<3주차 실습>

ER-Win(1)

Database Programming

실습 순서

- ER-Win 실행
- Entity 생성
- 식별/비식별 관계
- 다대다 관계
- Subtypes
- Strong Entity Patterns
- 실습 과제

ERwin Data Modeler

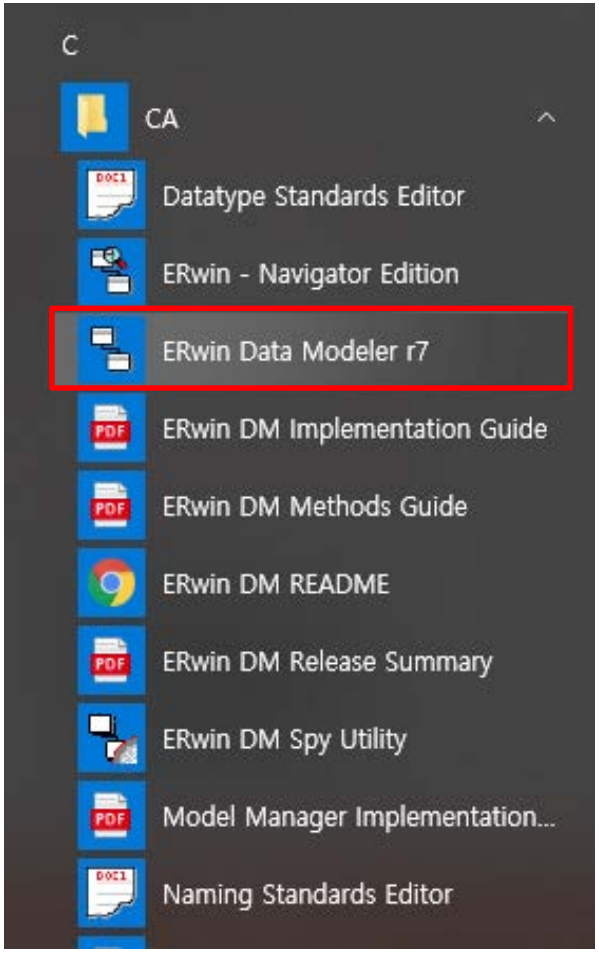
1. 사용하기 쉽고 강력한 기능을 지닌 데이터 모델링 도구로서 데이터베이스를 빠르고 쉽게 설계할 수 있도록 지원

2. GUI 환경의 쉬운 작업으로 인한 개발기간의 단축 데이터베이스 모델링에 대한 개발 방법론이 적용된 프로그래밍 자동화 도구
(CASE Tool : Computer Added Softer Engineering)

3. 유지보수/운영 환경에서 ERD와 DBMS 스키마 정보의 지속적인 관리

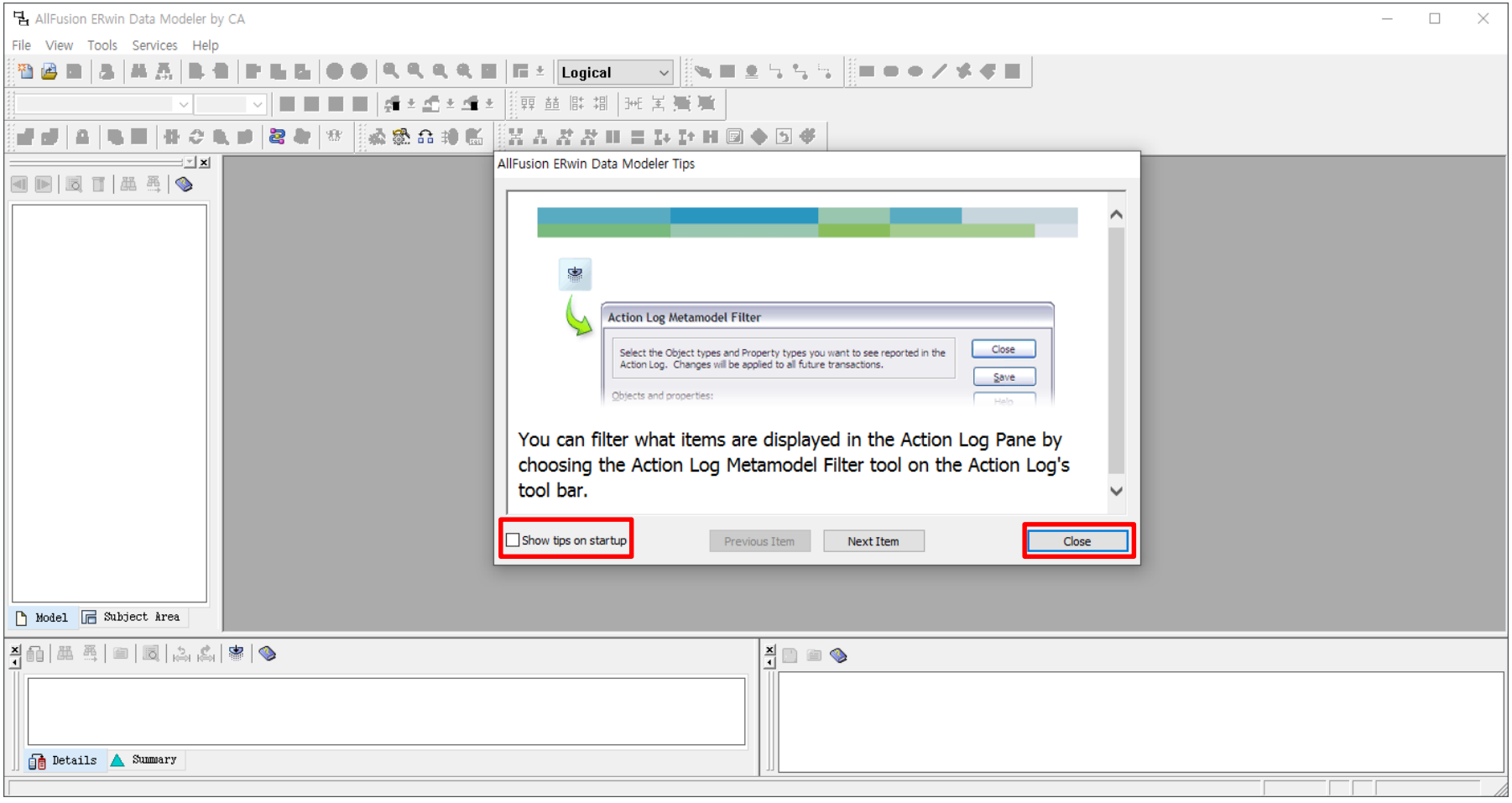
ER-Win 실행 (1/8)

- 시작 → CA → Erwin Data Modeler r7



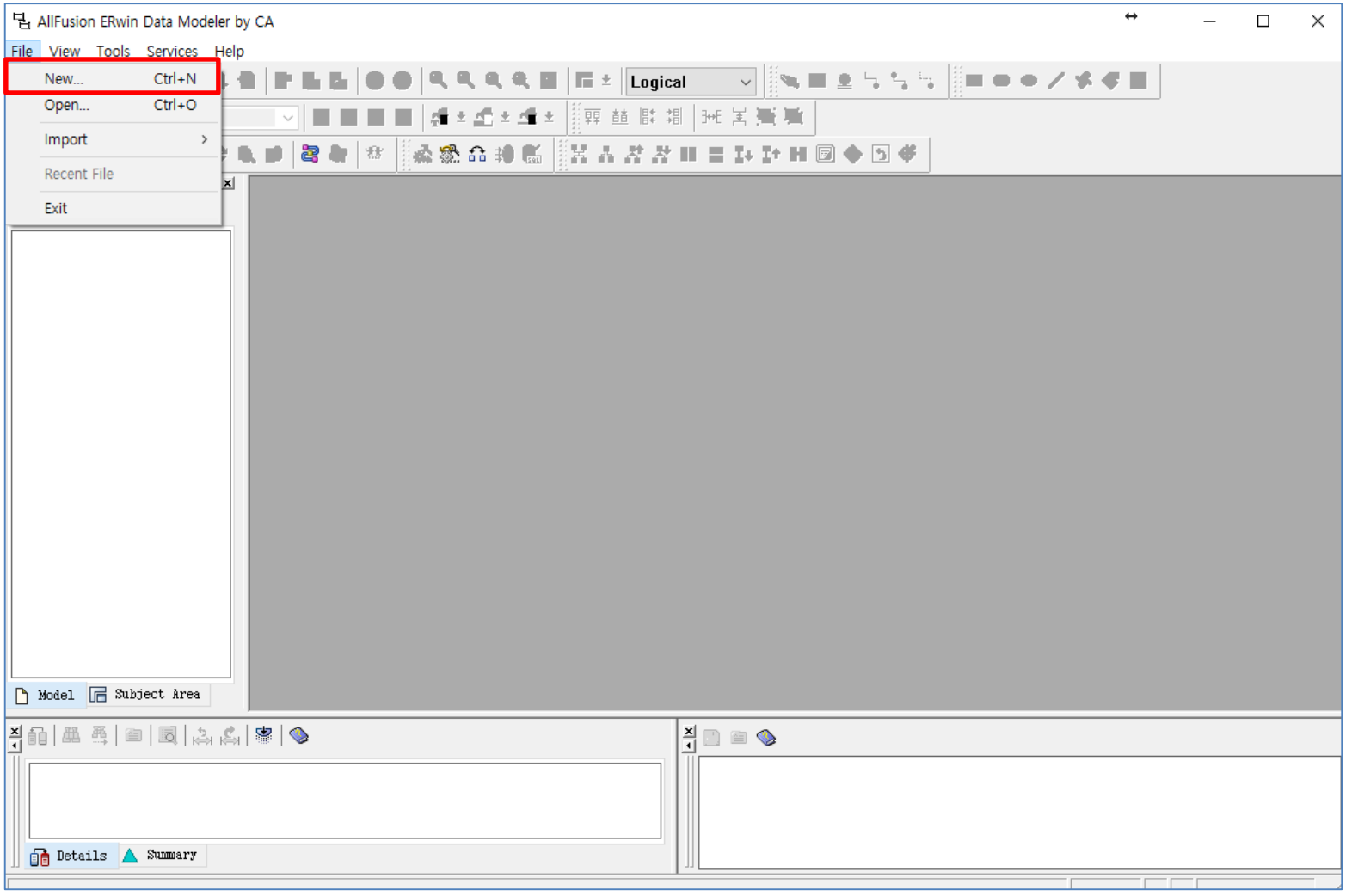
ER-Win 실행 (2/8)

- **Show tips on startup 체크 해제 → Close 클릭**



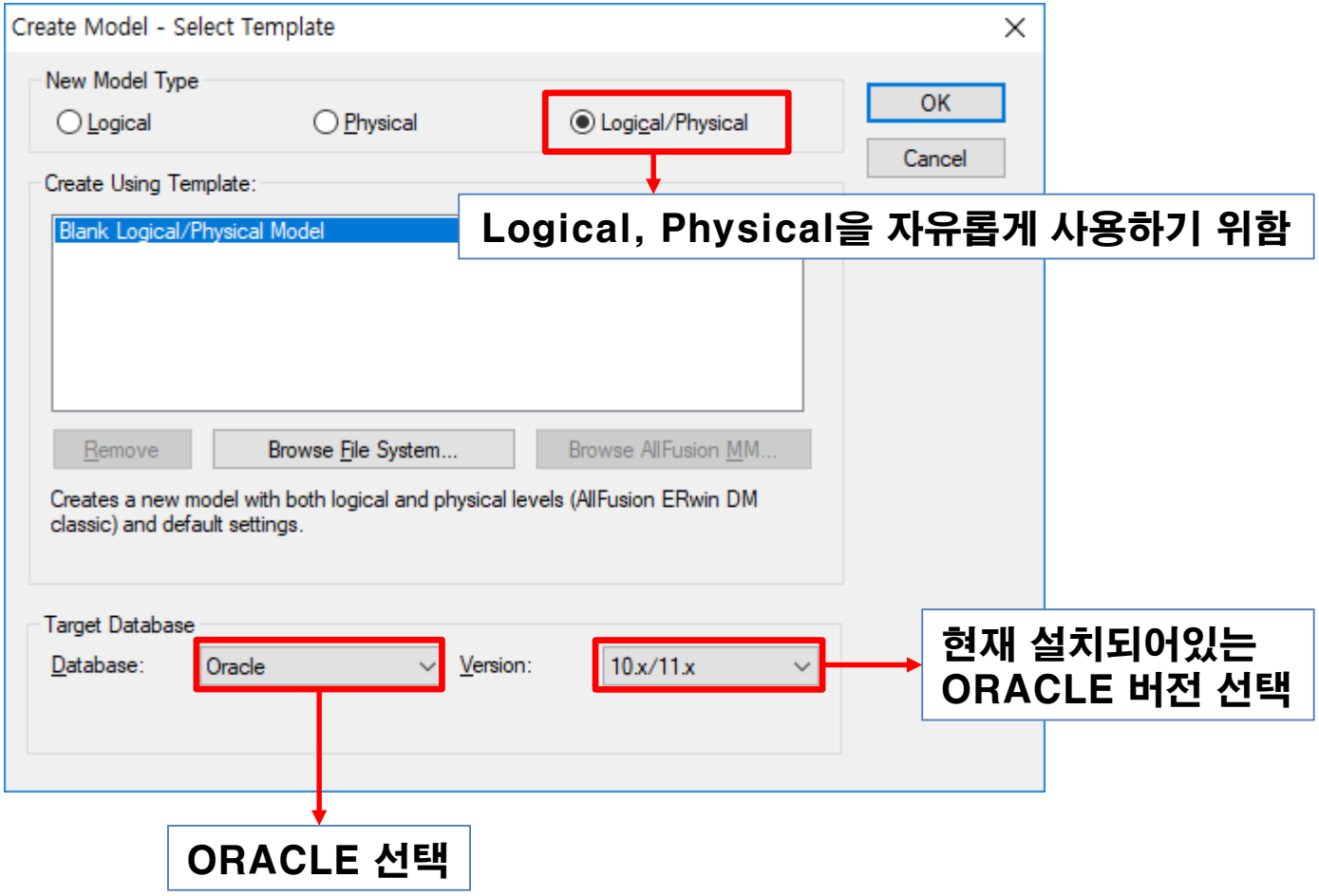
ER-Win 실행 (3/8)

