Tutorial 3: Logical Database Design

Mapping ER Diagrams to the Relational Model

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1. 1:1
   X(K1, A1, **K2**)
   Y(K2, A2)

2. 1:M
   X(K1, A1)
   Y(K2, A2, **K1**)

3. M:N(Binary Relationship)
   X(K1, A1)
   Y(K2, A2)
   R(**K1, K2,** A3)

4. M:N(Ternary Relationship)
   X(K1, A1)
   Y(K2, A2)
   Z(K3, A3)
   R(**K1, K2, K3,** A4)

5. 1:M Strong Entity with Total Participation
   X(K1, A1)
   Y(K2, A2, **K1**)

6. 1:M Weak Entity with Total Participation (assume that A2 is the partial key)
   X(K1, A1)
   Y(**K1**, A2, A3)

7. 1:1 and 1:M Unary Relationship
   X(K1, A1, **RefK1**)

8. M:N Unary Relationship

9. ISA 1
   X(K1, A1)
   Y(**K1**, A2, A3)
   Z(**K1**, A4, A5)

10. ISA 2 (the d means disjoint)
    X(K1, A1)
    Y(**K1**, A2, A3)
    Z(**K1**, A4, A5)