

DATA MODELING TUTORIAL

Using VISIO

PROBLEM 1: staying in a hospital

- Typically, a patient receives medications that have been ordered by a particular doctor. Because the patient often receives several medications per day, there is a 1:M relationship between PATIENT and ORDER. Similarly, each order can include several medications, creating a 1:M relationship between ORDER and MEDICATION.
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- Identify the business rules for PATIENT, ORDER, and MEDICATION.
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The business rules

- The business rules reflected in the PATIENT description are:
 - A patient can have many (medical) orders **written** for him or her.
 - Each (medical) order is **written** for a single patient.
- The business rules reflected in the ORDER description are:
 - Each (medical) order can **prescribe** many medications.
 - Each medication can be **prescribed** in many orders.
- The business rules reflected in the MEDICATION description are:
 - Each medication can be **prescribed** in many orders.
 - Each (medical) order can **prescribe** many medications.

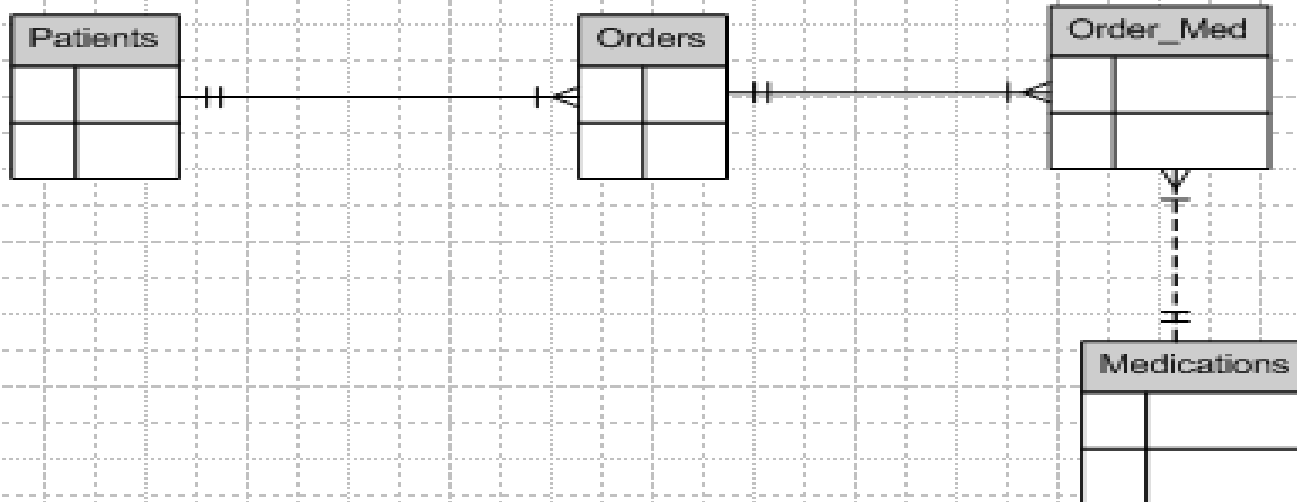
Create a Crow's Foot ERD that depicts a relational database model to capture these business rules.

Natural Relationship between order and medication is N:M



When that happens we need to convert to an association with an entity in between the two original entities

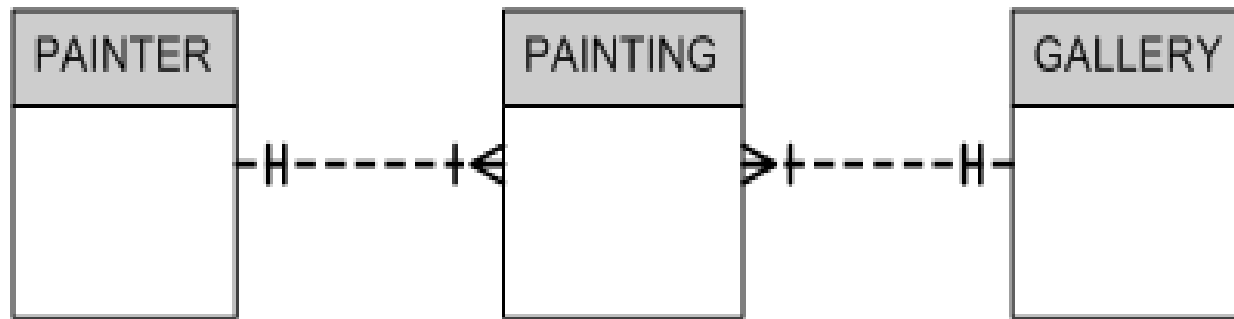
Orders is the associative entity to solve the N:M relationship. You could call it Pat_Med also. This entity shares the identifier from each of the original tables



