In a lawyer appointment management system, a client **can** register by providing a unique username, first name, last name, date of birth, contact number, email, and password. Each address consists of a city name, street number, and house number. A lawyer can also register using the same credentials, with the addition of a bar registration number and his/her specialization. Each client and lawyer can **do** log in using their valid username and password. After Log In each client and lawyer Identified with unique ID and other entities.

A client can **book** multiple appointments, and each appointment stores the unique appointment ID, date, time, status, and an optional description, while a lawyer **attends** appointments from many clients. One lawyer can handle multiple appointments and cases, but each appointment is associated with exactly one lawyer and one client.

A legal case is identified by a case ID and contains case type, case description, and case status (either Ongoing or Closed). Each case is **managed by** a client and **handled by** a lawyer, and every case must **belong to** exactly one court. Courts are identified by a court ID, and the system also stores the court type (Supreme, High, or District), court location, division, and district information.

Payments are managed carefully in the system and are recorded with payment ID, amount, date, method (Cash, Mobile Banking, or Bank Transfer), and status (Paid or Unpaid). Each payment must be **linked** to an appointment. Every payment is always **initiated by** a client.

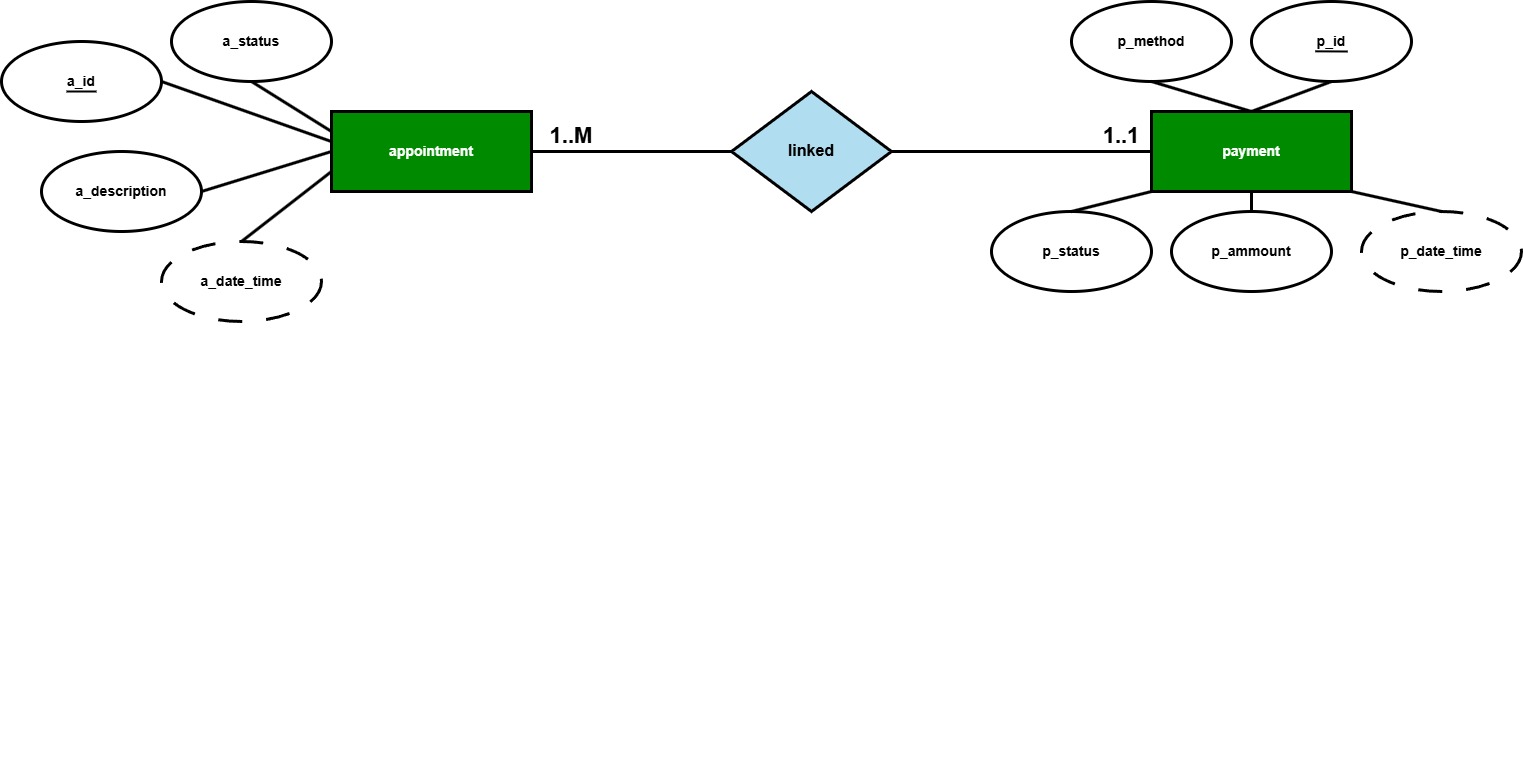
The review system allows clients to give feedback to lawyers. A review is uniquely identified by an ID and includes the review date, rating (between 1 and 5), and optional comments. A client can give only one review per appointment, preventing duplicate feedback. Reviews are **associated with** an appointment where lawyers get average ratings updated.

ER DIAGRAM

A diagram of a company structure

AI-generated content may be incorrect.

