Phase I. EER Design

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0. Pre-Illumination

This report covers some ideas and the initial EER diagram of the traveling information sharing database. Besides this part, there are five parts of the report. Part one specifies the assumptions, explanations, and limitations that we set for the project. Part two has the EER diagram that we draw. Part three explains some notation for the relationship of this project. And part four is the short conclusion of the whole Phase I (EER design) of the project. Finally, the fifth part discusses some questions of the project.

1. Assumptions, Explanations and Limitations

In this part we discuss all the assumptions, explanations and limitations in this project to illuminate our EER diagram, based on both the project description and real-life experiences.

1.1 Assumption

- Most entities have a unique ID that is generated by the database.

- The number of followers of a member is based on the number from social media.

- It is assumed that the traveler would choose to dine, sightsee or shop instead of all the other activities that can be done at a travel destination

- Any restaurant, shopping mall, sight could be the business partner.

- Travel attractions are the same as travel destinations.

1.2 Explanation

- **Subclasses of Travel Attractions (Destinations):**

    Sights, restaurants, and shops are subclasses of Travel Attractions

- **Composite Attributes:**

    Address is broken down into separate parts

    Contact Person has multiple parts

- **Member Status:**

    The derived attribute is based on the number of followers.

- I thought "Food, shopping, business, members, attractions" are the value of the purpose, so I didn't put them into the diagram. (in the 8th part of the project description)
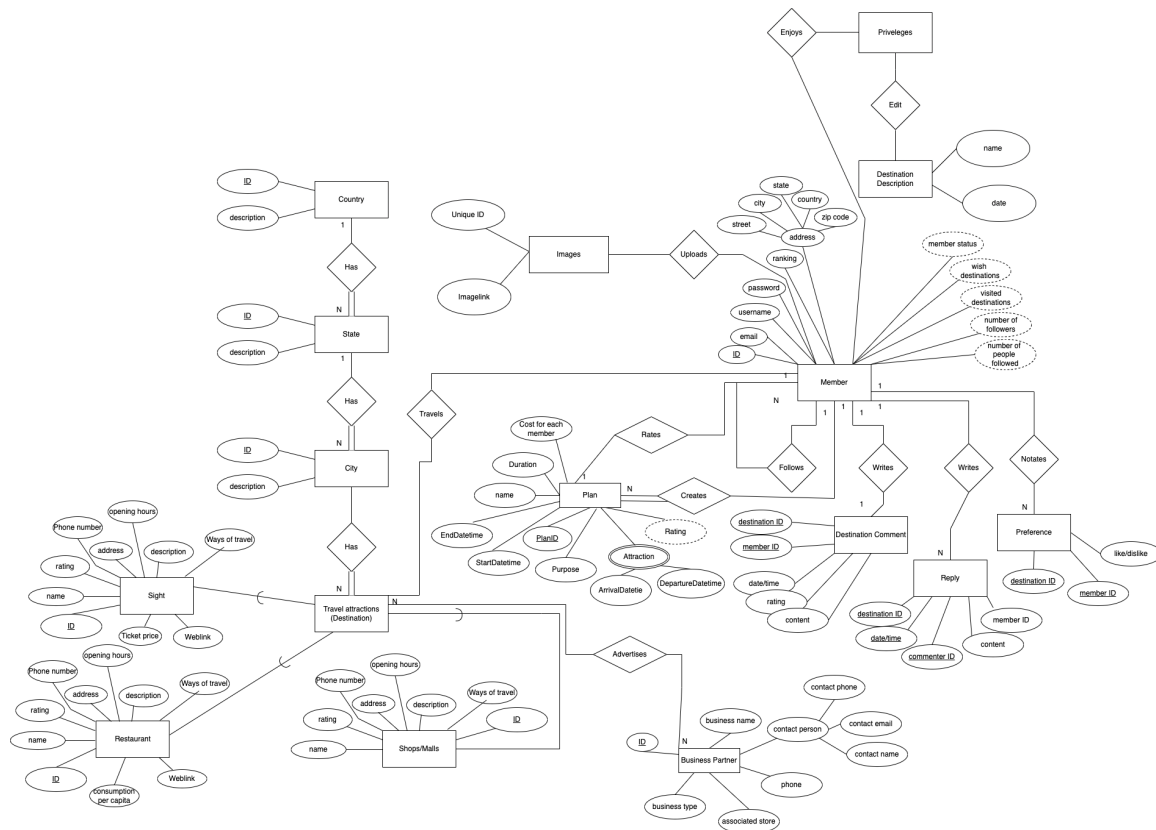
1.3 Limitations

