Chart

Black Box Testing

Req. Code	Req. Description	Test ID	Test Case Description	Expected Result	Status
UM-F-1.0	The platform shall allow new users to create an account with essential credentials.	TC-001	Verify that a new user can successfully create an account with required credentials	User should be able to create an account successfully	Success
UM-F-1.1	Each user account must have a unique email address.	TC-002	Ensure that a duplicate email address cannot be used for registration	System should reject duplicate email addresses	Success
UM-F-1.2	Passwords must adhere to security standards.	TC-003	Validate password strength requirements (e.g. minimum length, special characters)	System should enforce password security rules	Success
UM-F-1.3	The platform should require users to confirm their password during registration.	TC-004	Check if users must re-enter and match their password before proceeding	Passwords must match for registration to succeed	Success

Conclusion

HourFlow adopts a user-centered approach, integrating key artifacts such as time banking, ratings and reviews, skill-based groups, chats, and achievement badges to enhance user engagement. Similarly, the project utilized the SCRUM methodology to iteratively develop and update based on testing and user input. Likewise, the utilization of various tools and technologies like MERN stack, JSON Web Token, Bcrypt and so on ensured the development of an efficient, scalable and user-friendly system. Through continuous development and testing, HourFlow has the potential to enhance community engagement, skill development and networking.

Future Aspects

- Incorporating workshops and training programs that allow users to earn time credits can promote skill enhancement and lifelong learning.
- Leveraging AI to match and recommend requests with service providers.