

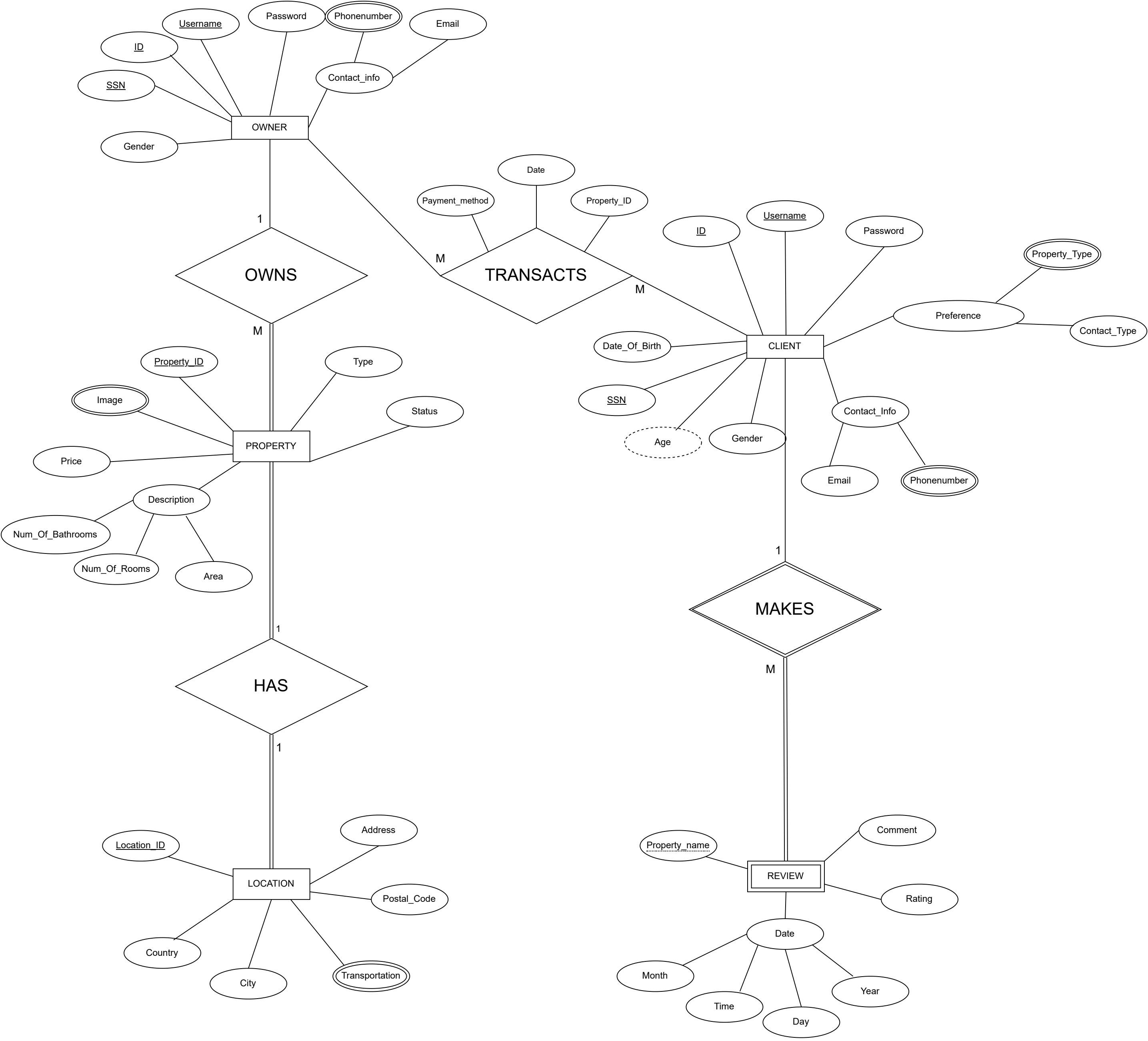
DBMS PROJECT

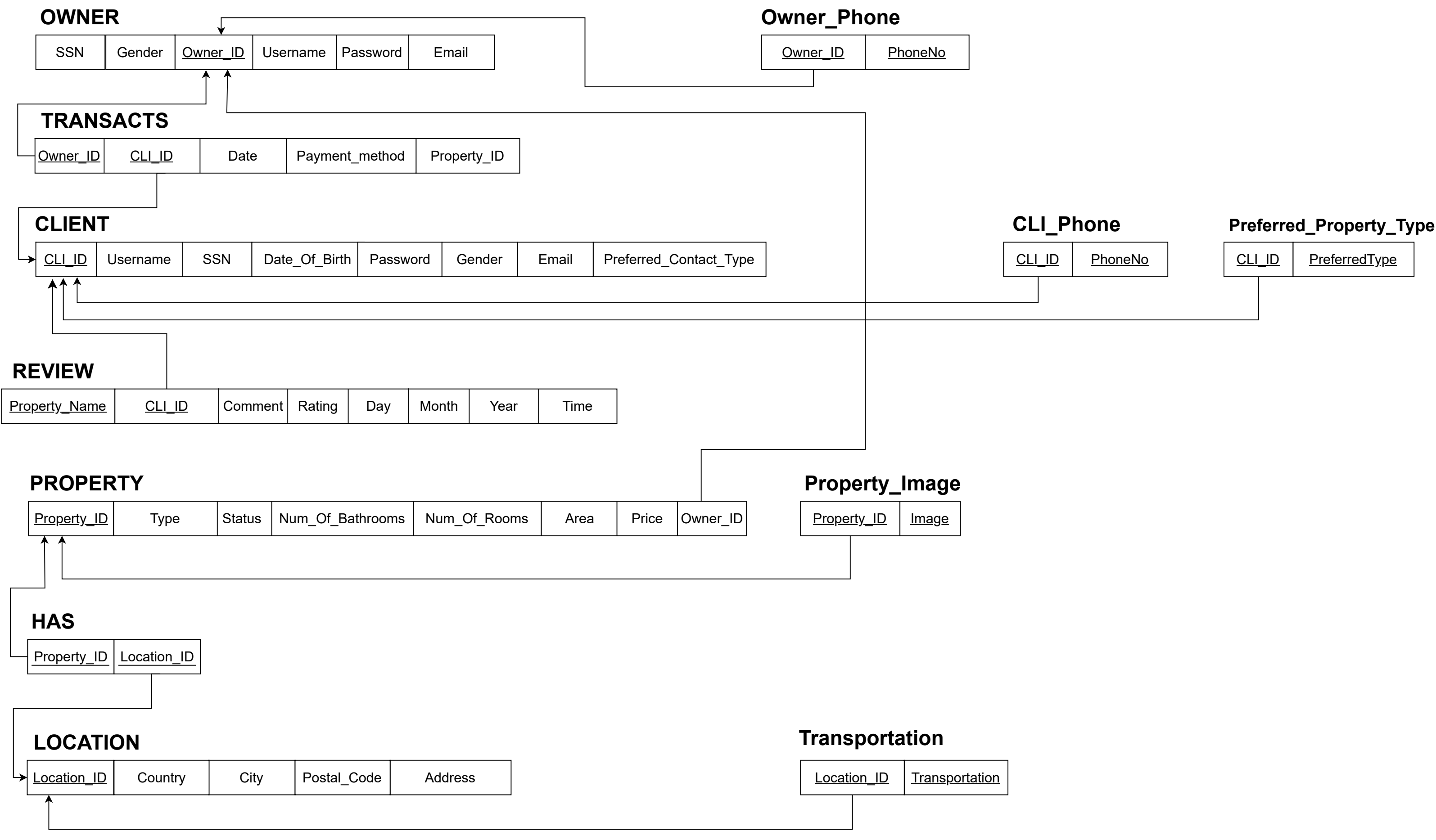
Property Finder

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Assumptions Document

Entities

1. [Strong] Owner

- Primary Key [ID].
- Candidate keys [SSN, Username].
- Simple single attributes [Password, Gender].
- Composite attribute [Contact_info ({ Phone_number }, Email)].

