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
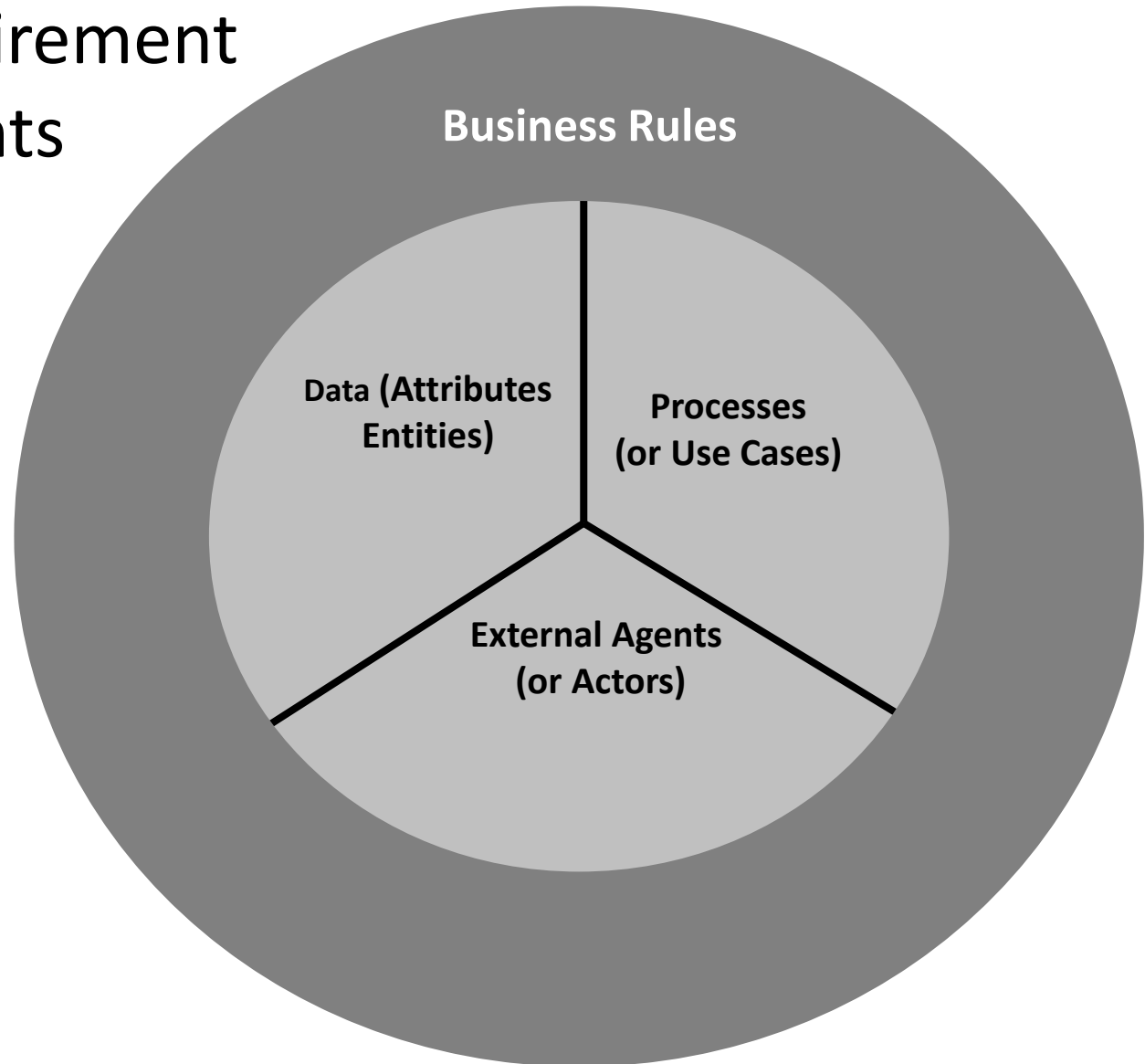
EXTRA CREDIT

EXAM #1

In-Class review on Tues

Meet individually with me to review details

Review:

What are the Core Requirement Components?

Core Requirement Components

Business Rules

Data (Attributes Entities)

Processes (or Use Cases)

External Agents (or Actors)

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?
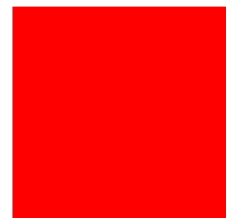
Entities

- 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.
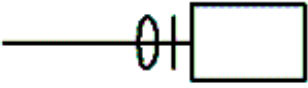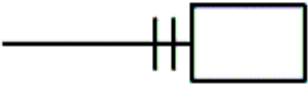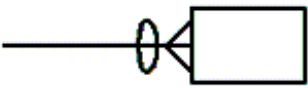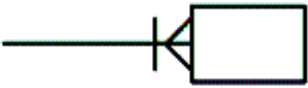 A customer places an order.