There are some limitations both from the title statement and from daily life. We list them as follows:

- Only three types of travel attractions/destinations

2. EER Design Diagram

In this part we draw an EER design diagram with common notation introduced from the textbook. Figure 1 exhibits the whole design as follows:
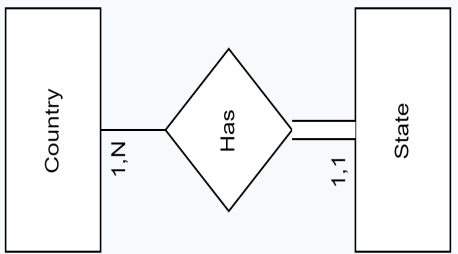
https://app.diagrams.net/#G1jMsRqsyaEdaXn84mYALz5CQkQeMMgCNF
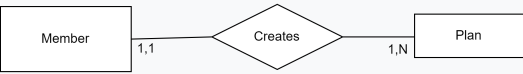
3. (Min, Max) Notation for Relationship

In this part we discuss the (min, max) notation for several relationships that exist in our EER design diagram. Table 1 clearly specifies how the numerical expression corresponds to the relationship between two entities.

Table 1. The explanation for (Min, Max) Notation

Numerical Expression	Discussion
Country — 1,N — Has — 1,1 — State	• A country may have one or more states at a time, so on the side of country the numerical expression is (1, N) • One state must belong to only one country, so on *the state's* side the numerical expression is (1, 1).
Member — 1,1 — Writes — 1,N — Reply	• One member can write one reply at a time so on the member side the numerical expression is (1,1) • A Reply at a time can be from one person or from many, so on *the Reply's* side, the numerical expression is (1, N).
Member — 1,1 — Creates — 1,N — Plan	• One member can create one plan for one destination at a time so on the member side the numerical expression is (1,1) • A Plan at a time can be created by one person or by many many, so on *the side of* plan, the numerical expression is (1, N).
Business Partner — N,N — Advertises — N,N — Travel attractions (Destination)	• One business partner can advertise one or many destinations at a time, so on the business partner side, the numerical expression is (N, N) • One destination can be advertised by many businesses, so on *the destination* side the numerical expression is (N, N).

4. Conclusion

In this report we discussed and drew the EER diagram for the Database of traveling information sharing. In the first half, we illustrate our assumptions, limitations and explanations, and then we have the diagram for our EER model. In the next part, we talked about some relationships that existed in the EER diagram.

This report analyzed the conceptual model of the traveling information sharing Database. In the next step, we will convert our Conceptual model to a Logical model and implement it finally. We may adjust some details or assumptions when we go further with this project.

For further questions please contact us or refer to the above discussions.

5. Project Questions

a) 1. The address is a multi-attribute attribute including street, city, state, country, and zip code.

  2. The city, state, and country will have a unique id and a description to allow for name changes without having to update the entire database.

  3. The comments, replies, and likes will have unique keys made up of multiple attributes.

  4. When calculating the followers of the members, there should be some special apps or ways to count the number.

b) One instance of the project that might warrant the need for subclass is the

difference between a regular member and a preferred member, but I think that the difference can be determined dynamically rather than with a subclass. The travel destinations/attractions, however, have been divided into subclasses.

c) We believe this project needs a Relational DBMS because of the related parts to this project where the relationships will not change, but the data will continue to grow. There is a potential for many users and many transactions to handle and secure. It is also important to keep in mind the normalization of the data to keep redundancy to a minimum.