- 왼쪽 상단의 메뉴에서 File 클릭 후 New 클릭



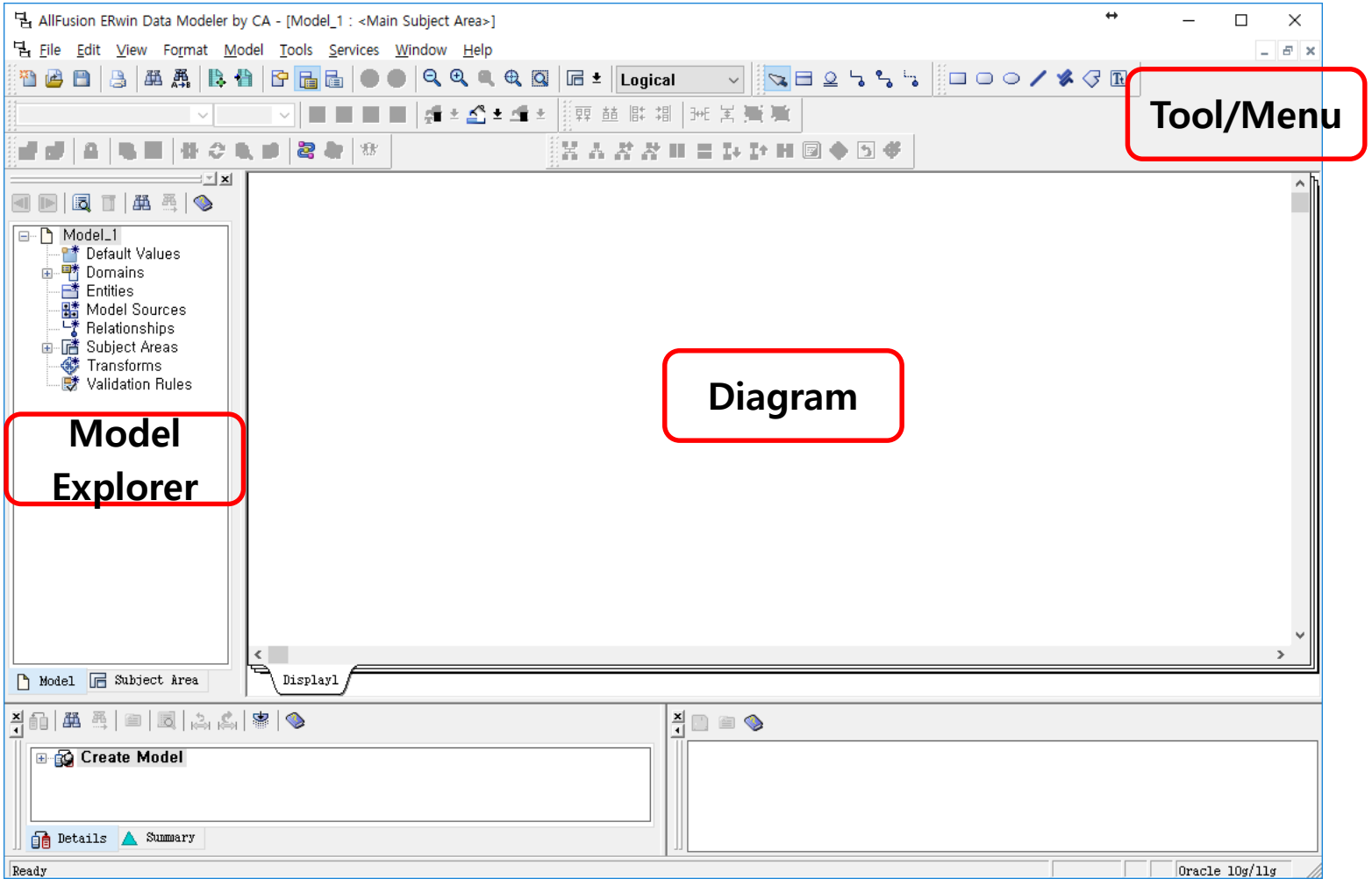
ER-Win 실행 (4/8)

- 아래 그림을 참고하여 설정한 뒤 OK 버튼 클릭



ER-Win 실행 (5/8)

- 화면 구성

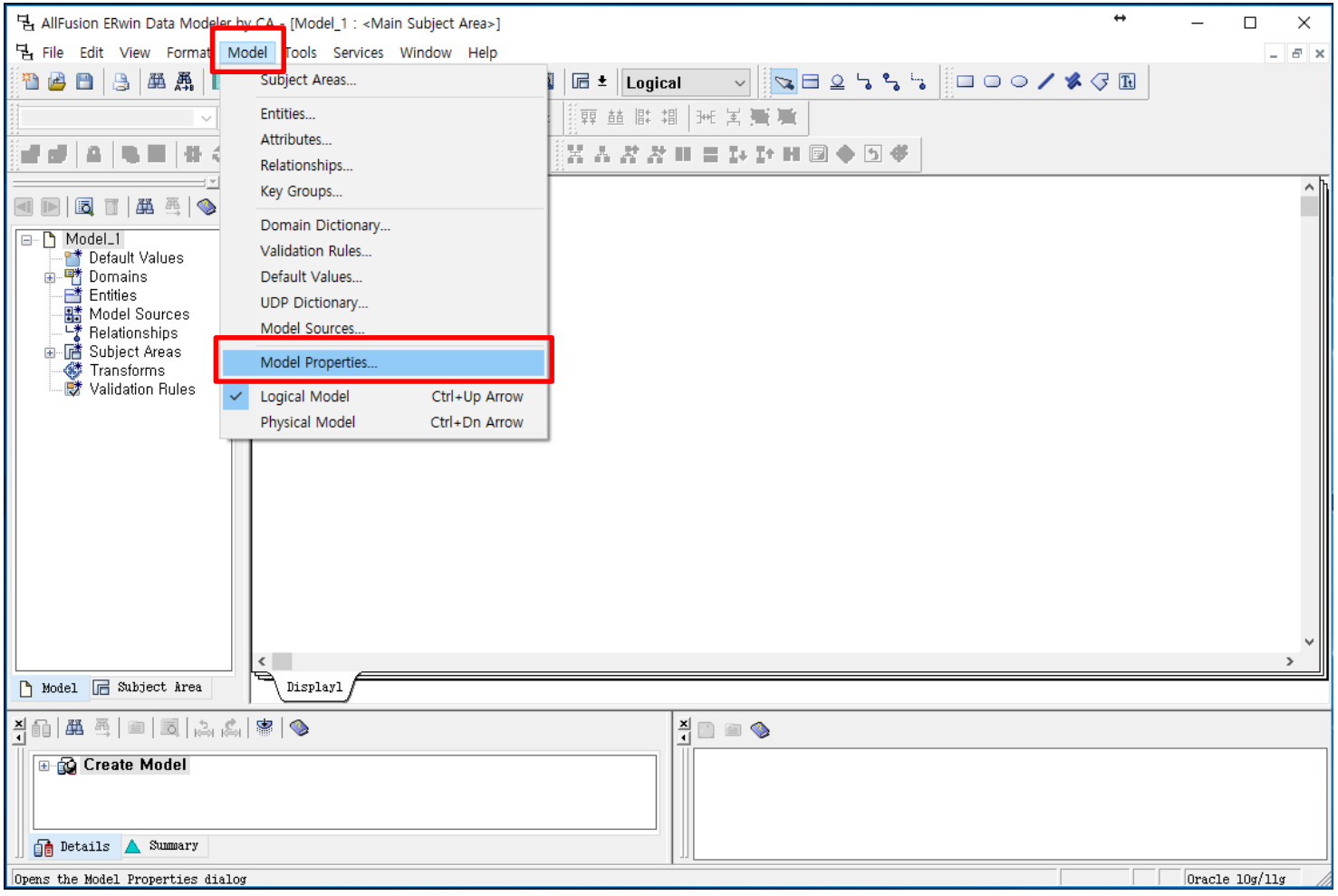


ER-Win 실행 (6/8)

- ER-Win 표기 방식
  - 메인 화면이 열리면 어떤 표기방법을 사용할 것인지 선택해야 함
  - 두 가지 표기법 지원
    - ✓ IE(Information Engineering)
    - ✓ IDEF1X(Integeration DEFinition for Information Modeling)

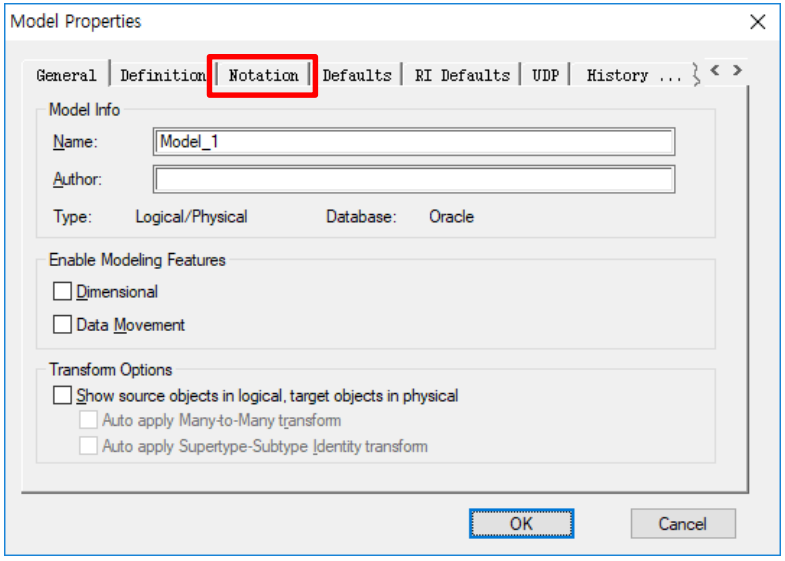
ER-Win 실행 (7/8)

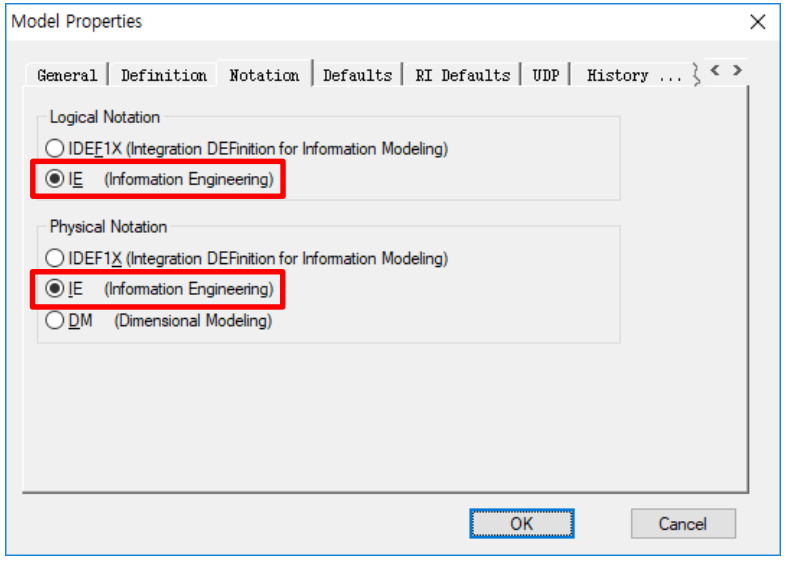
- IE 방식 설정 방법
  - Model → Model Properties

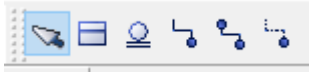


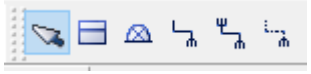
ER-Win 실행 (8/8)

