

## FDAS Normalization

### Fire Event Report

#### UNF:

FIRE\_EVENT (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage, (property\_id, building\_id, building\_class, damage\_cost, totally\_destroyed, insurance\_coverage))

#### 1NF:

FIRE\_EVENT (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage)

BUILDING\_DAMAGE (fevent\_id, property\_id, building\_id, building\_class, damage\_cost, totally\_destroyed, insurance\_coverage)

Partial Dependencies:

property\_id, building\_id -> building\_class

#### 2NF:

FIRE\_EVENT (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage)

BUILDING\_DAMAGE (fevent\_id, property\_id, building\_id, damage\_cost, totally\_destroyed, insurance\_coverage)

BUILDING (property\_id, building\_id, building\_class)

Transitive Dependencies: NO TRANSITIVE DEPENDENCIES

#### 3NF:

FIRE\_EVENT (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage)

BUILDING\_DAMAGE (fevent\_id, property\_id, building\_id, damage\_cost, totally\_destroyed, insurance\_coverage)

BUILDING (property\_id, building\_id, building\_class)

Full Dependencies:

fevent\_id -> fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage

fevent\_id, property\_id, building\_id -> damage\_cost, totally\_destroyed, insurance\_coverage

property\_id, building\_id -> building\_class

## Building Damage Assessment Visits

### UNF:

VISIT\_REPORT (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode, lga\_code, lga\_name, building\_id, lga\_building\_value, building\_class, fevent\_id, assessor\_id, given\_name, family\_name, (date\_arrived, date\_departed))

### 1NF:

VISIT\_REPORT (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode, lga\_code, lga\_name, building\_id, lga\_building\_value, building\_class, fevent\_id, assessor\_id, given\_name, family\_name)

VISIT\_DATE (prop\_id, fevent\_id, building\_id, date\_arrived, date\_departed)

Partial Dependencies:

prop\_id -> prop\_address\_street, prop\_address\_town, prop\_address\_postcode

prop\_id, building\_id -> building\_class

### 2NF:

VISIT\_REPORT (prop\_id, lga\_code, lga\_name, building\_id, lga\_building\_value, fevent\_id, assessor\_id, given\_name, family\_name)

VISIT\_DATE (prop\_id, fevent\_id, building\_id, date\_arrived, date\_departed)

BUILDING (property\_id, building\_id, building\_class)

PROPERTY (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode)

Transitive Dependencies:

lga\_code -> lga\_name

assessor\_id -> given\_name, family\_name

### 3NF:

VISIT\_REPORT (prop\_id, lga\_code, building\_id, lga\_building\_value, fevent\_id, assessor\_id)

VISIT\_DATE (prop\_id, fevent\_id, building\_id, date\_arrived, date\_departed)

PROPERTY (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode)

BUILDING (property\_id, building\_id, building\_class)

LGA (lga\_code, lga\_name)

ASSESSOR (assessor\_id, given\_name, family\_name)

Full Dependencies:

prop\_id, fevent\_id, building\_id -> lga\_code, lga\_building\_value, assessor\_id

prop\_id, fevent\_id, building\_id, date\_arrived -> date\_departed

prop\_id -> prop\_address\_street, prop\_address\_town, prop\_address\_postcode

property\_id, building\_id -> building\_class

lga\_code -> lga\_name

assessor\_id -> given\_name, family\_name

### Collected 3NF Relations

1. **VISIT\_REPORT** (prop\_id, lga\_code, building\_id, lga\_building\_value, fevent\_id, assessor\_id)
2. **VISIT\_DATE** (prop\_id, fevent\_id, building\_id, date\_arrived, date\_departed)
3. **PROPERTY** (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode)
4. **BUILDING** (property\_id, building\_id, building\_class)
5. **LGA** (lga\_code, lga\_name)
6. **ASSESSOR** (assessor\_id, given\_name, family\_name)
7. **FIRE\_EVENT** (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage)
8. **BUILDING\_DAMAGE** (fevent\_id, property\_id, building\_id, damage\_cost, totally\_destroyed, insurance\_coverage)
9. **BUILDING** (property\_id, building\_id, building\_class)

### Attribute Synthesis

1

**VISIT\_REPORT** (prop\_id, lga\_code, building\_id, lga\_building\_value, fevent\_id, assessor\_id)

2

**VISIT\_DATE** (prop\_id, fevent\_id, building\_id, date\_arrived, date\_departed)

3

**PROPERTY** (prop\_id, prop\_address\_street, prop\_address\_town, prop\_address\_postcode)

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**BUILDING** (property\_id, building\_id, building\_class)

5

**LGA** (lga\_code, lga\_name)

6

**ASSESSOR** (assessor\_id, given\_name, family\_name)

7

**FIRE\_EVENT** (fevent\_id, fevent\_name, fevent\_date, fevent\_liveslost, fevent\_damage)

8

**BUILDING\_DAMAGE** (fevent\_id, property\_id, building\_id, damage\_cost, totally\_destroyed, insurance\_coverage)