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FDAS Normalization

Fire Event Report

UNF:

FIRE_EVENT (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage, (<u>property_id</u>, <u>building_id</u>, building_class, damage_cost, totally_destroyed, insurance_coverage))

1NF:

FIRE_EVENT (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage)

BUILDING_DAMAGE (<u>fevent_id</u>, <u>property_id</u>, <u>building_id</u>, building_class, damage_cost, totally_destroyed, insurance_coverage)

Partial Dependencies:

<u>property_id</u>, <u>building_id</u> -> building_class

2NF:

FIRE_EVENT (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage)

BUILDING_DAMAGE (<u>fevent_id</u>, <u>property_id</u>, <u>building_id</u>, damage_cost, totally_destroyed, insurance_coverage)

BUILDING (<u>property_id</u>, <u>building_id</u>, building_class)

Transitive Dependencies: NO TRANSITIVE DEPENDENCIES

3NF:

FIRE_EVENT (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage)

BUILDING_DAMAGE (<u>fevent_id</u>, <u>property_id</u>, <u>building_id</u>, damage_cost, totally_destroyed, insurance_coverage)

BUILDING (<u>property_id</u>, <u>building_id</u>, building_class)

Full Dependencies:

<u>fevent_id</u> -> fevent_name, fevent_date, fevent_liveslost, fevent_damage

<u>fevent_id</u>, <u>property_id</u>, <u>building_id</u> -> damage_cost, totally_destroyed, insurance_coverage

<u>property_id</u>, <u>building_id</u> -> building_class

Building Damage Assessment Visits

UNF:

VISIT_REPORT (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode, lga_code, lga_name, <u>building_id</u>, lga_building_value, building_class, <u>fevent_id</u>, assessor_id, given_name, family_name, (date_arrived, date_departed))

1NF:

VISIT_REPORT (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode, lga_code, lga_name, <u>building_id</u>, lga_building_value, building_class, <u>fevent_id</u>, assessor_id, given_name, family_name)

VISIT_DATE (<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, assessor_id, <u>date_arrived</u>, date_departed)

Partial Dependencies:

<u>prop_id</u> -> prop_address_street, prop_address_town, prop_address_postcode

<u>prop_id</u>, <u>building_id</u> -> building_class

2NF:

VISIT_REPORT (<u>prop_id</u>, lga_code, lga_name, <u>building_id</u>, lga_building_value, <u>fevent_id</u>, assessor_id, given_name, family_name)

VISIT_DATE (<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, assessor_id, <u>date_arrived</u>, date_departed)

BUILDING (<u>property_id</u>, <u>building_id</u>, building_class)

PROPERTY (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode)

Transitive Dependencies:

lga_code -> lga_name

assessor_id -> given_name, family_name

3NF:

VISIT_REPORT (<u>prop_id</u>, lga_code, <u>building_id</u>, lga_building_value, <u>fevent_id</u>, assessor_id)

VISIT_DATE (<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, assessor_id, <u>date_arrived</u>, date_departed)

PROPERTY (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode)

BUILDING (<u>property_id</u>, <u>building_id</u>, building_class)

LGA (<u>lga_code</u>, lga_name)

ASSESSOR (<u>assessor_id</u>, given_name, family_name)

Full Dependencies:

<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u> -> lga_code, lga_building_value, assessor_id

<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, <u>date_arrived</u> -> date_departed, assessor_id

<u>prop_id</u> -> prop_address_street, prop_address_town, prop_address_postcode

<u>property_id</u>, <u>building_id</u> -> building_class

<u>lga_code</u> -> lga_name

<u>assessor_id</u> -> given_name, family_name

Collected 3NF Relations

1. **VISIT_REPORT** (<u>prop_id</u>, lga_code, <u>building_id</u>, lga_building_value, <u>fevent_id</u>, assessor_id)
2. **VISIT_DATE** (<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, <u>date_arrived</u>, date_departed, assessor_id)
3. **PROPERTY** (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode)
4. **BUILDING** (<u>property_id</u>, <u>building_id</u>, building_class)
5. **LGA** (<u>lga_code</u>, lga_name)
6. **ASSESSOR** (<u>assessor_id</u>, given_name, family_name)
7. **FIRE_EVENT** (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage)
8. **BUILDING_DAMAGE** (<u>fevent_id</u>, <u>property_id</u>, <u>building_id</u>, damage_cost, totally_destroyed, insurance_coverage)
9. **BUILDING** (<u>property_id</u>, <u>building_id</u>, building_class)

Attribute Synthesis

1 & 8

BUILDING_DAMAGE (<u>prop_id</u>, lga_code, <u>building_id</u>, lga_building_value, <u>fevent_id</u>, assessor_id, damage_cost, totally_destroyed, insurance_coverage)

2

VISIT_DATE (<u>prop_id</u>, <u>fevent_id</u>, <u>building_id</u>, <u>date_arrived</u>, date_departed, assessor_id)

3

PROPERTY (<u>prop_id</u>, prop_address_street, prop_address_town, prop_address_postcode)

4 & 9

BUILDING (<u>property_id</u>, <u>building_id</u>, building_class)

5

LGA (<u>lga_code</u>, lga_name)

6

ASSESSOR (<u>assessor_id</u>, given_name, family_name)

7

FIRE_EVENT (<u>fevent_id</u>, fevent_name, fevent_date, fevent_liveslost, fevent_damage)