Normalization:



**linked:**  
**unf:**  
app\_id, app\_status, app\_description, app\_date\_time, p\_id, p\_method, p\_status, p\_ammount, p\_date\_time

**1nf:** no multivalued attribute. (same as unf)  
app\_id, app\_status, app\_description, app\_date\_time, p\_id, p\_method, p\_status, p\_ammount, p\_date\_time

**2nf:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. p\_id, p\_method, p\_status, p\_ammount, p\_date\_time

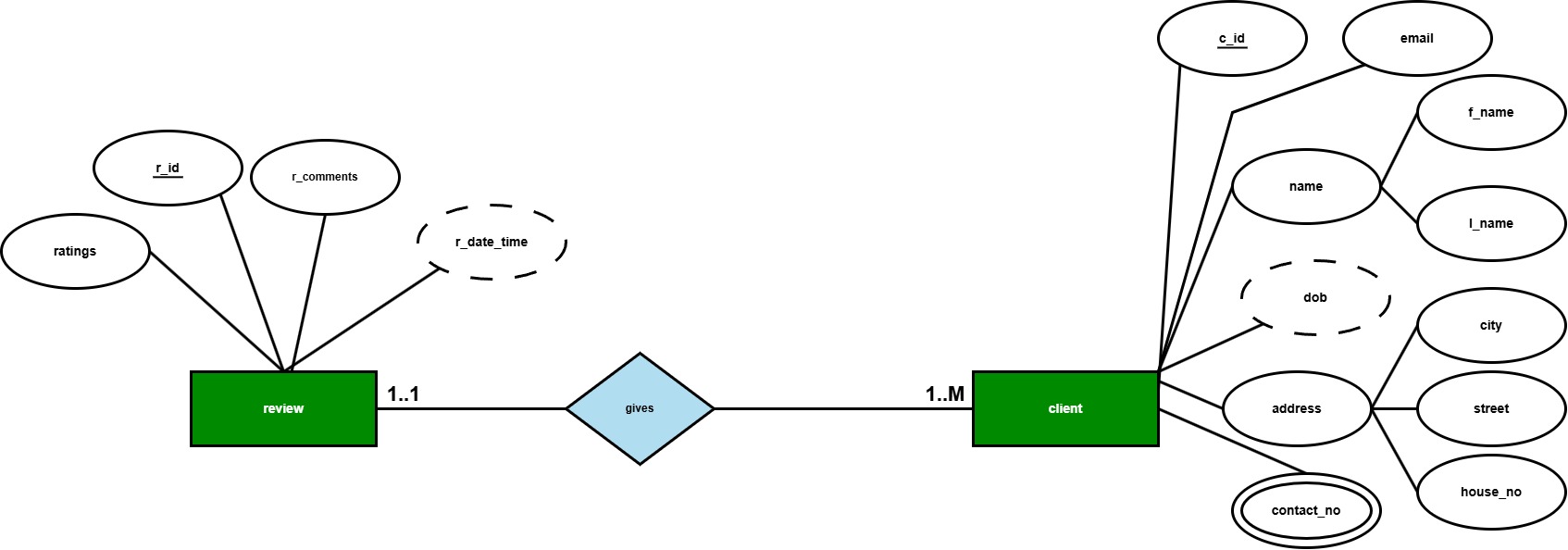
**3nf:**

There is no transitive attribute. Relation is already in 3nf.

1. app\_id, app\_status, app\_description, app\_date\_time
2. p\_id, p\_method, p\_status, p\_ammount, p\_date\_time

**Table creation:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. p\_id, p\_method, p\_status, p\_ammount, p\_date\_time, **app\_id**



**gives:**

**unf:**  
r\_id, r\_comment, ratings, r\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf:** contact\_no is a multivalued attribute.  
r\_id, r\_comment, ratings, r\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

1. r\_id, r\_comment, ratings, r\_date\_time
2. c\_id, email, contact\_no, f\_name, l\_name, city, street, house\_no, dob

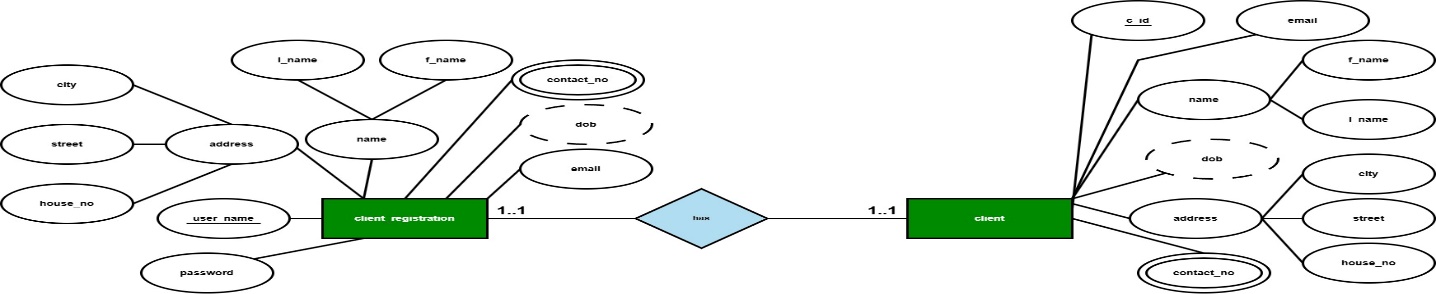
**3nf:**

Name and Address are Transitive attribute.

