INSTRUCTOR’S MANUAL

TO ACCOMPANY

**David M. Kroenke | David J. Auer | Scott L. Vandenberg | Robert C. Yoder**

**40th Anniversary Edition**

DATABASE PROCESSING

Fundamentals, Design, and Implementation

15th Edition

Appendix A

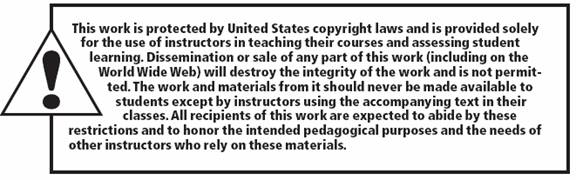
Getting Started with Microsoft Access 2016



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Instructor's Manual to accompany:

*Database Processing: Fundamental, Design, and Implementation (15th Edition)*

**David M. Kroenke | David J. Auer | Scott L. Vandenberg | Robert C. Yoder**

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* CHAPTER OBJECTIVES

To create databases in Microsoft Access 2016

To create tables in Microsoft Access 2016

To understand Microsoft Access 2016 data types

To insert data into tables in Microsoft Access 2016

To create relationships between tables in Microsoft Access 2016

To create Query-by-Example (QBE) queries in Microsoft Access 2016

To create SQL views in Microsoft Access 2016

To understand the use of the Form Wizard in Microsoft Access 2016

To understand the use of the Report Wizard in Microsoft Access 2016

* ERRATA

There are no known errors at this time. Any errors that are discovered in the future will be reported and corrected in the Online DBP e15 Errata document, which will be available at [http://www.pearsonhighered.com/kroenke](http://www.pearsonhighered.com/kroenke/).

* TEACHING SUGGESTIONS

Microsoft Access 2016 provides a good starting point for student DBMS use. Microsoft Access 2016 is commonly available in many computer labs, and many students will already be familiar with the software.

If your students are not familiar with Microsoft Access 2016, use this material at the start of your class. It should be completed before, or soon after, you start Chapter 1. Chapter 1 assumes student familiarity with Microsoft Access 2016, and the chapter figures contain screenshots from a database in Microsoft Access. In addition, the Chapter 1 Project Questions require student use of Microsoft Access 2016.

Microsoft Access 2016 is one of the software programs included in the set of software available through the Microsoft DreamSpark program. Participation by your department in this program will allow you to make Access available to your students for academic purposes at no cost to them. See the DreamSpark Web site (<https://www.dreamspark.com/> )for more information.

The material in this Appendix is not intended to be a full coverage of Microsoft Access 2016. If you want your students to have a better Microsoft Access 2016 reference, you might consider supplementing this text with a Microsoft Access 2016 textbook.

Keep in mind that starting with Chapter 2, this text uses and illustrates features not available in Microsoft Access 2016. There are versions of Microsoft SQL Server 2017, Oracle Database 11*g* Express Edition and MySQL 5.7 that can be downloaded at no cost. Consider using one of these DBMSs as your primary teaching tool for later chapters.

* ANSWERS TO REVIEW QUESTIONS

1. Microsoft Access 2016 includes an application generator. What capabilities does this feature add to Microsoft Access 2016 that are not usually found in enterprise-class DBMS products such as SQL Server 2017, Oracle Database, and MySQL 5.7?

The application generator has built-in support for forms and reports that are not found in enterprise-class DBMS products as programs have to be written to create applications.

A.2 What is a primary key? What is a foreign key? How are foreign keys used to create relationships between tables?

A primary key is an attribute in a relation that makes each row unique. It also establishes the ordering of rows in a table. A foreign key is an attribute that matches a primary key IN ANOTHER TABLE, thereby establishing a relationship between the two tables.

1. What file extension is used to identify Microsoft Access 2016 database files?

Access database filenames end with the extension **accdb** that has been used since Access 2007.

1. What is the Microsoft Office Fluent user interface? Describe the components of the Fluent user interface as used in Microsoft Access 2016.

The Office Fluent user interface is shared among most of the Office applications, so that learning one application will help with learning another Office application. It is comprised of the Ribbon and Command Tabs. The Ribbon contains sets of appropriate commands for the selected Command tab.

1. What is the Microsoft Access 2016 Quick Access Toolbar, and what is it used for?

The Quick Access toolbar contains commonly-used commands such as accessing the File menu, along with Undo/Redo. It can be customized.

1. What is the Microsoft Access 2016 Navigation Pane?

The Navigation Pane displays a list of the database objects, such as tables, queries, forms, and reports. The types of database objects displayed can be customized.

1. How does Microsoft Access 2016 create surrogate keys in tables?

The AUTONUMBER datatype is used for that purpose. The Access DBMS supplies values for autonumber attributes.

1. How do you create relationships in Microsoft Access 2016?

This is done graphically using the Relationship window. The participating tables are added to the window, then the Primary key of one table is connected to the Foreign key of another table via drag-and-drop. Internally this generates an SQL constraint between the tables.

1. What is referential integrity, and why is it important?

Referential integrity is used to ensure that a foreign key field has a value in it that matches an existing primary key in another related table. This helps maintain data consistency.

