

# Microsoft Access 2016

## Module 2: Building a Database and Defining Table Relationships

### A Guide to this Instructor's Manual:

We have designed this Instructor's Manual to supplement and enhance your teaching experience through classroom activities and a cohesive module summary.

This document is organized chronologically, using the same headings in **blue** that you see in the textbook. Under each heading you will find (in order): Lecture Notes that summarize the section, Teacher Tips, Classroom Activities, and Lab Activities. Pay special attention to teaching tips and activities geared towards quizzing your students, enhancing their critical thinking skills, and encouraging experimentation within the software.

In addition to this Instructor's Manual, our Instructor's Resources also contains PowerPoint Presentations, Test Banks, and other supplements to aid in your teaching experience.

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### Module Objectives

Students will have mastered the material in this module when they can:

- |  |   |
|--|---|
| <p><b>Session 2.1</b></p> <ul style="list-style-type: none"> <li>Learn the guidelines for designing databases and setting field properties</li> <li>Create a table in Design view</li> </ul> | <ul style="list-style-type: none"> <li>Define fields, set field properties, and specify a table's primary key</li> <li>Modify the structure of a table</li> <li>Change the order of fields in Design view</li> <li>Add new fields in Design view</li> </ul> |
|--|---|

- Change the Format property for a field in Datasheet view
  - Modify field properties in Design view
  - Delete and rename fields
  - Change the data type for a field in Design view
  - Set the Default Value property for a field
  - Import a text file
  - Define a relationship between two tables
- Session 2.2**
- Import data from an Excel worksheet
  - Import an existing table structure
  - Add fields to a table with the Data Type gallery

## [Guidelines for Designing Databases](#)

### LECTURE NOTES

- Discuss the guidelines for designing databases.

#### TEACHER TIP

Encourage students to spend adequate time designing their databases; it will save them valuable time later.

The first step in designing a database is to think of all the fields of data you might want to store. Explain to students that for a large database, this step is often done by a group who will “brainstorm” all the data items that will be needed in a database. The next step is to group the fields into tables. Each table will contain a group of related fields. A field will be selected in each table to become the primary key for that table.

The primary key is a field in the table that can uniquely identify a record in the table. When tables will be related to one another, you need to include a common field in the two tables that will be used to form the relationship. For each field, you will need to specify the properties for that field. Field properties include their data type, field sizes, and an optional description of the field.

### CLASSROOM ACTIVITIES

#### 1. Classroom Discussion:

What fields would you identify when creating a database of students who attend your school?  
(Answer: Identify all the fields needed to produce the required information. For example, information about age, majors, full time, part time, etc.)

#### 2. Quick Quiz:

- The \_\_\_\_\_ uniquely identifies each record in a table. (Answer: D)
  - composite key
  - customer ID
  - first field
  - primary key
- When you store the same data in more than one place, \_\_\_\_\_ occurs. (Answer: data redundancy)

## [Guidelines for Setting Field Properties](#)

### LECTURE NOTES

- Discuss how to name fields and objects.

- Discuss the assignment of field data types.
- Discuss how to set field sizes.

#### TEACHER TIP

When selecting a field size, students should make sure the field is big enough to hold the largest piece of data to be stored there. However, the field should not be larger than necessary because this will result in wasted space.

Point out that database design is a very complicated and intricate process. It takes much practice and experience to become a good database designer. The concepts presented in the book are meant to get the student to start thinking about design issues. However, students should know that there is much more to learn about database design.

#### CLASSROOM ACTIVITIES

##### 1. Quick Quiz:

- True or False: The Field Size property defines a field value's maximum storage size for Text, Number, and AutoNumber fields only. (Answer: True)
- True or False: The primary key determines what field values you can enter for the field and what other properties the field will have. (Answer: False)
- When would you use the Text data type? (Answer: Use the Text data type for names, addresses, descriptions, and fields containing digits that are not used in calculations.)
- When would you use the Memo data type? (Answer: Use the Memo data type for long comments and explanations.)
- When would you use the Number data type? (Answer: Use the Number data type for fields that will be used in calculations, except those involving money; use the Currency data type for money.)

##### 2. Group Activity:

Divide students into groups of five (larger groups allow for more brainstorming). Tell the students they need to set up a database for a softball league. Have students consider that they will need to maintain information about each player and also about each team. Allow students to brainstorm about what fields of information will be needed for each player and for each team. As they consider the required fields, have students also determine each field's properties. Finally, have students determine how these two tables will be related, what type of relationship (e.g., one-to-many) they will have, the common field(s) that form the relationship, and any other specifications that might be important. Have the groups draw out their design similar to Figure 2-2. When they are all finished, have the groups swap their design with another group. Now have each group critique the design that has been passed to them by another group.

#### [Creating a Table in Design View](#)

##### LECTURE NOTES

- Demonstrate how to create a table.
- Show how to define a field.
- Show how to specify the primary key.
- Demonstrate how to save the table structure.

**TEACHER TIP**

When students create a table, they will name the fields and define the properties for the fields. They will also specify the primary key for each table and save the table structure. The table structure is set up and modified in Design view. When all the fields have been defined, they will then specify which field(s) will be the primary key. When the table has been fully defined, they will save the table structure.

Use Figure 2-6 through 2-13 to discuss the elements in the Table window in Design view. Although it is not required to enter a description for the fields, it is advisable to do so. Students should always select a field(s) as the primary key. Although Access does not require that you do so, there are several advantages to selecting a primary key.

**CLASSROOM ACTIVITIES**

## 1. Class Discussion:

In general, what are the steps in creating a table? (Answer: When students create a table, they will name the fields and define the properties for the fields. They will also specify the primary key for each table and save the table structure. The table structure is set up and modified in Design view.

