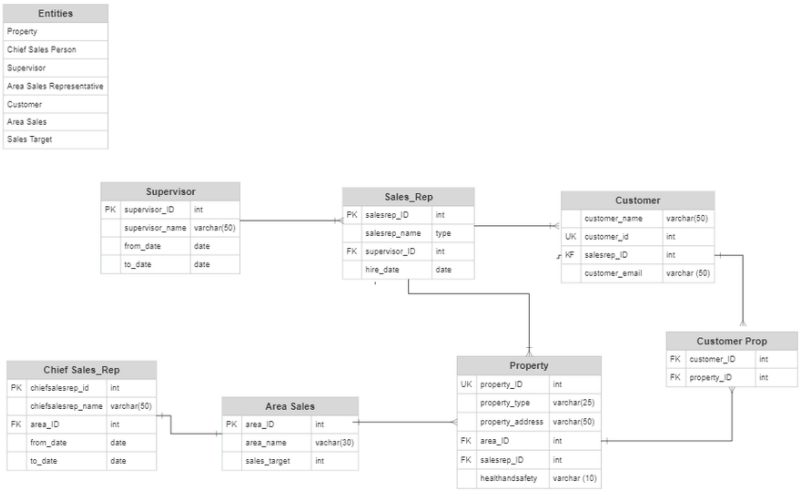
Assessment- My Homes Real Estate Company

Part 1

(A) Using a database design (relational model)/Normalization approach of your choice, produce a Conceptual, Logical and Physical design/models for the database to support the information system, which is needed at the MyHomes.



- I carefully read the brief, and identified the information needed to answer all the questions, but also complete the task.

B) Based on your Physical design from Part 1 (A) and the information available in the scenario, produce an SQL script that create appropriate tables

```
MariaDB [myhomes1]> show tables;
+--------------------+
| Tables_in_myhomes1 |
+--------------------+
| area_sales         |
| chiefsales_rep     |
| customer           |
| customer_prop      |
| property           |
| sales_rep          |
| supervisor         |
+--------------------+
7 rows in set (0.001 sec)
```

- I created a database called myhomes1.
- Based on the above ER Diagram, I created tables for all the entities.

Part 2

(B) Answer the following queries (retrievals) using SQL

1) Display names of representatives, details of the properties they represent, and names of their supervisors.

```
SELECT
    sr.salesrep_name AS Representative_Name,
    p.property_id AS Property_ID,
    p.property_type AS Property_Type,
    p.property_address AS Property_Address,
    sup.supervisor_name AS Supervisor_Name
FROM
    Sales_rep sr
INNER JOIN
    Property p ON sr.salesrep_id = p.salesrep_id
INNER JOIN
    Supervisor sup ON sr.supervisor_id = sup.supervisor_id;
```

- I identified all the entities that would be needed to complete this query.
- Then I used SELECT to identify all the columns I wanted to present.
- I used inner join to match the row from sales_rep, property and supervisor tabled based on sales_rep and supervisor_id.
- There are multiple entries because many sales reps, look after multiple properties.

Representative_Name	Property_ID	Property_Type	Property_Address	Supervisor_Name
Emma Johnson	1	House	123 Main St	John Smith
Emma Johnson	11	House	789 Pine Rd	John Smith
Emma Johnson	21	Apartment	890 Oak Ave	John Smith
Liam Smith	2	Apartment	456 Elm St	John Smith
Liam Smith	12	Bungalow	567 Cedar Ln	John Smith
Liam Smith	22	House	345 Maple Dr	John Smith
Olivia Davis	3	House	789 Oak Ave	Emily Johnson
Olivia Davis	13	House	890 Birch Rd	Emily Johnson
Olivia Davis	23	Apartment	234 Pine Rd	Emily Johnson
Noah Brown	4	Bungalow	567 Maple Dr	Emily Johnson
Noah Brown	14	Apartment	345 Elm St	Emily Johnson
Noah Brown	24	House	678 Cedar Ln	Emily Johnson
Sophia Williams	5	Apartment	890 Pine Rd	Michael Brown
Sophia Williams	15	House	234 Oak Ave	Michael Brown
Sophia Williams	25	Bungalow	123 Birch Rd	Michael Brown
Ethan Garcia	6	House	345 Cedar Ln	Michael Brown
Ethan Garcia	16	Bungalow	678 Maple Dr	Michael Brown
Ava Jones	7	Bungalow	234 Birch Rd	Olivia Davis
Ava Jones	17	Apartment	123 Pine Rd	Olivia Davis
William Martinez	8	Apartment	678 Elm St	Olivia Davis
William Martinez	18	House	456 Cedar Ln	Olivia Davis
Isabella Miller	9	House	123 Oak Ave	James Garcia
Isabella Miller	19	Bungalow	789 Birch Rd	James Garcia
James Smith	10	Apartment	456 Maple Dr	James Garcia
James Smith	20	House	567 Elm St	James Garcia

25 rows in set (0.001 sec)

2) Display details of customers together with details of their areas and names of the managers of their areas.

```
SELECT
  customer.customer_name,
  customer.customer_ID,
  customer.salesrep_ID,
  customer.customer_email,
  property.area_id,
  area_sales.area_name,
  chiefsales_rep.chiefsalesrep_name
FROM customer
INNER JOIN customer_prop ON customer.customer_ID = customer_prop.customer_ID
INNER JOIN property ON customer_prop.property_ID = property.property_id
INNER JOIN area_sales ON property.area_id = area_sales.area_id
INNER JOIN chiefsales_rep ON area_sales.area_id = chiefsales_rep.area_id;
```

- I identified all the entities that would be needed to complete this query.
- Then I used SELECT to identify all the columns I wanted to present.
- I used inner join to connect the data for customers, their properties, the areas where the properties are located, and the chief sales representatives managing those areas.

customer_name	customer_ID	salesrep_ID	customer_email	area_id	area_name	chiefsalesrep_name
James Davis	10	10	james@example.com	101	Kensington	Michael Johnson
Olivia Smith	3	3	olivia@example.com	101	Kensington	Michael Johnson
Ethan Davis	14	4	ethan@example.com	101	Kensington	Michael Johnson
Olivia Martinez	15	5	olivia@example.com	101	Kensington	Michael Johnson
Emily Davis	1	1	emily@example.com	102	Brixton	Sophia Williams
Noah Smith	12	2	noah@example.com	102	Brixton	Sophia Williams
Sophia Johnson	13	3	sophia@example.com	102	Brixton	Sophia Williams
Ethan Jones	6	6	ethan@example.com	102	Brixton	Sophia Williams
Ava Garcia	7	7	ava@example.com	102	Brixton	Sophia Williams
Isabella Williams	9	9	isabella@example.com	102	Brixton	Sophia Williams
Emma Martinez	11	1	emma@example.com	103	Shoreditch	William Brown
Noah Martinez	4	4	noah@example.com	103	Shoreditch	William Brown
Sophia Brown	5	5	sophia@example.com	103	Shoreditch	William Brown
William Miller	8	8	william@example.com	103	Shoreditch	William Brown
Liam Johnson	2	2	liam@example.com	104	Notting Hill	Olivia Davis

15 rows in set (0.001 sec)