

TEAM ID 6

ASSIGNED TA: RADWA MOUSTAFA



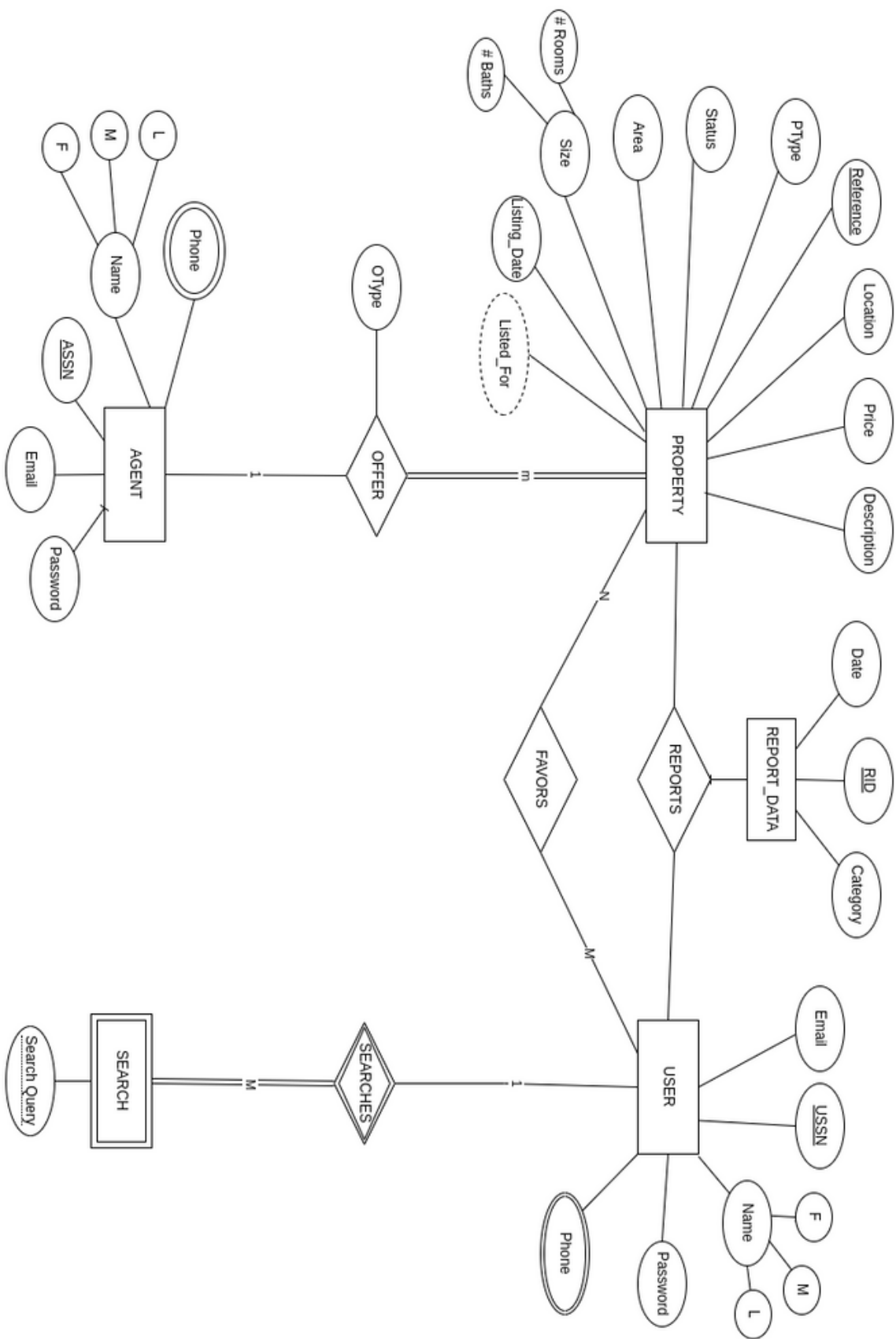
PROPERTY FINDER

DBMS PROJECT - PHASE 1

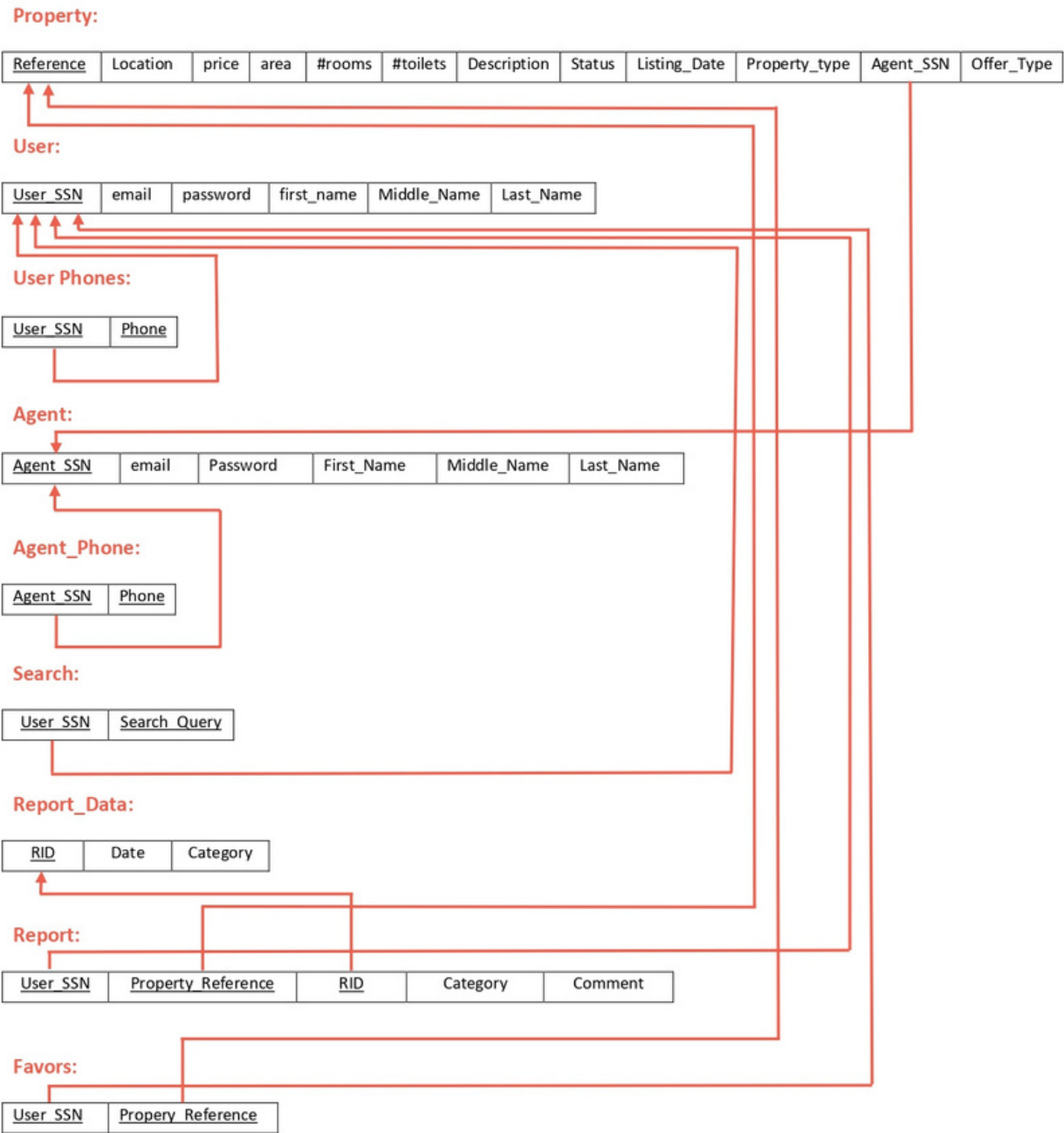
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ENTITY RELATIONSHIP DIAGRAM (ERD):



MAPPED SCHEMA:



NORMALIZED SCHEMA:

Property:

<u>Reference</u>	Location	price	area	#rooms	#toilets	Description	Status	Listing_Date	Property_type	Agent_SSN	Offer_Type
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User:

<u>User_SSN</u>	email	password	first_name	Middle_Name	Last_Name
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User Phones:

<u>User_SSN</u>	<u>Phone</u>
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Agent:

<u>Agent_SSN</u>	email	Password	First_Name	Middle_Name	Last_Name
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Agent_Phone:

<u>Agent_SSN</u>	<u>Phone</u>
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Search:

<u>User_SSN</u>	<u>Search_Query</u>
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Report_Data:

<u>RID</u>	Date	Category
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Report:

<u>User_SSN</u>	<u>Property_Reference</u>	<u>RID</u>	Category	Comment
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Favors:

<u>User_SSN</u>	<u>Property_Reference</u>
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DESCRIPTION:

What is Property Finder:

Property finder is the Leading Real Estate Marketplace. It allows the client to Search Over 100K Listings of properties for Sale And Rent. It allows agents to offer available properties and enables the users to search and find their ideal property that meets their needs. Users can also report issues that belong to specific properties and also favor a property that matches their needs.

ENTITIES:

For the Property Finder System, there are five major entities: Agent, Search, Property, User, and Report_Data.

1) PROPERTY

The PROPERTY Entity table contains the following data items (attributes):

- A Unique Reference Number
- Property's Price
- Property's Description
- Property's Location
- Property Type (villa, apartment... etc)
- Property's Status
- Property's Area
- Property's Size as a composite attribute that includes (no. of rooms and toilets)
- Property's Listing_Date
- Property's Listed_For as Derived Attribute means: from when was this property listed

The primary key of the property entity is the Reference Number

2) REPORT_DATA

The REPORT_DATA Entity table contains the following attributes:

- A Unique Report ID Number
- Report's Date
- Report's Category

The primary key of the REPORT_DATA entity is the Report ID Number

3) USER

The USER Entity table contains the following attributes:

- A Unique User SSN Number
- User's Email
- User's Password
- User's Name as a composite attribute that includes (First name, Middle name, and Last name)
- User's Phone number as MULTI-Valued attribute

The primary key of the USER entity is the User SSN Number

4) AGENT

The AGENT Entity table contains the following attributes:

- A Unique Agent SSN Number
- Agent's Email
- Agent's Password
- Agent's Name as a composite attribute that includes (First name, Middle name, and Last name)
- Agent's Phone number as MULTI-Valued attribute

The primary key of the AGENT entity is the Agent SSN Number

5) SEARCH

SEARCH is a weak entity. It has only one attribute: Search Query; which is also a partial key.

It has total participation constraint (existence dependency) in SEARCHES relation as it's an identifying relationship with its owner identity (the User)

RELATIONSHIPS:

For the Property Finder System, there are four relationships between the entities. The relationships are:

1. Report_Data that is REPORTED by the User on a Property
2. User FAVORS a Property
3. Agent OFFER a Property
4. User SEARCHES using Search

1) REPORTS

This is a ternary relationship as it's an association among three entities: USER, REPORT_DATA, and PROPERTY.

2) FAVORS

- Relates the entities: Property and User
- The relationship is M : N (many properties to many users) as:
 - Many Properties Can be FAVOR by one User
 - Many Users Can FAVOR one Property
- Related by the key attributes User's SSN and Property's Reference

3) OFFER

- Relates the entities: Property and Agent
- The relationship is 1 : M (one agent to many properties) as:
 - Each property can be OFFERED by One Agent
 - Each Agent Can OFFER Many Properties
- It has Offer's type "OType" attribute (for rent/for sale)
- Property Entity has a Full Participation with OFFER Relation as:
 - All the Properties must be offered by the agent
- Related by the key attributes Agent's SSN and Property's Reference

4) SEARCHES

- Relates the entities: Search and User
- The relationship is M : 1 (many searches by one user) as:
 - One User Can SEARCH many Searches
 - One Search Can be SEARCHED by one User
- It's the identifying relationship with the weak entity SEARCH and its owner identity (double lined)
- Search Entity has a FULL Participation with SEARCHES Relation as:
 - All the Searches must be searched by a User
 - It's the identifying relationship of the Search entity with its owner identity (the User Entity)
- Related by the key attributes User's SSN and the Partial key Search Query.

ASSUMPTIONS:

- No multiple users could have the same SSN even if they are from different countries
- The user can report multiple times daily on the same property and we can differentiate them with the Report ID (RID)