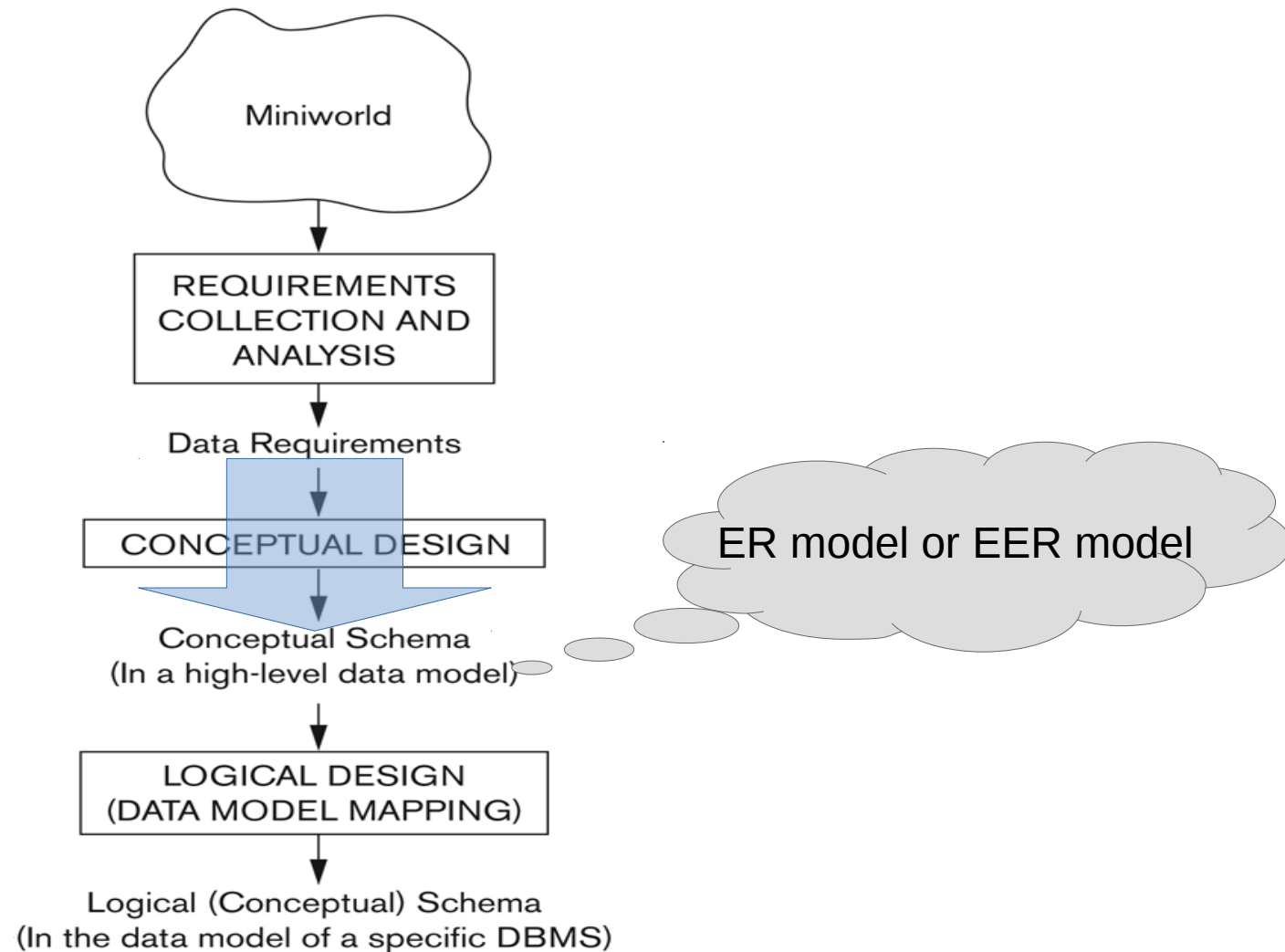Database Technology

Topic 4: Enhanced Entity-Relationship (EER) Model

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Recall: DB Design Process

Miniworld

↓

REQUIREMENTS COLLECTION AND ANALYSIS

↓

Data Requirements

↓

CONCEPTUAL DESIGN

ER model or EER model

↓

Conceptual Schema
(In a high-level data model)

