Feasibility Report: *TeamUp*

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1. Introduction

Universities are hubs of innovation, yet many students face difficulty in finding suitable teammates for academic projects, hackathons, and skill exchange. *TeamUp* aims to bridge this collaboration gap by providing a platform where students can connect based on skills, interests, and project requirements.

The system will serve as a **closed community platform** (restricted to the campus domain) that encourages cross-disciplinary collaboration and maximizes student participation in events.

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2. Problem Statement

- Students often rely only on their immediate friend circle to form teams.
- Talent remains untapped as students lack visibility of others' skills.
- Hackathon and project opportunities are missed due to lack of teammates.
- No existing structured system at Thapar for **skill-based matchmaking**.

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3. Objectives

- Provide a **profile-based matchmaking algorithm** to suggest teammates.
- Enable students to **post projects, hackathon invites, and skill-exchange requests**.
- Facilitate **team discovery** and structured collaboration across the campus.
- Ensure **secure, campus-exclusive access** via university email login.

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4. Feasibility Analysis

4.1 Technical Feasibility

- **Stack:** MERN (MongoDB, Express, React, Node.js).
- **Database:** MongoDB Atlas (cloud-based) to store student profiles, projects, and connections.
- **Authentication:** Google OAuth restricted to @thapar.edu domain.
- **Matching Algorithm:**
    - Tag-based similarity scoring system.
    - Ranking potential matches by overlap of skills, interests, and availability.
- **Deployment:** Cloud-based deployment on AWS / Render / Vercel.
- **Scalability:** Initially for TIET campus (~12k students), but architecture allows scaling to multiple institutions.

4.2 Economic Feasibility

- **Initial Cost:**
    - Domain & hosting: ₹2,000–5,000/year.
    - MongoDB Atlas, Vercel/Render: Free student plans available.
- **Development Cost:**
    - Zero monetary cost (developed as part of coursework).
    - Only requires student effort and institutional resources.
- **Maintenance:**
    - Minimal costs, handled through free hosting tiers for small user base.

4.3 Operational Feasibility

- **Users:** Students of Thapar University (restricted to institutional email IDs).
- **Ease of Use:**
    - Simple sign-up with university email.
    - Intuitive UI for posting projects and browsing matches.

- **Adoption:**
    - Strong incentive for students (hackathons, project teams, skill exchange).
    - University can promote it through technical societies like GDSC, ACM, IEEE.

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5. Risks & Mitigation

- **Low Adoption Risk:** Mitigate by collaborating with student societies for early promotion.
- **Scalability Issues:** Use cloud services with free scaling options.
- **Privacy Concerns:** Restrict data access, use authentication, and allow students to control visibility.

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6. Expected Outcomes

- Working web application accessible to all TIET students.
- Profile-based matchmaking for projects/hackathons.
- Database of ongoing projects and skill listings.
- Practical demonstration of **full-stack development, database design, and algorithm implementation**.

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7. Conclusion

The feasibility analysis demonstrates that *TeamUp* is **technically, economically, operationally, and schedule-wise feasible** It addresses a real collaboration gap on campus, showcases advanced technical skills, and has potential for long-term impact.