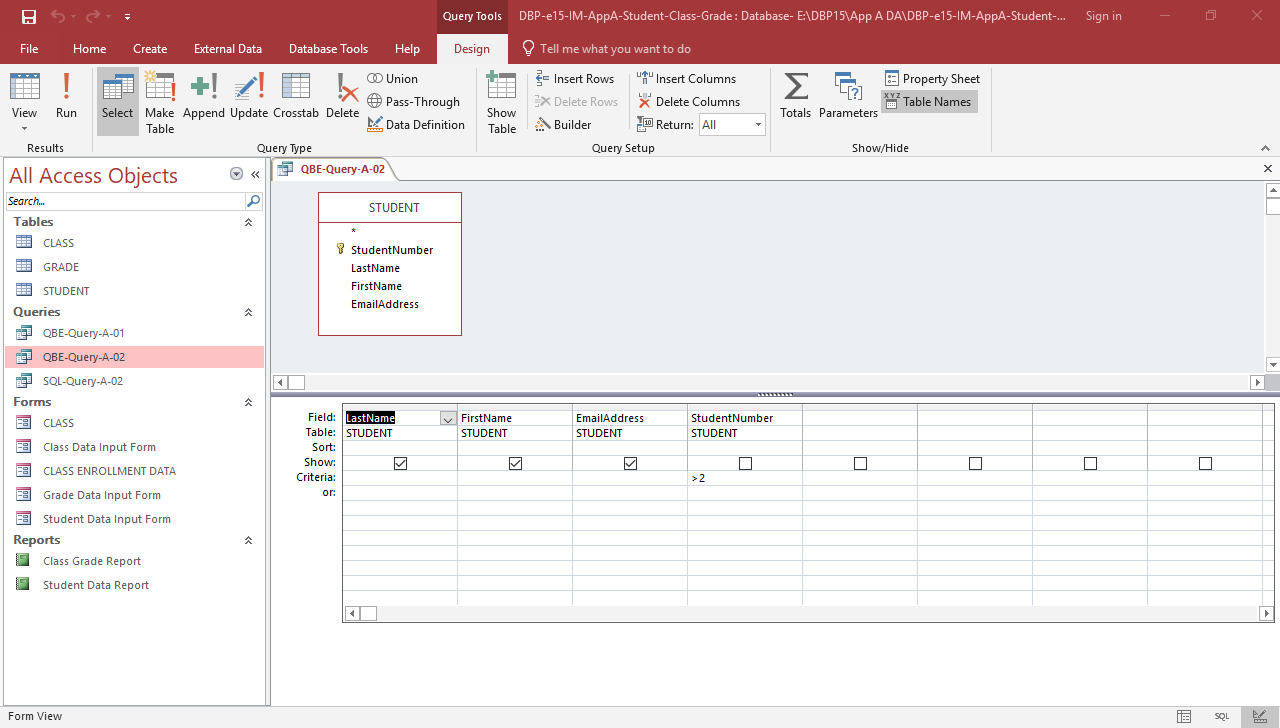
1. What is an SQL view, and how are views created in Microsoft Access 2016?

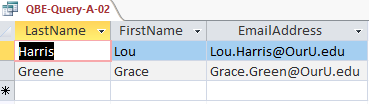
For Access, a view is simply a query that is saved along with other database objects. Other DBMSes store queries externally in script files, but store *views* as a part of the database. Views can have special restrictions that regular queries do not have in other DBMSes.

* ANSWERS TO EXERCISES

1. Using the Student-Class-Grade database that you created in this Appendix:
   1. Create and run an Access QBE query to duplicate the results in Figure 1-12. Save the query as QBE-Query-A-02.

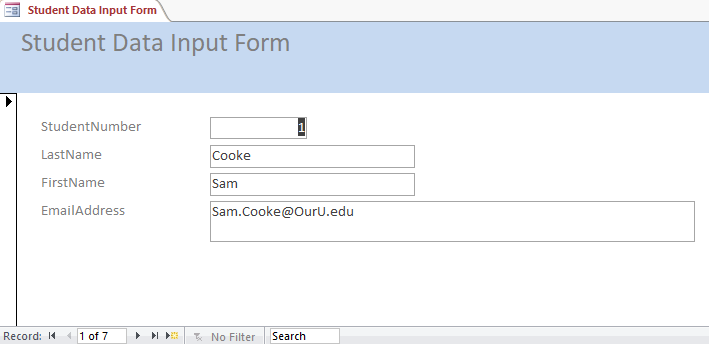
See the file DBP-e15-IM-AppA-Student-Grade-Class.aacdb (database before our changes below) and DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb (database after our changes below).



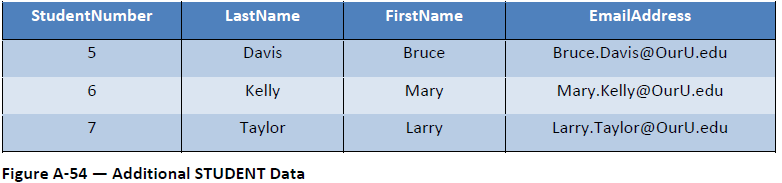


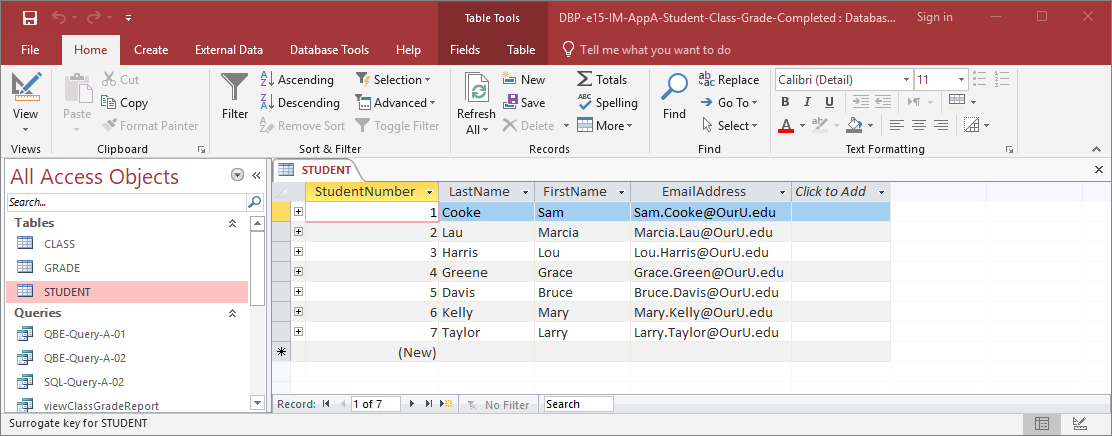
* 1. Use the Form Wizard to create a data input form for the STUDENT table. Name the form **Student Data Input Form**. Using the student data shown in Figure A-54, add the new students to the STUDENT table.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb.



