Fire Event Report

UNF

Fire_Event (fire_id, fire_name, fire_date_started, fire_lives_lost, fire_damage (property_id, building_id, building_class, damage_cost, damage_total_destroy, building_insur_coverage))

1NF

Fire_Event (<u>fire_id</u>, fire_name, fire_date_started, fire_lives_lost, fire_damage)

Building_Damage (<u>fire_id, property_id, building_id</u>, building_class, damage_cost, damage_total_destroy, building_insur_coverage)

    Candidate Keys :
        fire_id, property_id, building_id (PK)

    Partial dependency :
        property_id, building_id → building_class, building_insur_coverage

2NF

Fire_Event(<u>fire_id</u>, fire_name, fire_date_started, fire_lives_lost, fire_damage)

Building_Damage(<u>property_id, fire_id, building_id</u>, damage_cost, damage_total_destroy)

Building_Info (<u>property_id</u>, <u>building_id</u>, building_class, building_insur_coverage)

    Transitive dependency :
        - No transitive dependency is found

3NF

Fire_Event(<u>fire_id</u>, fire_name, fire_date_started, fire_lives_lost, fire_damage)

Building_Damage(<u>property_id, fire_id, building_id</u>, damage_cost, damage_total_destroy)

Building_Info (<u>building_id, property_id</u>, building_class, building_insur_coverage)

Full dependency :
- fire_id → fire_name, fire_date_started, fire_lives_lost, fire_damage
- property_id, fire_id, building_id, → damage_cost, damage_total_destroy
- property_id, building_id, → building_class, building_insur_coverage

Assessment Visit

UNF

Assess_Damage(property_id, property_street, property_town, property_postcode, lga_code, lga_name, building_id, Lga_building_value, building_class, fire_id, assessor_id, assessor_gname, assessor_fname, (arrival_date_and_time, departed_date_and_time))

1NF

Assess_Damage(property_id,building_id, fire_id, property_street, property_town, property_postcode, lga_code, lga_name, Lga_building_value, building_class, assessor_id, assessor_gname, assessor_fname)

Candidate Keys :
property_id, building_id, fire_id (PK)
Partial dependency :
• property_id → property_street, property_town, property_postcode
• property_id, building_id → building_class

Visit_datetime (property_id,building_id, fire_id, arrival_date_and_time, departed_date_and_time)

Candidate Keys :
• property_id,building_id, fire_id, date_and_time_arrived (PK)
• property_id,building_id, fire_id, date_and_time_departed

Partial dependency :
No partial dependency is found.

2NF

Assess_Damage(property_id,building_id, fire_id, lga_code, lga_name, assessor_id, assessor_gname, assessor_fname)

>
> Transitive dependency :
> lga_code → lga_name, Lga_building_value
> assessor_id → assessor_gname, assessor_fname

Visit_datetime (property_id,building_id, fire_id, arrival_date_and_time, departed_date_and_time)

>
> Transitive dependency :
> - No transitive dependency is found .

Property (property_id, property_street, property_town, property_postcode)

>
> Transitive dependency :
> - No transitive dependency is found .

Building (property_id,building_id, building_class, lga_code)

>
> Transitive dependency :
> - No transitive dependency is found .

3NF

Assess_Damage(property_id,building_id, fire_id, lga_code, assessor_id)

Visit_datetime (property_id,building_id, fire_id, arrival_date_and_time, departed_date_and_time)

Property (property_id, property_street, property_town, property_postcode)

Building (property_id,building_id, building_class, lga_code)

LGA (lga_code, lga_name, Lga_building_value)

Assessor(assessor_id, assessor_gname, assessor_fname)

>
> Full dependency
> - property_id,building_id, fire_id → lga_code, assessor_id
> - property_id,building_id, fire_id, arrival_date_and_time → departed_date_and_time
> - property_id → property_street, property_town, property_postcode
> - property_id,building_id, → building_class
> - lga_code → lga_name, Lga_building_value
> - assessor_id → assessor_gname, assessor_fname

COLLECTED 3NF RELATIONS :

For Fire Event Report :

1. **Fire_Event**(<u>fire_id</u>, fire_name, fire_date_started, fire_lives_lost, fire_damage)

2. **Building_Damage**(<u>property_id</u>, <u>fire_id</u>, <u>building_id</u>, damage_cost, damage_total_destroy)

3. **Building_Info** (<u>property_id</u>, <u>building_id</u>, building_class, building_insur_coverage)

For Assessment Visit :

4. **Assess_Damage**(<u>property_id</u>,<u>building_id</u>, <u>fire_id</u>, lga_code, assessor_id)

5. **Visit_datetime** (<u>property_id</u>,<u>building_id</u>, <u>fire_id</u>, <u>arrival_date_and_time</u>, departed_date_and_time)

6. **Property** (<u>property_id</u>, property_street, property_town, property_postcode)

7. **Building** (<u>property_id</u>,<u>building_id</u>, lga_code, building_class)

8. **LGA** (<u>lga_code</u>, lga_name,Lga_building_value)

9. **Assessor**(<u>assessor_id</u>, assessor_gname, assessor_fname)

ATTRIBUTE SYNTHESIS:

1. **Fire_Event**(<u>fire_id</u>, fire_name, fire_date_started, fire_lives_lost, fire_damage)

2.&4. **Damage**(<u>property_id</u>, <u>fire_id</u>, <u>building_id</u>, damage_cost, damage_total_destroy, lga_code, assessor_id)

3.& 7. **Building** (<u>property_id</u>,<u>building_id</u>, building_class, building_insur_coverage)

5. **Property** (<u>property_id</u>, property_street, property_town, property_postcode)

6. **Assessor**(<u>assessor_id</u>, assessor_gname, assessor_fname)

8. **LGA** (<u>lga_code</u>, lga_name, Lga_building_value)

9. **Visit_datetime** (<u>property_id</u>,<u>building_id</u>, <u>fire_id</u>, <u>arrival_date_and_time</u>, departed_date_and_time)