United Artists Data Model

- A painter can paint many paintings.
 - Each painting is painted by only one painter.
- A gallery can exhibit many paintings.
- A painter can exhibit paintings at more than one gallery at a time. (For example, if a painter has painted six paintings, two may be exhibited in one gallery, one at another, and three at the third gallery. Naturally, if galleries specify exclusive contracts, the database must be changed to reflect that business rule.)
 - Each painting is exhibited in only one gallery.

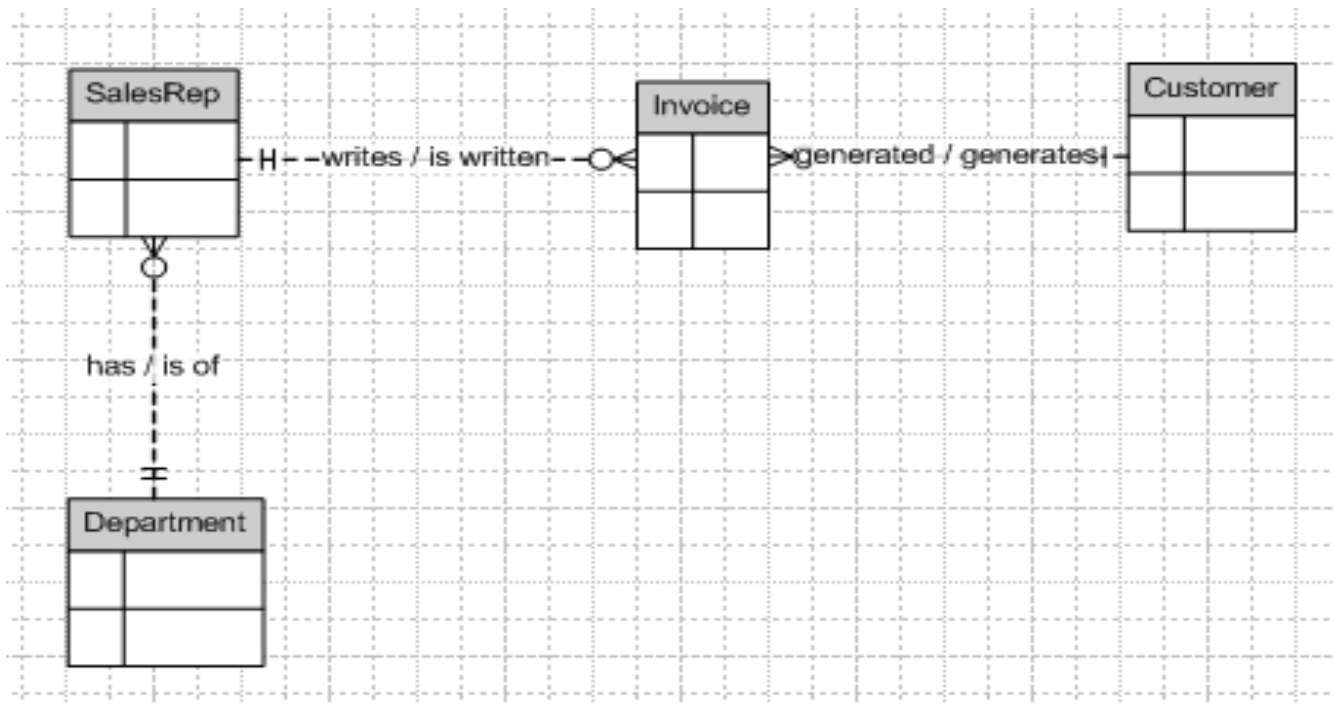
UA ERD Model



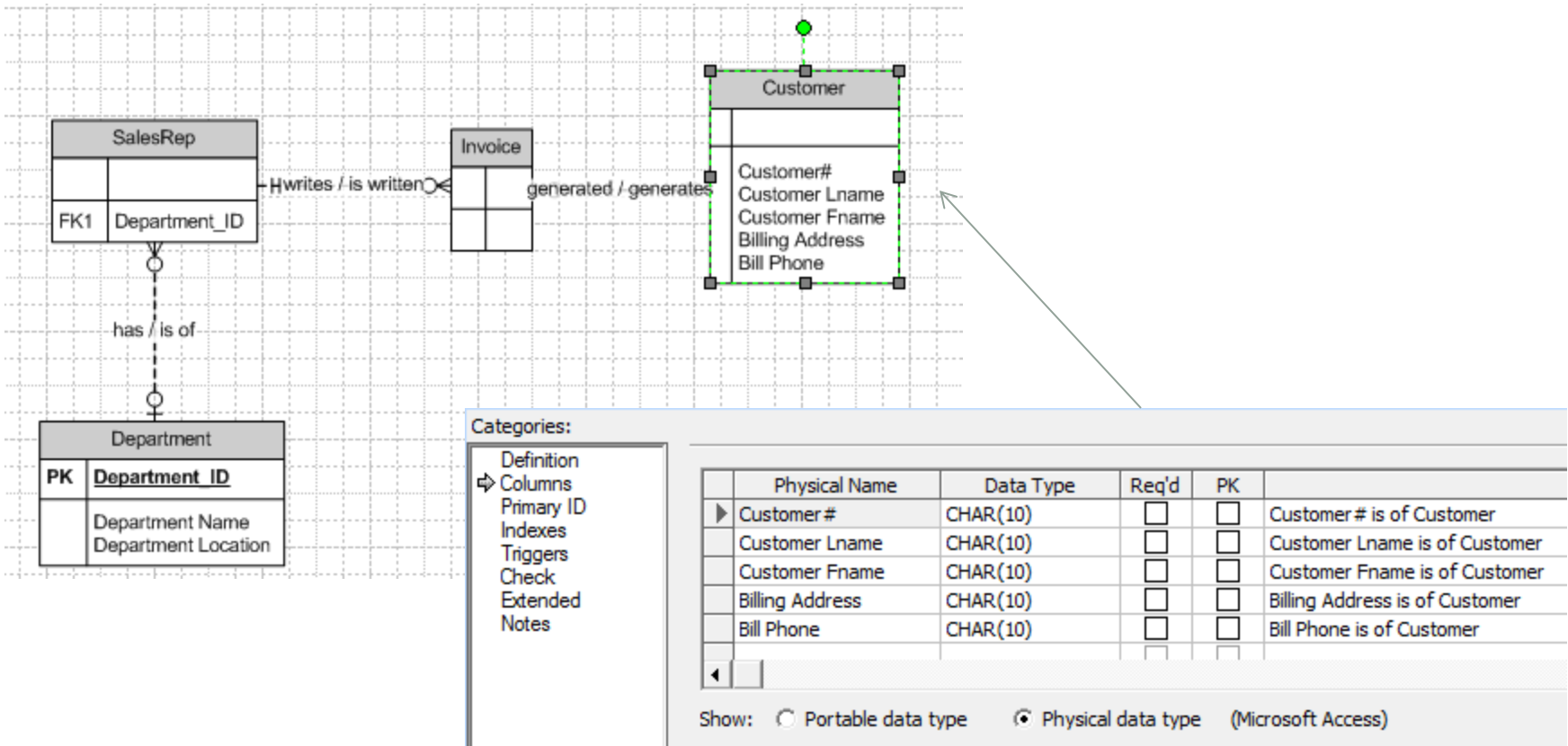
Problem 3 _ relationships

- A professor can teach many classes.
- Each class is taught by one professor.
- A professor can advise many students.
- Each student is advised by one professor.