When all the fields have been defined, they will then specify which field(s) will be the primary key.

When the table has been fully defined, they will save the table structure.)

## 2. Quick Quiz:

- If you make a typing error, what should you do? (Answer: Click to position the insertion point where the error is located and use either the Backspace key or the Delete key.)
- What data type should you select if you want to display cents and dollar signs? (Answer: Currency)

**LAB ACTIVITIES**

Divide students into the groups that designed the database for a softball league. Have students create a table based on their group's design.

**[Modifying the Structure of an Access Table](#)****LECTURE NOTES**

- Demonstrate how to move a field.
- Show how to add a field.

**TEACHER TIP**

Whenever a database object, such as a table, is modified, Access will ask if you want to save the modification. It is only the structure of the table that must be saved. Records, on the other hand, are automatically stored as they are entered.

When viewing the Relationships window, if the student sees field lists for system tables (beginning with "MSys" in their names), then Access is set to display system tables. To change this setting, click the File tab, click Current Database, click the Navigation Options button, and then clear the "Show Hidden Objects" and "Show System Objects" check boxes. Click the OK button to close the dialog boxes, and then close and reopen the database. (This setting applies to each database and is not a global Access setting.)

## CLASSROOM ACTIVITIES

### 1. Quick Quiz:

- True or False: An Access table cannot be modified once it is created. (Answer: False)
- Text fields have a default field size of \_\_\_\_\_. (Answer: 255)

### 2. Class Discussion:

What are the steps to add a field between two fields? (Answer: In the Table window in Design view, select the row for the field above where you want to add a new field. In the Tools group on the Table Tools Design tab, click the Insert Rows button. Define the new field by entering the field name, data type, optional description, and any property specifications.) Why might you want to add a field between two fields?

## [Modifying Field Properties](#)

### LECTURE NOTES

- Demonstrate how to change the Format Property in Datasheet View.
- Demonstrate changing Properties in Design View.

### TEACHER TIP

You can make some changes to properties in Datasheet view; for others, you'll work in Design view.

## CLASSROOM ACTIVITIES

### 1. Quick Quiz:

- True or False: When formatting a field, you do not change the actual values stored in the table. (Answer: True)
- Property changes are more easily done in \_\_\_\_\_ view. (Answer: Design)

### 2. Class Discussion:

Why should you reduce the size of fields that are too large for the data they will hold?

## [Adding Records to a New Table](#)

### LECTURE NOTES

Show how to add a record to a table.

### TEACHER TIP

When a table is created, the table structure is established. Once the table has been created, students will then need to add records to the table. As students enter records, they will be placed in the table in the order in which they were entered. However, when students close the table and open it again, the records will be ordered according to the primary key order.

## CLASSROOM ACTIVITIES

### 1. Creative Thinking Activity:

Refer to Figure 2-21. Where would you most likely find the information contained in the table? (Many times when students are given the information, they can enter it into the table, but locating or researching the information can be difficult.)

### 2. Quick Quiz:

- Use the \_\_\_\_\_ to open a table in Datasheet view. (Answer: Navigation Pane)
- To insert a check mark in the Yes/No value, press the \_\_\_\_\_. (Answer: spacebar)

## [Importing Data from an Excel Worksheet](#)

### LECTURE NOTES

- Show how to import a worksheet into a table.

### TEACHER TIP

Students often do not realize that information created in one type of software can be imported into another type of software. There are various ways to import this information.

### CLASSROOM ACTIVITIES

#### 1. Quick Quiz:

- True or False: Importing data is a process that allows you to copy the data from a source without having to open the source file. (Answer: True)
- True or False: You cannot import a spreadsheet from Excel. (Answer: False)

#### 2. Class Discussion:

What are the first three steps for importing a worksheet into a table? (Answer: 1. Click the Close button on the table window bar to close any open tables. 2. Save the table. 3. Click the External Data tab on the Ribbon.)

## [Creating a Table by Importing an Existing Table Structure](#)

### LECTURE NOTES

- Show how to create a table by importing the structure of another table.

### TEACHER TIP

Explain that if another Access database contains a table—or even just the design, or structure, of a table—that you want to include in your database, you can easily import the table and any records it contains or import only the table structure into your database.

When copying records from one table to another, it is very important to first determine that the two tables have the exact same data structure. If the two data structures differ in any way, the copy will cause an error. However, when you import, you are importing an entire table including its data and its structure. This is a good way to include a table in your database that was previously designed in a different database.

### CLASSROOM ACTIVITIES

#### 1. Class Discussion:

Discuss that in a corporate setting, there may be several people working on a database at one time. The ability to copy records into a table or import an entire table allows for the transfer of data in a collaborative effort. Of course, someone within the corporation must maintain the integrity of the data.

#### 2. Group Activity:

In groups of two or three, have students consider the following situation: An organization has several departments; up to this point, each department has been creating and maintaining its own database that pertains to its particular needs. However, the organization has decided that it could reduce redundancy and improve data integrity by pulling all the data into a single database. Have students discuss how this process might be done and what kinds of problems could arise. Ask students to consider that each department had maintained a customer database. Now that the data will be pulled

together, what will happen if the table structures don't match? How will they import all this data and end up with a single customer database?

### [Adding Fields to a Table Using the Data Type Gallery](#)

#### LECTURE NOTES

- Demonstrate how to add fields using the Data Type gallery.

#### TEACHER TIP

Explain that this feature allows you to add a group of related fields to a table at the same time, rather than adding each field to the table individually, thus saving time.

