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System Request

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Project Name: TraViz

Business Need:

Finding an all-in-one system for travel and tourism related information for different locations can be cumbersome as features like airfare prices, popular tourist attractions, food, etc. of a location usually need to be looked up separately. There is a need to have a space where such information is readily available in one click with the information presented in a concise manner, wherein the user can get a quick overview of a city they are interested in travelling to.

Moreover, when the same system keeps track of the user's travel history, it would be appealing to a large audience as the website would provide custom-build visualizations to the users based on their history which would serve as a memoir of their travels and a basis for their decisions for future trips.

This system would incite the desire to travel in the user and in turn, this would help in boosting the tourism and travel industry.

Functionality:
TraViz is a travel & tourism application. It has two main functionalities: allowing users to plot maps of their travel history, and helping users plan future trips with helpful information.

1. **Visualizing Travel History**
   The system must be able to:
   - Facilitate logging into the platform.
     - Users' data can be saved with their accounts, so they can come back to it later.
   - Allow users to enter their past "trips" into the system using an interactive user interface.
     - A "trip" has a starting city, an ending city, a date, and a mode of transportation. (ex. Manila to Abu Dhabi 2019, by plane/Prague to Vienna 2020, by bus)
     - When inputting starting and ending locations, the system can provide real-time suggestions for locations, similar to Google's auto-suggest feature in their search.
       - For example, if the user types "San", the system might suggest "San Francisco", "San Antonio", or "San Diego" under the search box.
       - This is possible through the use of a geocoding API, such as LocationIQ. Alternatively, the system could keep a database of

latitude and longitude for each city in the world and search that, but this would presumably take up a lot of server space.
    - The mode of transportation for each trip can be selected using a drop-down menu.
- Visualize the user's travel history on an interactive map.
    - Each "trip" will be visualized as two nodes on the world map (the start and end points), connected by a line. The locations of the two nodes will be the latitude and longitude of those cities, as obtained from the geocoding API. The color of the trip depends on the mode of transportation (for example, orange for flights, purple for road trips, blue for boat trips, etc.)

    - When the user hovers over a trip, they can see more information about the trip (year, mode of transportation taken, etc.)
    - Users should be able to easily share their maps with friends and family using a unique link.

2. Planning Trips

- Users can also use our system to plan future trips and get excited about travel.
- By switching to "Planning Mode", users can create planned trips.
    - These are similar to the trip objects in the first phase, except users only provide an origin and a destination.
    - Afterwards, our system provides some helpful information about the potential trip, including:
        - Airfare/travel cost between the two locations.
        - Popular tourist attractions in the destination location.
        - Tags for different types of destinations. (e.g. "nature", "historical", "food", etc.)

    - We may end up excluding some of these information types in the final product. This depends on time constraints faced by the team, as well as pending further research on what users would find most helpful. Our requirements are still fairly fuzzy, so our team hopes to either conduct user interviews/surveys or develop prototypes in order to figure out which features are most relevant.
    - We can obtain this information from a variety of sources. For popular tourist attractions, we can use the Sygic Travel API that provides points of interest in cities. For airfare, we can use the Travelpayouts Data API.
    - This information will be displayed on a card in the user interface for users to view.
    - The planned trips will also be visualized alongside the user's travel history, so users can see what their travel history map will look like if they take the trip.

Expected Value:

Tangible:

- The software will act as a record for a user's travel history, to keep it organized and understandable. It will serve as an electronic journal of users' past experiences, allowing them to reminisce about previous trips.
- TraViz will also allow users to view data about different tourist destinations from one place, saving them the inconvenience of browsing multiple websites to gather information such as airfare, tourist attractions, cost of living etc.

Intangible:

- TraViz will boost travel amongst people, especially those who have not travelled before, because users will share their visualizations and get people excited about travel.
- The software will encourage people to share their data about travel online, which can be used by many companies.

Special Issues or Constraints:

Time constraints:

1) System should be developed and up and running in 2-3 months

Technical constraints:

1) System should be available 24 hours, 7 days a week. Any maintenance work must be done between 07:00 and 09:00.
2) The team members mostly have beginner-level experience in web development. Because of this added learning curve, less essential features may have to be dropped in the final product.