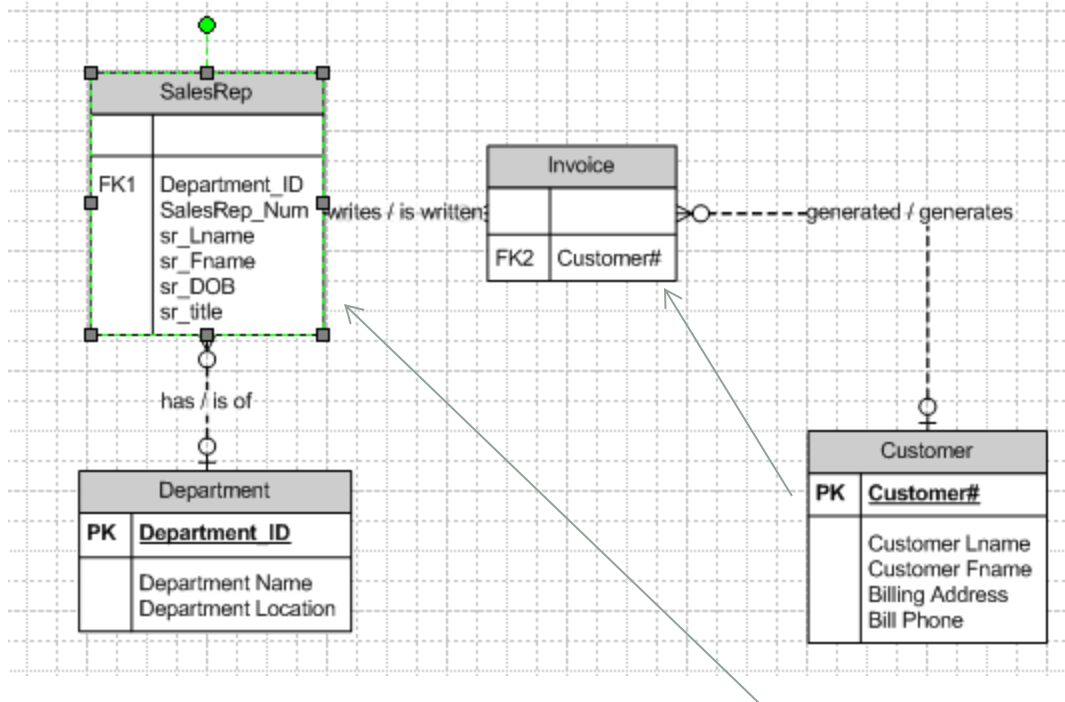
Problem 4: ABC Company



Populating the Model phase 1



Populating the Model phase 2

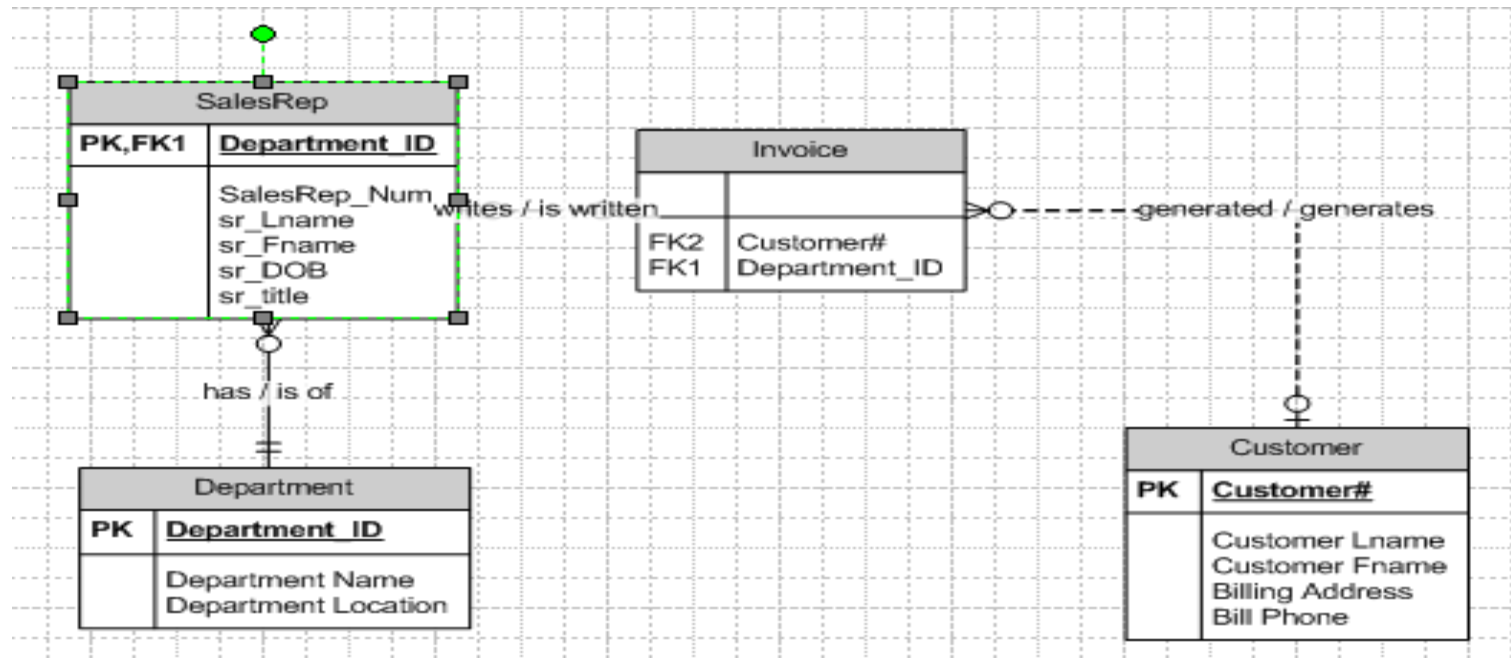