#### CLASSROOM ACTIVITIES

##### 1. Quick Quiz:

- How do you make a field active? (Answer: by clicking in it)
- What section provides options that will add multiple, related fields to the table at one time? (Answer: the Quick Start)

##### 2. Class Discussion:

Consider that a large organization has a very large database of information. What kinds of controls do you think will need to be in place for data entry? Do you think anyone in the corporation should be able to update data? Why or why not?

### [Modifying the Imported Table](#)

- Show how to delete a field from a table structure and in Design view.
- Show how to rename a field in Design view.
- Show how to change the data type for a field in Design view.

#### TEACHER TIP

It is important to be able to modify an imported table. Remind students that although they can move fields in Datasheet view by dragging a field's column heading to a new location, doing so rearranges only the display of the table's fields; the table structure is not changed.

#### CLASSROOM ACTIVITIES

##### 1. Quick Quiz:

- True or False: You can delete fields from an imported table structure. (Answer: True)
- You can change a field's data type in \_\_\_\_\_view? (Answer: Design or Datasheet)

##### 2. Class Discussion:

What is the difference between the Description and the Caption property values? Why do you need both?

### [Setting the Default Value Property for a Field](#)

#### LECTURE NOTES

- Demonstrate how to set the Default Value property for a field.

**TEACHER TIP**

The Default Value property for a field specifies what value will appear, by default, for the field in each new record you add to a table. This makes it quicker and more accurate to enter fields that may repeat in most records such as the state code and area code.

**CLASSROOM ACTIVITIES**

## 1. Quick Quiz:

- True or False: A text entry in the Default Value property must be enclosed within quotation marks. (Answer: True)
- True or False: Leaving the quotation marks off will result in an error. (Answer: False, they will be added automatically if left off)

## 2. Class Discussion:

Consider that a large organization has a very large database of information. What kinds of fields might be defined as having default values?

[Adding Data to a Table by Importing a Text File](#)**LECTURE NOTES**

- Demonstrate how to import data contained in a text file.

**TEACHER TIP**

Spend some time discussing a delimited text file (one in which fields of data are separated by a character such as a comma or a tab). Refer to Figure 2-38.

**CLASSROOM ACTIVITIES**

## 1. Quick Quiz:

- True or False: Click the Append button to copy the records of a text file. (Answer: True)
- True or False: A delimited text file is one in which fields of data are separated by a character such as a comma or a tab. (Answer: True)

## 2. Class Discussion:

Consider that a large organization has a very large database of information. What kinds of controls do you think will need to be in place for data entry? Do you think anyone in the corporation should be able to update data? Why or why not?

[Defining Table Relationships](#)**LECTURE NOTES**

- Discuss one-to-many relationships.
- Discuss referential integrity.
- Discuss how to define a relationship between two tables.

**TEACHER TIP**

Discuss the terminology covered in this section (one-to-many relationships, primary table, related table, orphaned record, and referential integrity). This is a basis for understanding how to define a relationship between two tables.

## CLASSROOM ACTIVITIES

### 1. Quick Quiz:

- True or False: Referential integrity is a set of rules that Access enforces to maintain consistency between related tables when you update data in a database. (Answer: True)
- The \_\_\_\_\_ connects the fields that are common to two tables. (Answer: join line)

### 2. Class Discussion:

What is the difference between a primary table and a related table? (Answer: The primary table is the “one” table in a one-to-many relationship; in Figure 2-40, the Animal table is the primary table because there is only one animal for each visit. The related table is the “many” table; in Figure 2-40, the Visit table is the related table because an animal can have zero, one, or many visits.)

## LAB ACTIVITIES

Divide the class back into the softball database discussion groups. Have them consider the process of determining a primary key for a table. Have them look at their databases. Do any of these fields represent a unique value that could serve as the primary key? If not, what could they do to provide a field that has a unique value for each record? If they decide to create a field, how will it be done? What will be the data type of the primary key? Who will assign the value? How will you make sure that there are no duplicates in this field? Once they have answered these questions, have them go to their databases and modify and create/delete fields to insert a primary key.

### TEACHER TIP

In this module, students learn how to add fields using the Data Type gallery. Students add the fields using a Quick Start Selection, which is a sort of template that inserts a group of related fields in a table. In Access, there is a certain degree of unpredictability when using any templates (database templates, table templates, Quick Start Selections, etc.). The end results are not always what you want or intend. For example, you might want to delete one or more of the fields inserted with the Quick Start Selection. When you delete the field in Datasheet view or Design view, the deletion might not be permanent or visible when you switch views, causing the deleted fields to reappear. If students encounter these types of problems, closing and reopening the table might help, but students might also need to close the database, reopen it, and compact and repair it before the deleted fields will remain deleted from the table.

## [End of Module Material](#)

- **Review Assignments:** Review Assignments provide students with additional practice of the skills they learned in the module using the same module case, with which they are already familiar. These assignments are designed as straight practice and do not include anything of an exploratory nature.
- **Case Problems:** A typical NP module has four Case Problems following the Review Assignments. Short modules can have fewer Case Problems (or none at all); other modules may have five Case Problems. The Case Problems provide further hands-on assessment of the skills and topics presented in the module, but with new case scenarios. There are five types of Case Problems:
  - **Apply.** In this type of Case Problem, students apply the skills that they have learned in the module to solve a new problem.
  - **Create.** In a Create Case Problem, students are either shown the end result (such as a finished Word document) and asked to create the document based on the figure provided, or, students are asked to create something from scratch in a more free-form manner.

- **Challenge.** A Challenge Case Problem involves one or more Explore steps. These steps challenge students by having them go beyond what was covered in the module, either with guidance in the step or by using online Help as directed.
- **Research.** A Research Case Problem requires students to find information on the Internet to help solve a problem or to include in the file they are creating.
- **Troubleshoot.** In this type of Case Problem, certain steps of the exercise require students to identify and correct errors that are intentionally placed in the files. Completing these steps helps to promote problem solving and critical thinking.

