

# Understanding Data Modeling Concepts

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# In This Module



**Introduction to common terminology**

**Understanding data modeling concepts**

**Discover how your model fits the enterprise data model**



Are you ready for another  
fun-filled, action-packed  
learning adventure?



## Video 2

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# Common Terminology



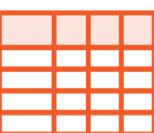
**Models and diagrams**



**Domain**



**Kinds of data (e.g. master or transactional)**



**Logical vs. physical**



Model?



Model?



# Model

A scaled-down, non-functional representation of an object, system, or idea









# Diagram

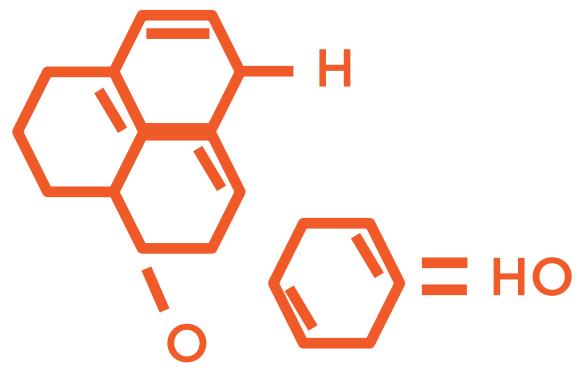
A two-dimensional visual representation that is often abstracted or symbolic.





An Apple



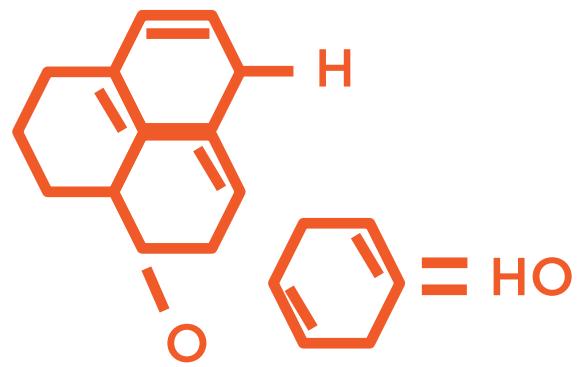


Chemical model  
of an apple



An Apple

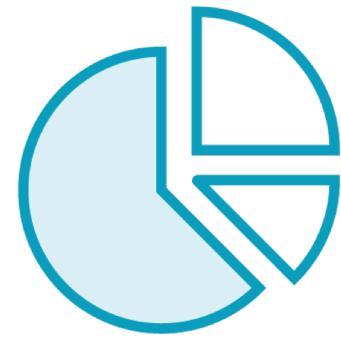




Chemical model  
of an apple



An Apple



Chemical diagram  
of an apple



Apple pie?

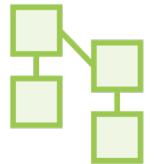


# Data model

A collection of **metadata** that represents the logical organization, shape, and meaning of data



# Common Terminology



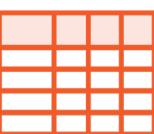
**Models and diagrams**



**Domain**



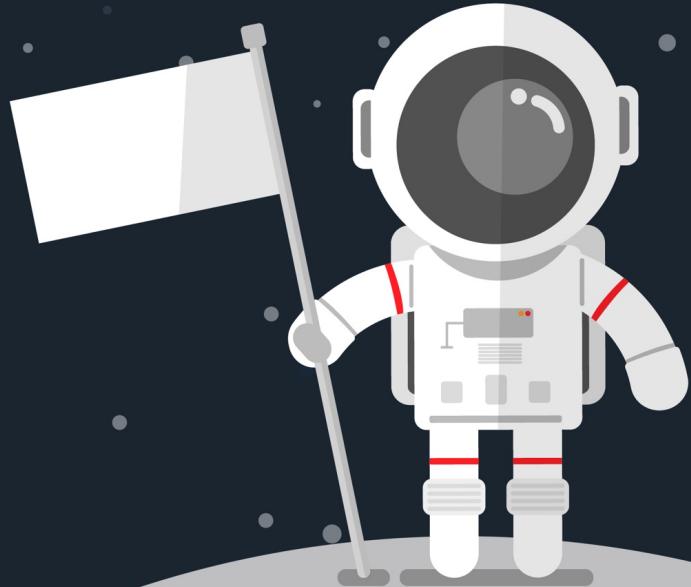
**Kinds of data (e.g. master or transactional)**



**Logical vs. physical**



"This moon is  
my domain"



**Joe's stuff**



# Knowledge Domain



# Domain

Describes the area and boundaries of a data element.