Categories:

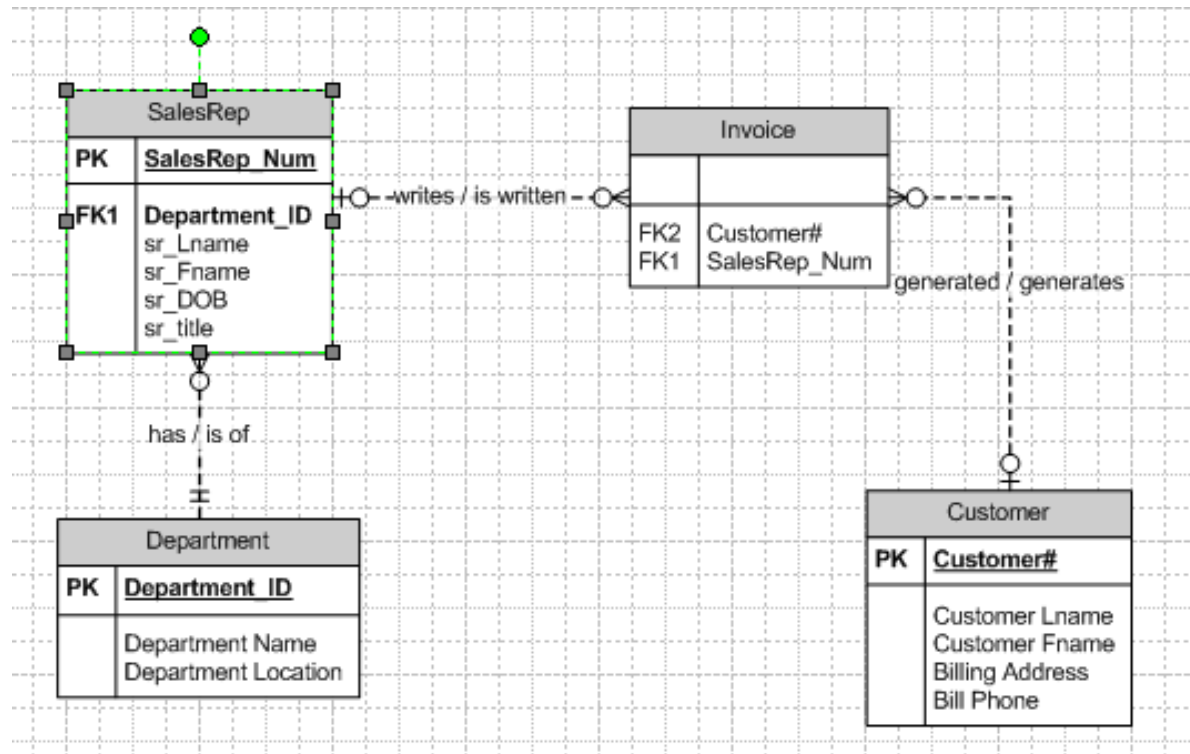
- Definition
- Columns
- Primary ID
- Indexes
- Triggers
- Check
- Extended
- Notes