- IE 방식 설정 방법
  - Notation 탭 → Logical, Physical Notation을 IE로 설정



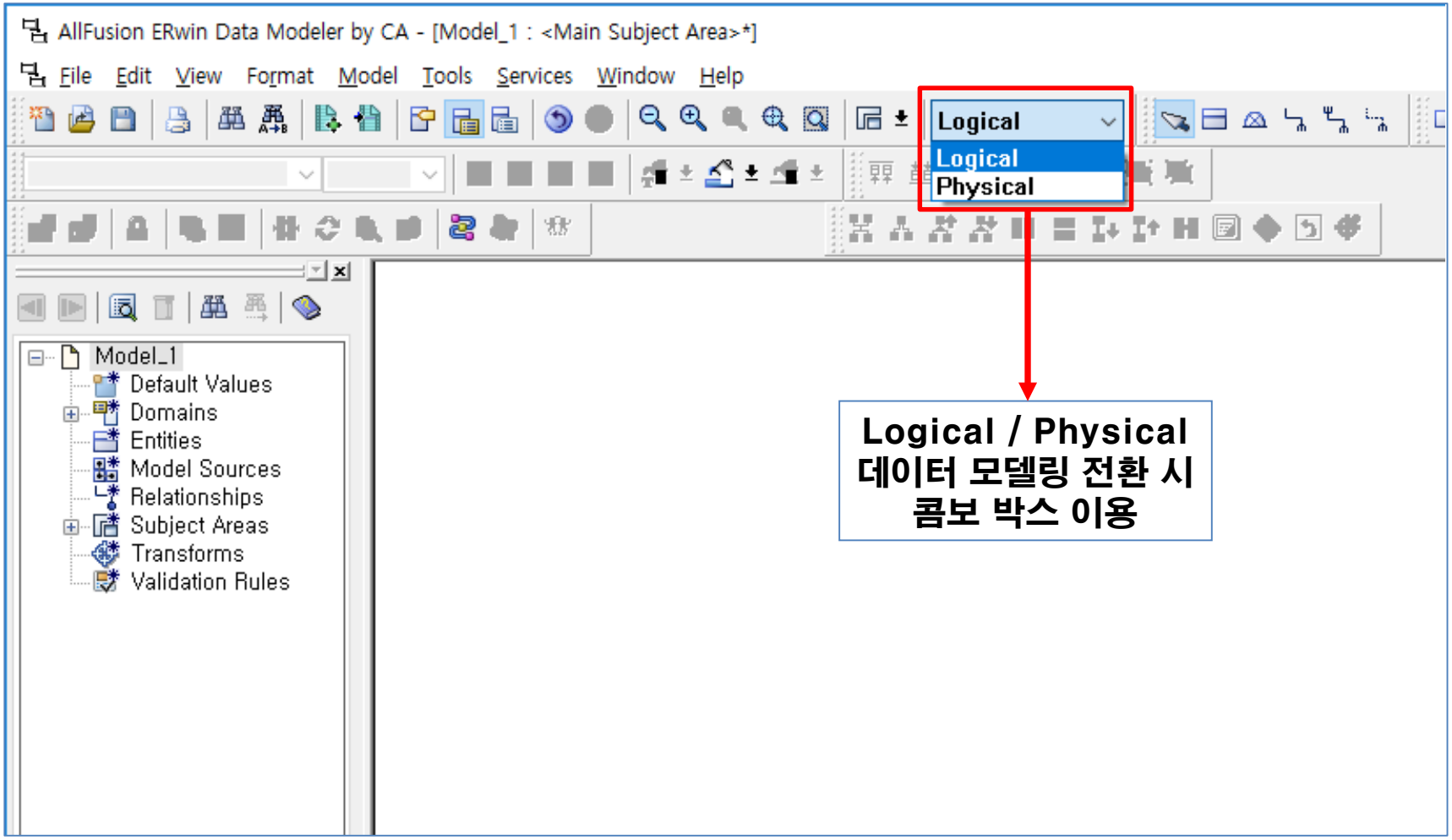


IDEF1X 

IE 

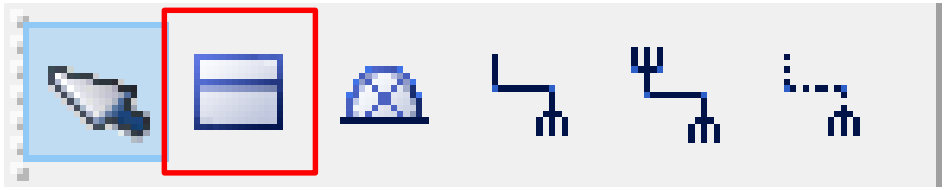
모델링 : Logical/Physical

- **Logical / Physical**

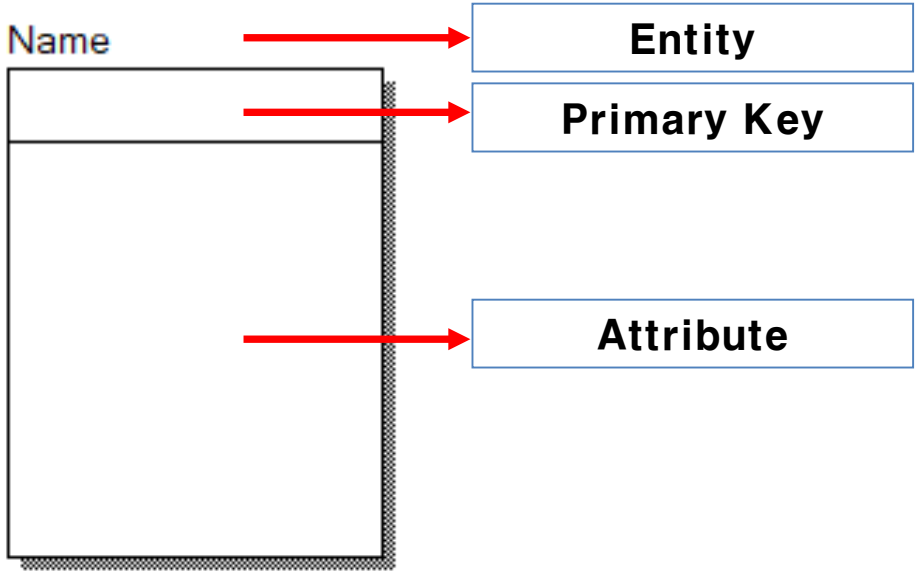


모델링 : Entity 생성 (1/2)

- Entity 생성

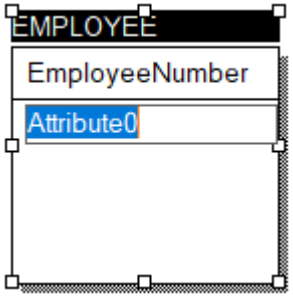


Entity 생성

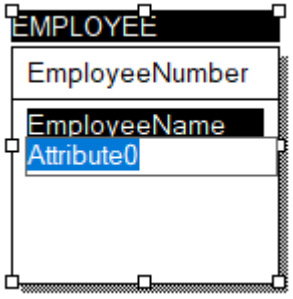


모델링 : Entity 생성 (2/2)

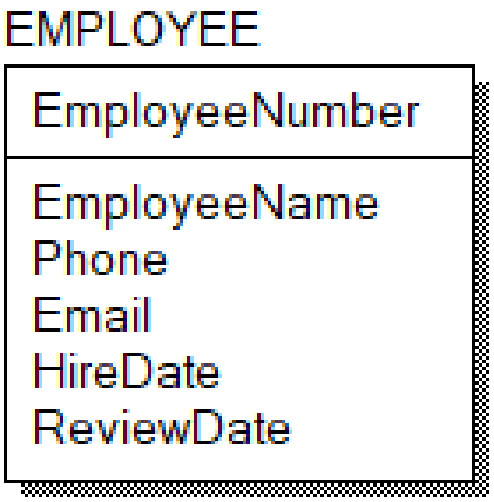
- Entity 생성
  - 예제) Employee Entity

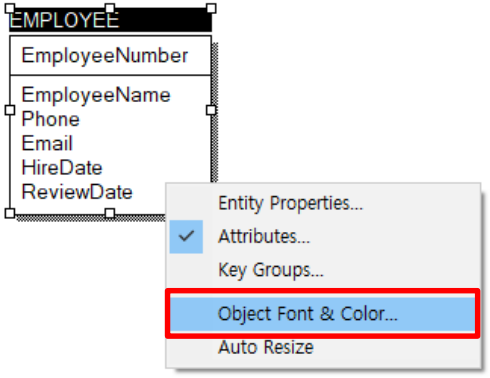


  - 작성 후 TAB 키를 이용하여 다음으로 넘어갈 수 있음



  - 작성 후 ENTER 키를 이용하여 새로운 속성을 기술 할 수 있음

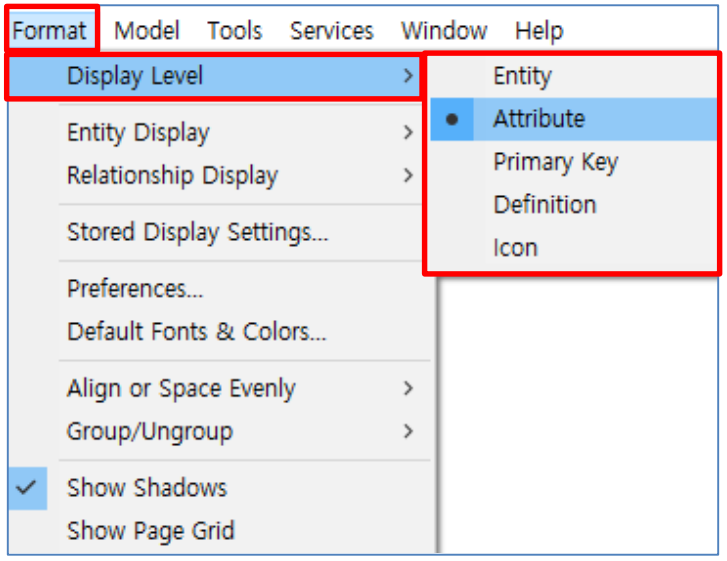




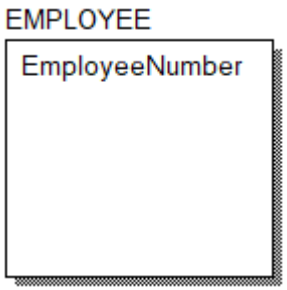
  - Title Font 변경

모델링 : Entity 속성 표현 방법

- **Entity 속성 표현 방법**
  - **Format → Display Level → (선택)**



Attribute 선택

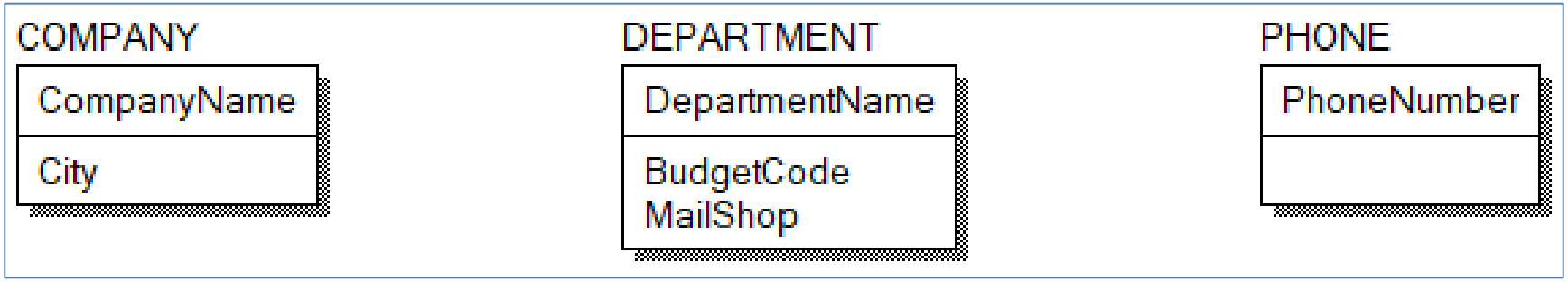


Primary Key 선택

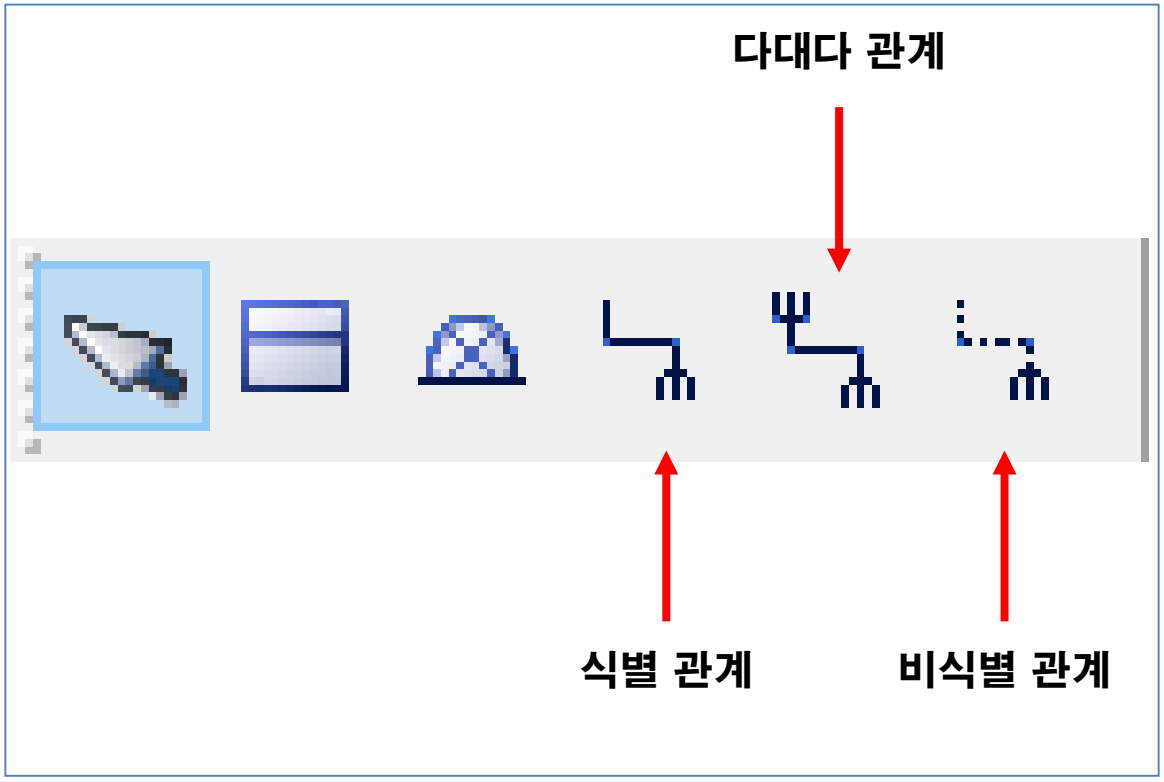
Entity 선택

모델링 : Identifying / Non Identifying Relationship 생성 (1/10)

- 관계 맺는 방법
  - 도구상자에서 관계선 선택
  - 부모 Entity 선택 후 자식 Entity 선택
  - 예제) COMPANY, DEPARTMENT, PHONE

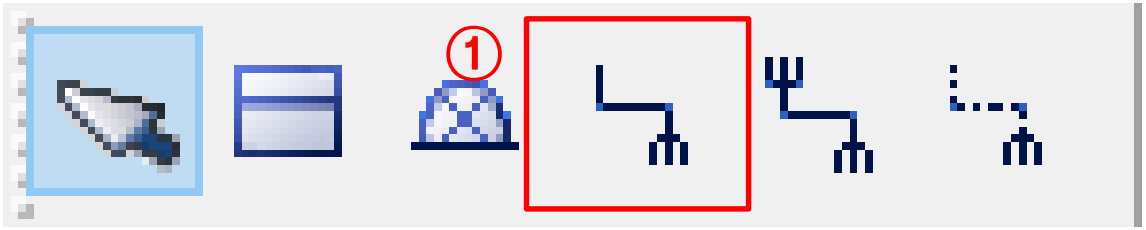


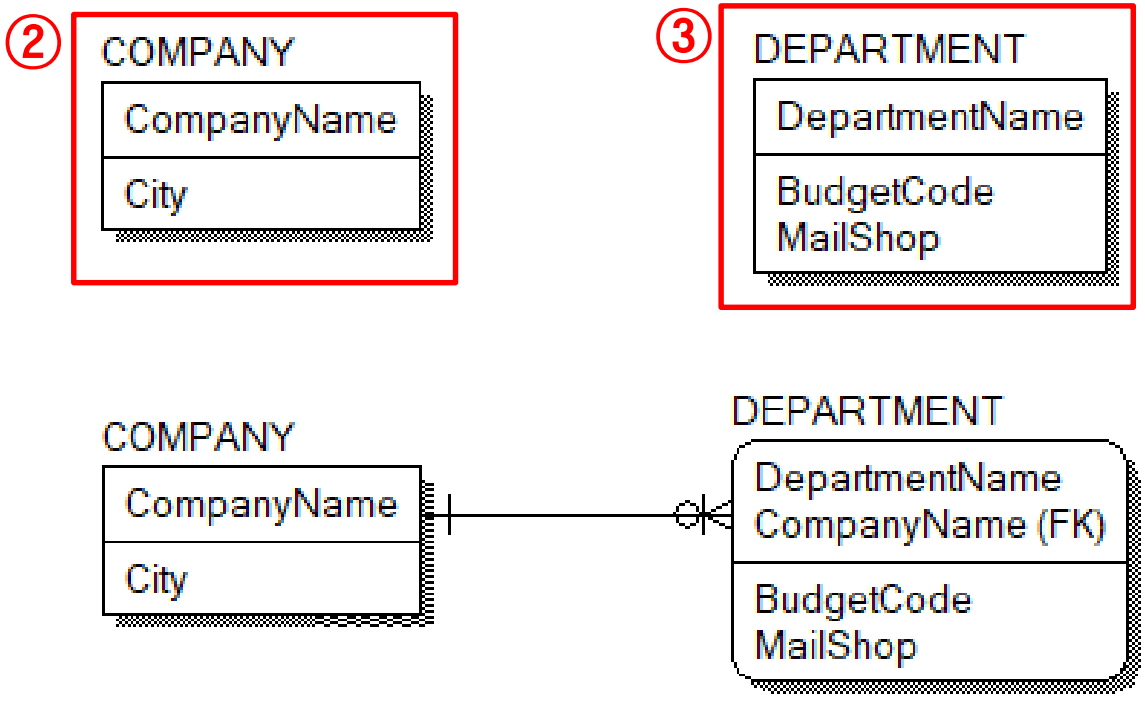
모델링 : Identifying / Non Identifying Relationship 생성 (2/10)



