Report: TeamUp

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1. Introduction

Universities are hubs of innovation, yet many students struggle to find suitable teammates for academic projects, hackathons, and skill-based learning. Collaboration often remains limited to an individual's immediate friend circle, causing talent, opportunities, and potential team synergies to go unnoticed.

TeamUp is designed to solve this problem by providing a structured platform where Thapar students can connect based on **skills, interests, availability, and project goals**. Being restricted to the university domain, it ensures a safe and trusted community for cross-disciplinary collaboration.

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2. Problem Statement

- Students rely heavily on their friend circle to form teams.
- A large portion of campus talent remains untapped due to limited visibility.
- Many students miss project or hackathon opportunities due to lack of teammates.
- Thapar currently lacks a structured system for skill-based or interest-based matchmaking.

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3. Need Analysis

A need analysis was conducted to understand the challenges faced by students regarding team formation and collaboration.

Key Observations

- Students lack visibility of peers' skills beyond their direct social circle.
- Many hackathon teams fail to form in time due to unavailability of suitable members.

- Students miss out on interdisciplinary collaboration opportunities.
- No centralized platform currently exists at Thapar for connecting students based on skills or project requirements.

Why TeamUp Is Needed

- To discover skilled collaborators beyond personal contacts.
- To reduce friction in finding teammates for hackathons, courses, minor/major projects, and club initiatives.
- To enable structured and transparent team formation.
- To support students looking to both offer skills and learn new ones.

This need analysis confirms the necessity and relevance of a campus-exclusive matchmaking platform.

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4. Objectives

- Develop a **profile-based matchmaking algorithm** to recommend ideal teammates.
- Provide features for **project posting**, **hackathon invites**, and **skill-exchange requests**.
- Encourage **cross-department and cross-skill collaboration**.
- Ensure **secure access through @thapar.edu email authentication**.

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5. Feasibility Analysis

5.1 Technical Feasibility

- **Technology Stack:** MERN (MongoDB, Express.js, React, Node.js).
- **Database:** MongoDB Atlas for cloud-based and scalable storage of users, skills, and projects.
- **Authentication:** Google OAuth restricted to @thapar.edu domain.
- **Matching Algorithm:**
    - Tag-based similarity scoring.
    - Ranking based on overlap of skills, interests, and availability.
- **Deployment Options:** AWS, Render, or Vercel.
- **Scalability:** Designed for ~12k TIET students but can scale to multiple institutions.

Conclusion: Fully technically feasible using modern, lightweight, proven technologies.

5.2 Economic Feasibility

- **Initial Costs:**
    - Domain + hosting: ₹2,000–₹5,000/year.
    - MongoDB, Render, Vercel: free-tier plans available.
- **Development Cost:**
    - Zero monetary cost; built as a student project.
- **Maintenance:**
    - Minimal costs; handled through free cloud tiers.

Conclusion: Economically feasible with extremely low cost.

5.3 Operational Feasibility

- **Users:** TIET students with institutional email IDs.
- **Ease of Use:**
    - Simple login through Google OAuth.
    - Intuitive UI for browsing matches and posting projects.
- **Adoption Factors:**
    - High relevance for hackathon teams, project groups, and skill exchange.
    - Can grow rapidly with help from societies like GDSC, ACM, and IEEE.

Conclusion: Highly feasible for daily use and campus-wide adoption.

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6. User Evaluation

A user testing study was conducted with **18 Thapar students** from various departments to evaluate interest and usability.

Key Findings

- **16 out of 18 students (88.8%)** said they would use TeamUp regularly.
- The concept received overwhelmingly positive responses.

What Students Liked

- Smart, skill-based matchmaking suggestions.
- Clean and intuitive interface.
- Project posting feature for hackathons and coursework.

Top Improvement Requests

- Real-time chat (12 students).
- More filters for searching teammates (10 students).
- Adding GitHub and project links (8 students).
- More domain tags like ML, DevOps, Finance, UI/UX (7 students).

Insight

Students are highly receptive to TeamUp's core features.
Requests focus on improving **communication**, **discoverability**, and **profile enrichment**, which can be added in future iterations.

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7. Risks & Mitigation

Risk	Mitigation Strategy
Low Adoption	Partner with student societies for outreach and onboarding.
Scalability Issues	Use auto-scaling cloud services and optimized database design.
Privacy Concerns	Restrict data access, implement OAuth, allow students to manage visibility.

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8. Expected Outcomes

- Fully functional platform accessible to all TIET students.
- Smart matchmaking for hackathons and projects.
- Centralized database of skills, projects, and collaboration requests.
- Practical demonstration of full-stack development and algorithmic matching.

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9. Conclusion

The inclusion of **need analysis, feasibility assessment, and user evaluation** demonstrates that TeamUp is **technically, economically, and operationally feasible**.
It addresses a real and significant collaboration gap on campus, provides high value to students, and has potential for future expansion across institutions.

TeamUp is not just feasible — it is impactful, scalable, and strongly validated by user feedback.