

MIS 3506

# Digital Design and Innovation Studio

6: UNDERSTANDING THE DATA YOUR  
CLIENT NEEDS

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Photo: Installation by Jenny Holzer, US Pavillion, Venice Biennale 1990

**EXTRA CREDIT**

# **EXAM #1**

**In-Class review**

during Class 1 next week

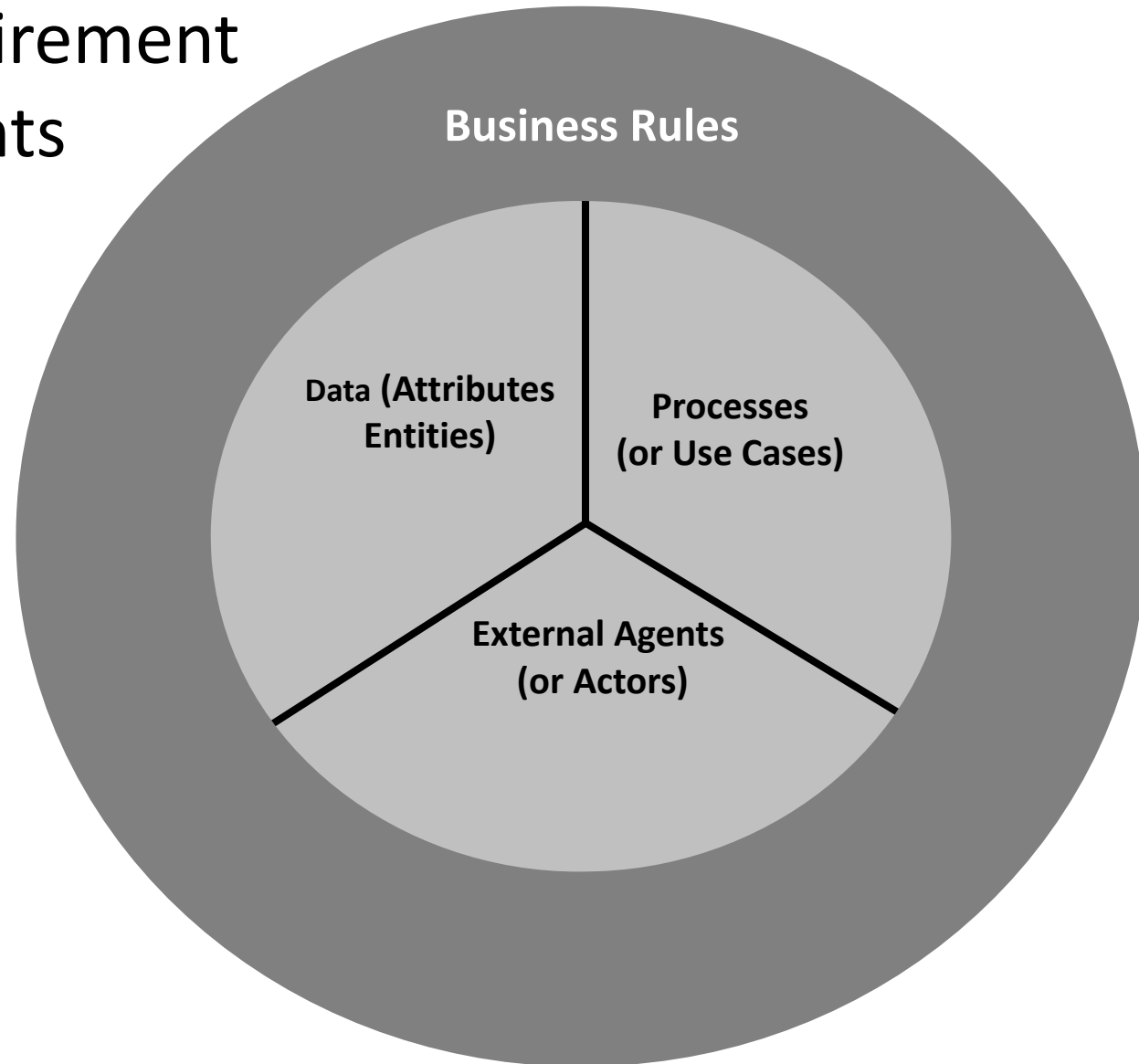
**Meet individually** with me

to review details

Review:

What are the **Core**  
**Requirement Components?**

# Core Requirement Components

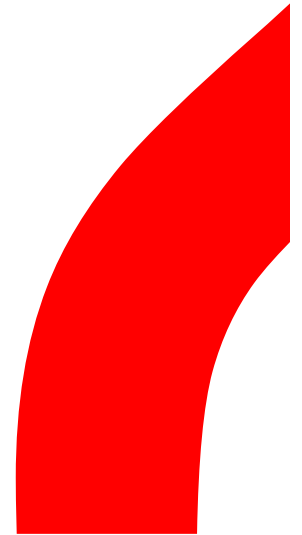


**DATA**

Understanding **DATA**  
needed in a  
business context



What is **DATA**



# data:

1: factual information (as measurements or statistics) **used as a basis for reasoning, discussion, or calculation** <the *data* is plentiful and easily available — H. A. Gleason, Jr.>  
<comprehensive *data* on economic growth have been published — N. H. Jacoby>

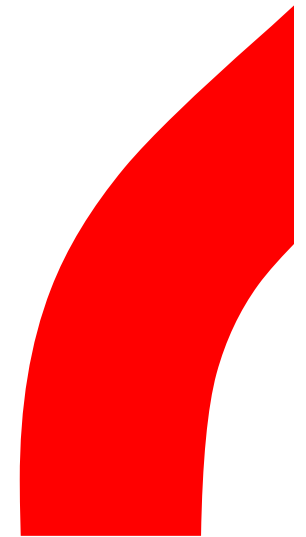
2: information output by a sensing device or organ that includes both useful and irrelevant or redundant information and **must be processed to be meaningful**

3: information in numerical form that can be **digitally transmitted or processed**

from <http://www.merriam-webster.com/dictionary/data>

# Defining Data

- Once you have good definitions of key terms involved in your project you are done with data. Right?
- What other information might you want about your data?



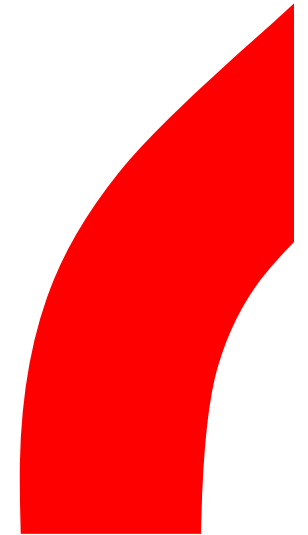
# Entities

- What is an entity?
- Where would you look for them?
- What might you want to know about them?



# Attributes

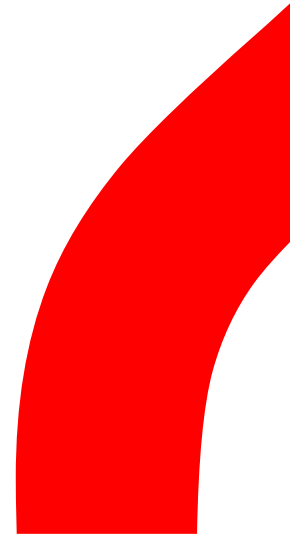
- What is an attribute?
- Where would you look for them?
- What might you want to know about them?



# Relationships

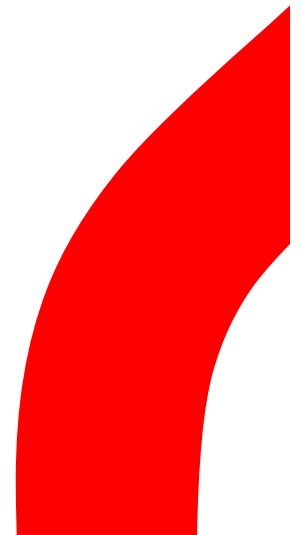
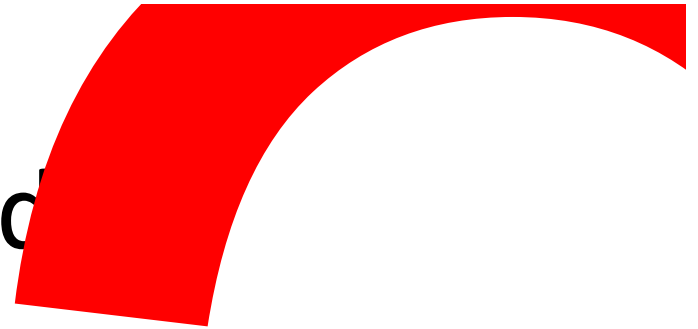
- What are the real world relationships between data entities?
- Try describing them in a sentence.

A customer places an order.