1. r\_id, r\_comment, ratings, r\_date\_time
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no

**Table creation:**

1. r\_id, r\_comment, ratings, r\_date\_time, **name\_id**, **a\_id**, **c\_id**
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no



**has:**

**unf:**

user\_name, email, password, dob, contact\_no, f\_name, l\_name, city, street, house\_no, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf:** contact\_no is a multivalued attribute.

user\_name, email, password, dob, contact\_no, f\_name, l\_name, city, street, house\_no, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

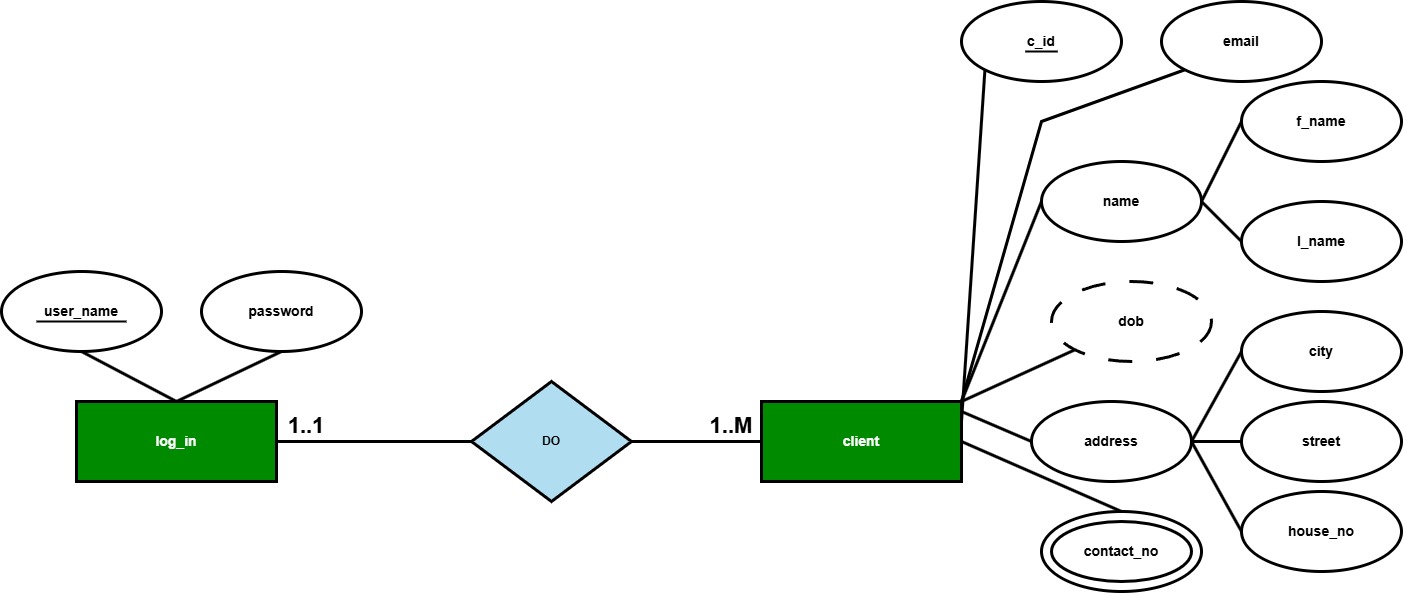
1. user\_name, email, password, dob, contact\_no, f\_name, l\_name, city, street, house\_no
2. c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**3nf:**Name and Address are Transitive attribute.

1. user\_name, email, password, dob, contact\_no
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. c\_id, email, contact\_no, dob

**Table creation:**

1. user\_name, email, password, dob, contact\_no, **name\_id, a\_id, c\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. c\_id, email, contact\_no, dob



**do**

unf:

user\_name, password, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf:** contact\_no is a multivalued attribute.

user\_name, password, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

1. user\_name, password
2. c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

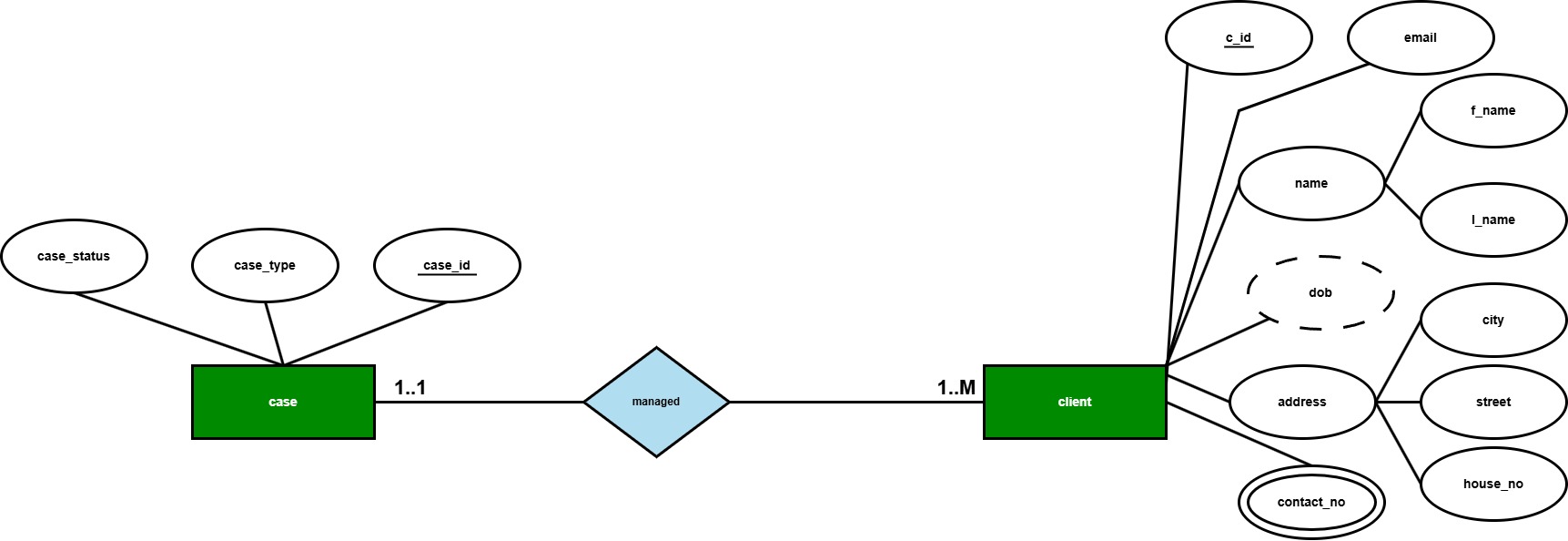
**3nf:**

Name and Address are Transitive attribute.

