Project Proposal Template

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1: Introduction

Title: Campushood

Our project revolves around creating a simple app platform for college campuses, where the users can share and request services/resources that are commonly wasted or underutilized, with a primary focus on **transport** and **food** needs.
The app would serve as a quick communication channel (with real-time post updates) between a user who needs a certain service, and posts/requests it, and a user who is offering that service, in either order. Students can accumulate an in-app reputation by engaging with other users' requests and incentivizing the campus community to become more sharing and physically connected.

We'll be using a Scrum framework to develop the app.

2: Novelty

There is a huge mismatch between the resources abundant at a college like Davidson, and their availability to students. For example, many students cannot afford a vehicle while they are still paying for college, and for those who do own a vehicle, gas, and transport costs are a huge burden (source). With public and affordable transport, especially in a small-town campus, low-income students can fend for themselves, further dividing the community into socioeconomic inequalities. The same is the case with food options. Our app hopes to provide a long-term solution. On the app, users will have access to several posting boards (Transport, food, and more as necessary), and a combined board with all posts, updating in real-time.

- FREE service for Davidson Students
- Targeted more as a service than a business
- Personalized Posting/Requests
- Negotiation of Incentives/Pay
- Custom rewards system
- Davidson Aesthetic and advantage of local updates
- Posting boards:
    - Post where they need to go, and date/time info
    - Respond to another user's request offering to give them a ride
    - Reply to posts, for clarification or negotiation (where to pick up, offering a different time, splitting gas money, etc)
- Acquire in-app (and potentially campus-level) rewards and leaderboard progress for helping
- Post leftover or unused food items (after events, at semester end, etc) and where they can be picked up

3: Customer Need

1. Who is the primary customer outside the team?
    a. Campus community (students, staff, faculty)
2. Who are the secondary stakeholders?
    a. Local businesses (food outlets or transportation services), and potentially parents of students. These groups have an interest in the well-being of students and the operational efficiency and community benefits the app provides.
3. What do the stakeholders want? Why?
    a. An easy, reliable, and safe way to connect with other community members and request/share resources and services, aiming to save money, and time, and enhance their campus life.
4. What is their desired overall experience?
    a. All stakeholders aim for a seamless, engaging, and beneficial experience. Students look for convenience and reliability; the administration wants to foster a connected and supportive campus culture; local businesses want visibility and engagement.

3.1 User Requirements

Write at least 5 SMART user stories based on the stakeholder's needs and wants:

1. As a student without a car, I want to request a ride to a grocery store on a certain date/time, so that I can get groceries without the stress of finding transportation

2. As a student with a car, I want to see if someone needs a ride to someplace I'm going so that I can share my resources with peers and contribute to reducing transportation challenges on campus.

3. As a frequent user of the app, I want to track my contributions through a reputation or rewards system, so that I can be recognized for my active participation and encouraged to continue contributing.

4. As a student on a budget, I want to have access to free food so that I can reduce the amount of money that I spend.

5. As a campus administrator, I want to be able to monitor this app, so students can have safe and reliable access to this service without any violations of the Honor Code.

3.2: Acceptance Tests

Write at least 5 acceptance tests for the user stories using the template:

- Given a student without a car logs into the app and enters a request for a ride, when they post a ride request for a specific date and time, then the request should become visible on the posting board

- Given a user wants to respond quickly to a ride request, when they select a request and submit a response, their response should be immediately sent to the requester's notifications.

- Given a frequent user have been actively sharing rides, when they check their profile, they should see an updated reputation and rewards reflecting their contributions.

- Given an event that has leftover food options, when they post on the app, they want it to be visible to all Davidson students.

- Given an admin wants to monitor the safety of students using the app, when they login, they can view the reviews of drivers and riders to make sure everyone has safe and comfortable options.

