

Database Design

Modeling Change: Price



ACADEMY

Objectives

This lesson covers the following objectives:

- Solve the business requirement of tracking changes in price or values by constructing a model that uses a historical entity
- Describe the meaning of journaling/logging
- Identify the business need for journaling/logging and construct a model that addresses this requirement

Purpose

Historical prices are important when looking for trends, determining the appreciation or depreciation value of items, or getting a refund for an item purchased in the past at a previous price.

Many businesses track history of change -- who changed it, when it was changed, and so on.

Example: if a student's grade is changed, it is useful to record when it was changed, the old grade, the new grade, and who changed it.

The Importance of Price Changes

Changes in price are often an important consideration when modeling business requirements. Some examples would be:

The stock market: Prices are changing by the second and you are watching the reader board, wondering when to buy and when to sell. What factors would you consider?

The Importance of Price Changes (cont.)

The fuel industry: Why would you want to track the price changes in fuel if you are thinking of buying a car or heating your home during the winter?

Construction businesses: Why are price changes important to a contractor of a five-year bridge-construction project?

The Good Old Days

The prices of products change over time. Some go up.

Can You Believe What I Paid for It?

The prices of products change over time. Some go down.

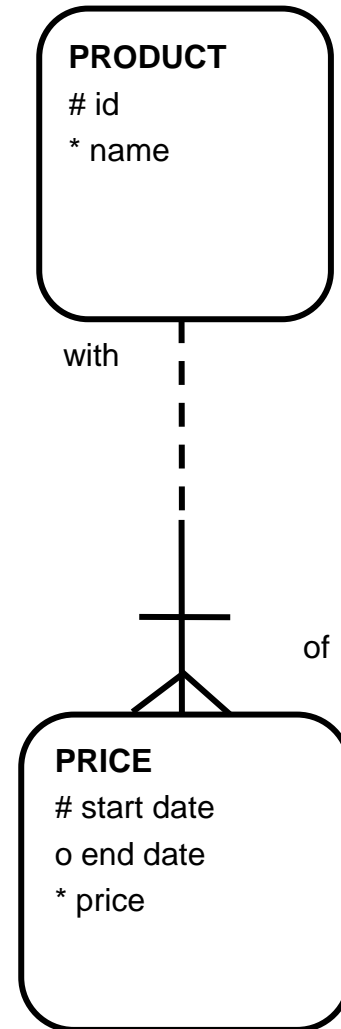
What's the Price Today?

The prices of products change over time. Some go up and down.

Model Historical Price

It is often useful to have information on past prices.

The model shown here tracks the historical price of a product.



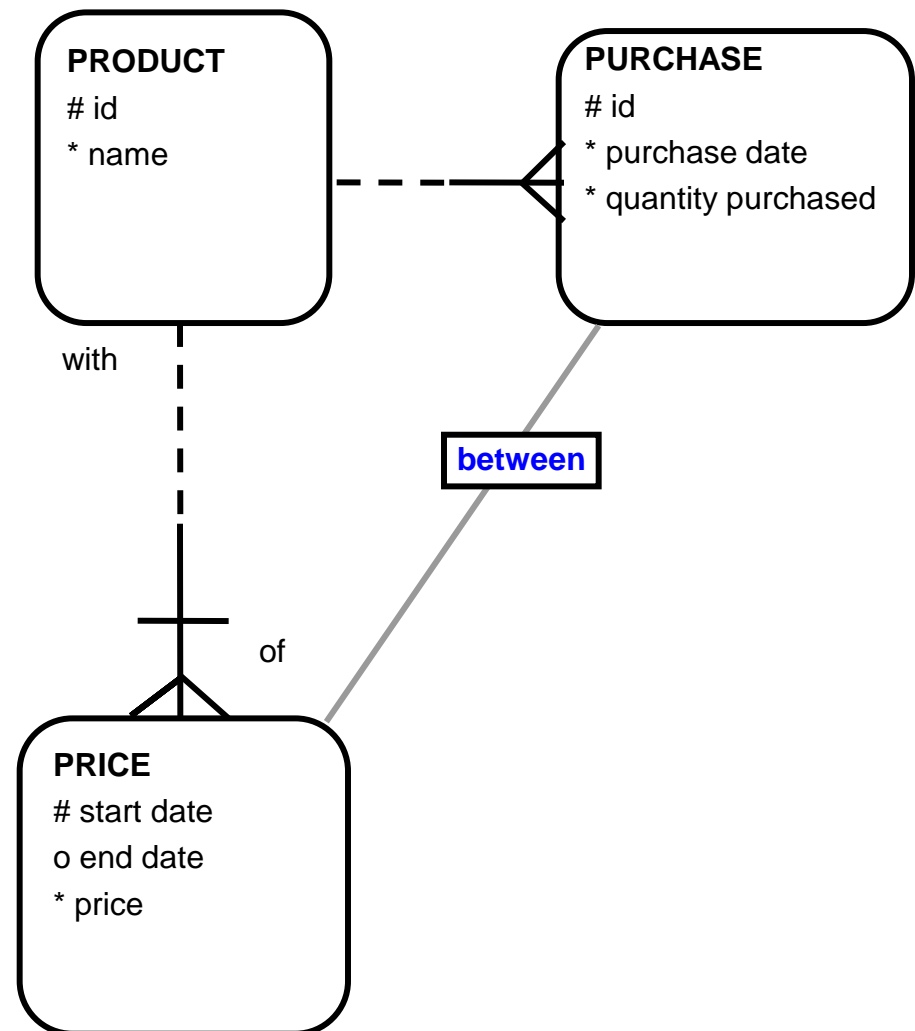
Historical Price Changes

Consider what happens when you return an item to a store. You purchased the item at a certain price, but it has gone on sale since then.