1. user\_name, password
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no

**Table creation:**

1. user\_name, password, **c\_id, name\_id, a\_id**
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no



**managed:**

**unf:**

case\_id, case\_status, case\_type, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf:** contact\_no is a multivalued attribute.

case\_id, case\_status, case\_type, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

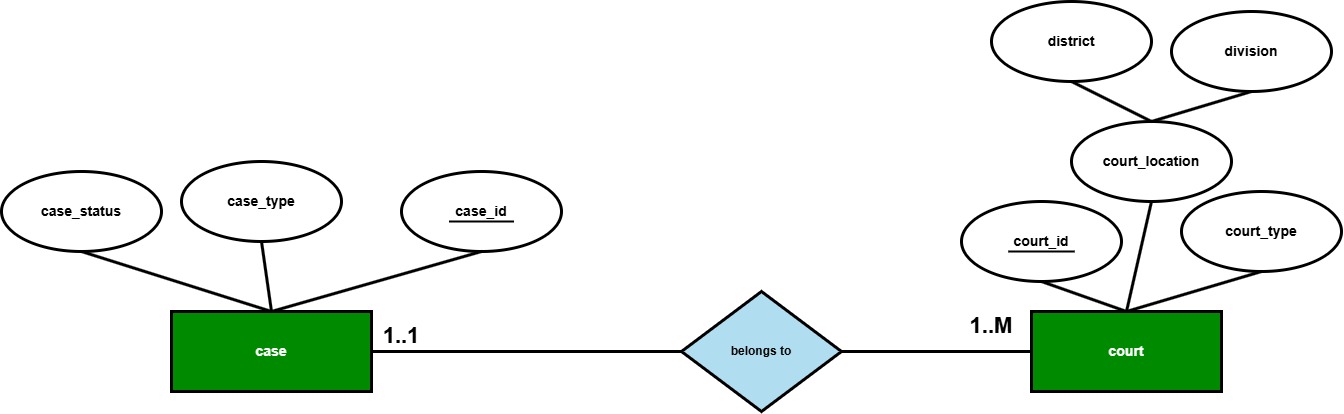
1. case\_id, case\_status, case\_type
2. c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**3nf:** Name and Address are Transitive attribute

1. case\_id, case\_status, case\_type
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no

**Table creation:**

1. case\_id, case\_status, case\_type, , **c\_id, name\_id, a\_id**
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no



**belongs to:**

**unf:**

case\_id, case\_status, case\_type, court\_id, court\_type, district, division

**1nf:** no multivalued attribute. (same as unf)

case\_id, case\_status, case\_type, court\_id, court\_type, district, division

**2nf:**

1. case\_id, case\_status, case\_type
2. court\_id, court\_type, district, division

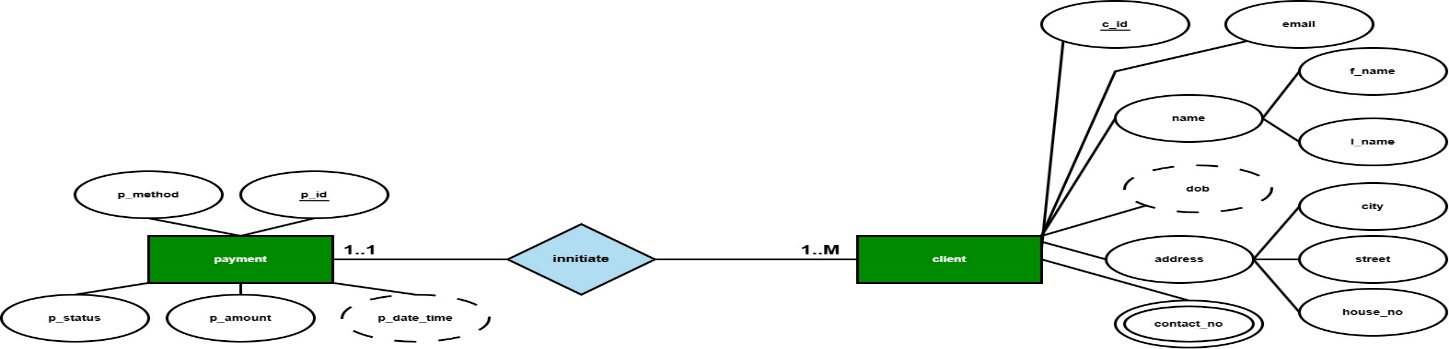
**3nf:**

Court\_Location is a Transitive attribute

1. case\_id, case\_status, case\_type
2. court\_id, court\_type
3. loc\_id, district, division

**Table creation:**

1. case\_id, case\_status, case\_type, **court\_id, loc\_id**
2. court\_id, court\_type, case\_id
3. loc\_id, district, division



**initiate:**

**unf:**

p\_id, p\_method, p\_status, p\_amount, p\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf**: contact\_no is a multivalued attribute.

p\_id, p\_method, p\_status, p\_amount, p\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

1. p\_id, p\_method, p\_status, p\_amount, p\_date\_time
2. c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