# Examples of Data Domain

Spelled out as a string: “one”

Number as a character: “1”

Leading zero as string: “01”

Integer: 1

Decimal: 1.00

Binary of character “1”: 00110001



# Reference Data Domain

First Name	First Name	Last Name	Birthdate
Paul	Paul	McCartney	1942-06-18
John	John	Lennon	1940-10-09
George	George	Harrison	1943-02-25
Ringo	Ringo	Starr	1940-07-07

(a.k.a. “look-up data”)



# Subject Matter Data Domain Examples

## **Customers**

Everything having to do  
with customer  
relationships

## **Franchisees**

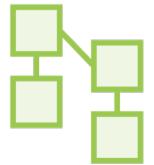
Everything having to do  
with getting and  
maintaining franchisees

## **eCommerce**

Decisions and analytics  
of your online presence



# Common Terminology



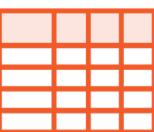
**Models and diagrams**



**Domain**



**Kinds of data (e.g. master or transactional)**



**Logical vs. physical**

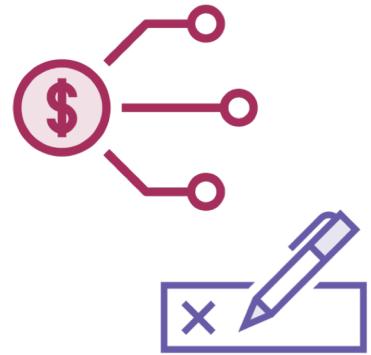


# Types of Data



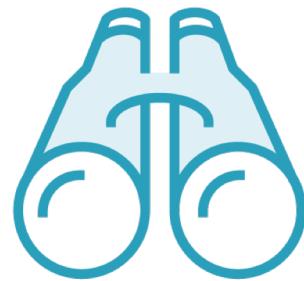
**Master**

Customer  
Hotel  
Sensor



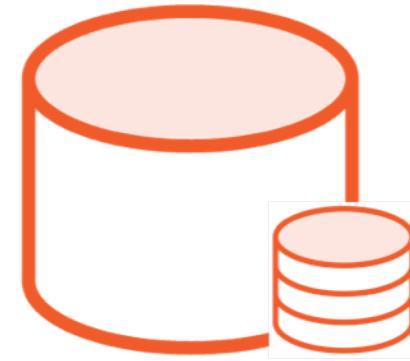
**Transactional**

Purchase  
Check-in  
Auto-orders



**Lookup**

Describes codes/IDs  
FK relationships  
“w” = “work phone”

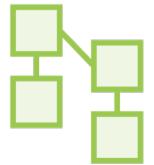


**Metadata**

Table data object  
Description  
Data type = “string”



# Common Terminology



**Model and diagrams**



**Domain**



**Kinds of data (e.g. master or transactional)**



**Logical vs. physical**



# Terms and Concepts

Logical	Physical
Entity	Table
Attribute	Column
Entity relationship	Foreign key relationship
Row (entity)	Row
Model	Schema