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▶	Department_ID	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	Department_ID is of SalesRep
	SalesRep_Num	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	SalesRep_Num is of SalesRep
	sr_Lname	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	sr_Lname is of SalesRep
	sr_Fname	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	sr_Fname is of SalesRep
	sr_DOB	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	sr_DOB is of SalesRep
	sr_title	CHAR(10)	<input type="checkbox"/>	<input type="checkbox"/>	sr_title is of SalesRep

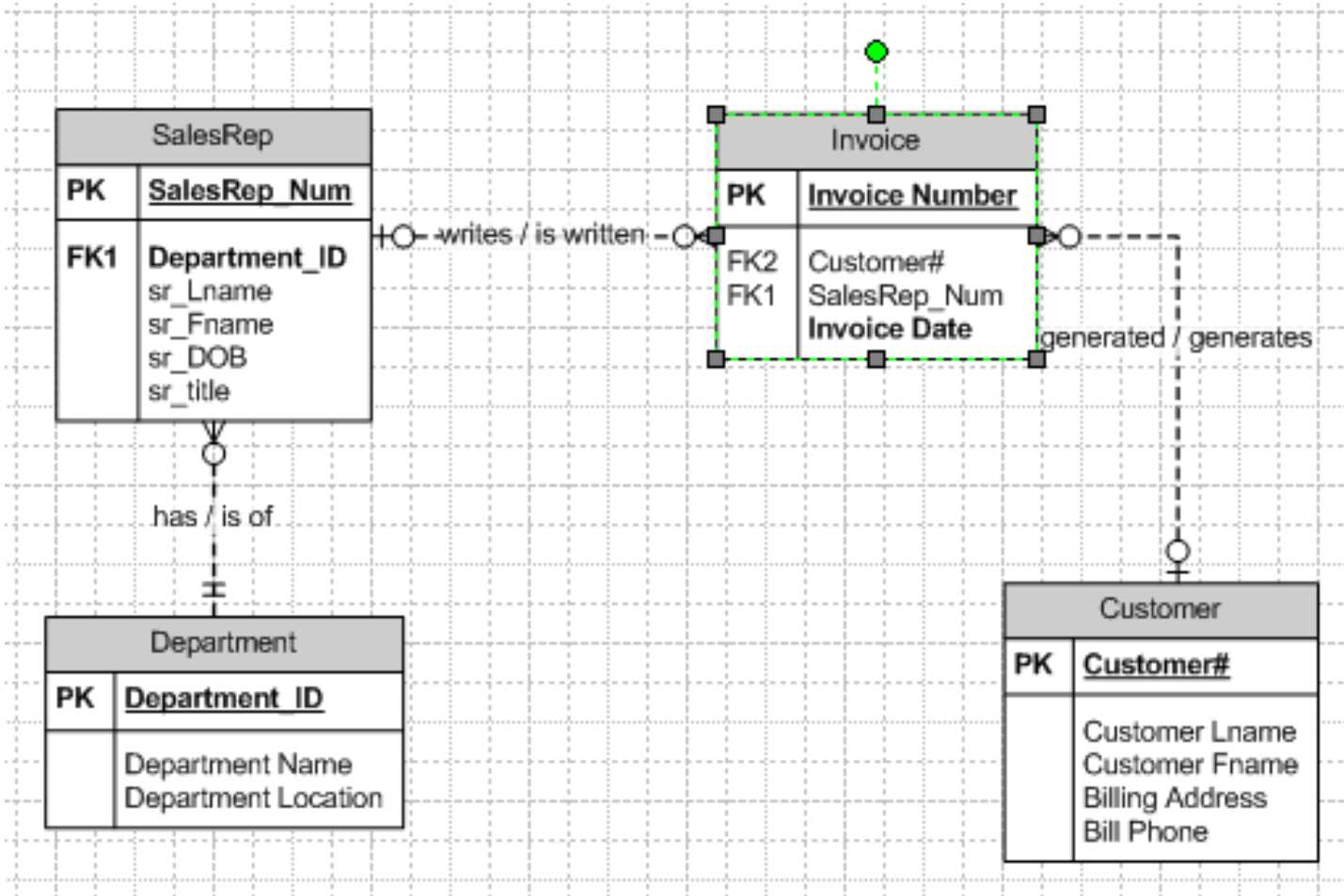
Populating the Model phase 2



Populating the Model phase 3



Populating the Model phase 4



Or Populating the Model phase 5