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# New Perspectives Access 2016

## Module 2

### Quick Check Answers

#### **Session 2.1**

1. Identify all the fields needed to produce the required information, organize each piece of data into its smallest useful part, group related fields into tables, determine each table's primary key, include a common field in related tables, avoid data redundancy, and determine the properties of each field.
2. The Data Type property determines what field values you can enter into the field and what other properties the field will have.
3. Caption
4. Short Text, Number, and AutoNumber
5. 255
6. F6
7. A primary key uniquely identifies each record in the table; a primary key prevents duplicate values from being entered in the same field; Access forces you to enter a value for the primary key field in every record in the table; records will always be displayed in a meaningful order by primary key, regardless of the order in which you entered them; Access responds faster to requests for specific records based on the primary key.

#### **Session 2.2**

1. Ctrl + '
2. Importing
3. Data Type
4. The field and all its values are removed from the table.
5. delimited
6. primary table; related table
7. Referential integrity

# Grading Rubric – Access 2016

## Module 2, Case Problem 1

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** *Beauty.accdb*

Description	Pts	Your Score
Beauty database, Option table a. OptionID: Description, “Primary key”; size “3”; caption, “Option ID” b. OptionDescription: Size “45”; caption, “Option Description” c. OptionCost: Format, “Standard”; “0” decimal places; caption, “Option Cost” d. FeeWaived: Caption “Fee Waived”	<b>4</b>	
Table created using design in Fig 2-48	<b>3</b>	
MemberID is the primary key, table saved as “Member”	<b>2</b>	
4 Fields added between LastName / Phone fields and one field between Phone and OptionEnd fields	<b>2</b>	
a. Address field: “Street”, size “40”, caption deleted b. City field: Size “25”, caption deleted c. StateProvince field: “State”, size “2”, caption deleted, FL is default value d. ZIPPostal field: “Zip”, size 10, caption deleted e. CountryRegion field deleted from Member table structure f. “OptionBegin” field added (data type: “Date/Time”; format: “Short Date”; Caption: “Option Begins”) between Phone / OptionEnd fields	<b>4</b>	
Records in Fig 2-49 entered. 1 <sup>st</sup> / last names entered. Columns resized to their best fit	<b>2</b>	
Data imported from Customers text file; Source: Customer text file; append the data; Table: Member; import delimited data and use a comma delimiter; do not save the import steps	<b>3</b>	
One-to-many relationship between primary Plan / Member table. All field names visible. Referential integrity, cascade updates defined for the relationship	<b>3</b>	
Beauty database compacted / repaired	<b>2</b>	
<b>TOTAL POSSIBLE POINTS:</b>	<b>25</b>	<b>0</b>

**YOUR SCORE:** \_\_\_\_\_

## Grading Rubric – Access 2016 Module 2, Case Problem 2

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** *Programming.accdb*

Description	Pts	Your Score
Programming database, Tutor table, field properties set as in Fig 2-50	3	
Field added as last field with name “Groups”, “Yes/No” data type, caption “Groups Only”	3	
Specify which tutors conduct group tutoring sessions only: Carey Billings, Fredrik Karlsson, Ellen Desoto, Donald Gallager	2	
Structure of Student table in Client database imported into table named “Student” in Programming database	3	
New fields at end: “BirthDate” (Date/Time), “Gender” (Short Text)	2	
4 fields related to phone numbers added between Zip / BirthDate	3	
BusinessPhone / FaxNumber fields deleted	2	
Design from Fig 2-51, including revised field names / data types	2	
LastName field follows FirstName field	1	
Records in Fig 2-52 added	3	
Fields resized to their best fit	1	
Data imported from Students text file	2	
Columns resized to their best fit	1	
Table created using design in Figure 2-53	3	
ContractID is primary key, table saved as “Contract”	2	
Field added, between TutorID / SessionType fields: “ContractDate” name, “Date/Time” data type, “Date contract is signed” description, “Short Date” format, “Contract Date” caption	3	
Data imported from Agreements workbook	3	
Records in Fig 2-54 added	3	
Columns resized to their best fit	1	
One-to-many relationships between database tables: Between Primary Student table / related Contract table, primary Tutor table / related Contract table. All field names visible. Referential integrity, cascade updates defined for each relationship	5	
Programming database compacted / repaired	2	
<b>TOTAL POSSIBLE POINTS:</b>	<b>50</b>	<b>0</b>

**YOUR SCORE:** \_\_\_\_\_

## Grading Rubric – Access 2016 Module 2, Case Problem 3

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** *Center.accdb*

Description	Pts	Your Score
“Center” database, “Patron” table, a. PatronID: Description “Primary key”, field size 5, caption “Patron ID” b. Title: Field size 4 c. FirstName: Field size “20”, caption “First Name” d. LastName: Field size “25”, caption “Last Name” e. Phone: Field size “14” f. Email: Field size “35”	4	
Table created with data imported from the Donations workbook	2	
Primary key DonationID, table named “Donation”	2	
Left-justify DonationDescription field	1	
Table matches design in Fig 2-55	3	
Columns resized to their best fit	1	
Donation Value: Made current field, 0 decimal places	2	
Table created using design in Fig 2-56	3	
Primary key AuctionID, table saved as “Auction”	2	
Data imported to Auction table from Auctions text file	2	
Columns resized to their best fit	1	
DonationID: made 2 <sup>nd</sup> field, description “Foreign key”.	2	
Records added from Fig 2-57	2	
One-to-many relationships between tables: Primary Patron table / related Donation table, primary Donation table / related Auction table. All field names visible. Referential integrity, cascade updates defined for each relationship	5	
Center database compacted / repaired	2	
<b>TOTAL POSSIBLE POINTS:</b>		<b>0</b>