모델링 : Identifying / Non Identifying Relationship 생성 (3/10)

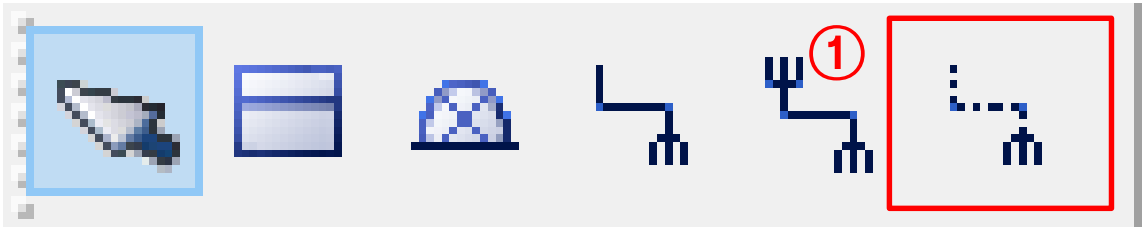
- 식별 관계

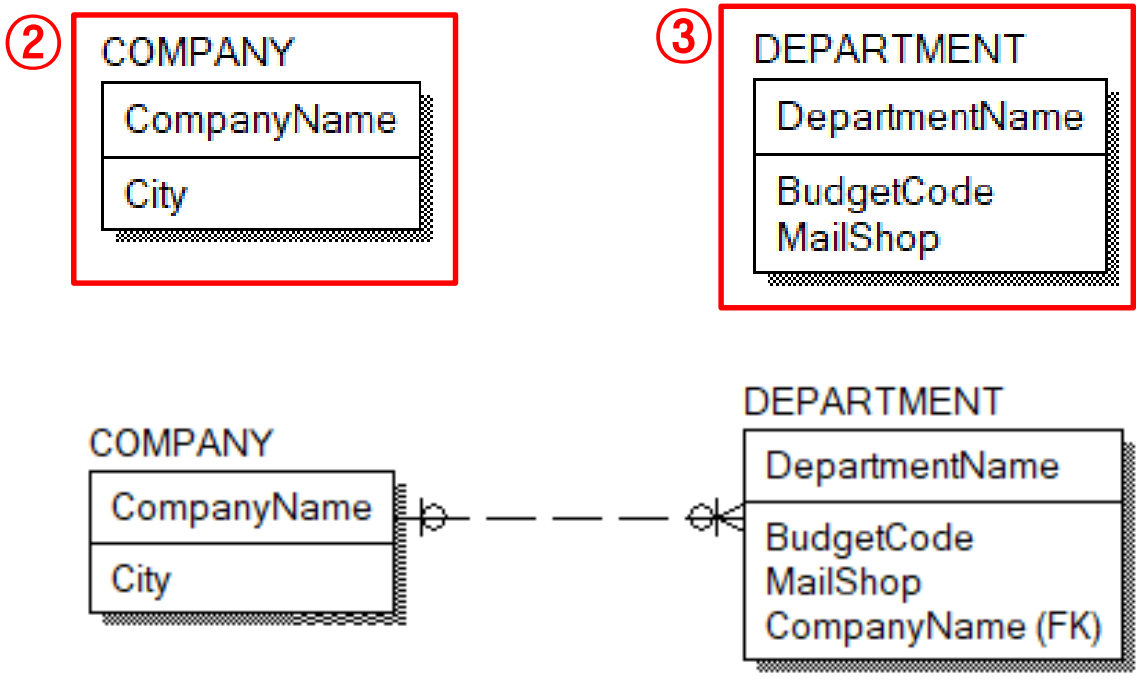




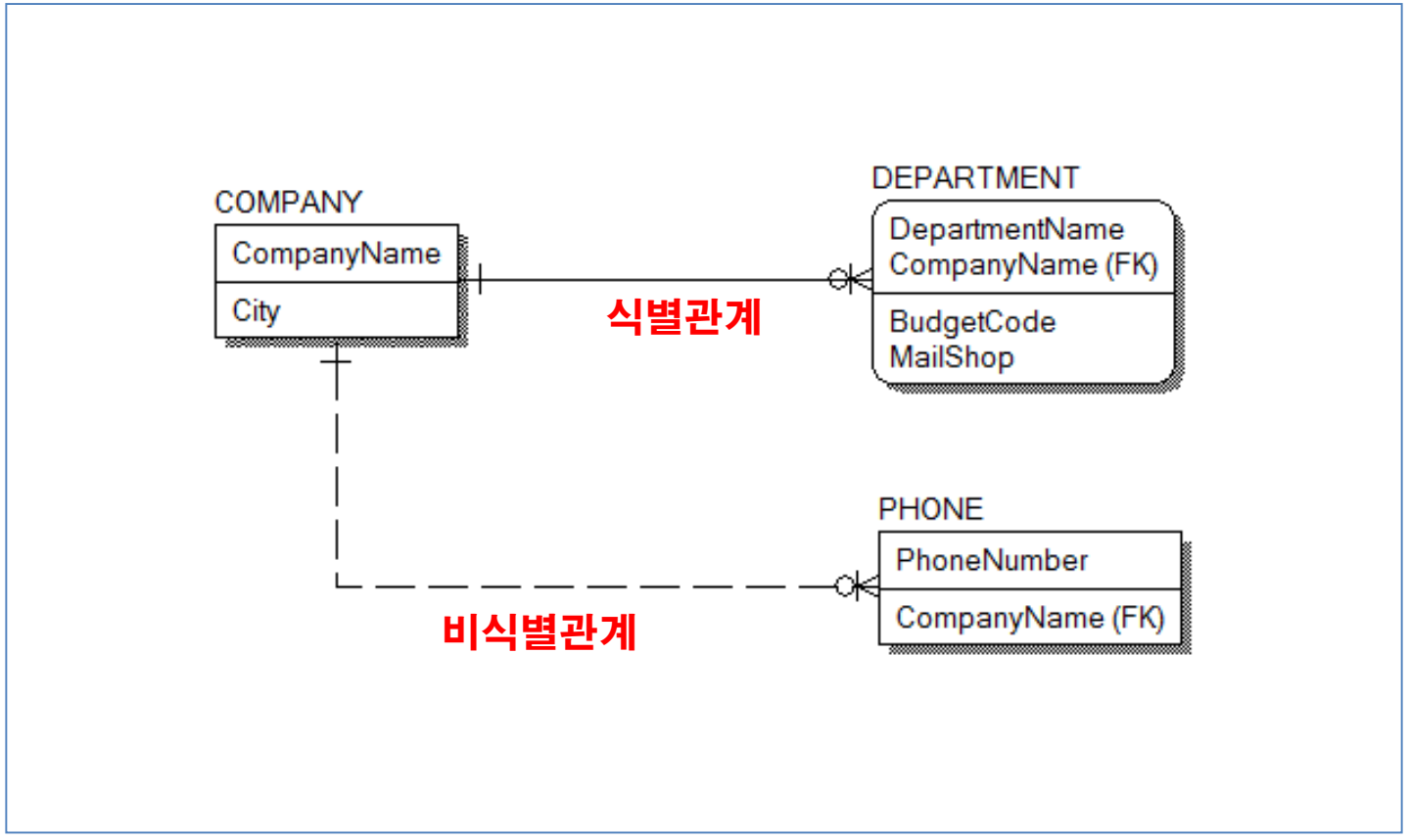
모델링 : Identifying / Non Identifying Relationship 생성 (4/10)

- 비식별 관계



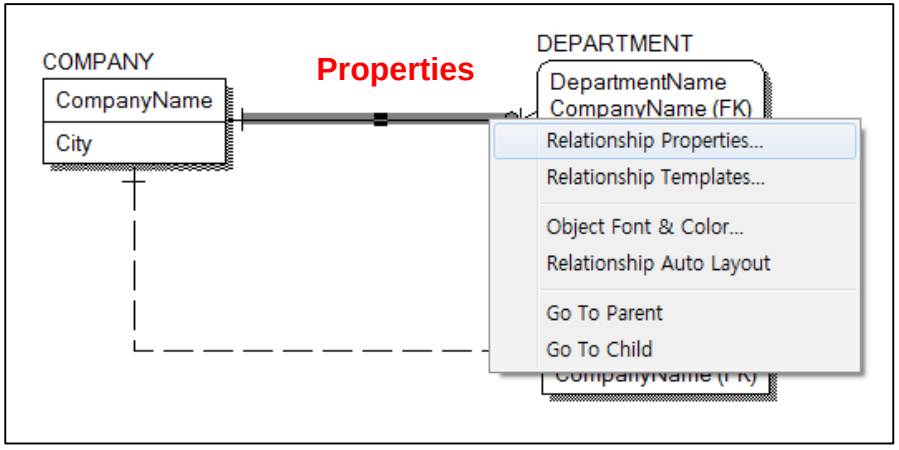


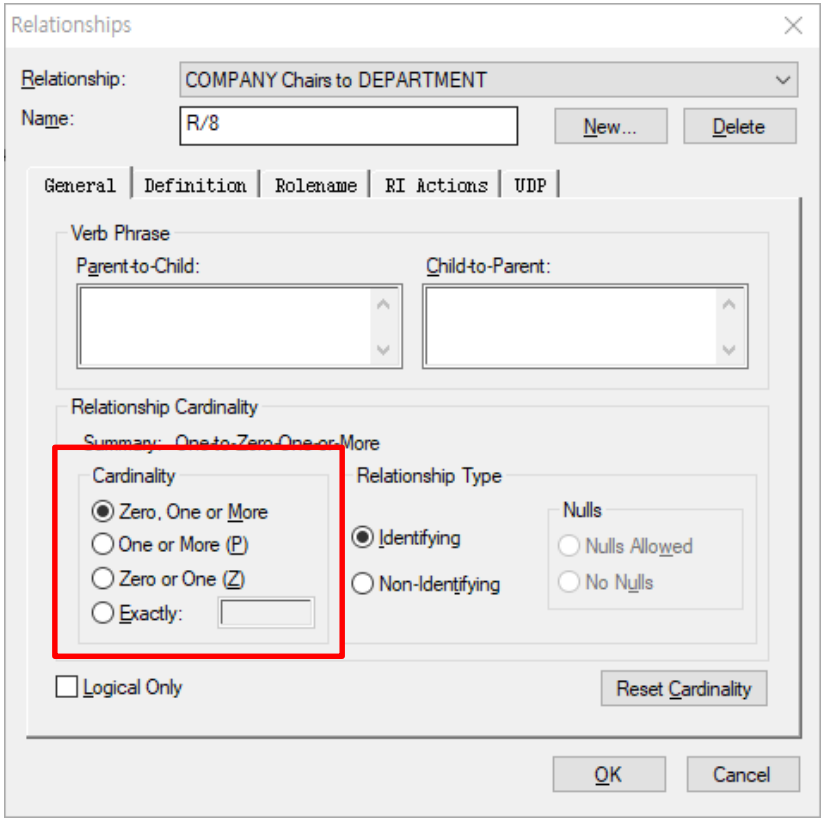
모델링 : Identifying / Non Identifying Relationship 생성 (5/10)



모델링 : Identifying / Non Identifying Relationship 생성 (6/10)

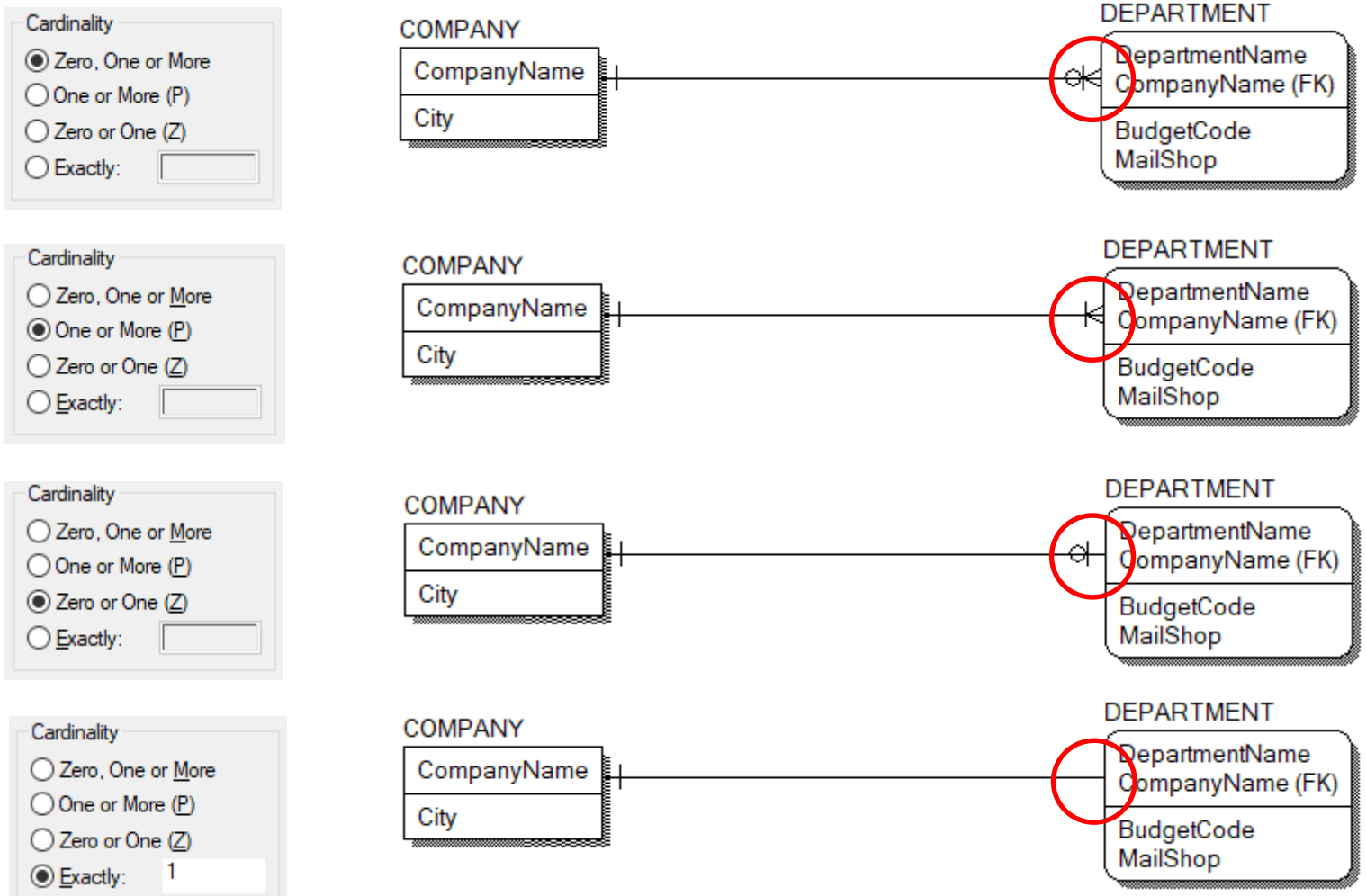
- 카디널리티 설정
  - 관계선 클릭 → 오른쪽 버튼 클릭 → Relationship Properties