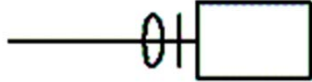
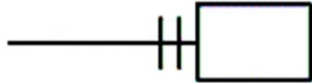
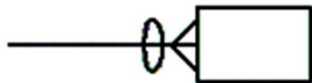
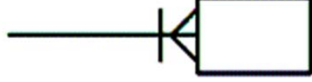
# Relationships (continued)

- What is the **cardinality** of the relationship?
  - One to one
    - A Temple student has one TUID number and a TUID number identifies only one student.
  - One to many
    - A doctor sees many patients.
  - Many to many
    - A library has many books and a book can be in many libraries.



# Relationships (continued)

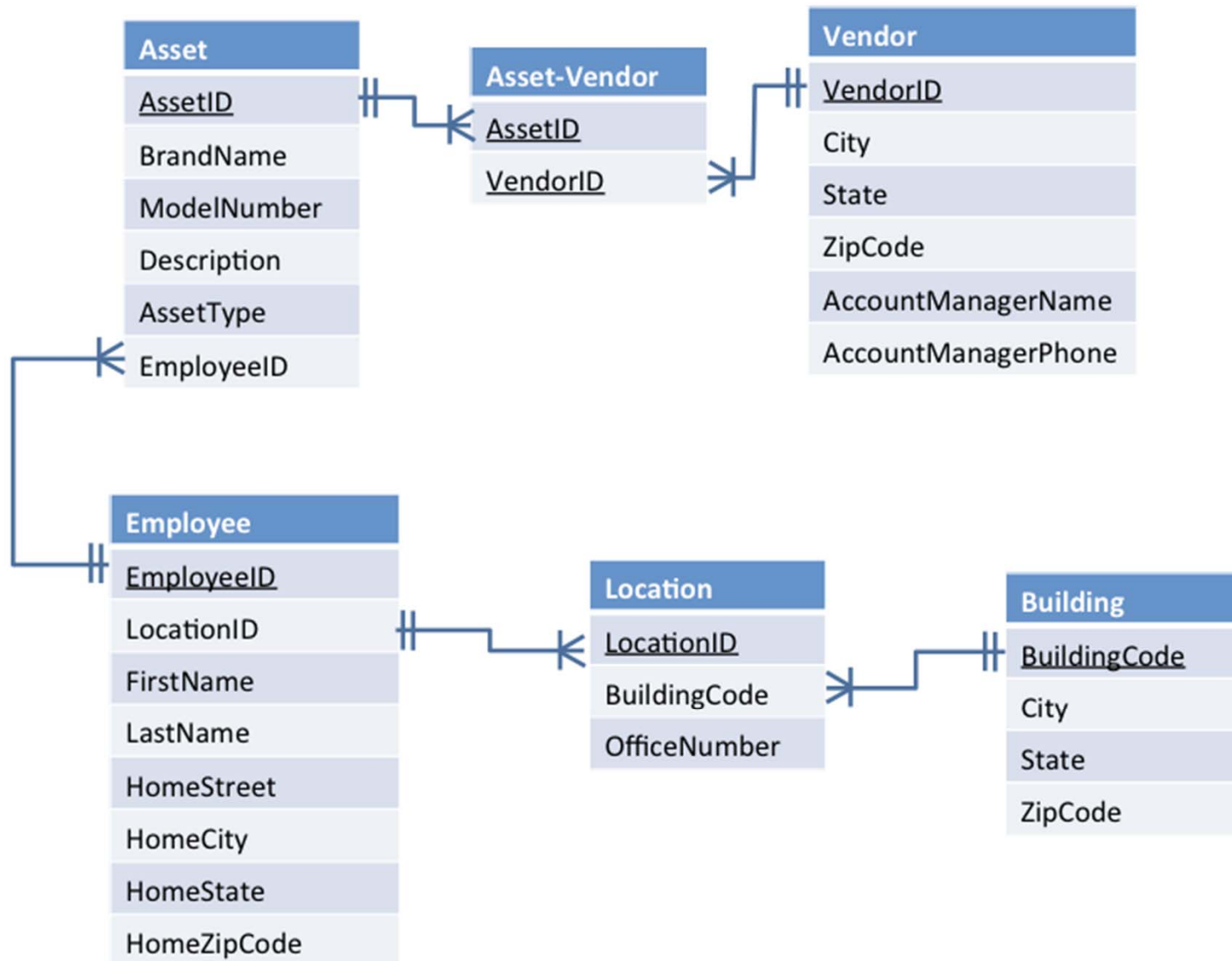
- What is a data schema?
- What relationship notation should you use?