Tracking Price Changes

Businesses often need to keep a record of price changes. In this model, we assume that each PURCHASE is of only one product.

The price that was paid can be found by matching the purchase date between the start date and the end date of PRICE.

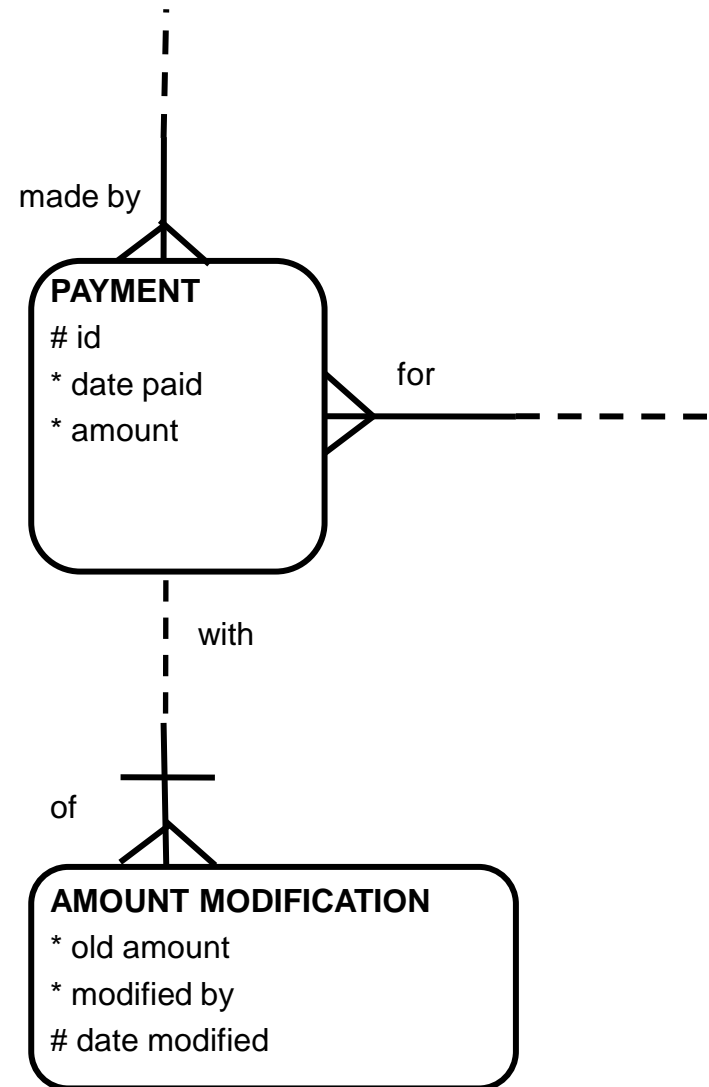


Other Data Changing Over Time

We've seen that prices change over time. Other types of information can also change, for different business reasons.

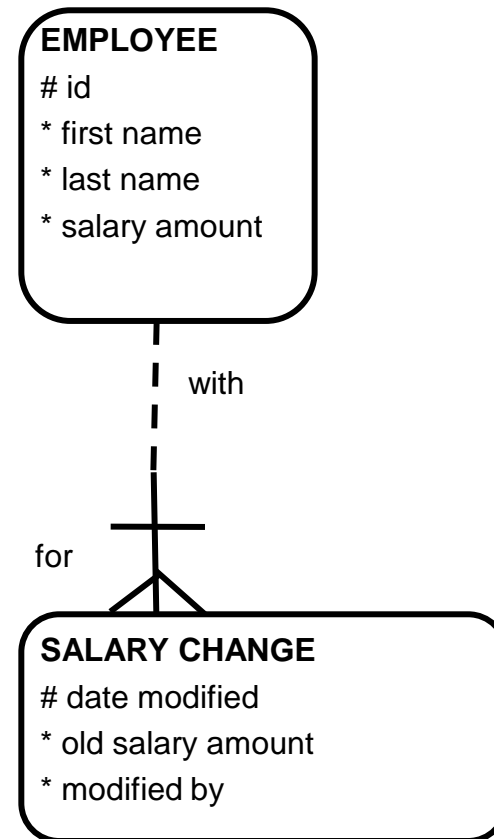
Journaling

Whenever a system allows a user to modify or remove particular information, the question should be asked, “Do the old values need to be kept on record?” This is called “logging” or “journaling.” This is often an issue when the information is financial or of a sensitive nature, such as a student grade change.



Journal Content

A journal usually consists of both the modified value and the information about who did the modification and when it was done. This extra information can, of course, be expanded if you wish.



Terminology

Key terms used in this lesson included:

- Appreciation
- Depreciation
- Journaling and/or logging

Summary

In this lesson, you should have learned how to:

- Solve the business requirement of tracking changes in price or value by constructing a model that uses a historical entity
- Describe the meaning of journaling/logging
- Identify the business need for journaling/logging and construct a model that addresses this requirement