**YOUR SCORE:** \_\_\_\_\_

## Grading Rubric – Access 2016 Module 2, Case Problem 4

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** *Appalachia.accdb*

Description	Pts	Your Score
“Appalachia” database, “Hiker” table, a. HikerID: “Primary key” description, size “3”, “Hiker ID” caption b. HikerFirst: Size “20”, “Hiker First Name” caption c. HikerLast: Size “25”, “Hiker Last Name” caption d. Address: Size “35” e. City: Size “25” f. State: Size “2” g. Zip: Size “10” h. Phone: Size “14”	<b>6</b>	
Hiker First Name / Hiker Last Name columns resized to their best fit	<b>1</b>	
“Trip” table structure and data from “Travel” database imported into new table in “Appalachia” database	<b>3</b>	
Trip table renamed “Tour” giving the name to the new table in “Appalachia” database	<b>1</b>	
a. TourID: Description “Primary key”, size “3”, “Tour ID” caption b. TourName: “Tour Name” caption, size “35” c. PricePerPerson: “Price Per Person” caption	<b>3</b>	
Columns resized to their best fit	<b>1</b>	
Table created using design in Fig 2-58	<b>3</b>	
ReservationID primary key, table saved as “Reservation”	<b>2</b>	
TourDate field displays dates in format similar to 02/15/17	<b>1</b>	
Data in the Bookings text file imported into Reservation table	<b>2</b>	
Columns resized to their best fit, date values in TourDate field are displayed according to the custom format	<b>2</b>	
One-to-many relationships between tables: Primary Hiker table / related Reservation table, primary Tour table / related Reservation table. All field names visible. Referential integrity, cascade updates defined for each relationship	<b>4</b>	
Appalachia database compacted / repaired	<b>1</b>	
<b>TOTAL POSSIBLE POINTS:</b>	<b>30</b>	<b>0</b>

**YOUR SCORE:** \_\_\_\_\_



## Grading Rubric – Access 2016 Module 2, Module Case

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** Riverview.accdb

Description	Pts	Your Score
“Riverview” database, table created using design in Fig 2-5, table saved as “Billing”	<b>2</b>	
InvoiceNum field (primary key, Size: “5”, caption: “Invoice Num”)	<b>1</b>	
VisitID field (Data type: “Short Text”; Description: “Foreign key”; Size: “4”; Caption: “Visit ID”). InvoiceAmt field (Data Type: “Currency”; Decimal Places: “2” Caption: “Invoice Amt”). InvoiceDate field (Data type: “Date/Time”; Format: “mm/dd/yyyy”; Caption: “Invoice Date”). InvoicePaid field (Data type: “yes/no”; Caption: “Invoice Paid”).	<b>4</b>	
“InvoiceAmt” appears before the InvoicePaid field.	<b>1</b>	
InvoiceItem field: (Created before InvoicePaid field; Data Type: “Short Text”; Size: “40”; Caption: “Invoice Item”)	<b>1</b>	
In Visit table, VisitID field (Format: “Short Date”; Description: “Primary Key”; Size: “4”; Caption: “Visit ID”) AnimalID field (Data Type: “Short Text”; Description: “Foreign Key”) VisitDate field (Data Type: “Date/Time”; Caption: “Date of Visit”) Reason field (Data Type: “Short Text”, Size: “60”, Caption: “Reason/Diagnosis”) OffSite field (Data Type: “yes/no”; Caption: “Off-Site Visit?”)	<b>5</b>	
Add records shown in Figure 2-21 to Billing table	<b>1</b>	
Data imported from Invoices workbook into Billing table	<b>3</b>	
Columns in all tables resized to their best fit	<b>1</b>	
Import Animal table from AllAnimals database into the Riverview database	<b>3</b>	
Import Owner table from Kelly database into the Riverview database	<b>3</b>	
Add fields to the Owner database using the Data Type gallery Address field via QuickStart section (5 fields added (“Address”, “City”, “State Province”, “ZIP Postal”, “Country Region”)	<b>1</b>	
Delete “Country Region”, “County”, and “Notes” fields	<b>1</b>	
Rename: “StateProvince” as “State”; “ZIPPostal” as “Zip”	<b>1</b>	

Edit data types: Phone field: Data type: "Short Text"; Size: "14" Address field: Size: "35"; caption deleted City field: Size: "25"; caption deleted State field: Size: "2"; caption deleted; Default: "WY" Zip field: Size: "10"; caption deleted OwnerID field: Type: "Primary Key"; Caption: "Owner ID"; FirstName field: Caption: "First Name" LastName field: Caption: "Last Name"	<b>4</b>	
Add two records to the Owner table, resize columns for best fit	<b>1</b>	
Data imported from Owner text file into Owner table	<b>3</b>	
One-to-many relationships between tables: Primary Owner table / related Animal table; Primary Animal table / related Visit table; Primary Visit table / related Billing table. All field names visible. Referential integrity, cascade updates defined for each relationship	<b>3</b>	
Riverview database compacted / repaired	<b>1</b>	
<b>TOTAL POSSIBLE POINTS:</b>	<b>40</b>	<b>0</b>