↓

LOGICAL DESIGN (DATA MODEL MAPPING)

↓

Logical (Conceptual) Schema
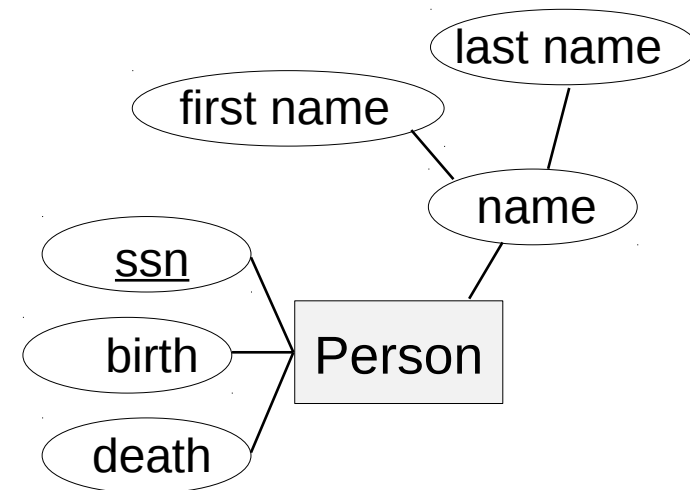(In the data model of a specific DBMS)

(E)ER Modeling

ER Concepts

Quiz

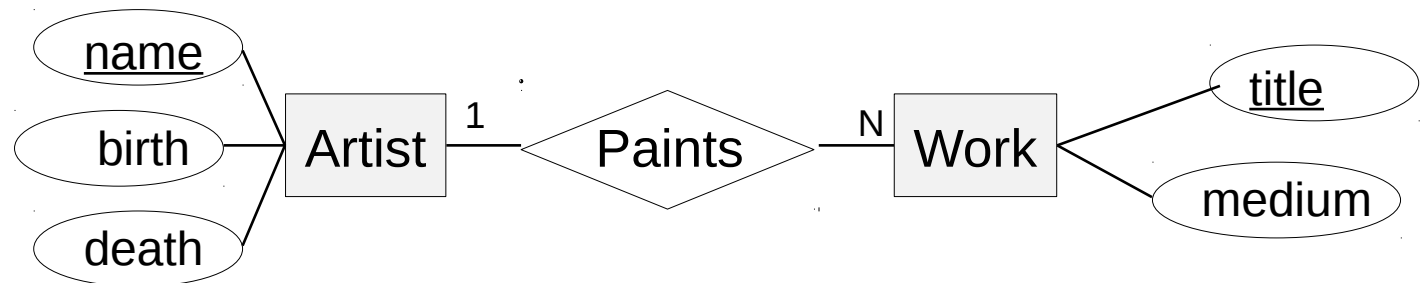Consider the attribute name in the ER diagram given below. How do we call such attributes?

A. multi-valued attributes

B. derived attributes

C. composite attributes

D. key attribute attributes

E. foreign key attributes

Quiz

Assume that Alicia is an artist. Based on the given ER diagram, which of the following statements is *wrong*?