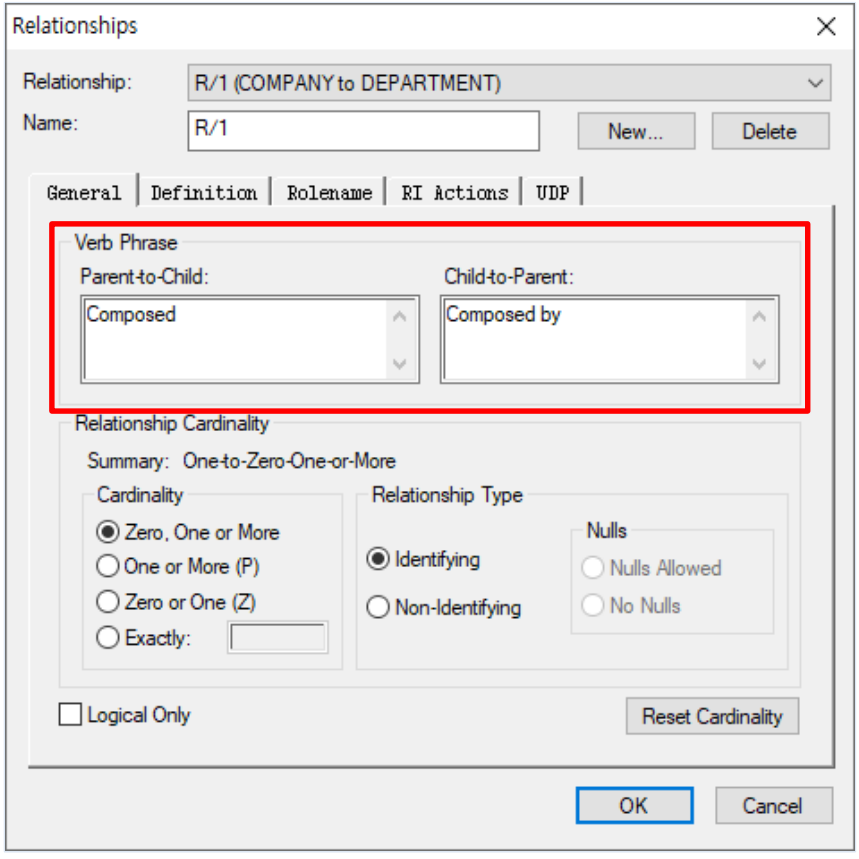
모델링 : Identifying / Non Identifying Relationship 생성 (7/10)

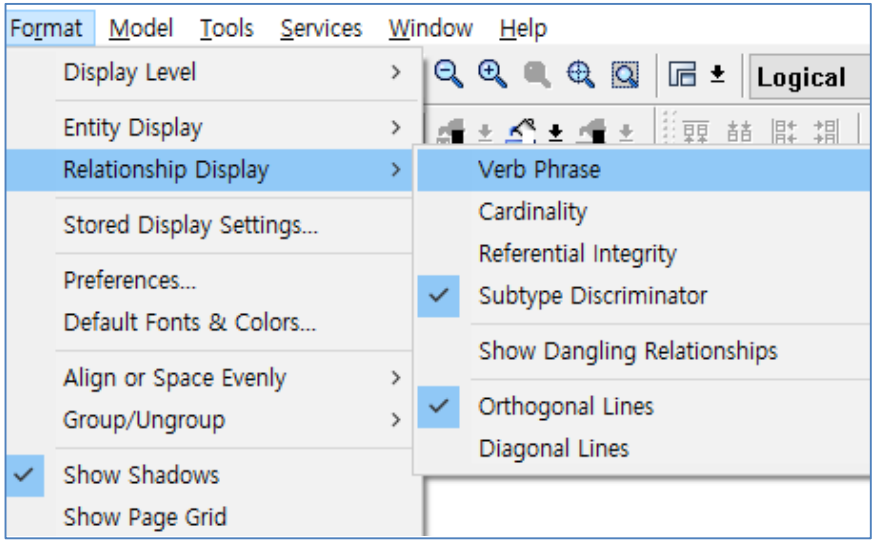
- 카디널리티

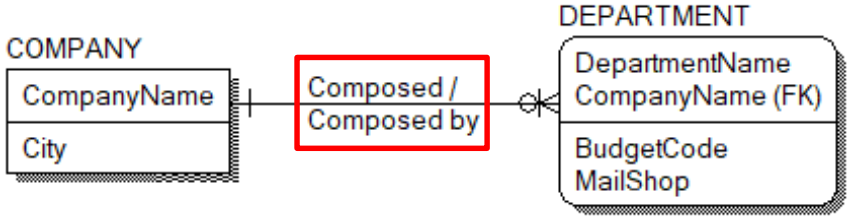


모델링 : Identifying / Non Identifying Relationship 생성 (8/10)

- 관계 설명 작성
  - 관계선 클릭 → 오른쪽 버튼 클릭 → Relationship Properties
  - Format → Relationship Display → Verb Phrase

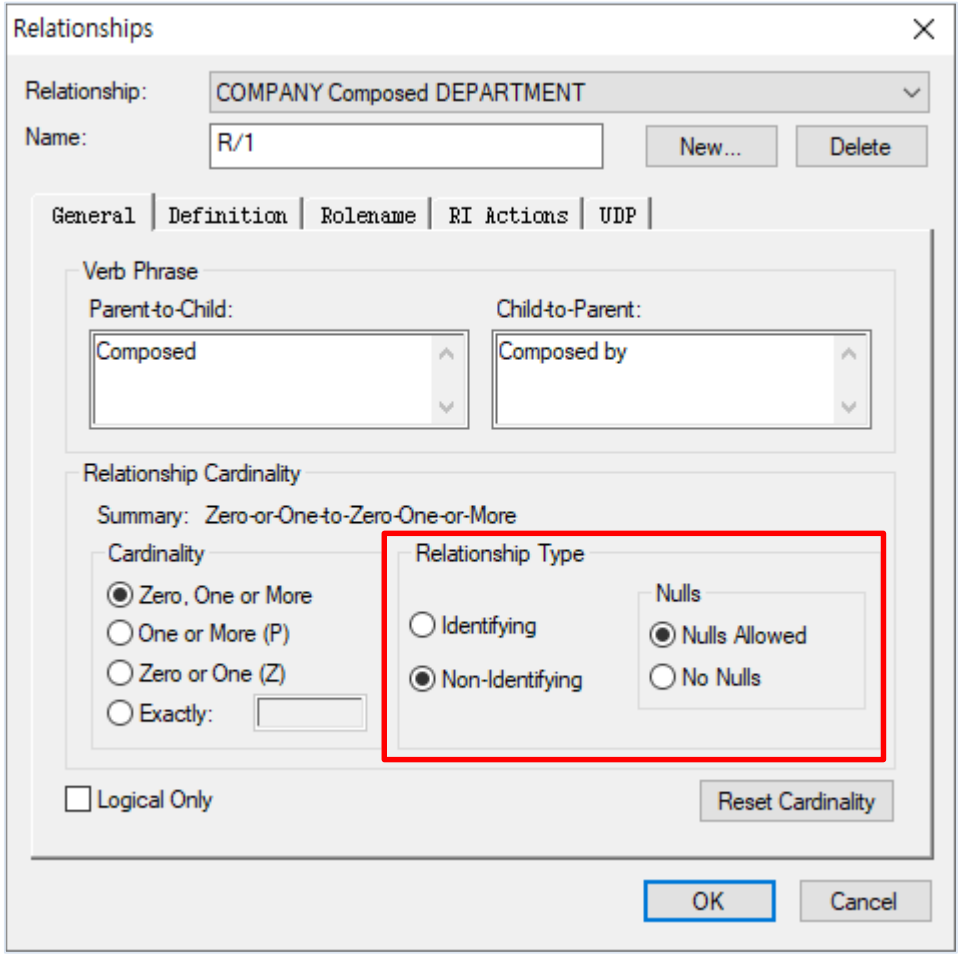






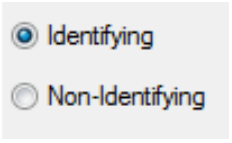
모델링 : Identifying / Non Identifying Relationship 생성 (9/10)

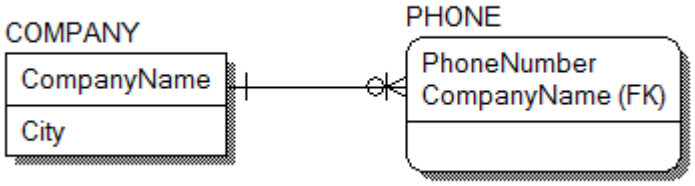
- 관계 옵션 설정
  - 관계선 클릭 → 오른쪽 버튼 클릭 → Relationship Properties

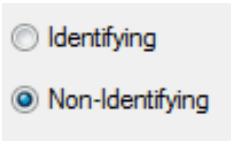


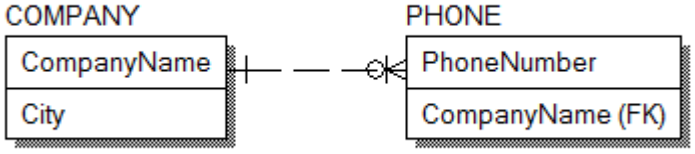
모델링 : Identifying / Non Identifying Relationship 생성 (10/10)

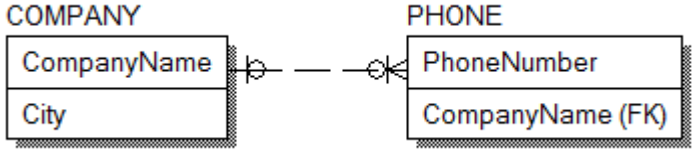
- **Relationship Type**

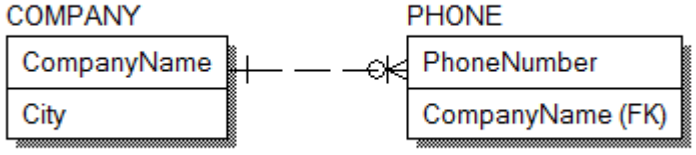








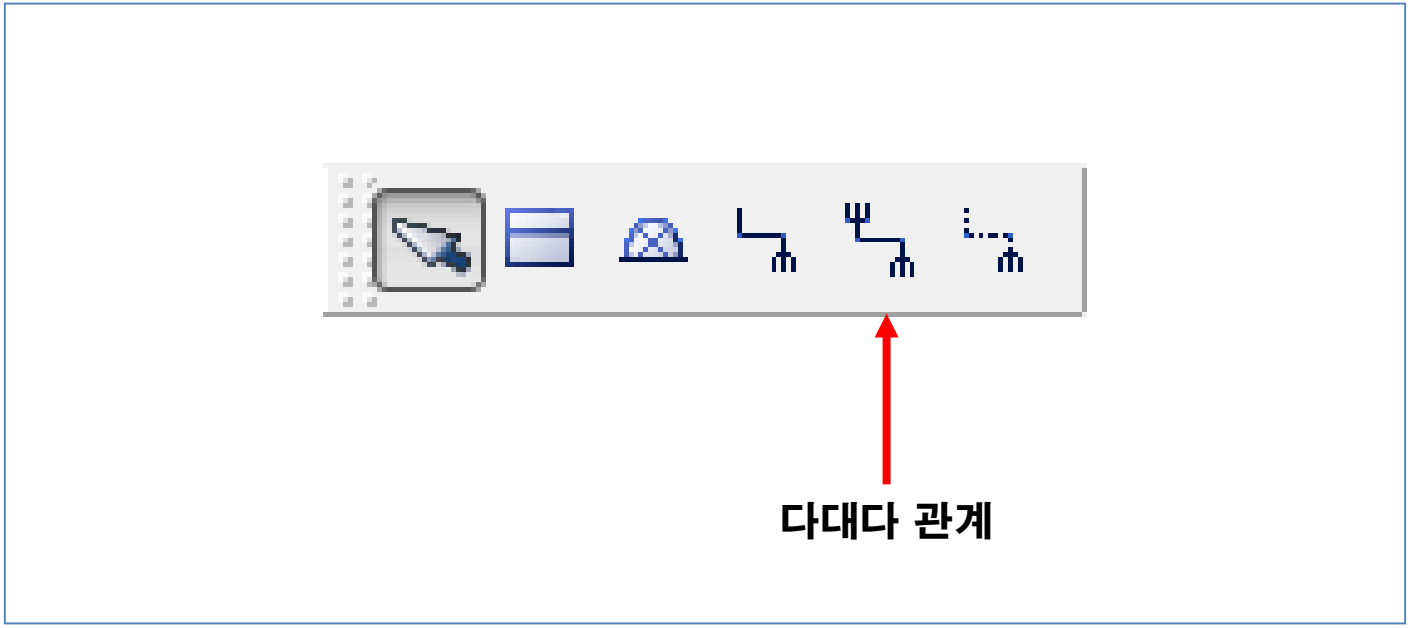




모델링 : Many-to-Many Relationship (1/5)