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.
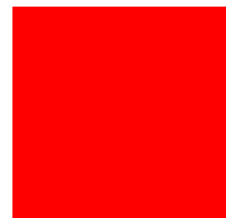
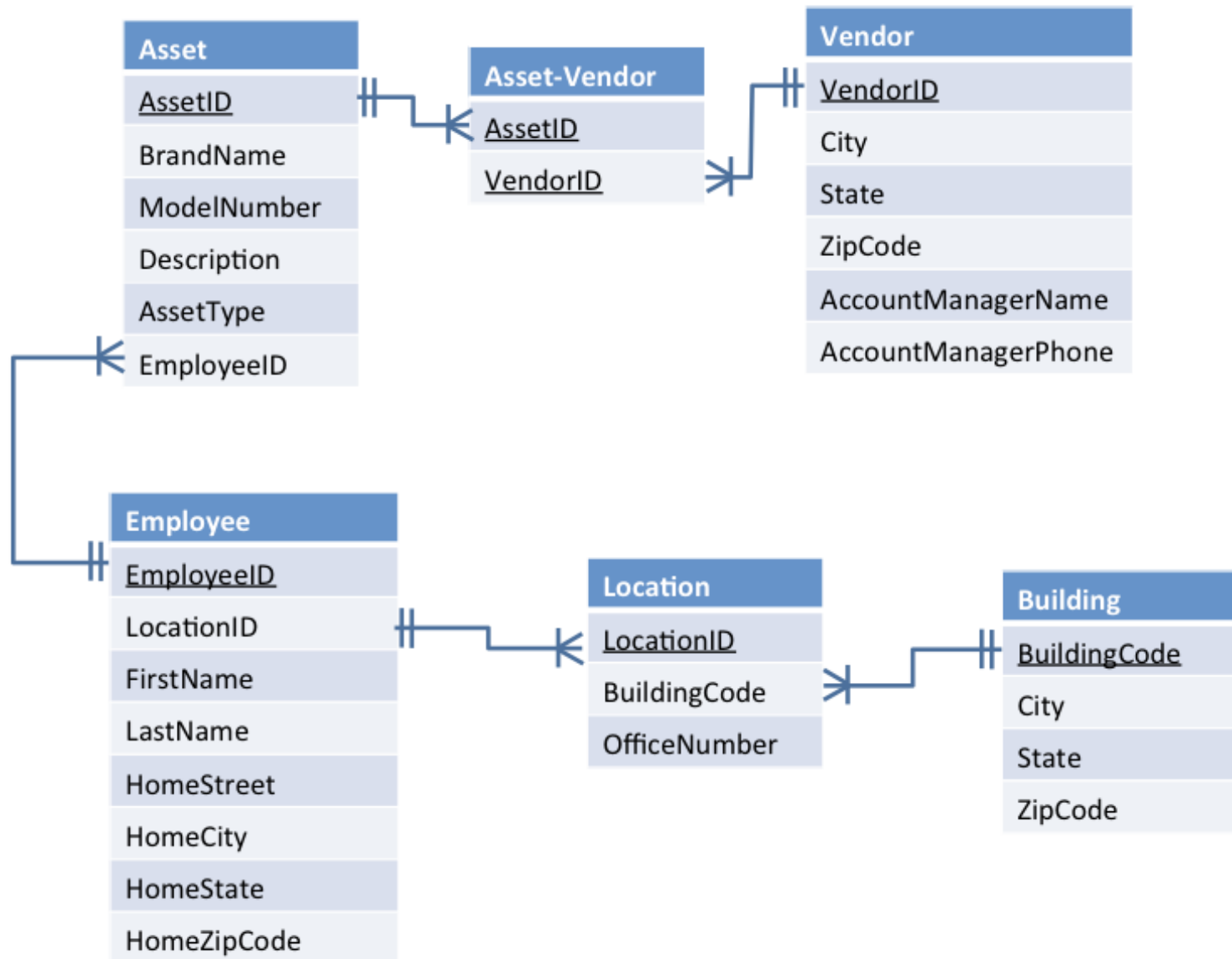# Relationships (continued)

- What is a data schema?

- What relationship notation should you use?

Notation	Information Engineering
Multiplicities:	
- 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)

Asset
- AssetID
- BrandName
- ModelNumber
- Description
- AssetType
- EmployeeID

Asset-Vendor
- AssetID
- VendorID

Vendor
- VendorID
- City
- State
- ZipCode
- AccountManagerName
- AccountManagerPhone

Employee
- EmployeeID
- LocationID
- FirstName
- LastName
- HomeStreet
- HomeCity
- HomeState
- HomeZipCode