A. Alicia may have painted five different works using the same medium.

B. Alicia may have painted three works, each of them together with another artists.
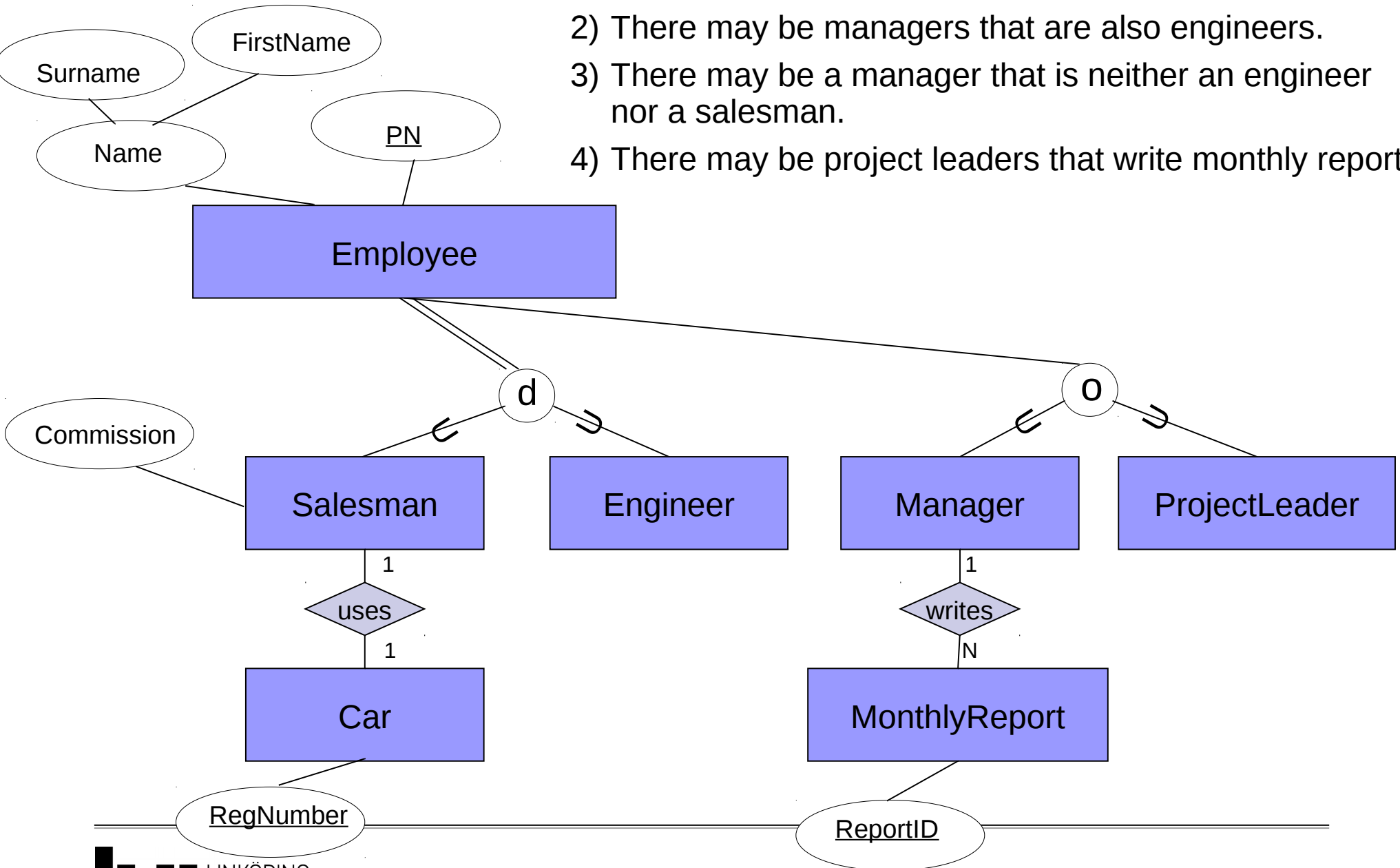
C. Alicia may not have painted any work at all.

(E)ER Modeling

EER Concepts

Quiz

One of the following statements is *not* correct. Which one?
1) Every engineer has a personal number (PN).
2) There may be managers that are also engineers.
3) There may be a manager that is neither an engineer nor a salesman.
4) There may be project leaders that write monthly reports.

