Database Design

8-3
Modeling Change: Price
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 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?
What’s the Price Today?

• The prices of products change over time.
• Some go up, some go down, and others fluctuate up and down.
• Food, clothing and school fees are more expensive now than they were twenty years ago.
• Technology often gets cheaper over time.
• You can buy a standard specification laptop computer today for around half the price of ten years ago.
• Gold, silver and currency are examples of commodities whose prices fluctuate.
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