Notation	Information Engineering
<u>Multiplicities:</u>	
- Zero or one	
- One only	
- Zero or more	
- One or more	



# Schema for Asset Management Database

(Assets are purchased from Vendors and assigned to Employees)



Case:

**READ: the Night Owl case**

We will use the case to determine the Entities, their Attributes and Relationships.

You are working for the Night Owl, a new music venue located in North Philadelphia. The Night Owl wants to sell tickets to Temple students directly rather than through a service like Ticketmaster. You are part of the team defining the data requirements for their web service.

The Night Owl's plan is to take credit cards for payment and to create a customer loyalty program for those customers who want to take advantage of it. The customer loyalty program will track each visit the customer makes to Night Owl and will give them a free ticket to an upcoming show for every 10 tickets they buy. The Night Owl also wants to use the customers' email addresses to advertise upcoming shows.

Your job is to define the logical data elements that must be kept for each customer in Night Owls' database. Use what you know about credit card sales and customer loyalty programs to do the following:

1. Identify all the data entities that the Night Owl database will need.
2. For each entity, identify all of the attributes that must be collected. Include information about each entity's type, range if any, default value, and special requirements.
3. Indicate the relationships between the different entities (i.e. every child has one and only one natural mother)

Case: (5 minutes)

**GLOSSARY:** using the case, your personal experience and quick research, what are the key concepts and information needed by the Night Owl?

Write out a glossary of these terms

Case: (15 minutes)

**ENTITIES:** using your glossary, what are the entities needed by the Night Owl's application?

Write out a list of these entities.

How many do you have?

Are any related?

Case: (15 minutes)

**ATTRIBUTES:** using your list of entities, what are the attributes of each of your entities?

Write out a list of these entities.

How many do you have?

Are any related?

Case: (15 minutes)

**Relationships:** using your list of entities, what are the relationships between each of your entities?

Write a sentence to describe each relationship.

What are the cardinalities of the relationships?

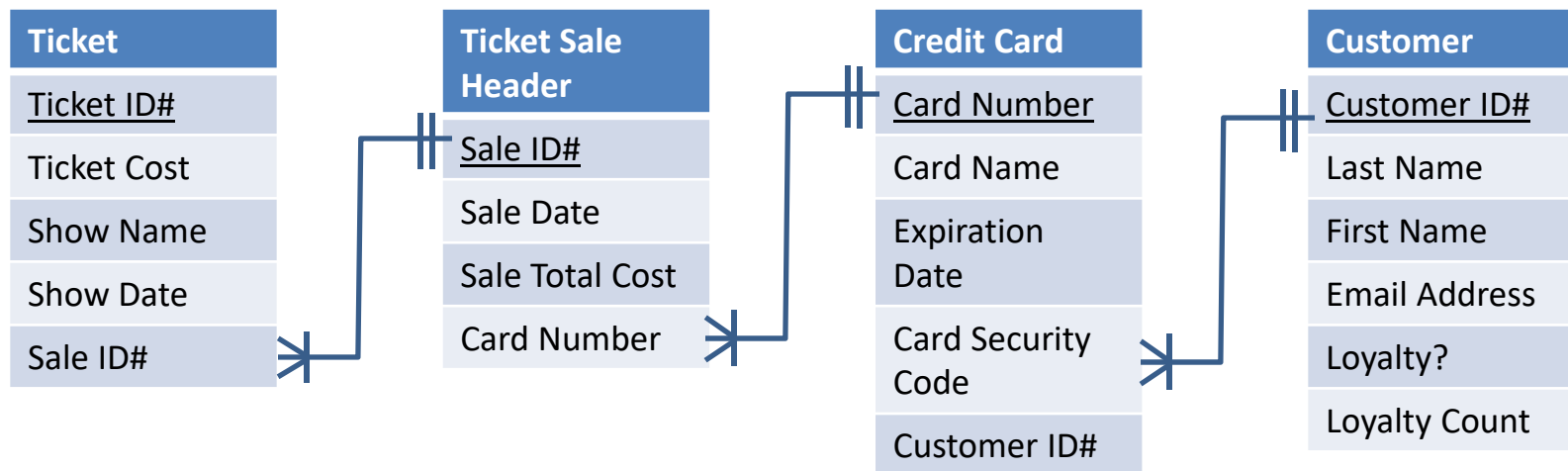
Case  
Review:

1. How did it go?
2. What confused you?
3. What does your list of entities, attributed and relationships look like?



# Schema for Night Owl Ticket Purchases

(Tickets are purchased by customers using credit cards)