Surname

FirstName

Name

PN

Employee

Commission

d

o

Salesman

Engineer

Manager

ProjectLeader

1

uses

1

Car

1

writes

N

MonthlyReport

RegNumber

ReportID

(E)ER Modeling

Example

Example
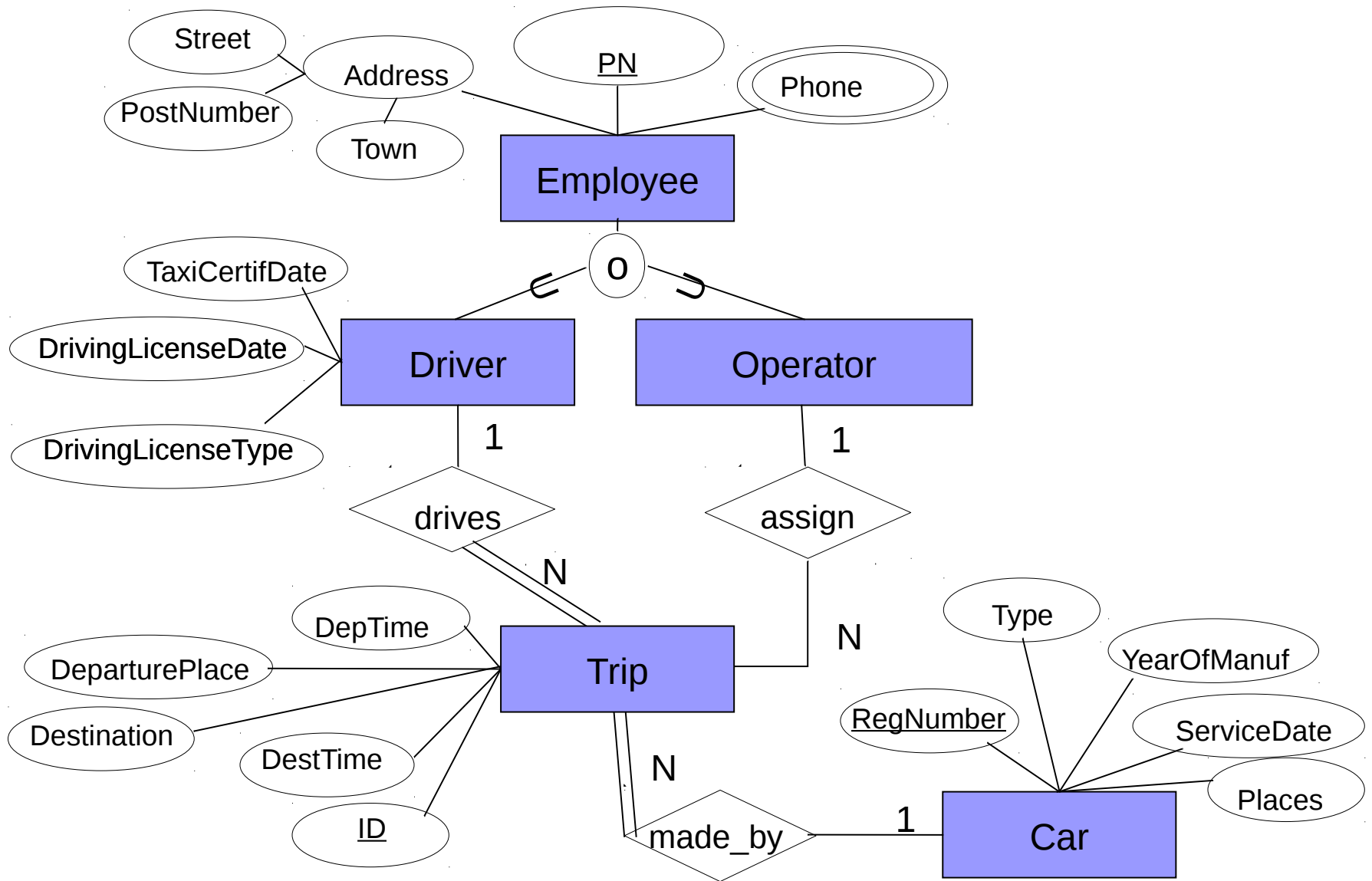
A taxi company needs to model their activities.

There are two types of employees in the company: drivers and operators. For drivers it is interesting to know the date of issue and type of the driving license, and the date of issue of the taxi driver's certificate. For all employees it is interesting to know their personal number, address and the available phone numbers.