**YOUR SCORE:** \_\_\_\_\_

## Grading Rubric – Access 2016 Module 2, Review Assignment

**Class:**

**Professor:**

**Notes:**

**Solution Filename:** *Vendor.accdb*

Description	Pts	Your Score
“Vendor” database, “Supplier” table: Field properties as in Fig 2-45	3	
Columns resized to their best fit	1	
Table created using design in Fig 2-46	3	
ProductID primary key, table saved as “Product”	3	
Field added, “Weight” (Data type: “Number”; Size: “Single”; Decimal Places: “2”; Caption: “Weight in Lbs”; Default Value: [no]) between Price / TempControl fields. “Units/Case” positioned between Price / Weight fields	4	
Records in Fig 2-47 entered. Columns resized to their best fit	3	
Data imported from Supplies workbook into Product table	3	
Columns resized to their best fit	1	
One-to-many relationships between tables: Primary Supplier table / related Product table. All field names visible. Referential integrity, cascade updates defined for each relationship	3	
Vendor database compacted / repaired	1	
<b>TOTAL POSSIBLE POINTS:</b>	<b>25</b>	<b>0</b>

**YOUR SCORE:** \_\_\_\_\_

Hiker First Name / Hiker Last Name columns resized to their best fit

Hiker ID	Hiker First Name	Hiker Last Name	Address	City	State	Zip	Phone
501	Student First	Student Last	123 Jackson St	Boone	NC	28607	828-497-9128
503	Ellen	Gilliams	19 Westernville Rd	Spartanburg	SC	29301	864-921-9876
506	Robert	Taylor	41 Taylor Ln	Jackson	GA	30233	770-999-2391
509	Sarah	Peeler	32 Mountain Ln	Ridgeview	WV	25169	703-456-9381
512	Rebecca	Peeler	32 Mountain Ln	Ridgeview	WV	25169	703-456-9381
515	Robert	Peeler	32 Mountain Ln	Ridgeview	WV	25169	703-456-9381
518	Wilbur	Sanders	512 Loop Rd	Asheville	NC	28801	828-921-3459
521	Zack	Hoskins	2 Hope Rd	Atlanta	GA	30301	404-998-2381
524	Sissy	Jackson	92 Bobcat Cir	Bethesda	MD	20817	240-925-0129
527	Mark	Billings	43 Oak Ln	Cashiers	NC	28717	828-829-9842
530	Todd	Pillow	2 Pillow St	Hendersonville	NC	28739	828-987-2948
533	Thomas	Jones	11 Boston Rd	Greenville	SC	29601	864-234-9501
535	Elmer	Jackson	99 River Rd	Blacksburg	SC	29702	864-921-2384
538	Catherine	Johnson	21 Pine St	Cedartown	GA	30125	678-982-1029
541	Douglas	Furrington	44 King St	Hershey	PA	17033	717-098-9382
544	Matthew	Smith	412 Sentry Ln	Gastonia	NC	28052	704-998-0987
547	Heather	Smith	412 Sentry Ln	Gastonia	NC	28052	704-998-0987
550	Jack	Smith	412 Sentry Ln	Gastonia	NC	28052	704-998-0987
553	Seth	Barkley	12 Main St	Stanley	NC	28164	704-988-2019
556	Henry	Billings	5 Loop Rd	Alexis	NC	28006	704-921-8832

- “Appalachia” database, “Hiker” table,
- HikerID: “Primary key” description, size “3”, “Hiker ID” caption
  - HikerFirst: Size “20”, “Hiker First Name” caption
  - HikerLast: Size “25”, “Hiker Last Name” caption
  - Address: Size “35”
  - City: Size “25”
  - State: Size “2”
  - Zip: Size “10”
  - Phone: Size “14”

“Trip” table structure and data from “Travel” database imported into new table in “Appalachia” database

Tour ID	Tour Name	Tour Type	Hours	Description	Price Per Person
100	Linville Gorge	Hiking	4	Exploration of Linville Gorge and falls	\$100
105	Rough Ridge	Hiking	3	Scenic views at Rough Ridge and surrounding peaks	\$75
110	Grandfather Mountain	Hiking	6	Exploration of Grandfather Mountain (lunch included)	\$175
115	Boone Greenway	Hiking	4	Traverse the Boone Greenway and explore the beauty	\$100
120	Explore the High Country	Van	8	Spend a day exploring the High Country (lunch and dir	\$250
125	Elk Knob	Hiking	4	Explore Elk Knob and surrounding area	\$100
130	Mount Mitchell	Hiking	6	Explore beautiful Mount Mitchell (lunch included)	\$175
135	Roan Mountain	Hiking	6	Explore Roan Mountain (lunch included)	\$175
140	Cross Country Skiing	Skiing	3	Explore the High Country on skis (equipment included	\$150
145	Rock Climbing	Climbing	3	Introduction to rock climbing in the High Country (equ	\$125
150	Fishing	Van/Fishing	6	Spend the day fishing on various lakes in the High Cou	\$200

Trip table renamed “Tour” giving the name to the new table in “Appalachia” database

- TourID: Description “Primary key”, size “3”, “Tour ID” caption
- TourName: “Tour Name” caption, size “35”
- PricePerPerson: “Price Per Person” caption