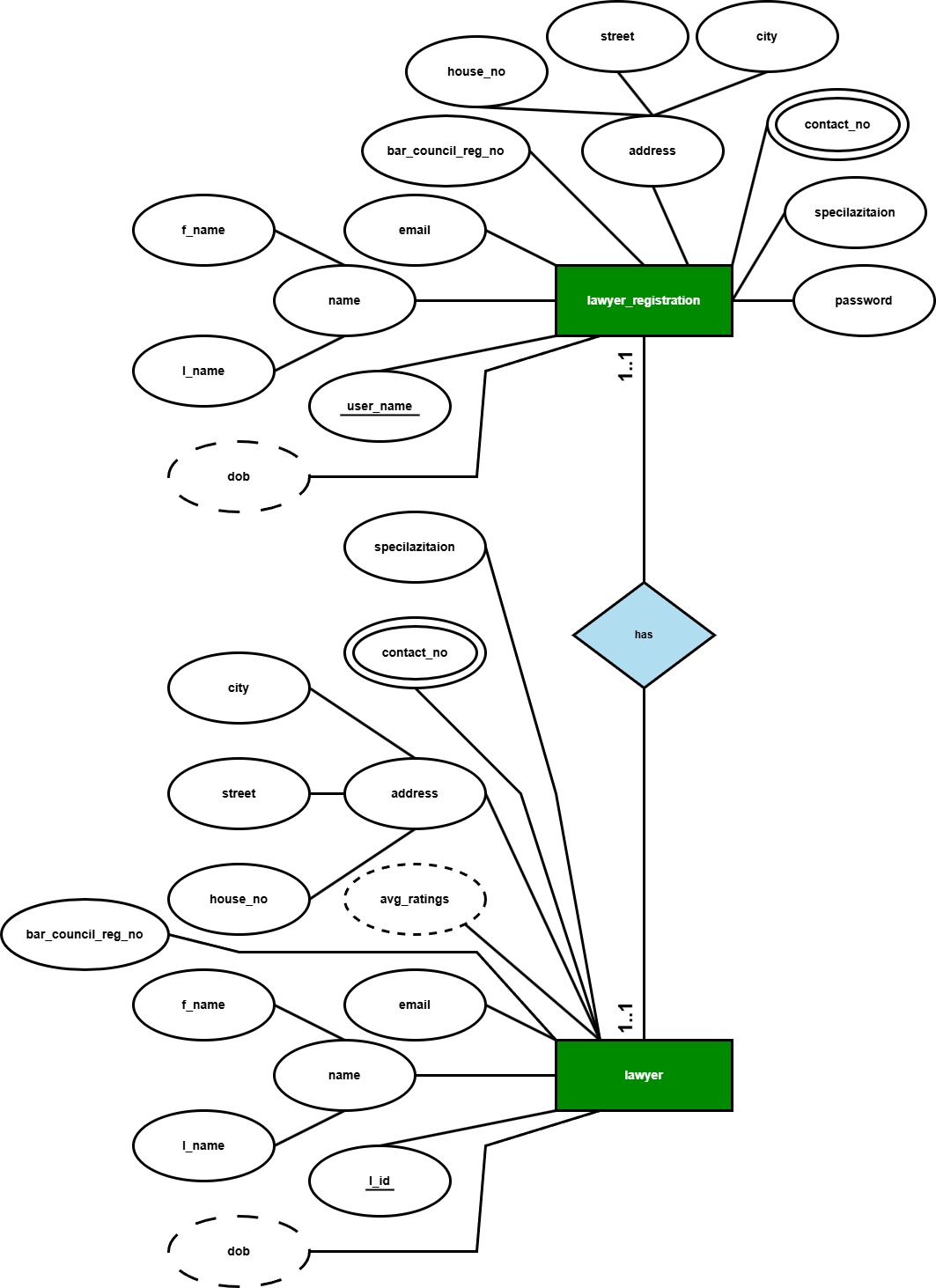
**3nf:**

Name and Address are Transitive attribute

1. p\_id, p\_method, p\_status, p\_amount, p\_date\_time
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no

**Table creation:**

1. p\_id, p\_method, p\_status, p\_amount, p\_date\_time, **c\_id, name\_id, a\_id**
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no



**has:**

**unf:**

l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no, user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**1nf**: contact\_no is a multivalued attribute.

l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no, user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**2nf:**

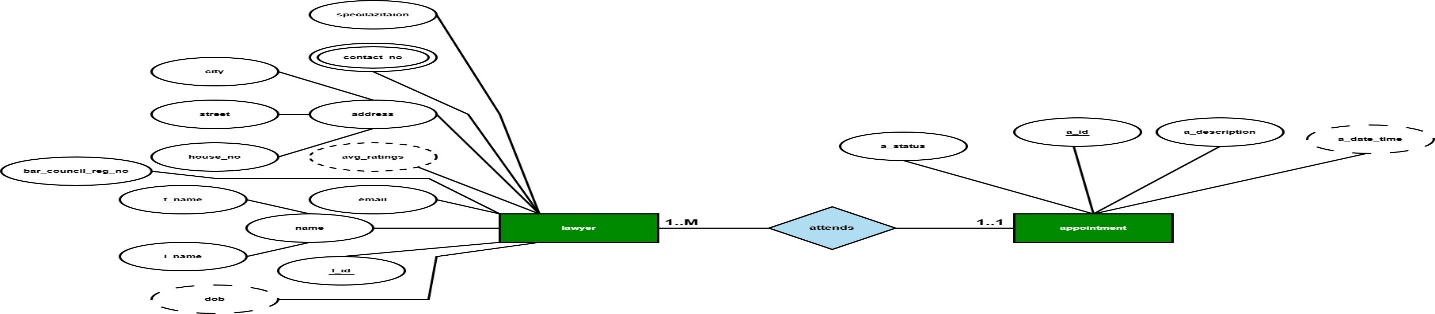
1. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no
2. user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**3nf:** Name and Address are Transitive attribute

1. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob

**Table creation:**

1. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, **name\_id, a\_id, user\_name**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob



**attends:**

**unf:** app\_id, app\_status, app\_description, app\_date\_time, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**1nf:** contact\_no is a multivalued attribute.

app\_id, app\_status, app\_description, app\_date\_time, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**2nf:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