Many - To - Many Relationship (N:M 관계)

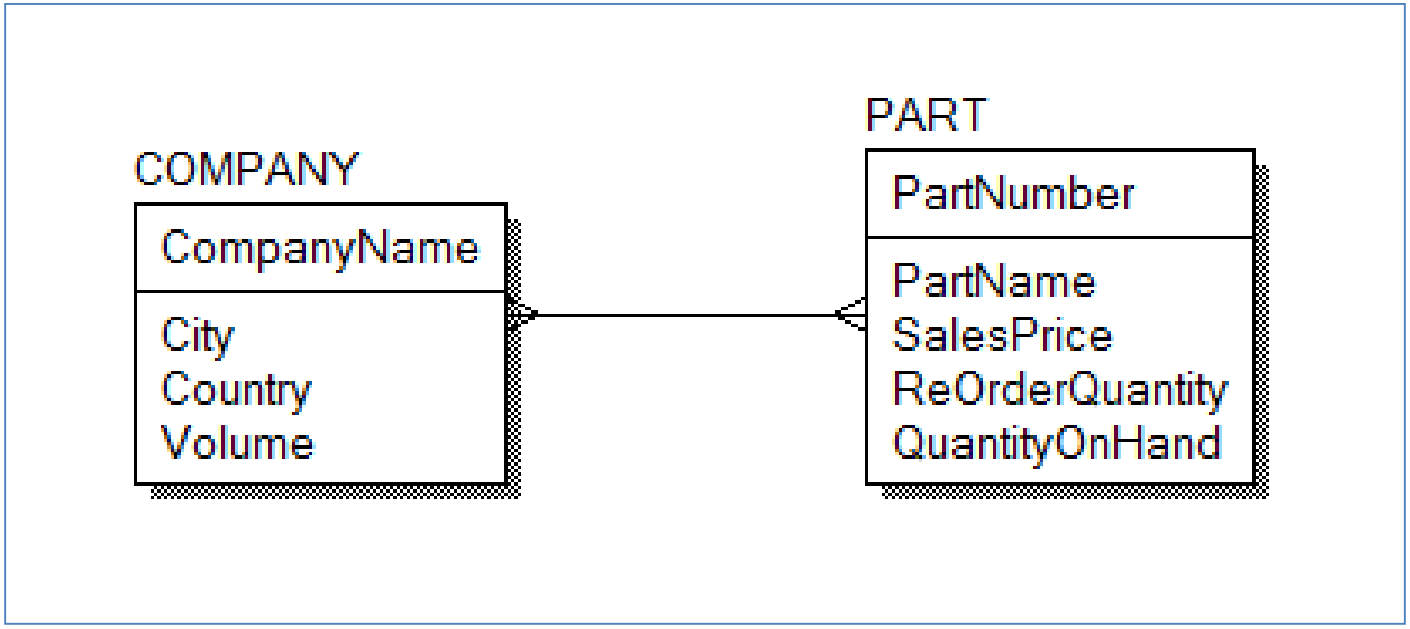
- Logical에서 존재



모델링 : Many-to-Many Relationship (2/5)

Many - To - Many Relationship (N:M 관계)

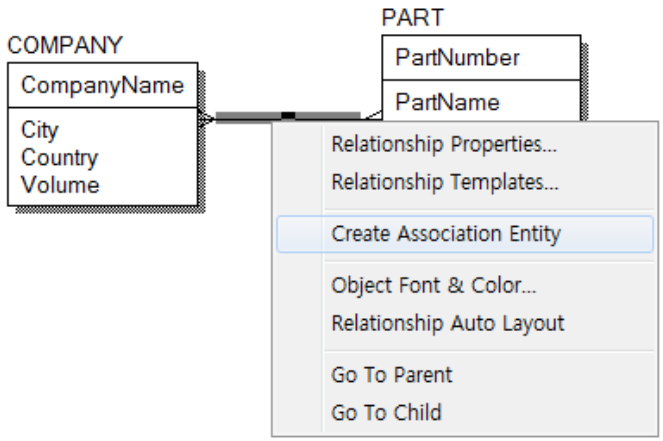
- Entity를 생성한 후 순서에 관계 없이 두 Entity를 차례대로 선택



모델링 : Many-to-Many Relationship (3/5) 27/40

Many - To - Many Relationship (N:M 관계)

- 관계를 해소하는 방법



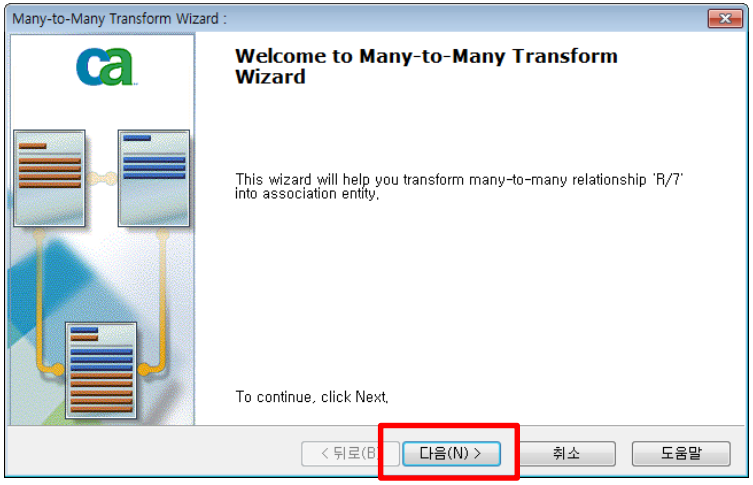
• 관계 선택
→ 마우스 오른쪽 버튼
→ Create Association Entity

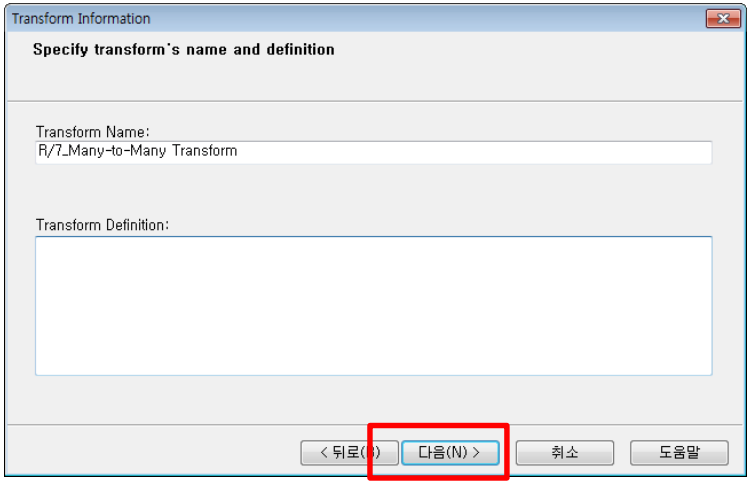
• 관계 선택
→ 'ERwin Transform Toolbar' 에서
'Many to Many Transform' 선택

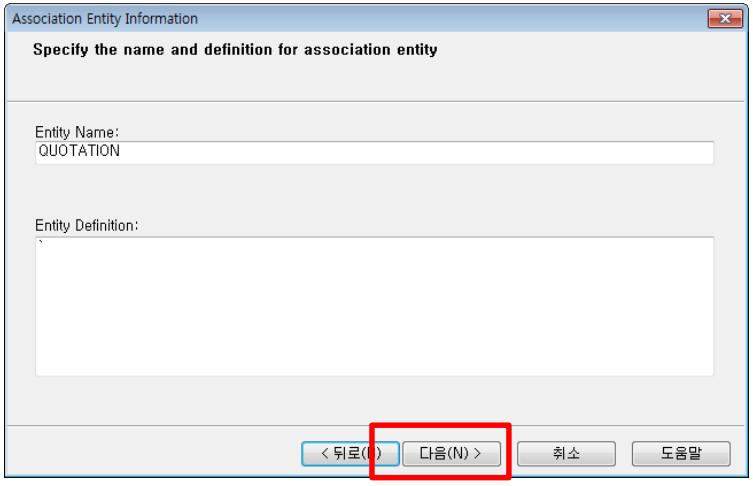
모델링 : Many-to-Many Relationship (4/5)

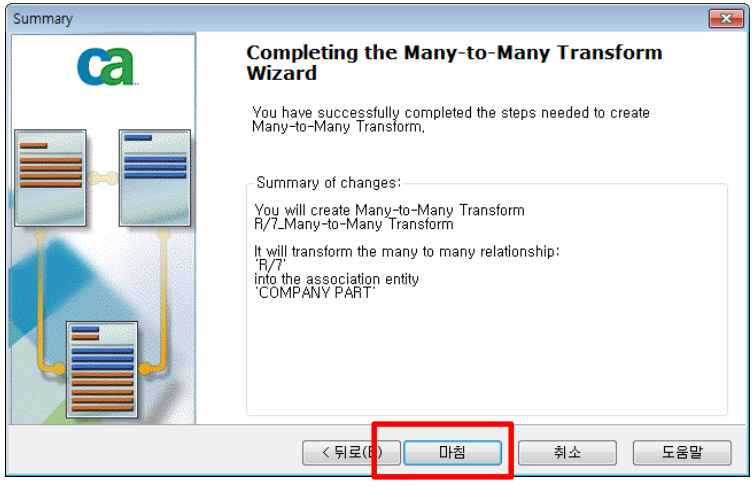
Many - To - Many Relationship (N:M 관계)

- 관계를 해소하는 방법

① 

② 

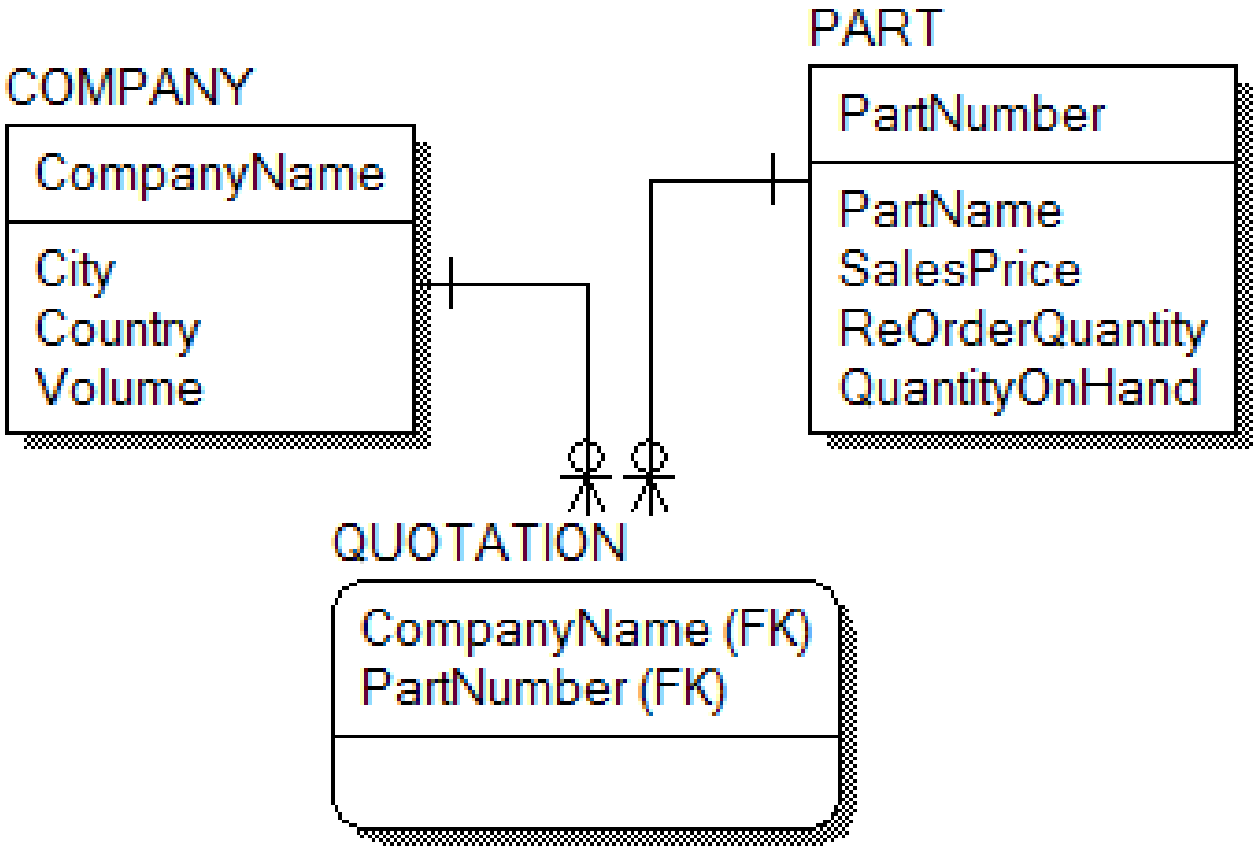
③ 

④ 

모델링 : Many-to-Many Relationship (5/5)

Many - To - Many Relationship (N:M 관계)