Columns resized to their best fit

Table created using design in Fig 2-58

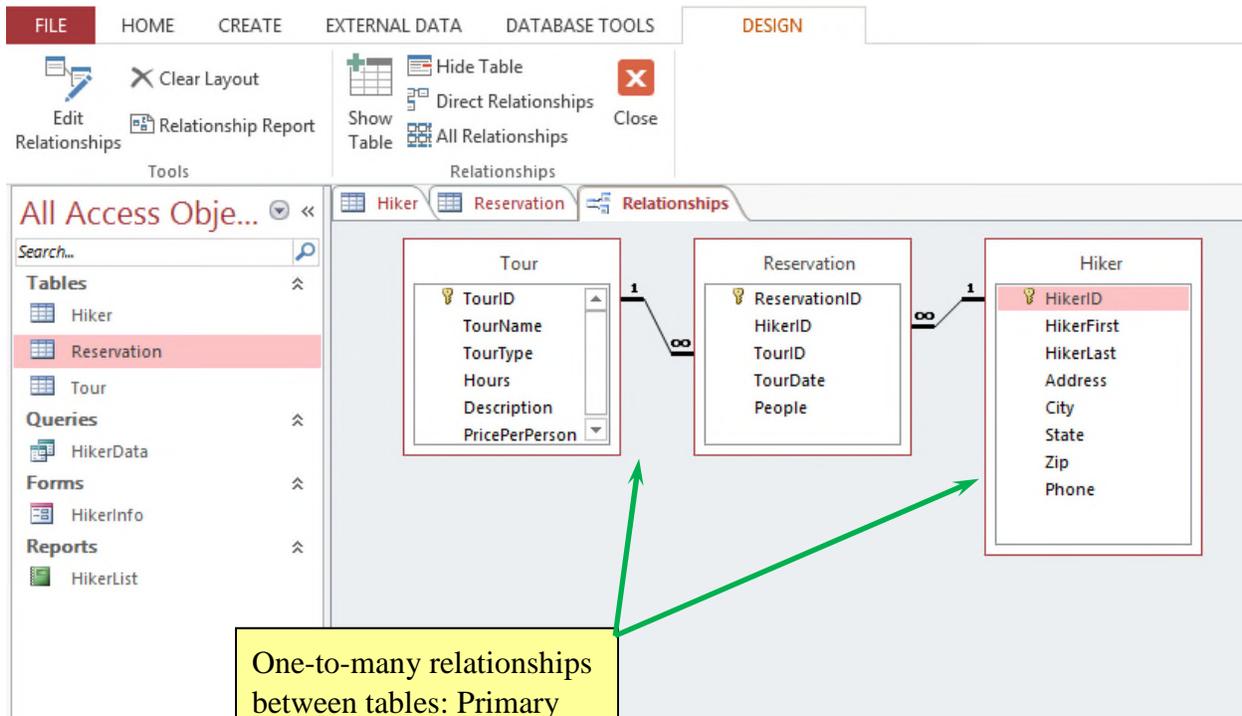
ReservationID primary key, table saved as "Reservation"

TourDate field displays dates in format similar to 02/15/17

Reservation ID	Hiker ID	Tour ID	Tour Date	People	Click to Add
3000	512	100	09/09/17	3	
3005	538	115	09/16/17	1	
3010	544	115	09/16/17	1	
3015	547	115	09/16/17	1	
3020	550	115	09/16/17	1	
3025	501	130	09/23/17	2	
3030	521	130	09/23/17	2	
3035	535	125	09/30/17	3	
3040	556	125	09/30/17	2	
3045	527	105	10/07/17	1	
3050	527	125	09/30/17	1	
3055	503	110	09/02/17	1	
3060	553	110	09/02/17	1	
3065	541	120	10/07/17	5	
3070	524	100	09/09/17	2	
3075	506	130	09/23/17	2	
3080	509	125	09/30/17	2	
3085	533	125	09/30/17	1	
3090	530	135	10/14/17	3	
3095	515	140	12/16/17	3	
3100	518	145	08/26/17	2	
3105	527	150	08/19/17	3	
3110	544	150	08/19/17	2	
3115	547	120	10/07/17	2	
3120	503	140	12/16/17	2	

Data in the Bookings text file imported into Reservation table

Columns resized to their best fit, date values in TourDate field are displayed according to the custom format



One-to-many relationships between tables: Primary Tour table / related Reservation table, primary Hiker table / related Reservation table. All field names visible. Referential integrity, cascade updates defined for each relationship

Appalachia database compacted / repaired

Option ID	Option Description	Option Cost	Fee Waived
101	Manicure weekly for 1 month	125	<input type="checkbox"/>
102	Manicure weekly for 3 months	350	<input checked="" type="checkbox"/>
103	Manicure weekly for 6 months	650	<input checked="" type="checkbox"/>
104	Manicure weekly for 12 months	1,200	<input checked="" type="checkbox"/>
105	Manicure bi-weekly for 1 month	70	<input type="checkbox"/>
106	Manicure bi-weekly for 3 months	190	<input type="checkbox"/>
107	Manicure bi-weekly for 6 months	350	<input checked="" type="checkbox"/>
108	Manicure bi-weekly for 12 months	650	<input checked="" type="checkbox"/>
109	Manicure monthly for 3 months	140	<input type="checkbox"/>
110	Manicure monthly for 6 months	250	<input checked="" type="checkbox"/>
111	Manicure monthly for 12 months	450	<input checked="" type="checkbox"/>
112	Pedicure weekly for 1 month	125	<input type="checkbox"/>
113	Pedicure weekly for 3 months	350	<input checked="" type="checkbox"/>
114	Pedicure weekly for 6 months	650	<input checked="" type="checkbox"/>
115	Pedicure weekly for 12 months	1,200	<input checked="" type="checkbox"/>
116	Pedicure bi-weekly for 1 month	70	<input type="checkbox"/>

- a. OptionID: Description, "Primary key"; size "3"; caption, "Option ID"
- b. OptionDescription: Size "45"; caption, "Option Description"
- c. OptionCost: Format, "Standard"; "0" decimal places; caption, "Option Cost"
- d. FeeWaived: Caption "Fee Waived"

Table created using design in Fig 2-48

MemberID is the primary key, table saved as "Member"