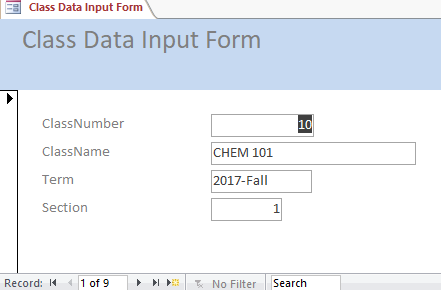
Use the “new record” button to add new rows

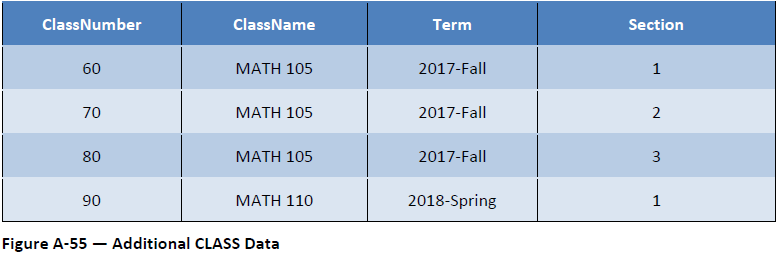


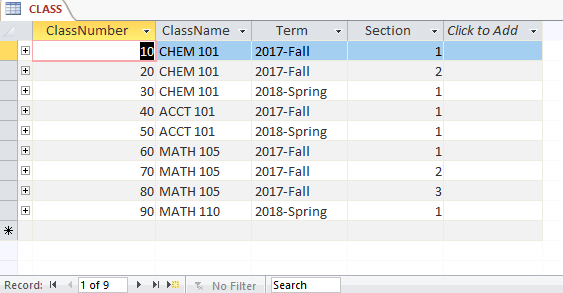


* 1. Use the Form Wizard to create a data input form for the CLASS table. Name the form **Class Data Input Form**. Using the class data shown in Figure A-55, add the new classes to the CLASS table.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb.

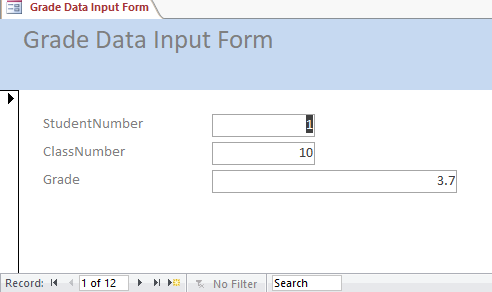


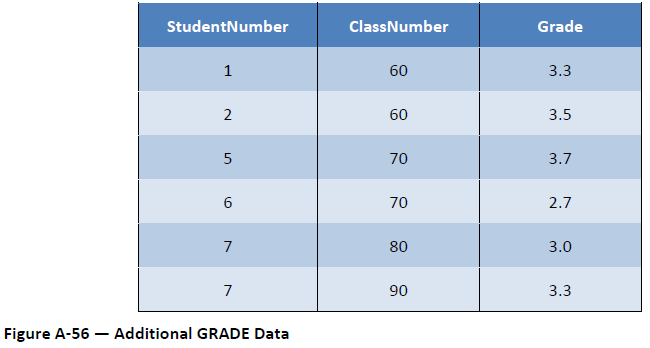


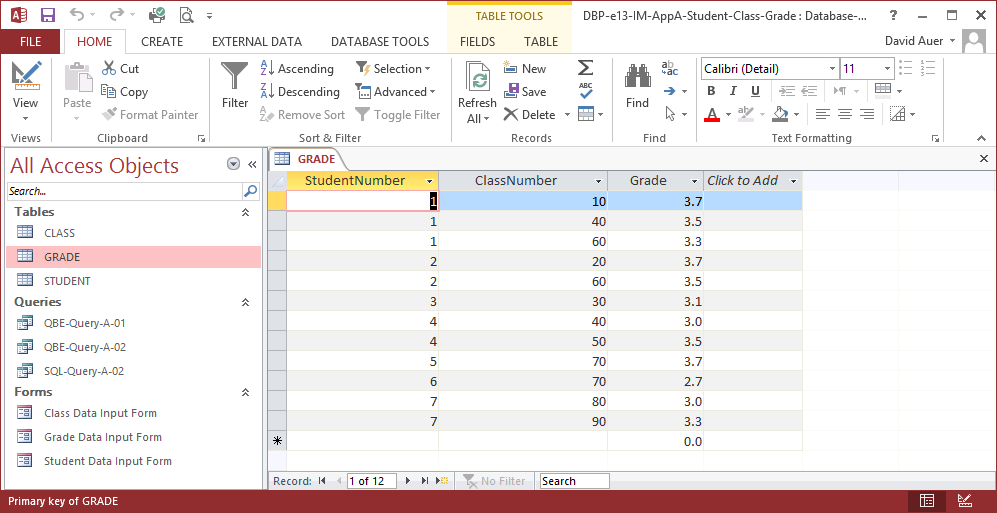


* 1. Use the Form Wizard to create a data input form for the GRADE table. Name the form **Grade Data Input Form**. Using the grade data shown in Figure A-56, add the new grades to the GRADE table.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb.

