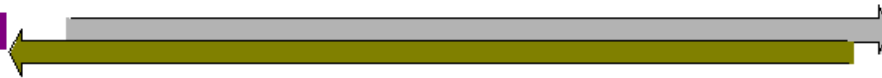


EAR Model



Relational Model

1 Entity Definition This is rather a straightforward step to move the Entity Definition to Relational Model presentation
 If there's any [m:n] relationship in EAR, the breakdown is [1:m and n:1] with an Intermediate Entity. Thus, a corresponding Relation is included in basic model

2 Degree of Relationship represented in ER Diagram

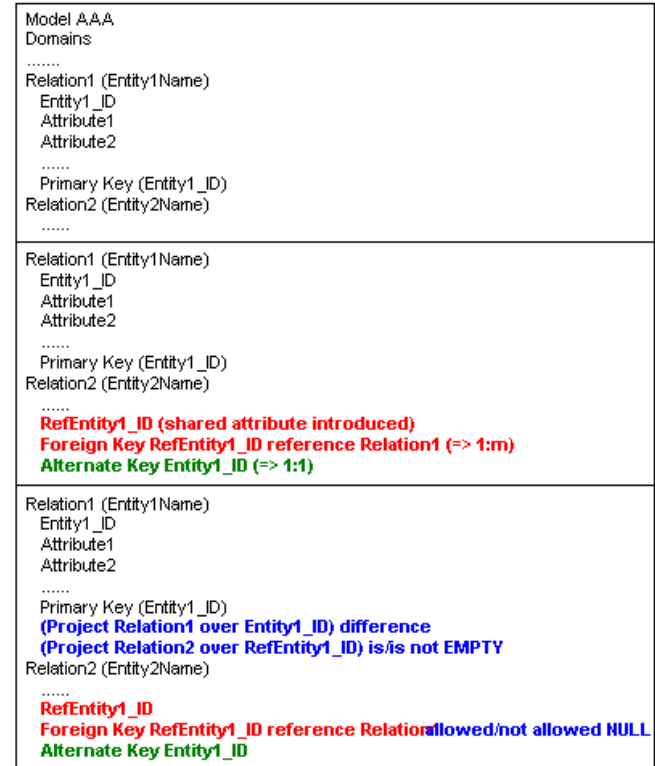
- 1 : m Add shared attributes to the m: side Relation
Define it as Foreign key reference to the 1: side relation
- 1 : 1 If it is 1:1 relationship, also in the work-like m: side Relation, define the attribute as Alternate Key
- m : n Treat it as 2 x "1 : m" relationship

3 Participation Condition of Relationship

- m : side Foreign Key **not allowed null**
- 1 : side Foreign Key **allowed null**
- (Project Relation1 over ReferencedAttribute) DIFFERENCE (Project Relation2 over ReferencingAttribute) is **EMPTY**
- (Project Relation1 over ReferencedAttribute) DIFFERENCE (Project Relation2 over ReferencingAttribute) is **NOT EMPTY**

3 Other Constraints Use Relational Algebra to implement varies Constraints e.g. inclusivity and exclusivity
 :n entity is exclusively; :n entity is inclusively;
 1: entity is inclusively; 1: entity is exclusively

e.g. The following constraint may be defined in the Patient relation, to restrict that any Doctor occurrence related to a Patient occurrence via the IsResponsibleFor relationship must have a Position attribute with the value Consultant:



Constraint (join (select Doctor where Position <> 'Consultant') and Patient where StaffNo = StaffNo) is empty