Feasibility Analysis - TraViz

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Technical Feasibility

1. **Domain expertise: 6/10**
   Members do not have direct experience in the travel industry and must learn its ins and outs on the go. This means that it might be possible for the team to miss out on important features or develop features that do not align with user needs. To mitigate this risk, interviews were conducted with the target audience. This provided some concrete basis for the features we decided to develop and more insight into how the travel industry might work.

2. **Technical familiarity: 6/10**
   The project has 3 main technical components: front-end, back-end, and data visualization. These are the teams' self-rated familiarity levels with each component.

   Front-end (HTML, CSS, Javascript):
   2 members have basic experience, 1 has zero experience.

   Backend (Python, Flask):
   1 member has basic experience, 2 have zero experience.

   Data visualization (D3.js):
   1 member has advanced experience, 1 has intermediate experience, 1 has zero experience.

   Given that at least 2 team members have basic-or-higher knowledge for each component, the project is technically feasible (but may require some learning curve for certain parts).

3. **Compatibility with existing systems: 7/10**
   The project is a standalone system. However, it does necessitate communication with multiple external APIs (LocationIQ, Sygic Travel, Travelpayouts, TravelPerk). These APIs may end up becoming defunct, or may start requiring payment. As such, these APIs could be potential failure points for certain features in the project.

   In response to this risk, our team hopes to take an adaptive approach to our feature list. If, during the modelling phase, we deem an API to be unreliable, expensive, or not a good fit with our needs, we may end up removing some features in the interest of time. Our team has to be ready to adapt to these changes as we have no control over these APIs and their policies.

On the other hand, the core functionality of the app (visualizing travel history) is not dependent on external APIs and will be well within the team's control.

4. **Project size: 8/10**
   The project will be created by a team of 3 people over the course of 2-3 months. The scale of the project is small to medium; the project only has 2 main features (visualizing travel history and planning trips) but each of these features contains a lot of sub-features. In addition, some of the features - particularly travel visualization - will take a lot of iterations before looking polished.

Overall, the project is doable within 2-3 months, with the caveat that the team members are college students whose schedules are volatile. In the event that extenuating circumstances prevent the members from working on the project as much as they normally could, some features may have to be adapted or removed.

Economic Feasibility

1. **Costs**
   The system should not cost any money to build. The team has no budget to work with, so if some part of the project ends up costing money (e.g. the APIs) it will be removed.

2. **Benefits**
   Tangible:
   - Our project will not generate revenue at this time. It will be free to use.

   Intangible:
   - The project will be an interesting application for our user base (people who travel). Users will enjoy reminiscing about their past trips while entering them into the application, and will be excited to see how their travel history maps out visually. Users will also end up sharing their maps with their peers, spreading word about the app and amplifying the career benefits listed below.
   - The project can be listed on the team members' resumes, serving as a testament to their learned skills and helping them find future employment. If a large number of people end up using the app, this lends further credibility to the team members.
   - The project will teach the team members valuable skills in communication, planning, development, and collaboration.
   - Completion of the project will enable the team to pass their Software Engineering class. :)