

G4-T15

TOPIC:- LEGAL CASE MANAGEMENT SYSTEM

TEAM MEMBERS

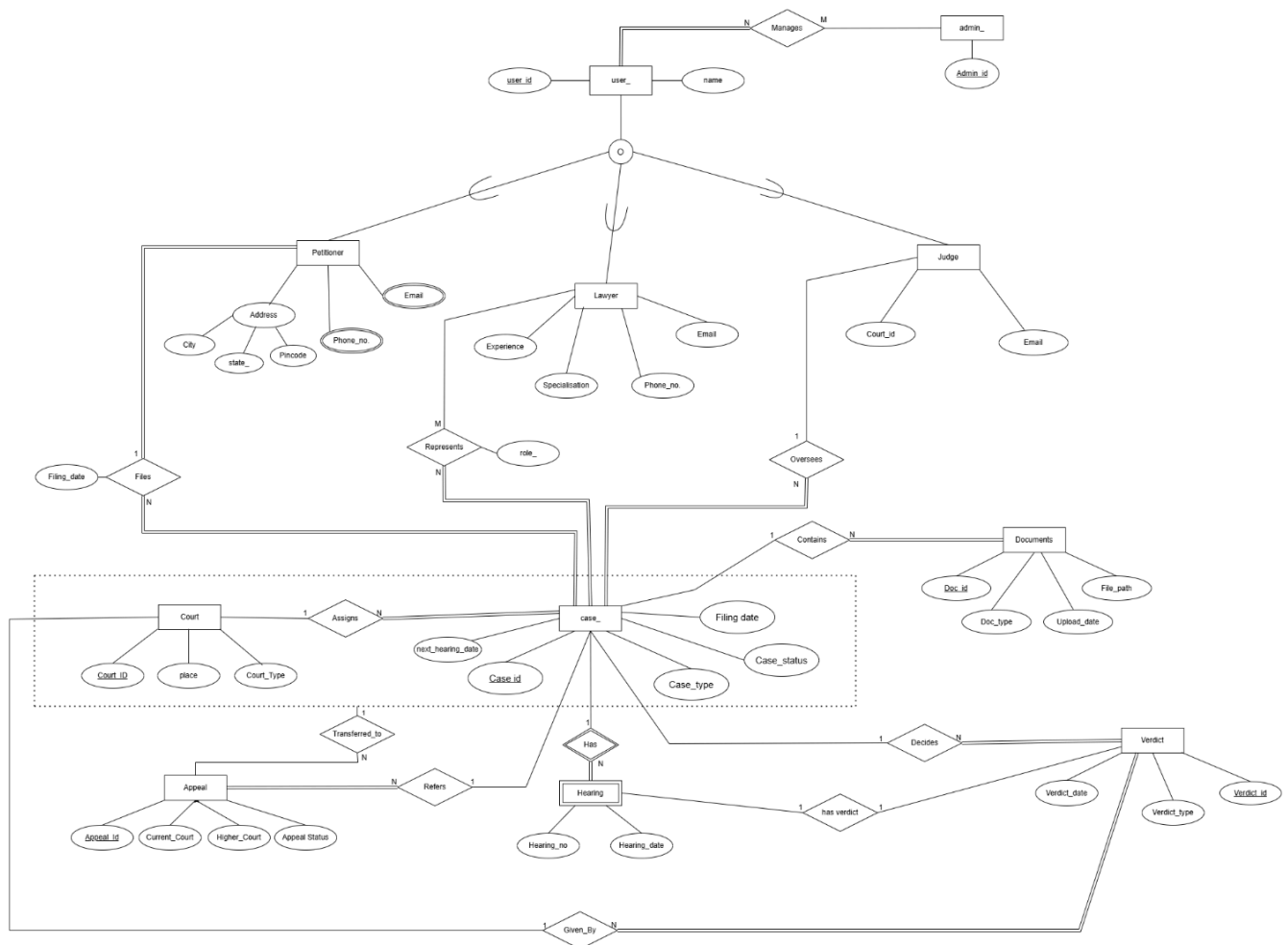
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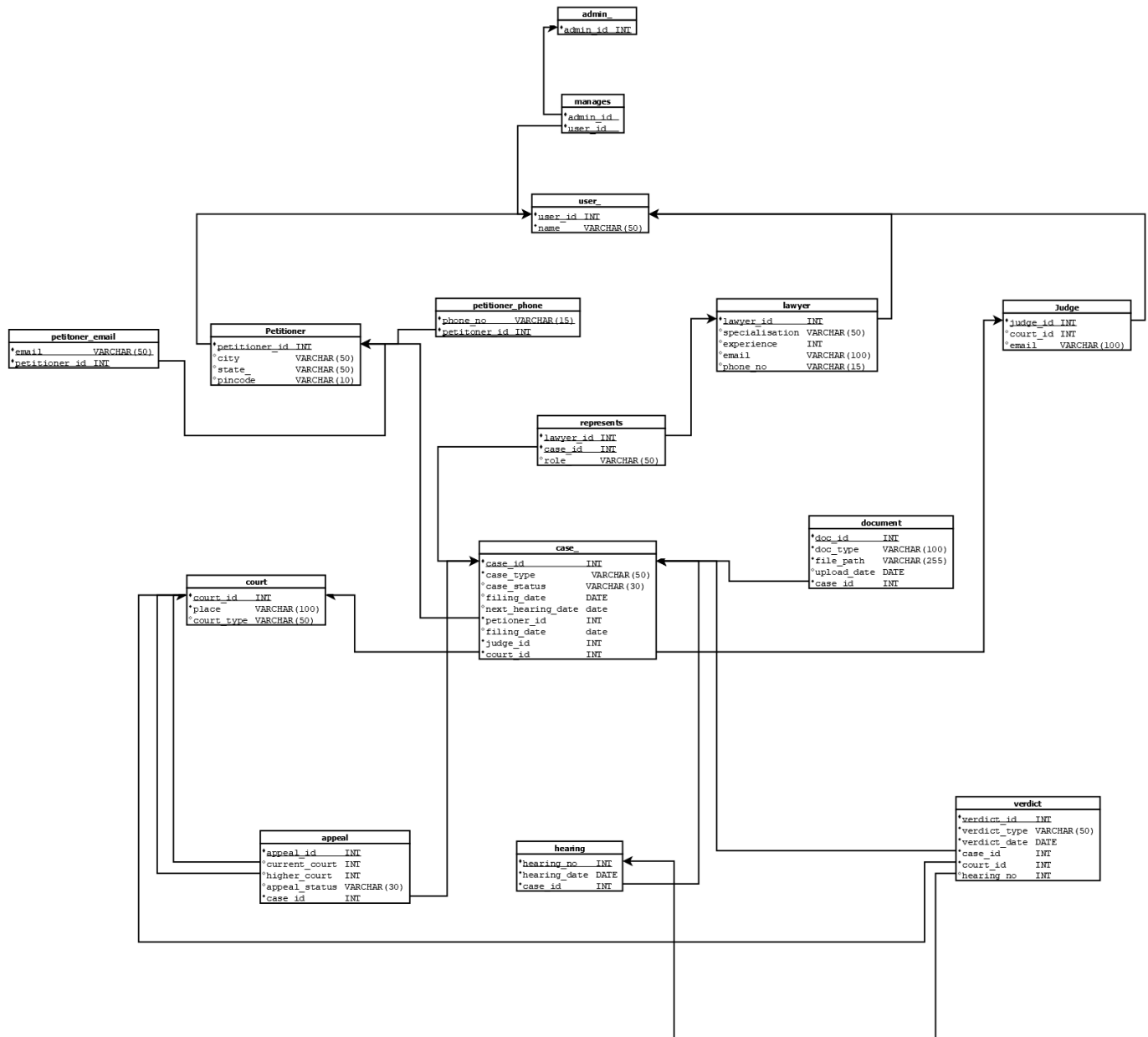
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ER Diagram