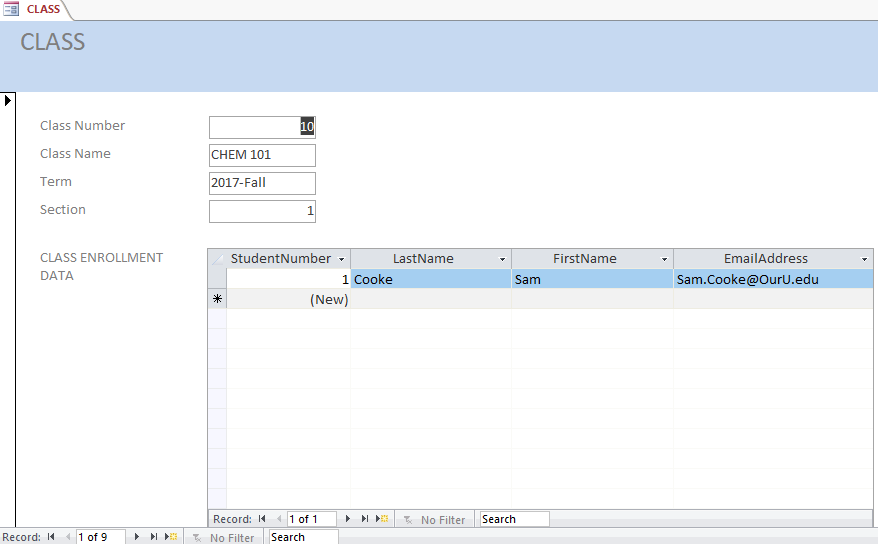






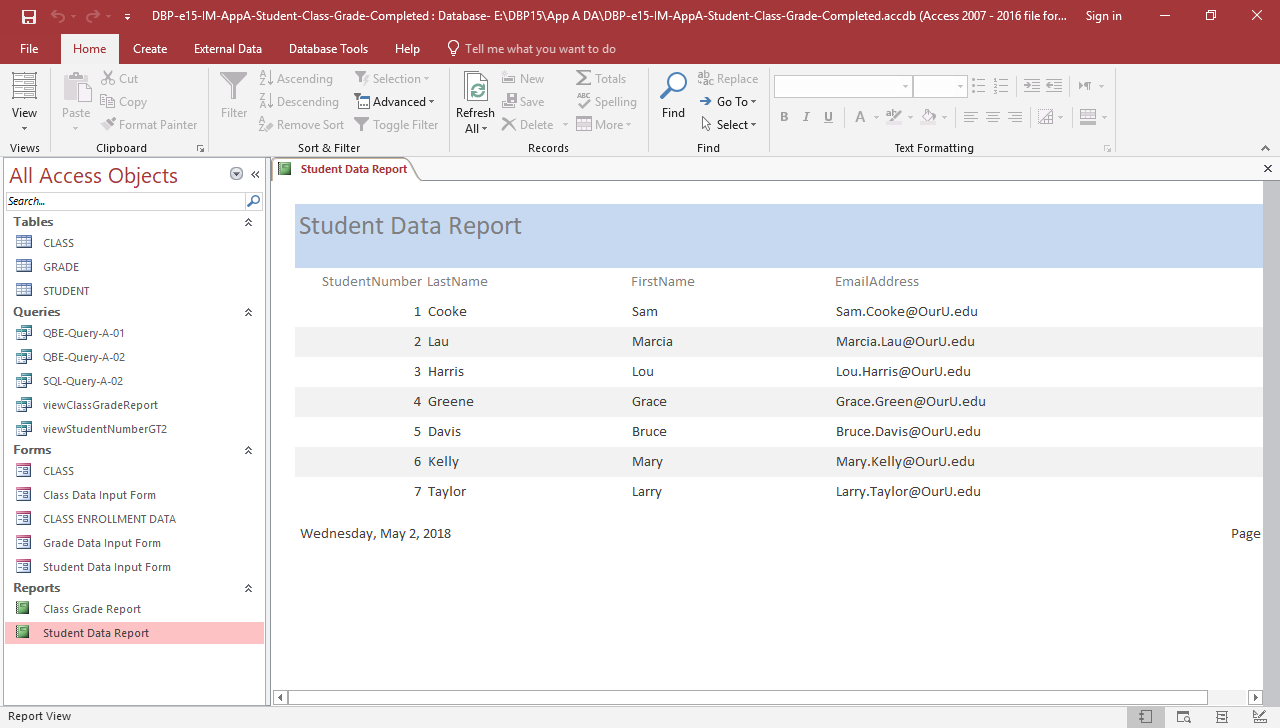
* 1. Use the Form Wizard to duplicate the CLASS form in Figure 1-11. Note that this form uses more than one table.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb. Formatting this form requires the use of Design View.