Notes:

- ❖ An owner can have multiple phone numbers (personal no.,business no. ,....etc).

2. [Strong] Client

- Primary key [ID].
- Candidate keys [SSN, Username].
- Simple single attributes [Password, Gender, Date_Of_Birth].
- Derived attribute [Age → derived from Date_Of_Birth].
- Composite attribute [Contact_info({phone_number}, Email) ,
- Preference ({Property_Type},Contact_Type)].

Notes:

- ❖ The derived attribute is calculated from the stored attribute (Date Of Birth), so it is not stored in the relational schema.
- ❖ A client can have multiple phone numbers (personal no.,business no. ,...etc)
- ❖ A client is asked for his preferred property types as such it is put as multivalued.

3. [Strong] Property

- Primary Key [ID]
- Simple single attributes [Type, Status, Price].
- Composite attribute [Description (Area, no_of_bathrooms, no_of_rooms)].
- Multivalued attribute {Image}.

Notes:

- ❖ Status of a property is defined as either rent or buy.

4. [Strong] Location

- Primary key [ID].
- Simple single attributes [City, Country, Address, Postal_code].
- Multivalued attribute {transportation}.

Notes:

- ❖ location can have multiple public transportations available as (buses, vehicles, planes...etc).

5. [Weak] Review (Identified by Client)

- Partial Key [Property_name].
- Simple single attributes [Comment, Rating].
- Composite attribute [Date (Time,Day,Month,Year)].

Notes:

- ❖ Review will be identified through the combination of the Primary key of the client and the partial key (property name).

Relationships

Owns

- Relationship entities: Owner – Property
- Cardinality ratio: [1:M]
 - ✓ **Explanation:** An owner may have one or more properties; however, each property can be owned by only one owner.
- Participation: [Partial : Total]
 - ✓ **Explanation:** an owner may or may not possess a property (assuming the possibility that all their properties might be sold), but a property must unequivocally be owned by an owner.

Makes

[Identifying relation]

- Relationship entities: Client - Review
- Cardinality ratio: [1:M]
 - ✓ **Explanation:** a client can provide one or multiple reviews for a particular property, with each review originating from a single client.
- Participation: [Partial : Total]
 - ✓ **Explanation:** a client has the option to submit a review for a property, but it is mandatory for a review to be created by a client.

Transacts

- Relationship entities: Client - Owner
- Relationship attributes: Payment_method, Property_ID, Date
- Cardinality ratio: [M:M]
 - ✓ **Explanation:** a client can engage in transactions with as many owners as they wish, and reciprocally, an owner can transact with as many clients as they desire.
- Participation: [Partial , Partial]
 - ✓ **Explanation:** a client may or may not transact with any owner and an owner may or may not transact with any client.

Has

- Relationship entities: Property - Location
- Cardinality ratio: [1:1]
 - ✓ **Explanation:** each property is linked to a single location, and reciprocally, each location is associated with just one property.
- Participation: [Total : Total]
 - ✓ **Explanation:** each property must be paired with a location, and each location must be associated with a property.

Assumptions

- While clients are welcome to submit multiple reviews for various properties, it's imperative to note that they are strictly limited to providing just one review per individual property.
- The location entity's address is exceptionally detailed, ensuring that each property is associated with only one specific location.
- In the Database, all stored locations are connected to properties which in turn explains the total participation in the relationship.
- Owners and clients have the freedom to engage in transactions with each other. However, it should be acknowledged that there may be instances where an owner or client chooses not to proceed with a transaction, perhaps because an owner does not wish to sell their properties at that particular time.