Location
- LocationID
- BuildingCode
- OfficeNumber

Building
- BuildingCode
- City
- State
- ZipCode

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

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?**
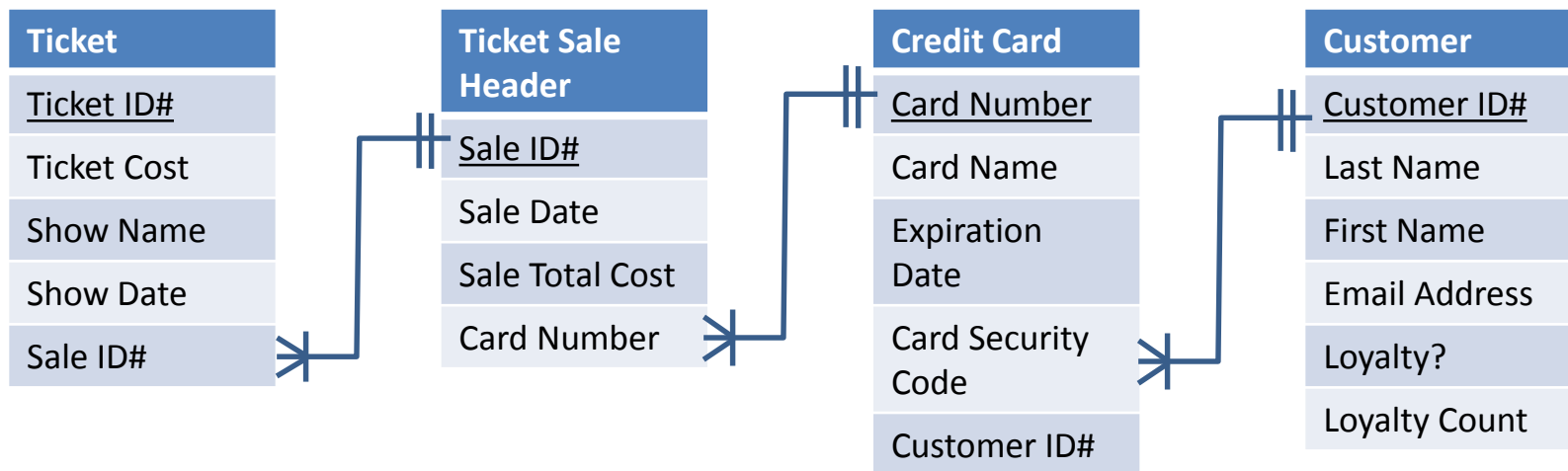Write a sentence to describe each relationship.
What are the cardinalities of the relationships?

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)

Ticket

Ticket ID#

Ticket Cost

Show Name

Show Date

Sale ID#

Ticket Sale Header

Sale ID#

Sale Date

Sale Total Cost

Card Number

Credit Card

Card Number

Card Name

Expiration Date

Card Security Code

Customer ID#

Customer

Customer ID#

Last Name

First Name
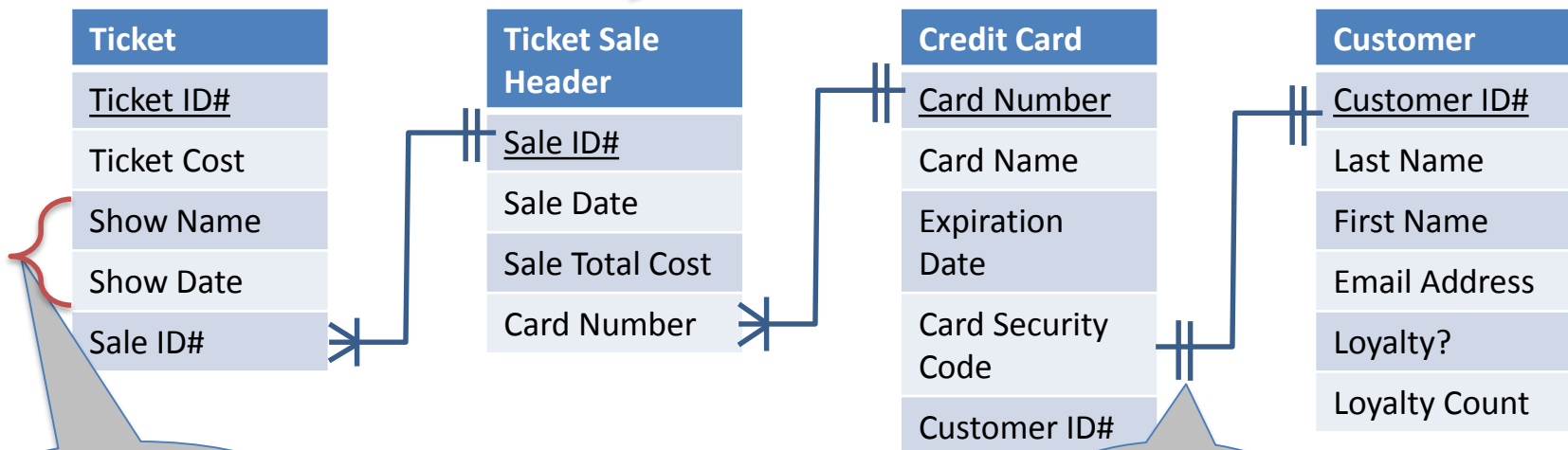
Email Address

Loyalty?

Loyalty Count

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