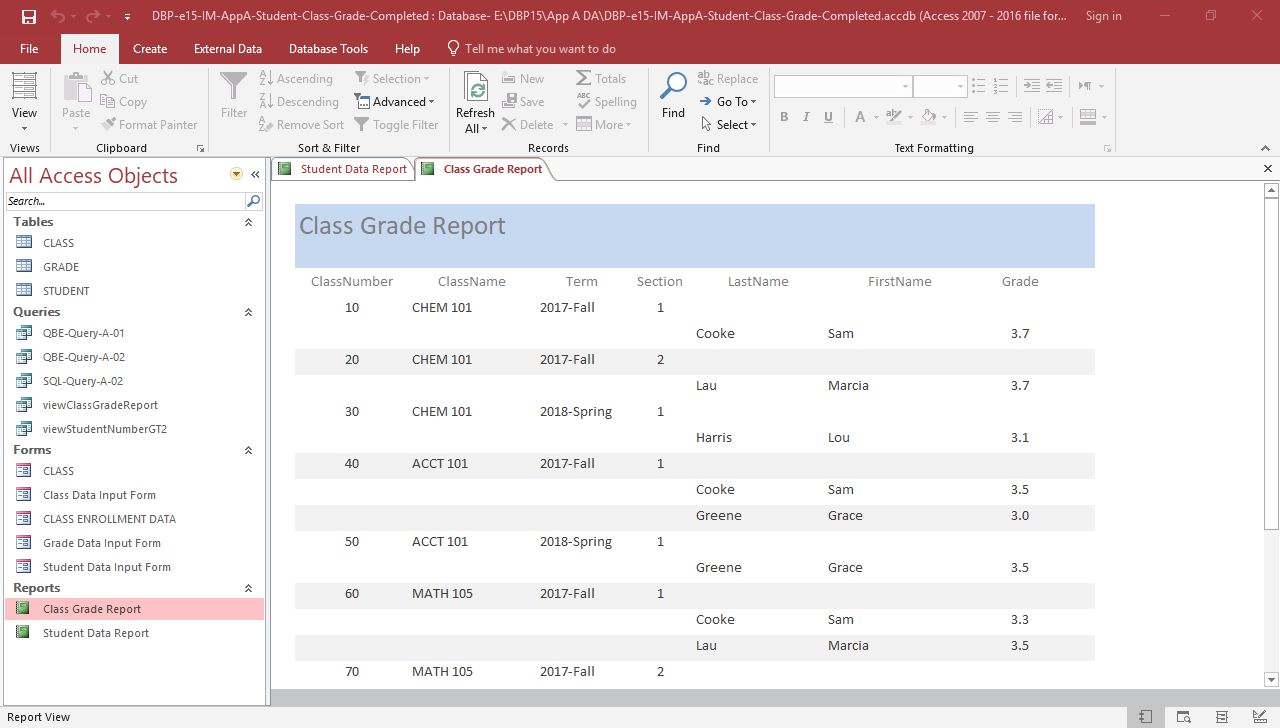
* 1. Use the Report Wizard to create a report of the data in the STUDENT table. Name the report **Student Data Report**.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb.



* 1. Use the Report Wizard and the CLASS, STUDENT and GRADE tables to duplicate the **Class Grade Report** shown in Figure 1-13. Note that your version of this report will display additional data because of the data you added to the database in steps B, C and D above.

See the file DBP-e15-IM-AppA-Student-Grade-Class-Completed.aacdb. Formatting this report requires the use of Design View.

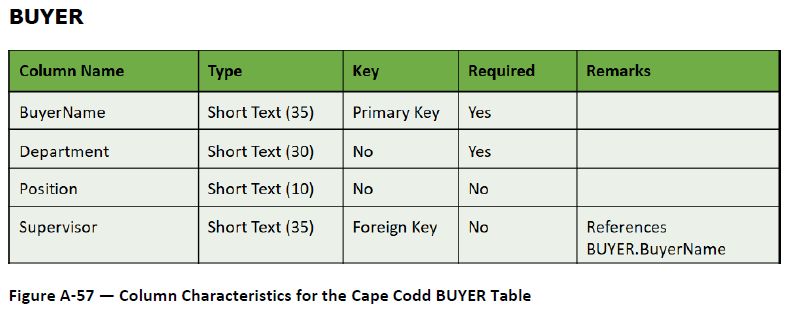


1. In this exercise, you will build the Cape Codd database used for the SQL examples in Chapter 2. The Access 2016 tables and relationships are shown in Figure 2-4.
   1. Create a new Access 2016 database named Cape-Codd.accdb.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

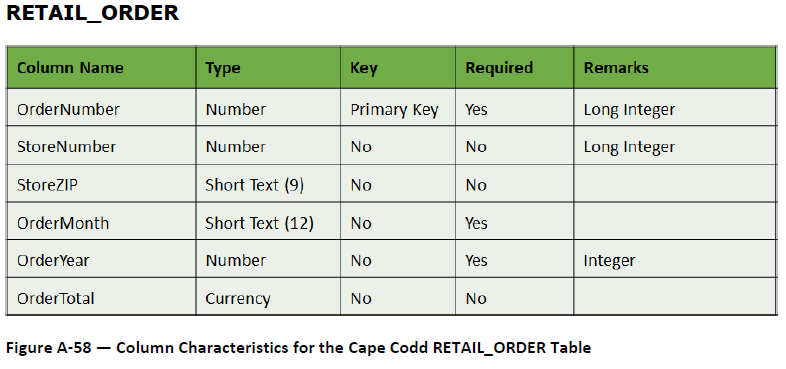
* 1. The column characteristics for the BUYER table are shown in Figure A-57. Using this data, create the BUYER table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.