Relational Schema



Proof That Relations are in BCNF

→ For an R to be in BCNF, For every FD $A \rightarrow B$ that holds on relation R, A is its super-key.

We will now check this condition for every Relation in Our Relational schema.

1) User

- The only non-trivial functional dependency is:
 $user_id \rightarrow name$
- The left-hand side, **user_id**, is the primary key, and hence a superkey

Therefore, the relation satisfies the BCNF condition.

2) Petitioner

- The only non-trivial functional dependency is:
 $Petitioner_ID \rightarrow \{Name, City, State, Pincode\}$
- The left-hand side, **Petitioner_ID**, is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

3) Court

- The only non-trivial functional dependency is:
 $Court_ID \rightarrow \{Location, Court_Type\}$
- The left-hand side, **Court_ID**, is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

4) Judge

- The only non-trivial functional dependency is:
Judge_id → {**Name, Email, Court_ID**}
- The left-hand side, **Judge_id**, is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

5) Lawyer

- The only non-trivial functional dependency is:
Lawyer_id → {**Name, Specialisation, Experience, Email, Phone_no**}
- The left-hand side, **Lawyer_id**, is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

6) Represents

- The only non-trivial functional dependency is:
{Lawyer_id, Case_id} → **role**
- The left-hand side, **{Lawyer_id, Case_id}**, is the composite primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

7) Case

- The only non-trivial functional dependency is:
Case_id → {**Case_type, Case_status, Filing_date, Next_Hearing_Date, Court_ID, Judge_id**}
- The left-hand side, **Case_id**, is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

8) Hearing

- The only non-trivial functional dependency is:
 $\{\text{Case_id}, \text{Hearing_no}\} \rightarrow \text{Hearing_date}$
- The left-hand side, **$\{\text{Case_id}, \text{Hearing_no}\}$** , is the composite primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

9) Document

- The only non-trivial functional dependency is:
 $\text{Doc_id} \rightarrow \{\text{Doc_type}, \text{File_path}, \text{Upload_date}, \text{Case_id}\}$
- The left-hand side, **Doc_id** , is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.

10) Verdict

- The only non-trivial functional dependency is:
 $\text{Verdict_id} \rightarrow \{\text{Verdict_type}, \text{Verdict_date}, \text{Case_id}, \text{Court_id}, \text{hearing_no}\}$
- The left-hand side, **Verdict_id** , is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition

11) Appeal

- The only non-trivial functional dependency is:
 $\text{Appeal_Id} \rightarrow \{\text{Appeal_Status}, \text{Current_Court}, \text{Higher_Court}, \text{Case_id}\}$
- The left-hand side, **Appeal_Id** , is the primary key, and hence a superkey.

Therefore, the relation satisfies the BCNF condition.