You don't model a table,  
you model an entity

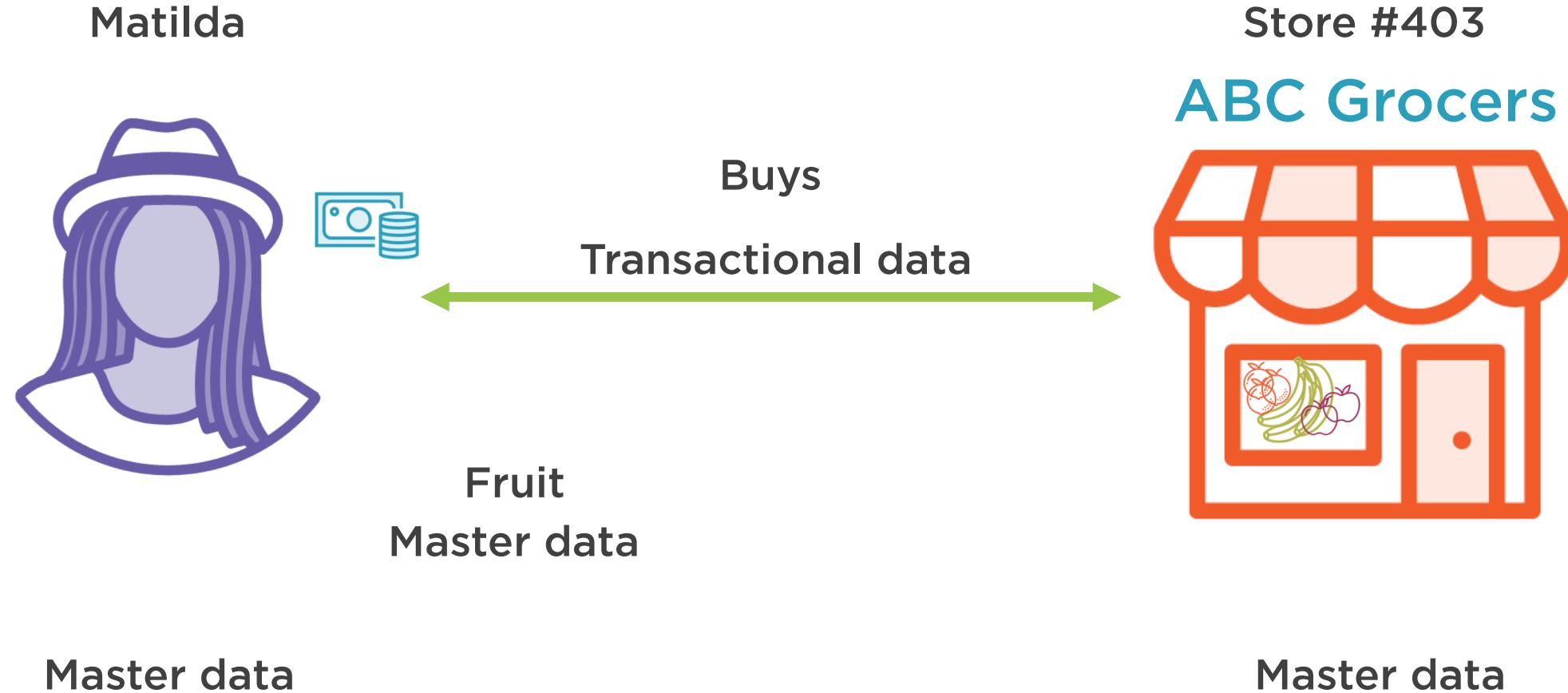


# Video 3

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# Data Kinds and Entity Relationship



# Centricty

From the center of a perspective often added to the end of a noun.



# Data Model Cardinality

How the uniqueness of an entity defines its relationship to other entities based on data centricity, e.g., one-to-many or many-to-many.



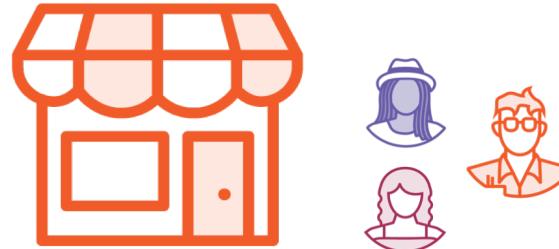
# Data Cardinality Example



Matilda-centric



One-to-many



Corporate-centric



One-to-many



Product-centric



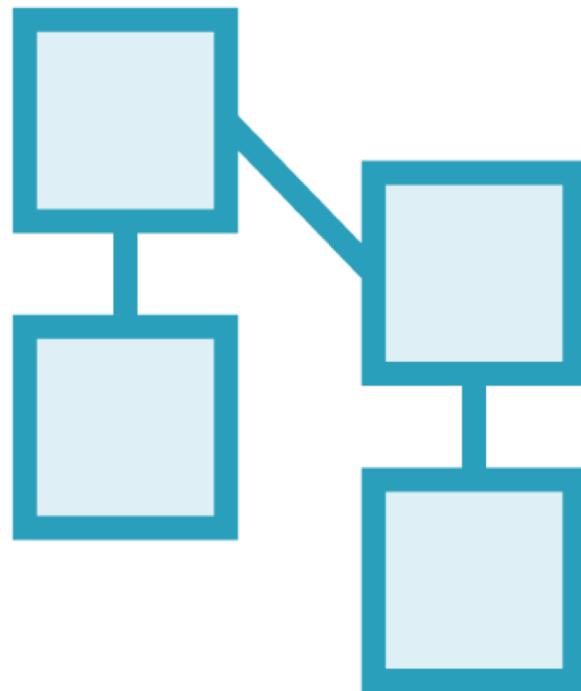
One-to-many



# Data Cardinality Example



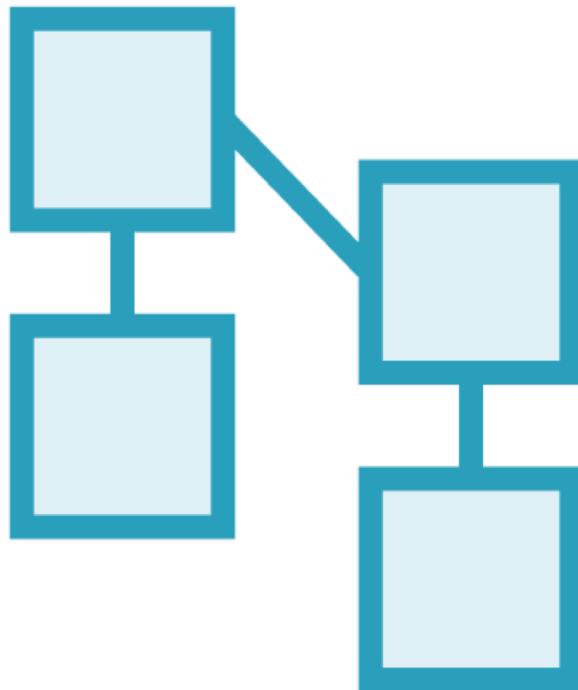
# Types of Data Models



- Hierarchical**
- Network**
- Relational**
- Object-oriented**
- Object-relational**
- Document**
- Entity-attribute-value**
- OLAP/data warehouses**



# Types of Data Models



## Hierarchical Relational

- object-oriented
- object-relational
- ORM (object-relational mapping)

## NoSQL

- document
- key/value
- graph

## Data warehouse/OLTP:

- Star
- Snowflake



# Next: Beginning Relational Data Modeling

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