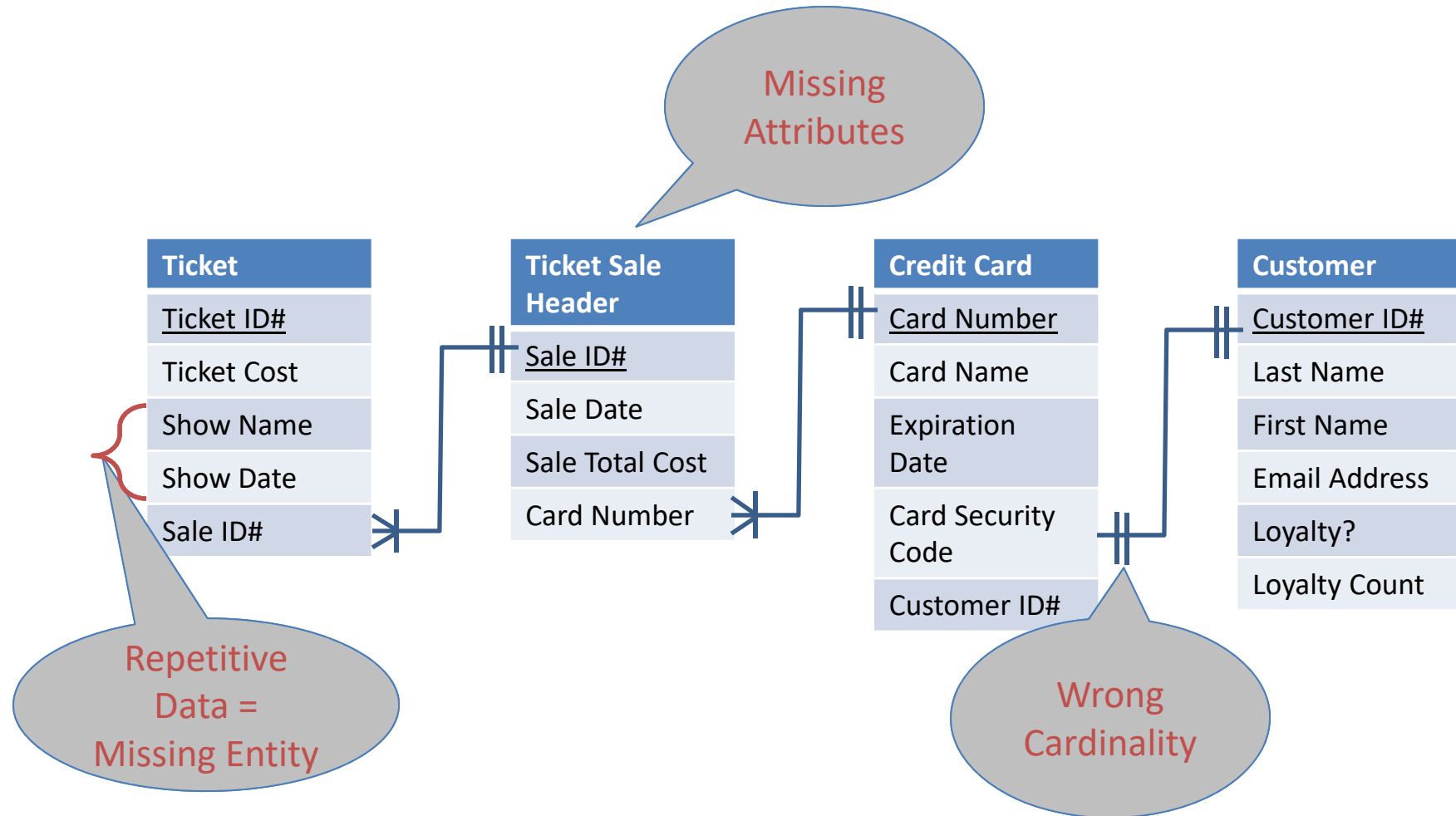


## Case Review:

1. How did it go?
2. What confused you?
3. What does your list of entities, attributed and relationships look like?
4. What follow-up questions do you have?
5. What problems or opportunities should you be looking for?

# Schema for Night Owl Ticket Purchases

(Tickets are purchased by customers using credit cards)



# Data Evaluation

1. How well does the schema describe the data involved in the client's problem?
2. How completely does they cover the client's situation?
3. Does it accurately reflect what data the client is using?
4. Is it an appropriate tool for the client's situation?

## EXTRA CREDIT:

Using your DATA SCHEMA and the CASE as a starting point, create a working eCommerce prototype that:

1. uses the DATA in the prototype's functions
2. completes and totals a ticket purchase and sales tax
3. tracks purchase history for the loyalty program