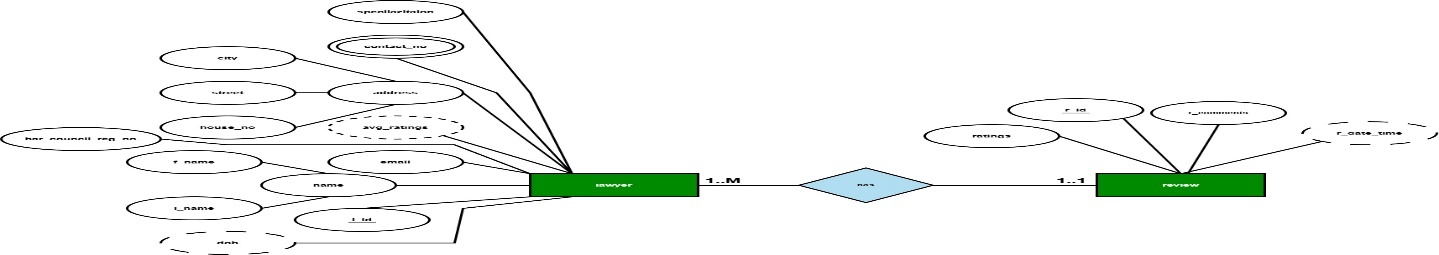
**3nf:**

Name and Address are Transitive attribute

1. app\_id, app\_status, app\_description, app\_date\_time
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob

**Table creation:**

1. app\_id, app\_status, app\_description, app\_date\_time, **name\_id, a\_id, l\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob



**has:**

**unf:** r\_id, ratings, r\_comments, r\_date\_time, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**1nf:** contact\_no is a multivalued attribute.

r\_id, ratings, r\_comments, r\_date\_time, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**2nf:**

1. r\_id, ratings, r\_comments, r\_date\_time
2. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

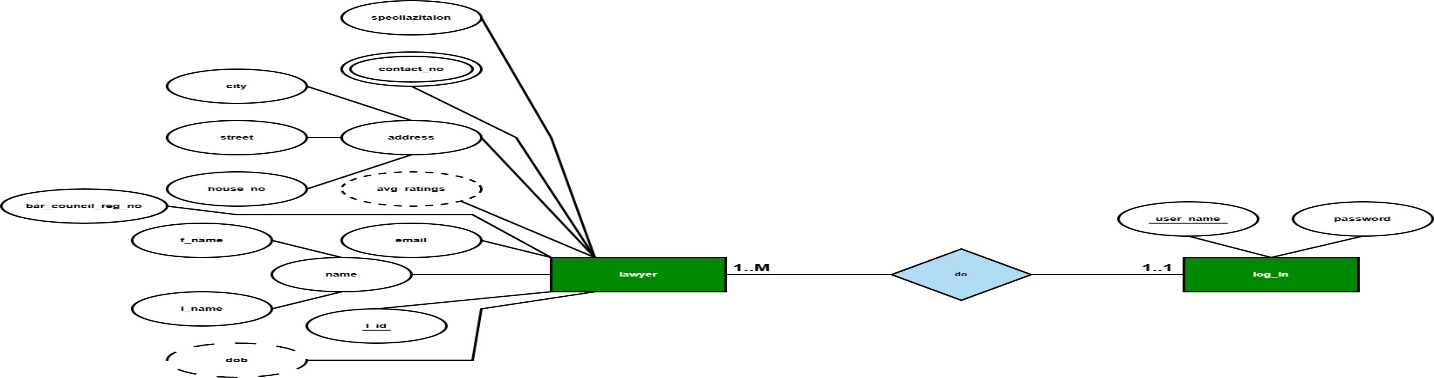
**3nf:**

Name and Address are Transitive attribute

1. r\_id, ratings, r\_comments, r\_date\_time
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob

**Table creation:**

1. r\_id, ratings, r\_comments, r\_date\_time, **name\_id, a\_id, l\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob

****

**do:**

**unf:** user\_name, password, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**1nf:** contact\_no is a multivalued attribute.

user\_name, password, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**2nf:**

1. user\_name, password
2. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

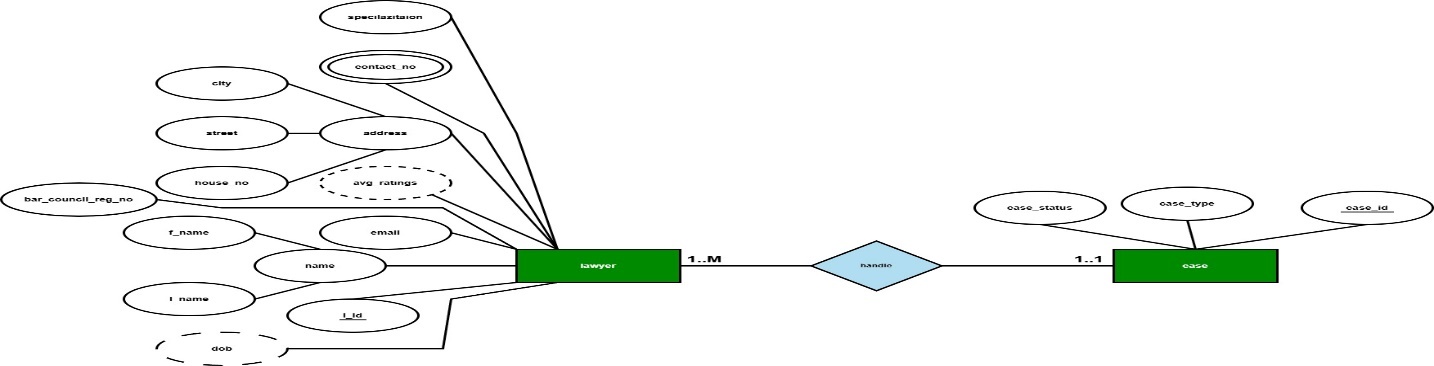
**3nf:**

Name and Address are Transitive attribute

1. user\_name, password
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob

**Table creation:**

1. user\_name, password, **name\_id, a\_id, l\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob



**handle:**

**unf:** case\_id, case\_status, case\_type, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**1nf:** contact\_no is a multivalued attribute.

case\_id, case\_status, case\_type, l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

**2nf:**

1. case\_id, case\_status, case\_type
2. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, f\_name, l\_name, city, street, house\_no

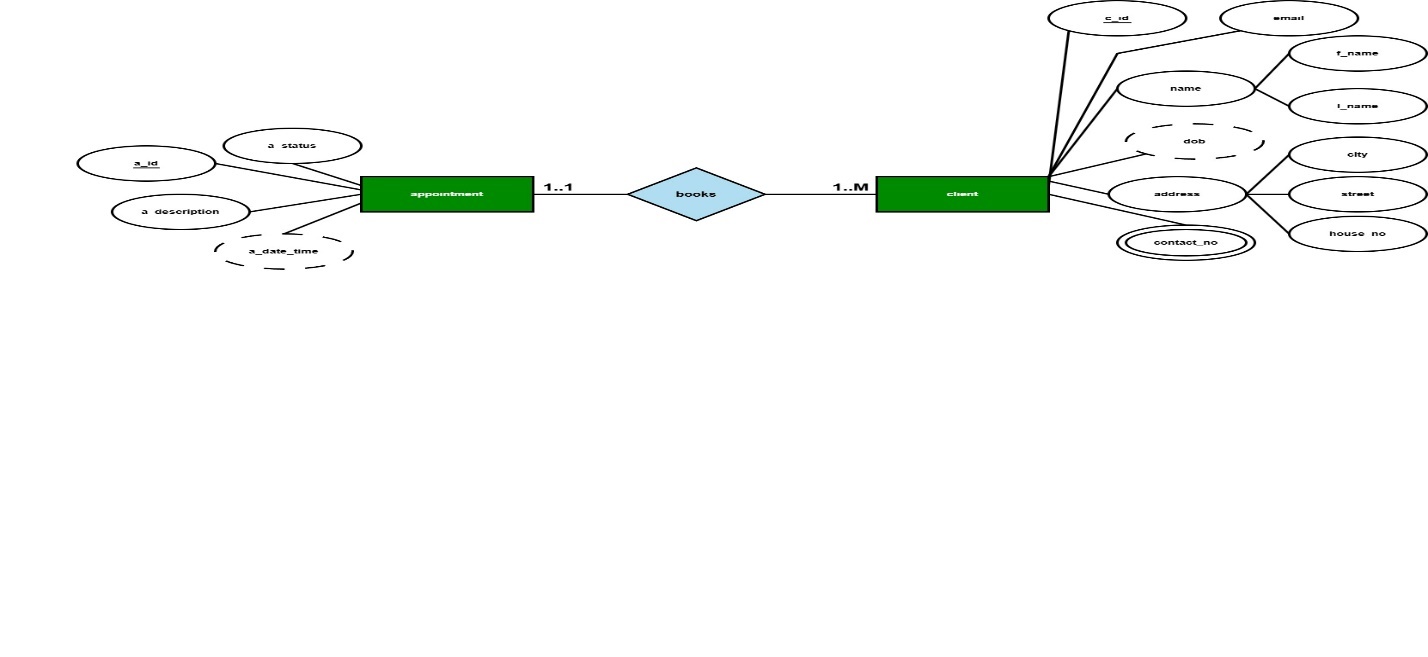
**3nf:**

Name and Address are Transitive attribute

1. case\_id, case\_status, case\_type
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob

**Table creation:**

1. case\_id, case\_status, case\_type, **name\_id, a\_id, l\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob



**books:**

**unf:** app\_id, app\_status, app\_description, app\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**1nf:** contact\_no is a multivalued attribute.

app\_id, app\_status, app\_description, app\_date\_time, c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

**2nf:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. c\_id, email, f\_name, l\_name, city, street, house\_no, contact\_no, dob

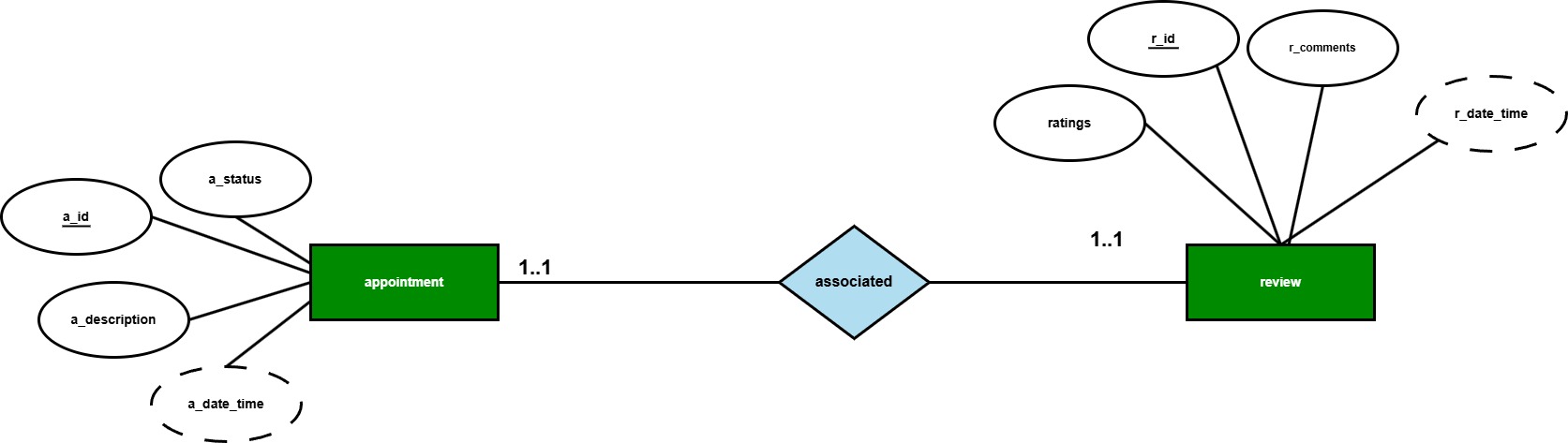
**3nf:**

Name and Address are Transitive attribute

1. app\_id, app\_status, app\_description, app\_date\_time
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. c\_id, email, contact\_no, dob

