Relational Database 101
Address

SOFTWARE GEMS

Country

CountryId
CountryCode
Name
FullName
FederationDate
ExpiredDate

Has

State

StateId
CountryId
StateCode
Name
FullName

Has

County

CountyId
StateId
CountyCode
Name

Has

Town

TownId
CountyId
Name

Has

Suburb

SuburbId
TownId
Name

Has

StreetName

StreetNameId
Name

Is Used In

StreetType

StreetTypeId
Name

Classifies

Street

StreetId
SuburbId
StreetNameId
StreetTypeId

Has

Address

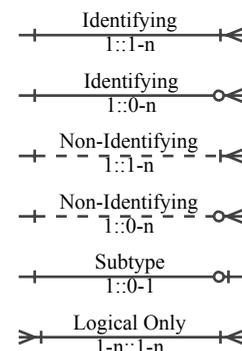| |
|---|
| AddressId |
| **StreetId** |
| Number |
| Unit |
| PostCode |
| IsNumber |
| IsUnit |
| IsPOBox |
| IsPostal |
| IsDelivery |

Business Rule

For those who are new to IDEF1X data models (R Brown 1985, after E F Codd), All Business Rules (predicates) are given in text form:

```
Address is Independent
    Address is uniquely Identified by ( AddressId )
Country is Independent
    Country is uniquely Identified by ( CountryId )
    Country has 0-n States
County is Independent
    County is uniquely Identified by ( CountyId )
    County has 0-n Towns
State is Independent
    State is uniquely Identified by ( StateId )
    State has 0-n Counties
Street is Independent
    Street is uniquely Identified by ( StreetId )
    Street has 0-n Addresses
StreetName is Independent
    StreetName is uniquely Identified by ( StreetNameId )
    StreetName is used in 0-n Street
StreetType is Independent
    StreetType is uniquely Identified by ( StreetTypeId )
    StreetType classifies 0-n Streets
Suburb is Independent
    Suburb is uniquely Identified by ( SuburbId )
    Suburb has 0-n Streets
Town is Independent
    Town is uniquely Identified by ( TownId )
    Town has 0-n Suburbs
```

Erection: Developer

IEEE Relation Notation

Notation	Type
Identifying	1::1-n
Identifying	1::0-n
Non-Identifying	1::1-n
Non-Identifying	1::0-n
Subtype	1::0-1
Logical Only	1-n::1-n

IDEF1X Method & Notation

Item	Definition	Display
Key		
Primary Key:	Unique	Above line
Alternate Key:	Other Unique key	AK
Inversion Entry:	Non-Unique index	IE
Entity		
Independent:	Exists without a parent	Square
Dependent:	Dependent on a parent	Round
Relation		
Identifying:	Parent PK forms child PK	Solid line
Non-Identifying:		Broken line
Parent PK is *always* a migrated FK in child		Bold