The company owns a number of cars. For each car there is a need to know its type, year of manufacturing, number of places in the car and date of the last service.
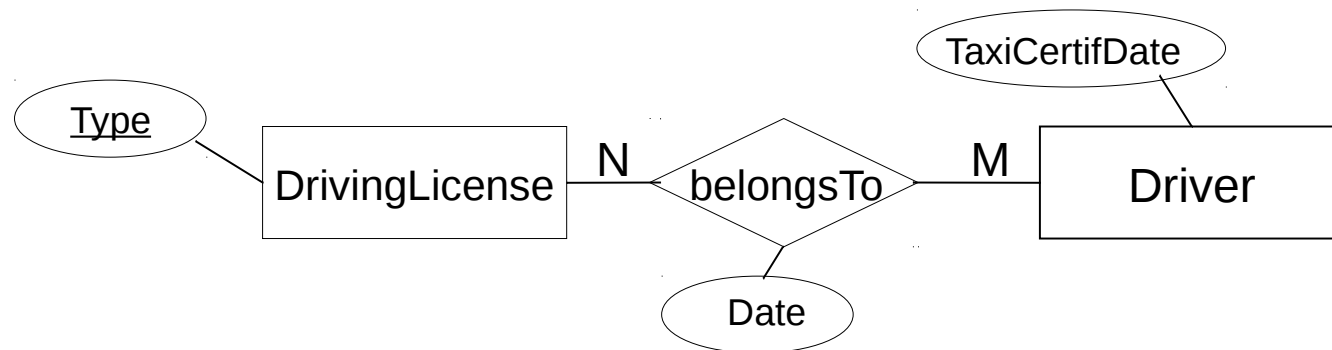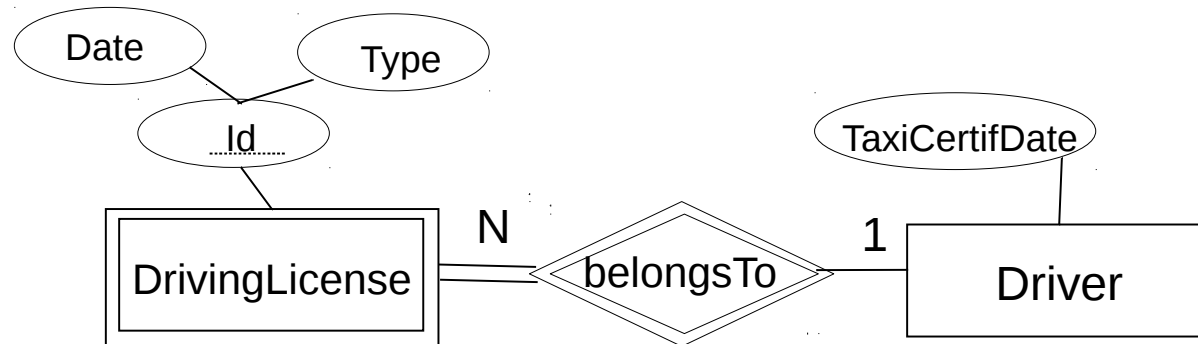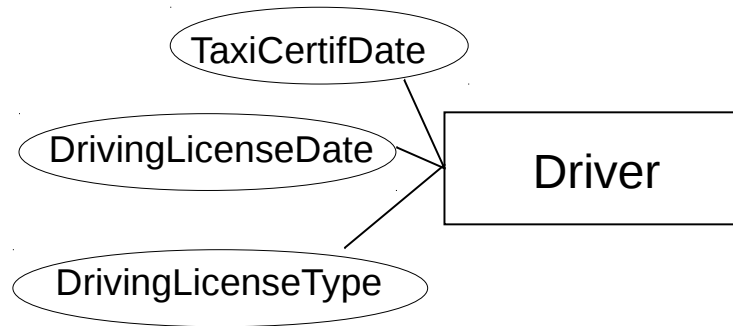
The company wants to have a record of car trips. A taxi may be picked on a street or ordered through an operator who assigns the order to a certain driver and a car. Departure and destination addresses together with times should also be recorded.

Example

Example (cont'd)

A driver may have many driving licenses (types)

TaxiCertifDate

DrivingLicenseDate

Driver

DrivingLicenseType

Date   Type

Id

DrivingLicense — N — belongsTo — 1 — Driver

TaxiCertifDate

Type

DrivingLicense — N — belongsTo — M — Driver

TaxiCertifDate

Date

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