**Table creation:**

1. app\_id, app\_status, app\_description, app\_date\_time, **name\_id, a\_id, c\_id**
2. name\_id, f\_name, l\_name
3. a\_id, city, street, house\_no
4. c\_id, email, contact\_no, dob

****

**associate:**

**unf:** app\_id, app\_status, app\_description, app\_date\_time, r\_id, ratings, r\_comments, r\_date\_time

**1nf:** no multivalued attribute. (same as unf)

app\_id, app\_status, app\_description, app\_date\_time, r\_id, ratings, r\_comments, r\_date\_time

**2nf:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. r\_id, ratings, r\_comments, r\_date\_time

**3nf:**

There is no transitive attribute. Relation is already in 3nf.

1. app\_id, app\_status, app\_description, app\_date\_time
2. r\_id, ratings, r\_comments, r\_date\_time

**Table creation:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. r\_id, ratings, r\_comments, r\_date\_time, **app\_id**

**Temporary Tables:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. p\_id, p\_method, p\_status, p\_ammount, p\_date\_time, **app\_id**
3. r\_id, r\_comment, ratings, r\_date\_time, **name\_id**, **a\_id**, **c\_id**
4. c\_id, email, contact\_no, dob
5. name\_id, f\_name, l\_name
6. a\_id, city, street, house\_no
7. user\_name, email, password, dob, contact\_no, **name\_id, a\_id, c\_id**
8. name\_id, f\_name, l\_name
9. a\_id, city, street, house\_no
10. c\_id, email, contact\_no, dob
11. user\_name, password, **, name\_id, c\_id, a\_id**
12. c\_id, email, contact\_no, dob
13. name\_id, f\_name, l\_name
14. a\_id, city, street, house\_no
15. case\_id, case\_status, case\_type, **name\_id , c\_id, a\_id**
16. c\_id, email, contact\_no, dob
17. name\_id, f\_name, l\_name
18. a\_id, city, street, house\_no
19. case\_id, case\_status, case\_type, **court\_id, loc\_id**
20. court\_id, court\_type, case\_id
21. loc\_id, district, division
22. p\_id, p\_method, p\_status, p\_amount, p\_date\_time, **c\_id, name\_id, a\_id**
23. c\_id, email, contact\_no, dob
24. name\_id, f\_name, l\_name
25. a\_id, city, street, house\_no
26. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, **name\_id, a\_id, user\_name**
27. name\_id, f\_name, l\_name
28. a\_id, city, street, house\_no
29. user\_name, password, email, bar\_council\_reg\_no, specialization, contact\_no, dob
30. app\_id, app\_status, app\_description, app\_date\_time, **name\_id, a\_id, l\_id**
31. name\_id, f\_name, l\_name
32. a\_id, city, street, house\_no
33. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob
34. r\_id, ratings, r\_comments, r\_date\_time, **name\_id, a\_id, l\_id**
35. name\_id, f\_name, l\_name
36. a\_id, city, street, house\_no
37. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob
38. user\_name, password, **name\_id, a\_id, l\_id**
39. name\_id, f\_name, l\_name
40. a\_id, city, street, house\_no
41. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob
42. case\_id, case\_status, case\_type, **name\_id, a\_id, l\_id**
43. name\_id, f\_name, l\_name
44. a\_id, city, street, house\_no
45. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob
46. app\_id, app\_status, app\_description, app\_date\_time, **name\_id, a\_id, c\_id**
47. name\_id, f\_name, l\_name
48. a\_id, city, street, house\_no
49. c\_id, email, contact\_no, dob
50. app\_id, app\_status, app\_description, app\_date\_time
51. r\_id, ratings, r\_comments, r\_date\_time, **app\_id**

**Final Tables:**

1. app\_id, app\_status, app\_description, app\_date\_time
2. c\_id, email, contact\_no, dob
3. name\_id, f\_name, l\_name
4. a\_id, city, street, house\_no
5. user\_name, email, password, dob, contact\_no, **name\_id, a\_id, c\_id**
6. court\_id, court\_type, case\_id
7. loc\_id, district, division
8. p\_id, p\_method, p\_status, p\_amount, p\_date\_time, **c\_id, name\_id, a\_id, app\_id**
9. l\_id, email, bar\_council\_reg\_no, avg\_ratings, specialization, contact\_no, dob, **name\_id, a\_id, user\_name**
10. user\_name, email, password, bar\_council\_reg\_no, specialization, contact\_no, dob
11. r\_id, ratings, r\_comments, r\_date\_time, **name\_id, a\_id, l\_id, c\_id**
12. user\_name, password, **name\_id, a\_id, l\_id, c\_id**
13. case\_id, case\_status, case\_type, **name\_id, a\_id, l\_id, c\_id, court\_id, loc\_id**
14. app\_id, app\_status, app\_description, app\_date\_time, **name\_id, a\_id, c\_id, l\_id**
15. r\_id, ratings, r\_comments, r\_date\_time, **app\_id**