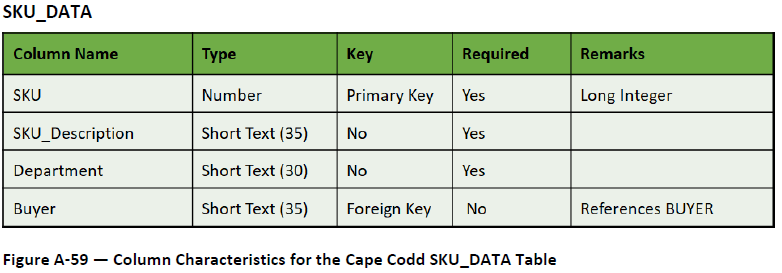
* 1. The column characteristics for the RETAIL\_ORDER table are shown in Figure A-58. Using this data, create the RETAIL\_ORDER table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.



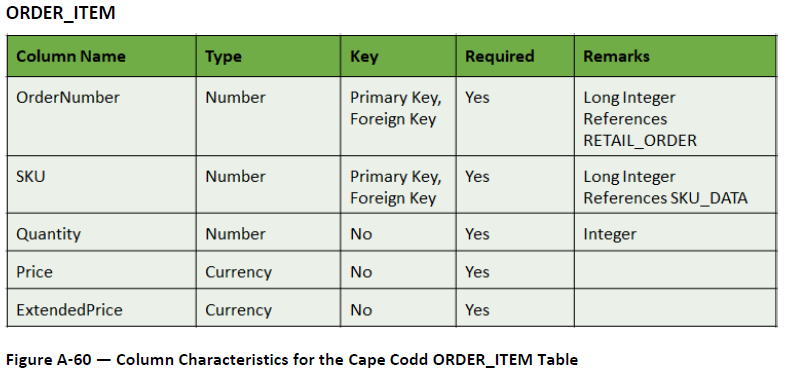
* 1. The column characteristics for the SKU\_DATA table are shown in Figure A-59. Using this data, create the SKU\_DATA table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.



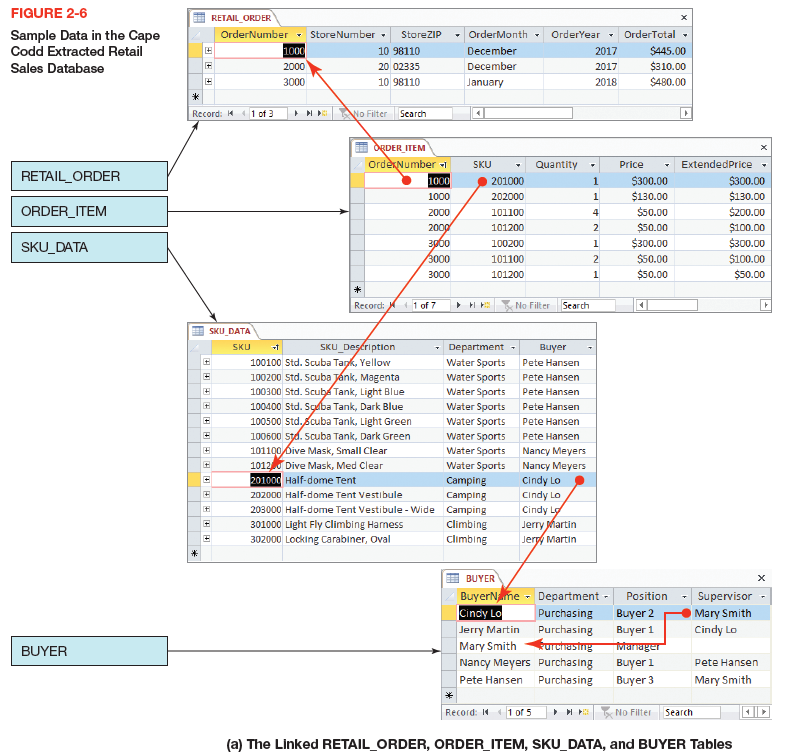
* 1. The column characteristics for the ORDER\_ITEM table are shown in Figure A-60. Using this data, create the ORDER\_ITEM table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.



* 1. The data for the BUYER table are shown in Figure 2-6(a). Populate the BUYER table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.



* 1. The data for the RETAIL\_ORDER table are shown in Figure 2-6(a). Populate the RETAIL\_ORDER table.
  2. The data for the SKU\_DATA table are shown in Figure 2-6(a). Populate the SKU\_DATA table.
  3. Create the relationship between the BUYER and SKU\_DATA tables. Enforce referential integrity.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

* 1. Note that there is a recursive relationship between the BUYER.Supervisor and BUYER.BuyerName. Create this relationship (see Microsoft Access 2016 documentation online if needed). Enforce referential integrity.

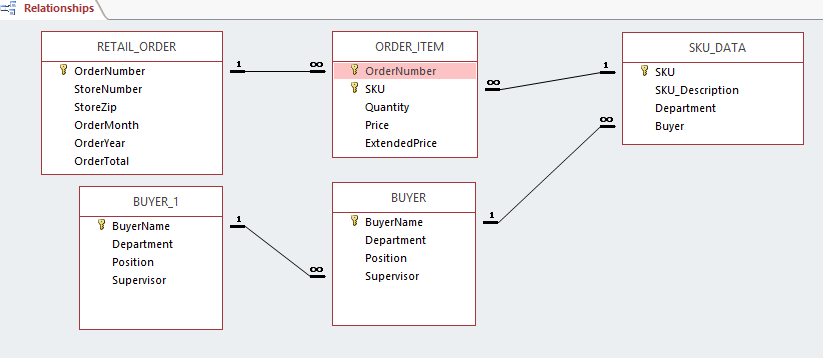
See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

* 1. Create the relationship between the RETAIL\_ORDER and ORDER\_ITEM tables. Enforce referential integrity.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