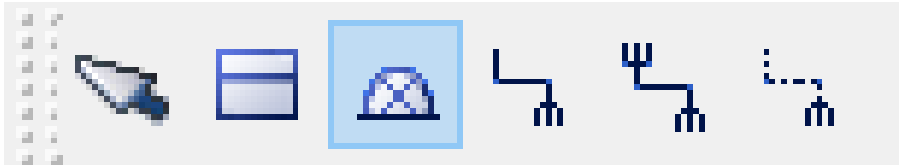
- 관계 해소 예제

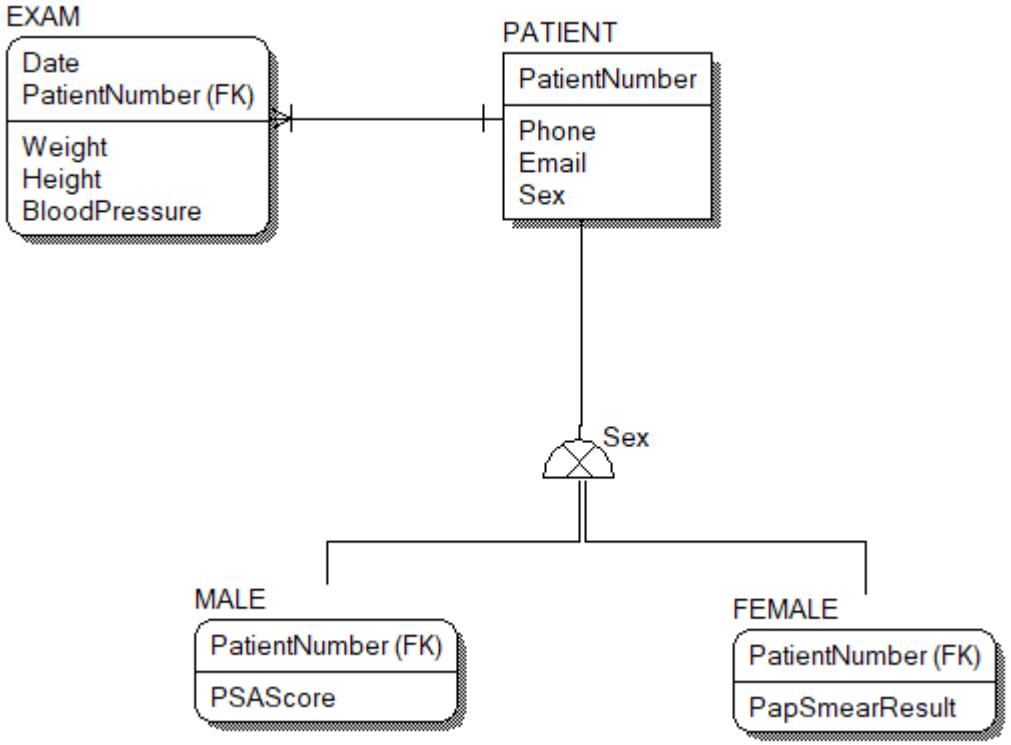


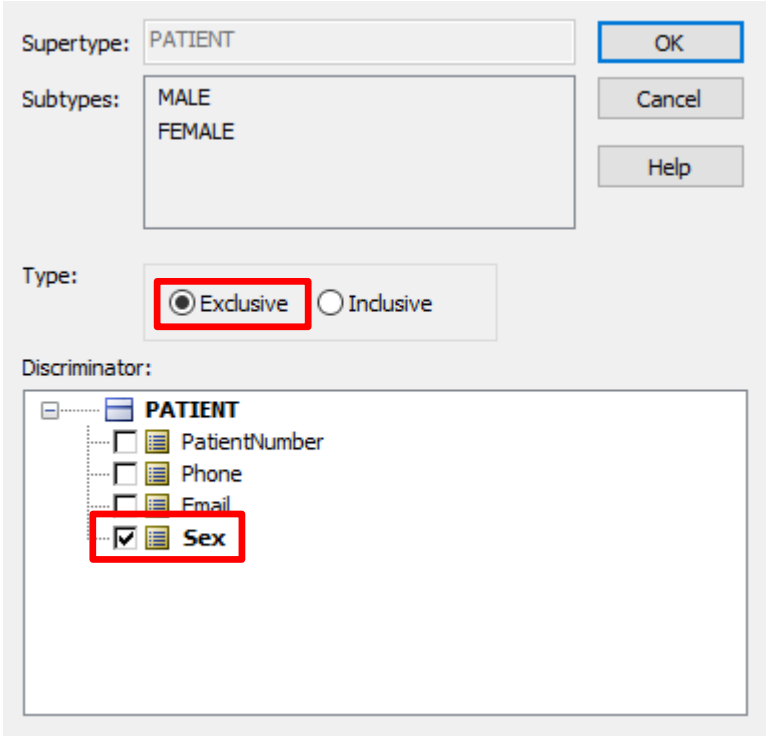
Subtypes : Exclusive or Inclusive (1/2)

Exclusive

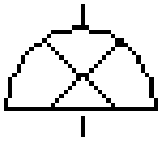
- 오른쪽 클릭 → Subtype Properties



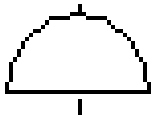




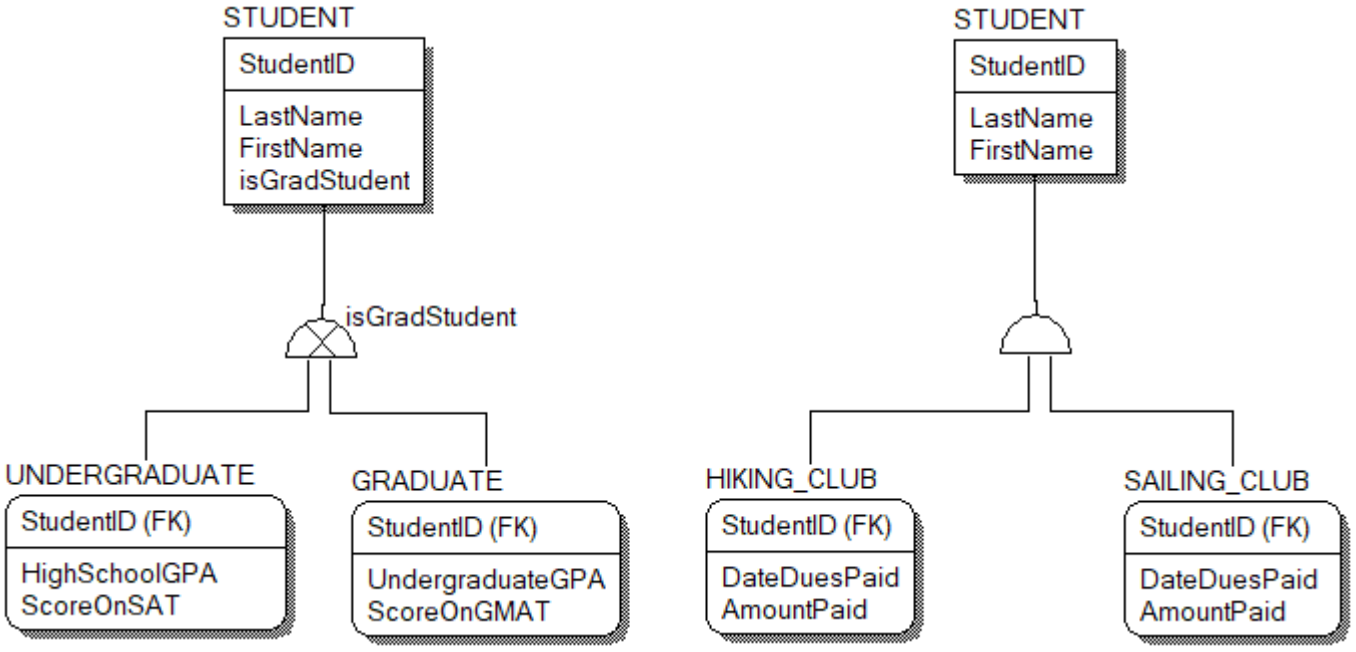
Subtypes : Exclusive or Inclusive (2/2)



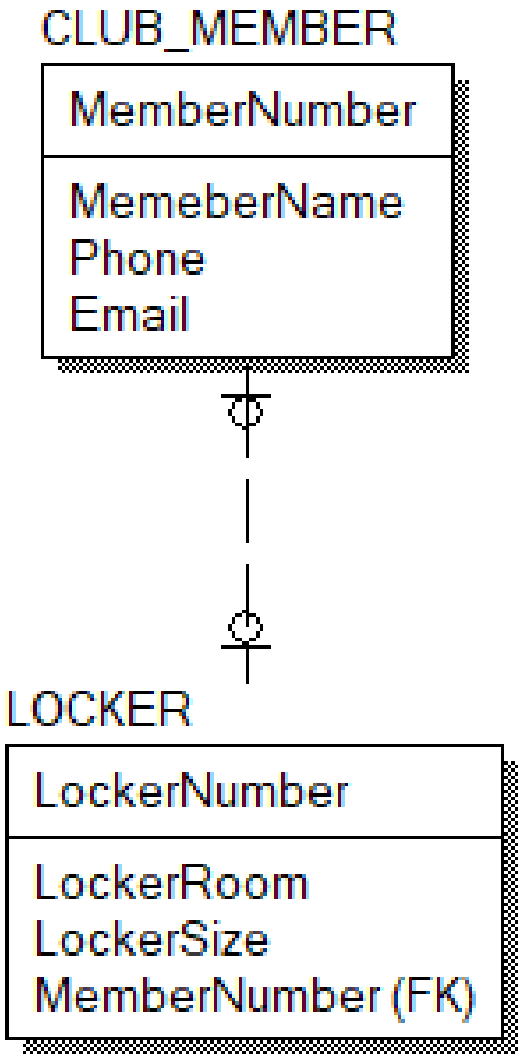
- **Exclusive TYPE**



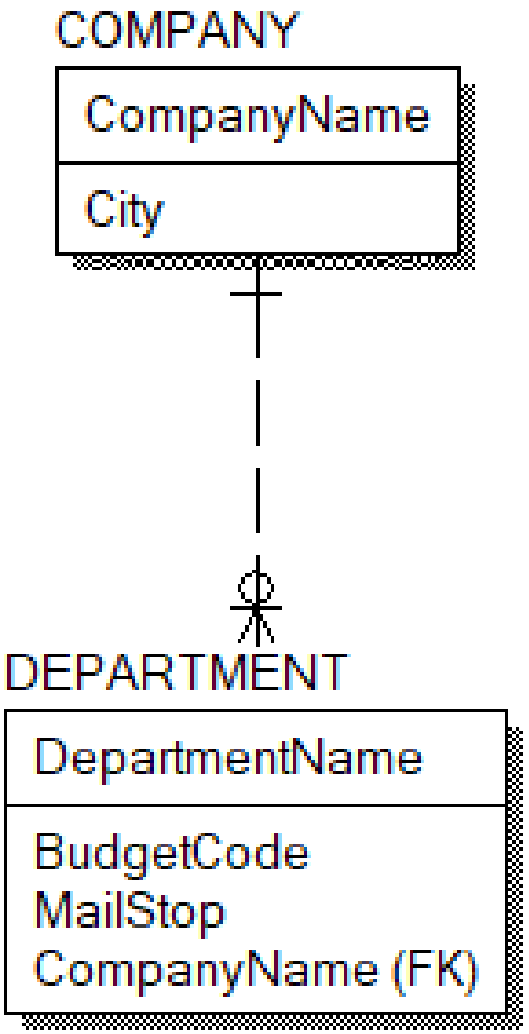
- **Inclusive TYPE**



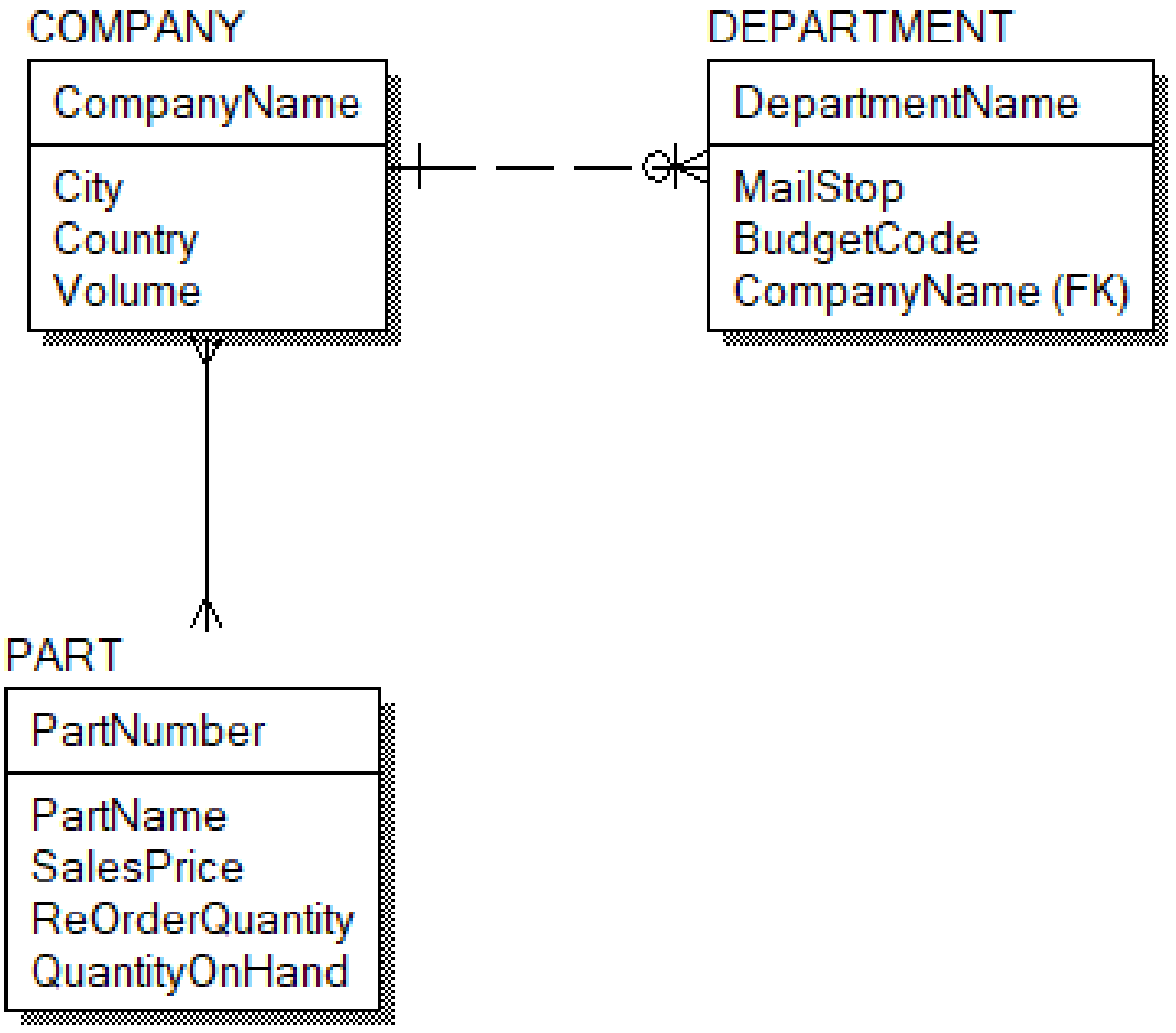
Strong Entity Patterns (1/3): 1:1 Strong Entity Relationships



