Chapter 1

Introduction to Kimtay Pet Supplies and StayWell Student Accommodation Databases

At a Glance

Instructor's Manual Table of Contents

Lecture Notes

Overview

In this chapter, students examine the database requirements of KimTay Pet Supplies—a company that is used in the examples throughout the text. Students also examine the database requirements for StayWell, whose database is featured in the exercises that appear at the end of each module.

Chapter Objectives

After completing this chapter, students will be able to accomplish the following:

- Introduce KimTay Pet Supplies, a company whose database is used to manage a pet supplies business. The KimTay database is used as the basis for many of the examples throughout the text.
- Introduce StayWell, a Seattle-based company whose database is used to manage accommodation for university students on behalf of property owners. The StayWell database is used as an additional case that runs throughout the text.

Teaching Tips

What Is a Database?

1. Define **database**. A database is a structure that contains different categories of information and the relationships between these categories.
2. The KimTay Pet Supplies database contains information about categories such as sales representatives (sales reps), customers, invoices, and items.
3. The StayWell database contains information about the offices that manage the accommodation, the owners of the accommodation, the residents, and the services (such as cleaning and maintenance) offered for the properties.
4. Each database also contains relationships between categories. The following are some examples:
    a. The KimTay Pet Supplies database contains information that relates sales reps to the customers they represent and customers to the invoices they have placed.
    b. The StayWell database contains information that relates the two main company offices to the properties that they manage, the owners, the different services to the service request, and to the resident renting a property.

Teaching Tip	Make sure that students understand the types of businesses and categories that are used to describe the databases. Ask them for corresponding real-life examples of the sample businesses. For example, what pet supplies stores are in your town? Have they ever been contacted by agencies that manage student accommodations?

The Kimtay Pet Supplies Database

1. KimTay Pet Supplies, a supplier of pet supplies, food, and accessories located in Cody, Wyoming, is a fictitious company that will be used as an example throughout the text. The company must maintain customer, invoice, and inventory data using its manual systems.
2. Figure 1-1 shows a sample invoice for KimTay Pet Supplies. Use the figure to point out that an invoice includes data from all of the tables in the KimTay Pet Supplies database. The data in the Total column is not stored in the database but calculated whenever an invoice is printed or displayed on the screen.
3. Figure 1-2 lists the five tables that make up the KimTay Pet Supplies database. Each table represents a category. The data in the tables is related through common fields. These relationships allow the user to access data from more than one table and produce reports, queries, and forms.
4. Use Figure 1-2 to explain the relationships in the KimTay Pet Supplies database. There is a one-to-many relationship between the SALES_REP table and the CUSTOMER table; that is, one sales rep can represent many customers. There is a one-to-many relationship between the CUSTOMER table and the INVOICES table because one customer can place many orders. Because the same item can be found on many orders and one order can include many items, there is a many-to-many relationship between the ITEM and the INVOICES table. The INVOICE_LINE table relates the ITEM and INVOICES table by including both the INVOICE_NUM field and the ITEM_ID field. The INVOICE_NUM field is the common field between the INVOICES and the INVOICES_LINE tables. The ITEM_ID field is the common field between the ITEM and INVOICE_LINE tables.
5. Point out the problems with storing data in the table structure shown in Figure 1-3. This alternative table structure violates the definition of a relation. (There are multi-valued entries; the rows are not distinct.)
6. Review the "Q&A" section on page 6 of this chapter to make sure that students understand the KimTay Pet Supplies database.

Teaching Tip	Use Figure 1-1 and ask students to analyze the invoice. From which table does each piece of data come? (All tables in the KimTay Pet Supplies database are used.) Which entries are calculated from the data in the database? (The entries in the Total column are calculated.) Use one (or more) of the KimTay Pet Supplies exercises on page 12 as an in-class exercise.

Quick Quiz 1

1. A(n) ____ is a structure that contains different categories of information and the relationships between these categories.
   Answer: database

StayWell Student Accommodation Database

1. Describe StayWell Student Accommodation. StayWell finds and manages accommodation for owners of student accommodation in the Seattle area.
2. StayWell has decided that the best way to increase efficiency and move toward an e-commerce-based business model is to store all the data about the properties, owners, tenants, and services in databases.
3. Use Figures 1-4 through 1-9 to describe the type of data that StayWell Student Accommodation needs to maintain. There are six tables in the database: OFFICE, OWNER, PROPERTY, SERVICE_CATEGORY, SERVICE_REQUEST, and RESIDENTS.
4. Use Figures 1-4 through 1-9 to explain the relationships. There is a one-to-many relationship (one customer can make many reservations) between the SERVICE_CATEGORY table and the SERVICE_REQUEST table. The common field between the two tables is CATEGORY_NUM. Because an owner could have more than one property, there is a one-to-many relationship between the OWNER table and the PROPERTY table with OWNER_NUM being the common field. There is a many-to-many relationship between the PROPERTY table and the SERVICE_REQUEST table.

Teaching Tip	Use one (or more) of the StayWell Student Accommodation exercises on page 13 as an in-class exercise.

Quick Quiz 2

1. In the StayWell Student Accommodation database, owner number _____ owns the property with the ID 6.
   Answer: MO100
2. In the StayWell Student Accommodation database, the corresponding description for the CATEGORY_NUM associated with SERVICE_ID 2 is _____.
   Answer: electrical systems
3. In the StayWell Student Accommodation database, the OFFICE_NAME associated with PROPERTY_ID 7 is _____.
   Answer: StayWell-Georgetown

Class Discussion Topics

1. Students interact with databases daily but often do not recognize that fact. Ask students whether they have used Google or another search engine recently. Have students purchased anything online? Did they use the online library catalog? How have they interacted with any databases in the previous 24 hours? Write the list on the board to emphasize the important role databases play in our daily lives.
2. Choose one of the two databases presented in this chapter. Ask students to provide other data items that could be included. For example, the OWNER table in the StayWell Student Accommodation database could include telephone numbers. Then, ask the students how the data items should be stored; for example, should phone numbers include area code? Why, or why not?

Additional Projects

1. Have students bring in an invoice for something that they have purchased recently. Can they identify which items would be calculated and which items would be stored in the database?
2. Have students create an invoice for StayWell Student Accommodation that would use the OWNER, PROPERTY, and SERVICE_CATEGORY tables in the database.
3. Have students visit a local business to find out how the business uses a database.

Additional Resource

1. *Concepts of Database Management*, *Eighth Edition* by Philip Pratt and Mary Last Cengage Learning, 2015.

Key Term

- **Database:** A structure that contains different categories of information and the relationships between these categories