* 1. Create the relationship between the SKU\_DATA and ORDER\_ITEM tables. Enforce referential integrity.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb. The completed relationships are as follows:



* 1. The data for the ORDER\_ITEM table are shown in Figure 2-6(a). Populate the ORDER\_ITEM table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

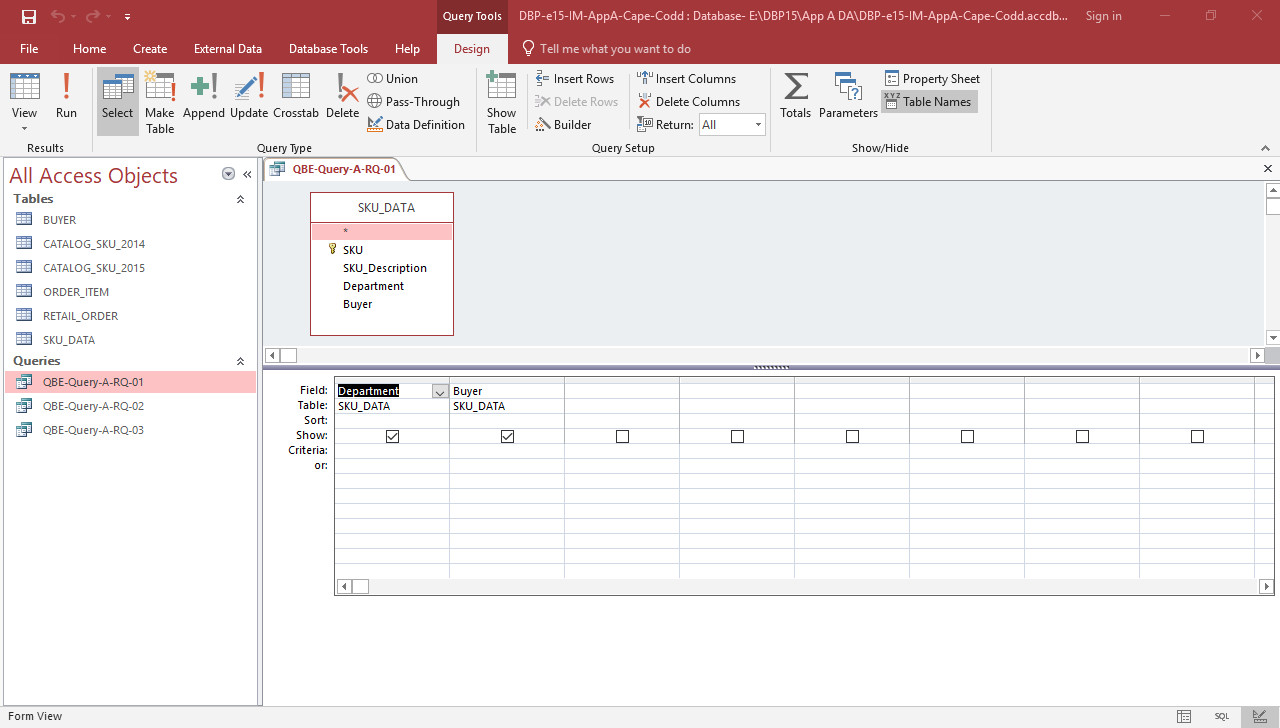
* 1. Why did you enter the ORDER\_ITEM data only after creating the relationships between the tables? (and the RETAIL\_ORDER and SKU\_DATA tables were populated)

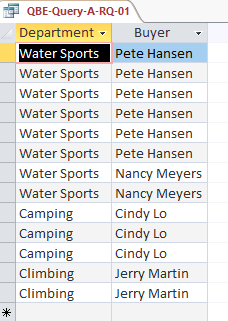
This question can be misleading. The (parent) RETAIL\_ORDER and SKU\_DATA tables need to be populated before we can set the referential integrity constraints in ORDER\_ITEM. Otherwise, adding a new row would immediately violate the integrity constraint since there is no matching PK in RETAIL\_ORDER or SKU\_DATA to the new FK we just added in ORDER\_ITEM.

Further, by entering the ORDER\_ITEM data after referential integrity constraints were created, we made sure that no inappropriate values could be inserted into ORDER\_ITEM.OrderNumber and ORDER\_ITEM.SKU.

* 1. Create a QBE query to display Department and Buyer in the SKU\_DATA table. Save the query as QBE-Query-A-RQ-01.

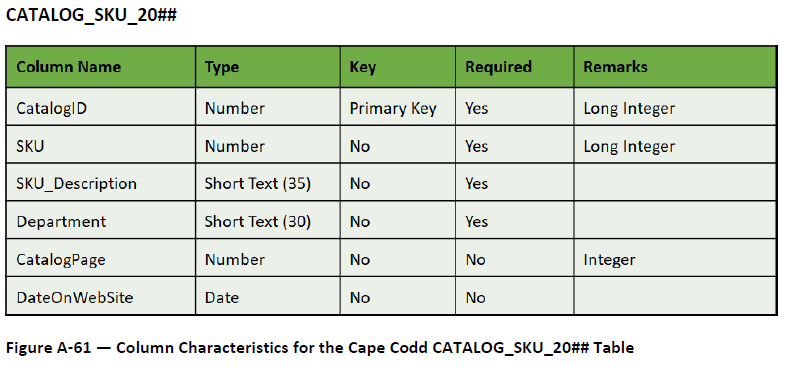
See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