4: Project Goals

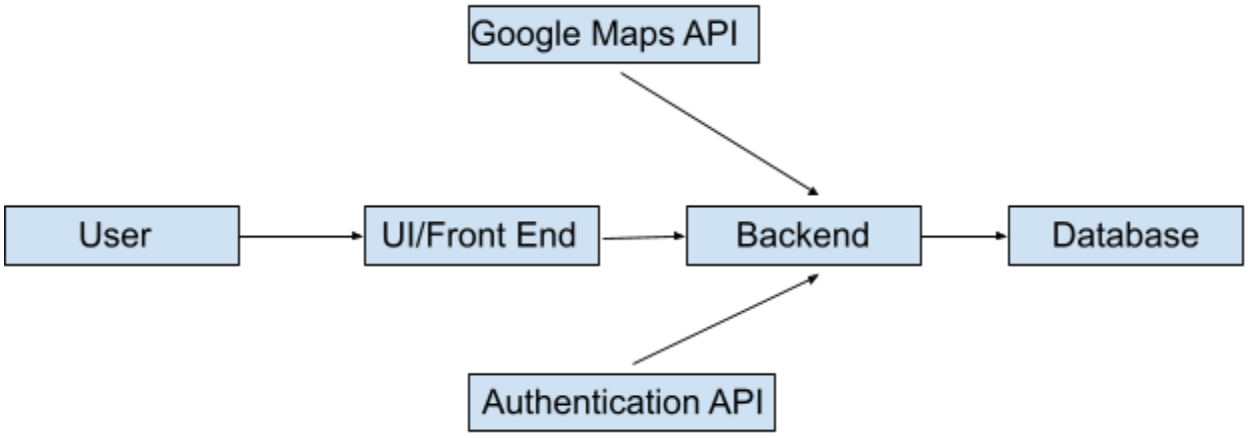
4.1: Customer Problems and Benefits

The customer problem being addressed is the mismatch between available campus resources (such as transportation and food) and their accessibility to students, particularly those facing socioeconomic challenges. The system will benefit from a streamlined platform for sharing and requesting resources, facilitating easy, real-time communication between students. This directly supports the customer's desired overall experience by creating a more inclusive, connected campus community where resources are utilized efficiently, and students can engage in mutual assistance, thereby reducing socioeconomic divides and enhancing campus life for all.

4.2: Measure of Success

Active engagement (e.g., frequency of resource sharing, interaction rates), positive user testimonials, and a demonstrable impact on reducing campus resource wastage and improving accessibility for all students will reflect the effectiveness of the platform in meeting its goals and the value it adds to the campus community.

5: System Description



User Interface (UI): This component serves as the user-facing interface of the application, enabling users to interact with its features. Through the UI, users can post requests, offer resources, and engage with community content.

Backend/Application Server: The application server manages the core logic and functionalities. It handles user requests, data processing, and interactions between various components, including the UI, database, and external services. Additionally, the application server ensures smooth communication and efficient operation across the entire system.

Database: The database serves as the repository for storing essential data such as user profiles, posts, responses, and reputations. It provides a reliable and structured storage mechanism, maintaining data consistency and integrity. By securely storing and organizing data, the database enables efficient retrieval and manipulation, supporting the application's functionality and user interactions.

External Services: These are third-party services integrated into our application to extend its capabilities. Examples include mapping services for location-based functionalities and notification services for real-time alerts and updates.

6: Solution Approach

- Briefly describe how the system will work.
    - Our system will allow Davidson students and faculty to share campus resources in an easy and accessible way. Students can use our chat function to request and share excess resources. Users will use their Davidson emails to authenticate the login process to ensure high levels of safety and security for all users involved.

- What technologies (platform, tools, libraries, programming languages) will you use and why?
    - Programming Language: Javascript (Typescript)
    - Frontend: HTML, CSS, React
    - Backend: NodeJS, MySQL
    - Tools: Figma, Git/Github, Vscode
- How will you test and measure the adequacy of your test strategy?
    - Through various forms of testing. We are planning to have iterative unit testing between the phases for small niche changes. However, for larger segments, we will test to see the functionality of the whole site itself. In addition, because this project is a proof of concept, we will gather UI recommendations and small design principles instead of test cases.

7: Project Management

- What development process will you use (Scrum, XP, Scrum+XP, etc.)?
    - Scrum
- What are the reasons behind your choice?
    - We believe that the Scrum framework will keep us in line and keep a steady production while balancing other priorities. Setting the expectation early on will be helpful for our success throughout the semester.
- Describe your (brief) goals for each iteration (Proposal - Report 1, Report 1 - Report 2, and Report 2 - Final)
    a. Proposal - Report 1: Main UI, Design
    b. Report 1 - Report 2: Testing, Debugging, Finalizing Design Choices/Finishing Implementations.
    c. Report 2 - Final: Testing, Debugging

8: Team Management

8.1: Roles

- What are the planned roles for the team members?
    - Scrum Master: Blake, (Huy, Paul, Awais, alternating throughout the semester)
    - Product Manager: Awais
    - Developers: Blake, Paul, Huy, Awais

8.2: Scheduling

- How often will the team meet?
    - Our goal is to meet weekly.
- How will you meet as a team? Zoom? In-person?
    - Zoom at the least. Our goal is to meet as much in person as possible. We may have joint coding/small group meetings throughout the week depending on availability.

8.3: Background

- Awais: Experience with app development in Unity, and web development
- Paul: Experience with Java/Python/C and some front-end development (CSS & HTML)
- Blake: Experience with Web Design and coding practices, API application
- Huy: Experience with full stack web development

9: Constraints and Risks

- Will need clear consent forms and privacy policies to collect and use student data.
- Access to third-party services like Maps and Notification Services requires agreements and might involve costs.
- Collaboration with campus administration for integration with existing campus services or resources could enhance our software.
- Campushood serves as a starting point rather than the definitive solution for addressing the lack of transportation on campus
- We aim to cultivate a supportive environment, fostering a culture of sharing and collaboration
- We currently focus on the food and transportation aspects at Davidson. Future improvements may include other resources such as used stuff/excess supplies, etc
- Expansion beyond Davidson !!

10: Github