Strong Entity Patterns (2/3): 1:N Strong Entity Relationships

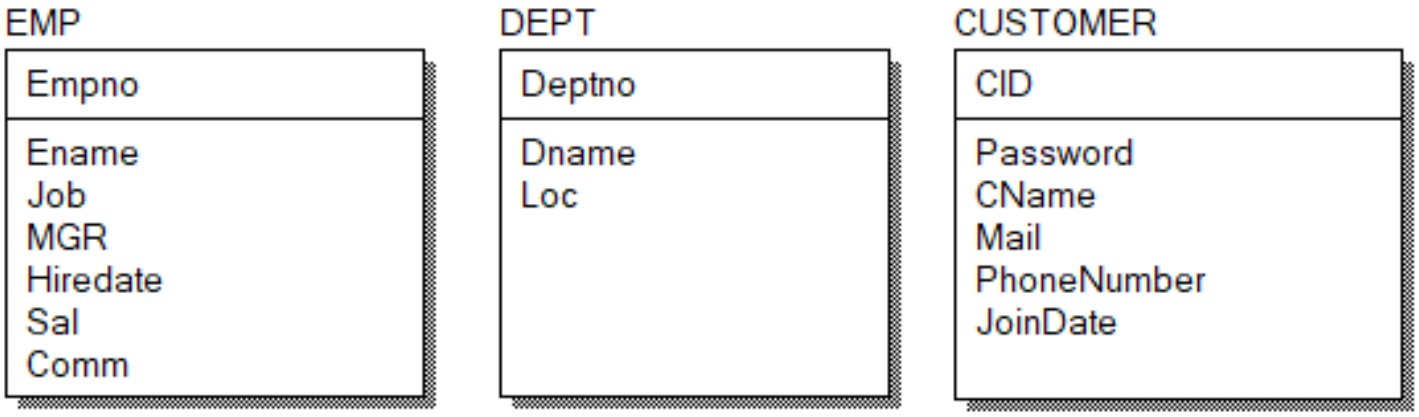


Strong Entity Patterns (3/3): N:M Strong Entity Relationships



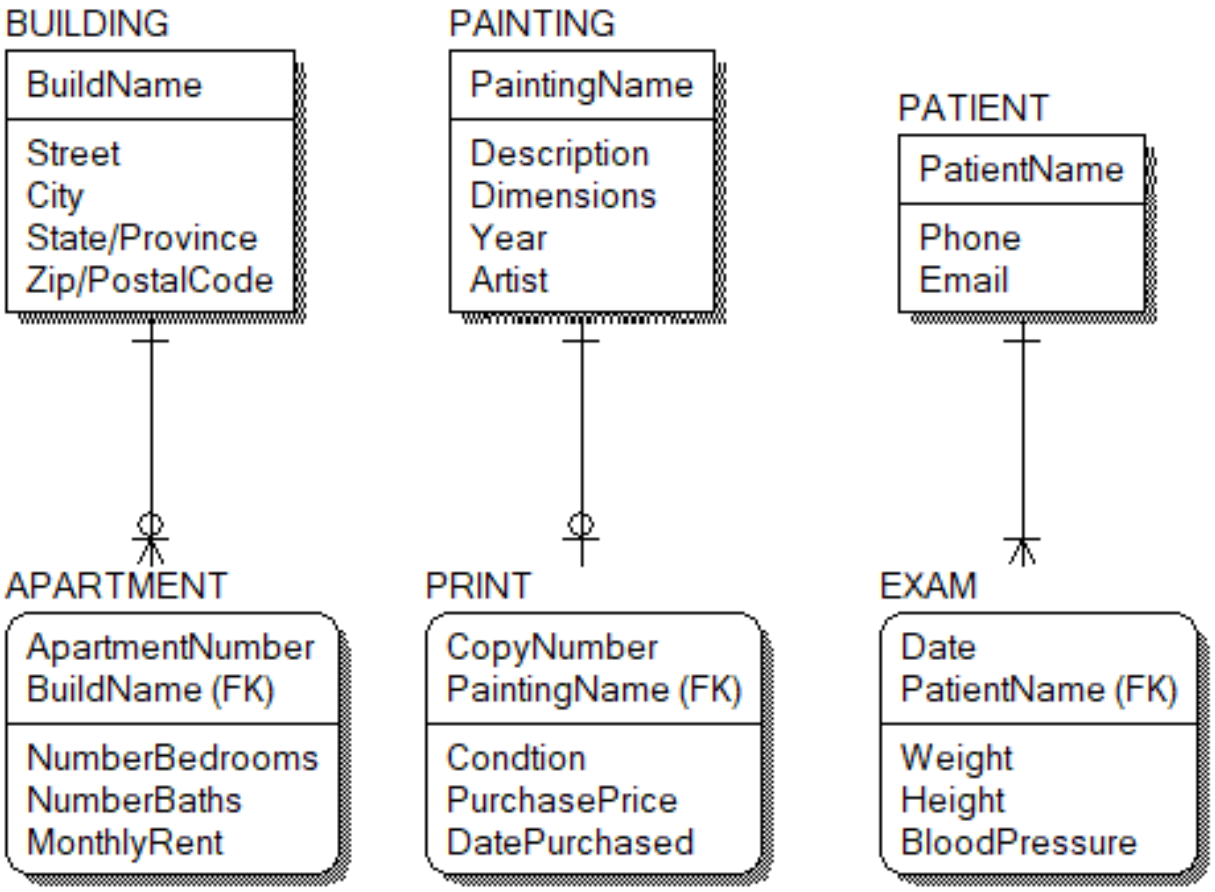
실습 과제 (1/6)

Q1) ER-Win 프로그램을 사용하여 아래와 같은 동일한 데이터베이스 모델을 작성하시오.



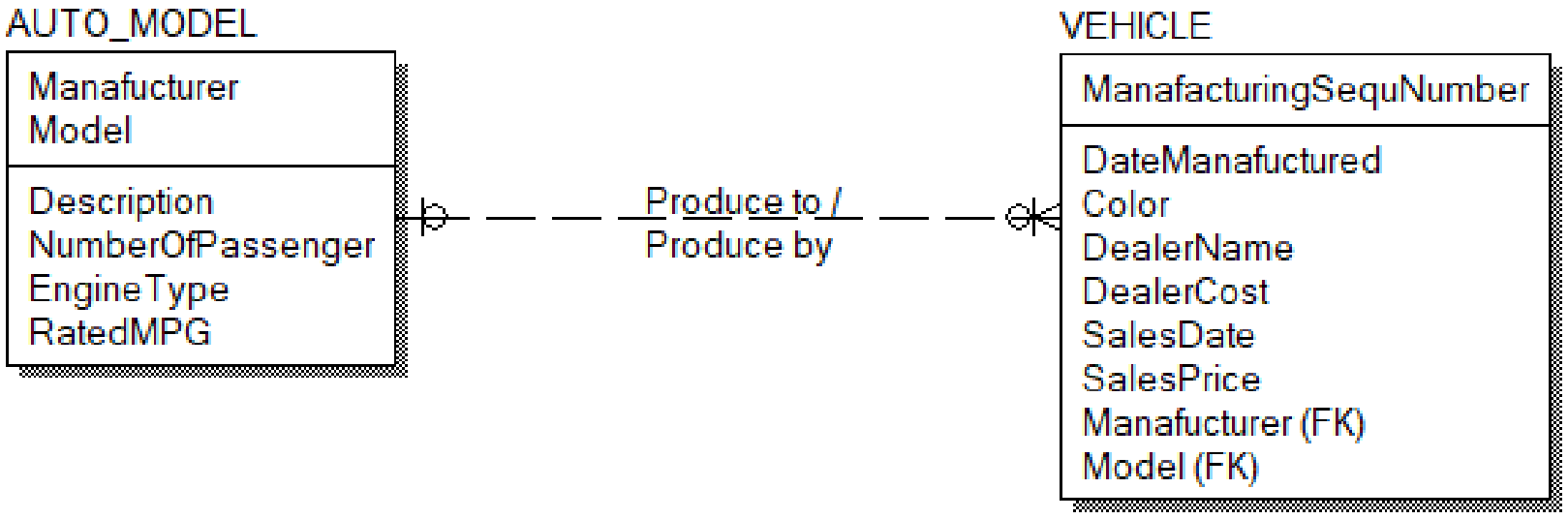
실습 과제 (2/6)

Q2) ER-Win 프로그램을 사용하여 아래와 같은 동일한 데이터베이스 모델을 작성하시오.



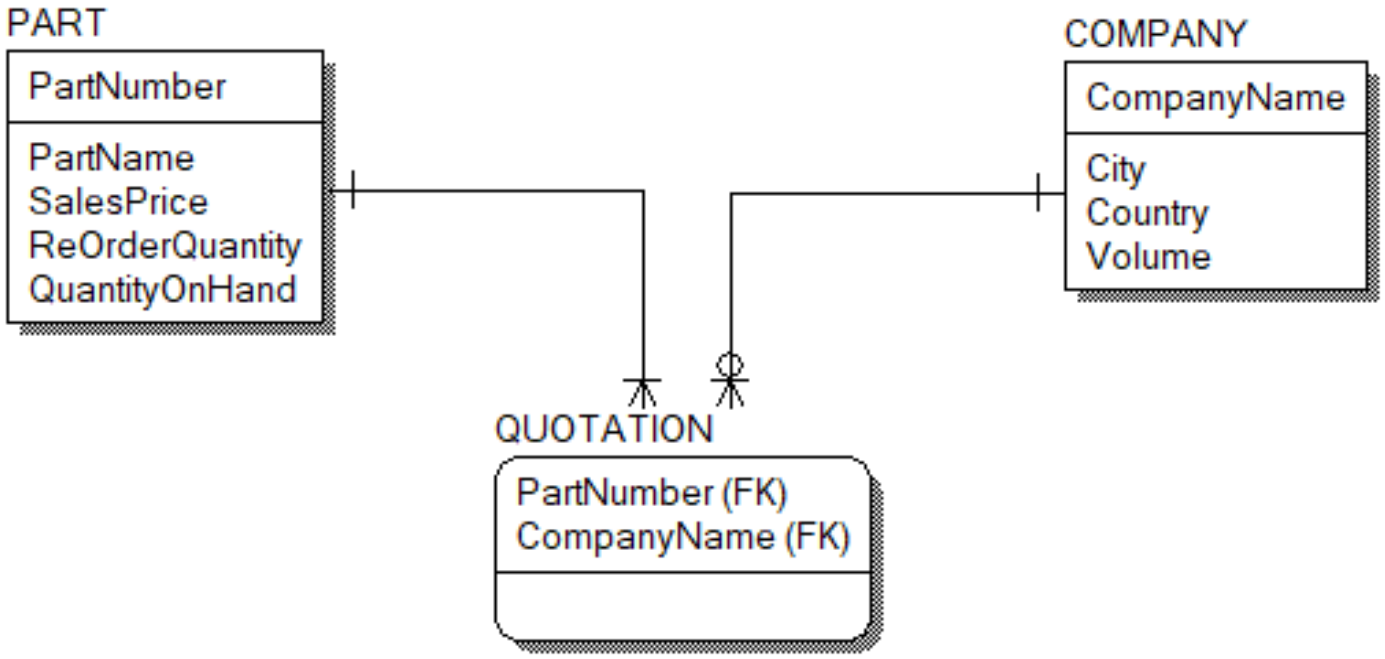
실습 과제 (3/6)

Q3) ER-Win 프로그램을 사용하여 아래와 같은 동일한 데이터베이스 모델을 작성하시오.



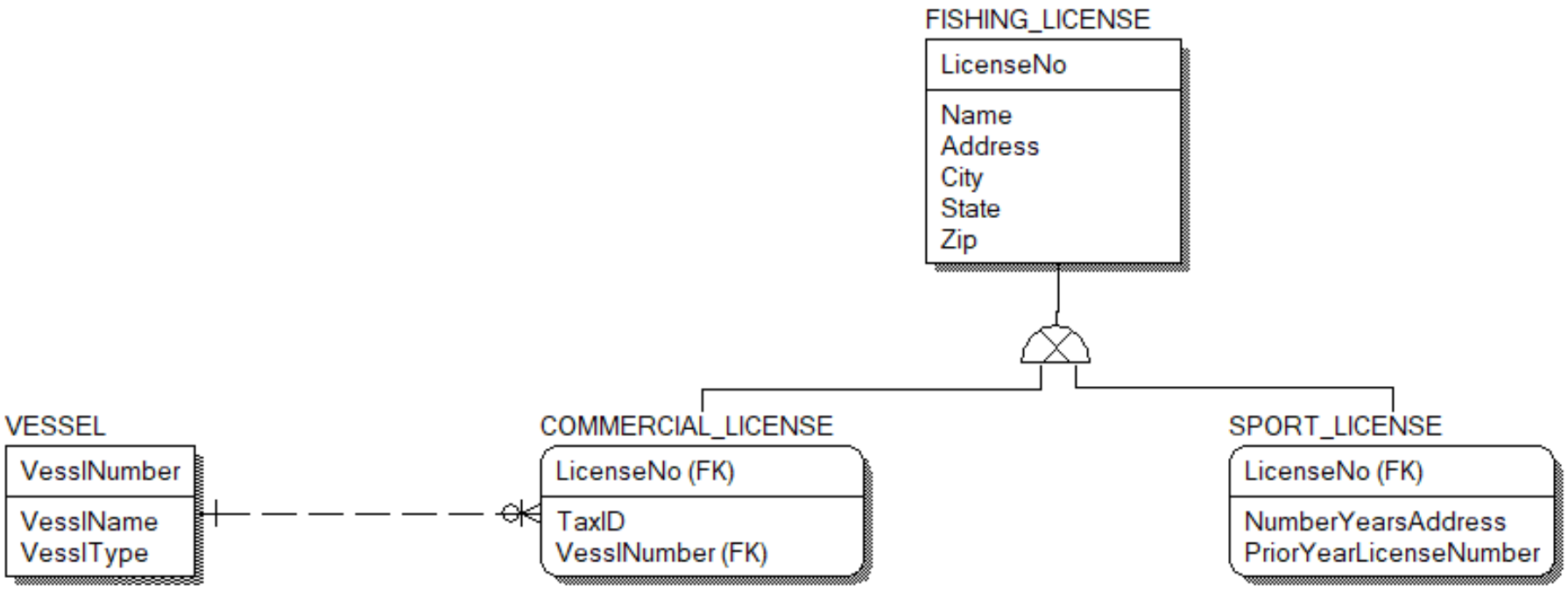
실습 과제 (4/6)

Q4) 아래와 같은 모델을 작성하시오.



실습 과제 (5/6)

Q5) 아래와 같은 모델을 작성하시오.



실습 과제 (6/6)

- 제출 방식 : E-Class를 통하여 제출
- 제출 내용 : ERwin File
- 제출 형식 : 학번_이름_주차
  - Ex) 학번_홍길동_3주차.erwin
- 제출 기한 : 수업 시작 시간으로 부터 24시간 이내 제출
  - 제출 기한 위반 시 감점 기준
    - 지각 제출 시 과제 점수에서 40% 감점
    - 1일 초과 당 20% 추가 감점 (단, 4일 이후 제출 불가)