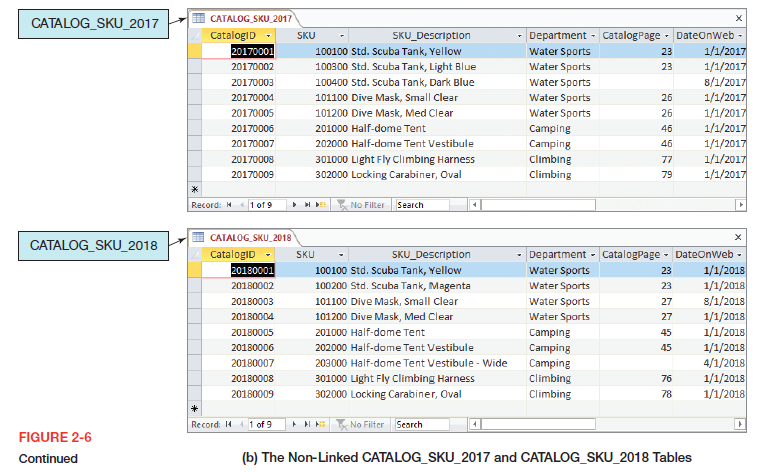




* 1. Create an SQL View to display the same Department and Buyer data from the SKU\_DATA table as shown in QBE-Query-A-RQ-01. Save the SQL view as viewSKUDeptBuyer.
  2. The column characteristics for the CATALOG\_SKU\_20## table are shown in Figure A-61. Using this data, create the CATALOG\_SKU\_2017 and CATALOG\_SKU\_2018 tables.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.





* 1. The data for the CATALOG\_SKU\_2017 table is shown in Figure 2-6(b). Populate the CATALOG\_SKU\_2017 table.

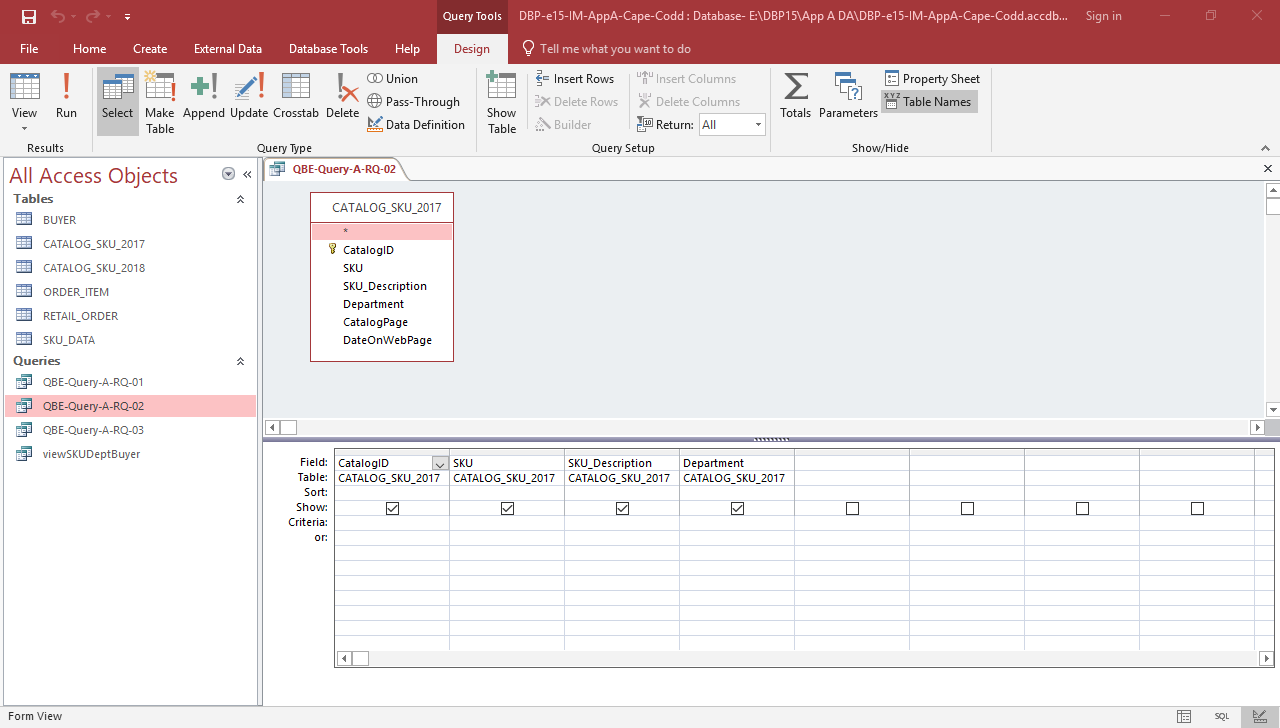
See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

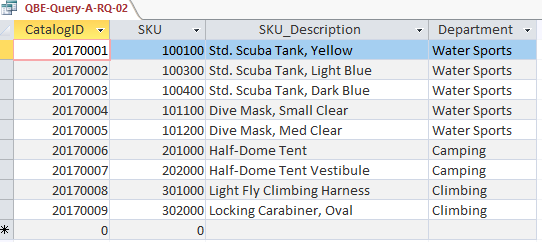
* 1. The data for the CATALOG\_SKU\_2018 table is shown in Figure 2-6(b). Populate the CATALOG\_SKU\_2018 table.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

* 1. Create a QBE query to display CatalogID, SKU, SKU\_Description, and Department from the CATALOG\_SKU\_2017 table. Save the query as QBE-Query-A-RQ-02.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.





* 1. Create a QBE query to display CatalogID, SKU, SKU\_Description, and Department from the CATALOG\_SKU\_2018 table. Save the query as QBE-Query-A-RQ-03.

See the file DBP-e15-IM-AppA-Cape-Codd.aacdb.