Fields added between LastName / Phone fields

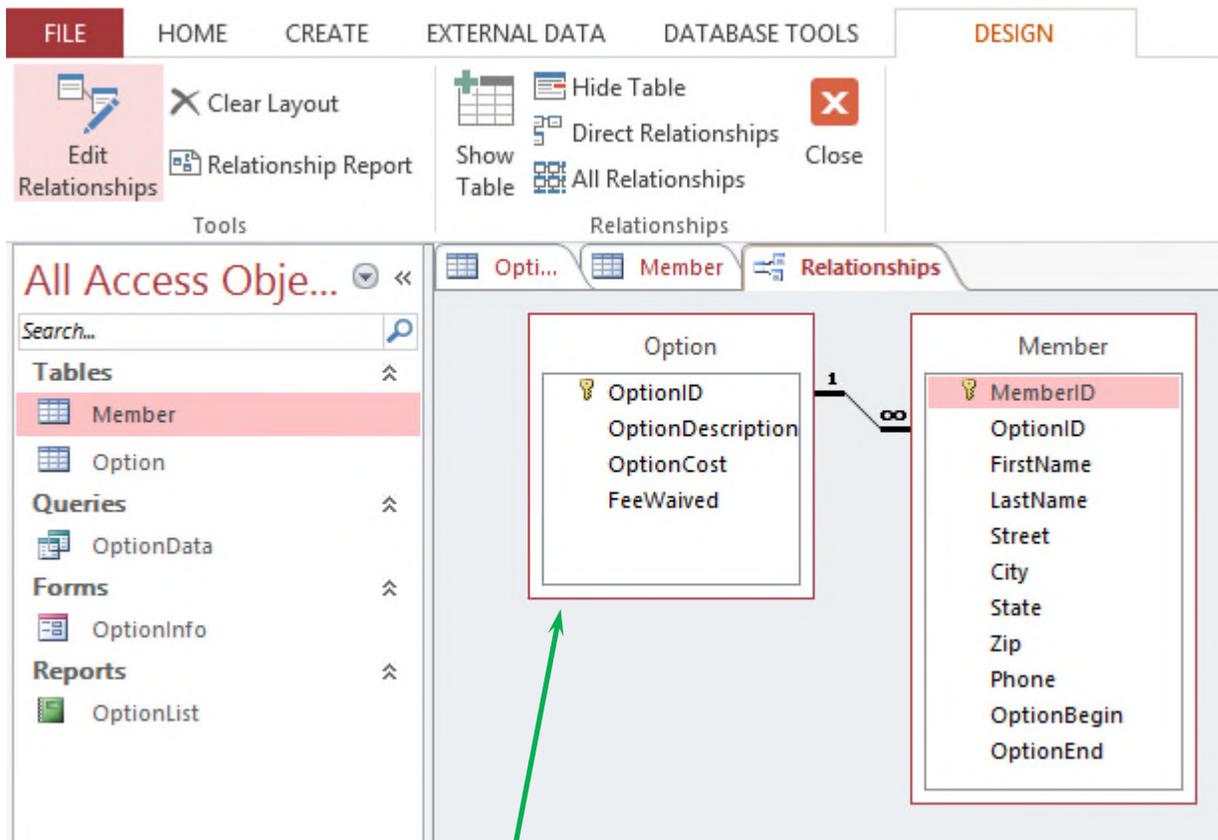
Field added between Phone / OptionEnds fields

Member ID	Option ID	First Name	Last Name	Street	City	State	Zip	Phone	Option Begins	Option Ends
2100	101	Elaine	Diza	192 23rd St	Orlando	FL	32801	407-912-2234	11/5/2017	12/5/2017
2103	123	Student First	Student Last	22 Oak St	Orlando	FL	32801	407-832-3944	2/1/2017	3/1/2017
2105	103	Sandra	Garcia	217 Acorn Ridge Dr	Orlando	FL	32803	407-811-2134	1/15/2017	7/15/2017
2110	106	Amara	Moreno	41 Balboa Dr	Orlando	FL	32801	786-733-7301	11/6/2016	2/6/2017
2115	123	Jackie	Smith	412 Ashton Cir	Orlando	FL	32805	813-231-3001	2/4/2017	3/4/2017
2118	120	Susan	Reyes	3 Balboa St	Orlando	FL	32804	407-216-0091	11/2/2016	2/2/2017
2120	135	Barbara	Jackson	31 Terhune Ave	Orlando	FL	32830	321-417-9980	12/6/2016	3/6/2017
2123	142	Angella	Delgado	2 Sangunta St	Orlando	FL	32829	407-333-3249	1/6/2017	7/6/2017
2126	111	Ariesa	Romero	33 Baldwin Dr	Celebration	FL	34747	407-912-9230	12/20/2016	12/20/2017
2129	128	Angel	Fernandez	19 Midori St	Orlando	FL	32809	954-840-9391	2/1/2017	5/1/2017
2132	131	Maita	Rios	123 Baja Rd	Orlando	FL	32812	407-801-1240	3/3/2017	6/3/2017
2135	134	Oleda	Valdez	12 Salerno Ct	Orlando	FL	32819	407-422-3901	1/12/2017	2/12/2017
2138	110	Lola	Sanchez	82 Hockley Ct	Orlando	FL	32818	407-940-9401	1/15/2017	7/15/2017
2142	105	Nancy	Smith	44 Hinson St	Orlando	FL	32808	954-844-4801	11/10/2017	12/10/2017
2145	120	Mirana	Alvarado	32 Pack Cir	Orlando	FL				
2148	143	Gilda	Packson	111 Saiffish St	Orlando	FL				
2151	141	Retha	Ramirez	2 Bostic Cir	Orlando	FL				
2154	131	Regia	Vargas	65 Acadlan Dr	Orlando	FL				
2157	127	Priscilla	Salazar	101 Rio Ln	Orlando	FL				
2160	141	Gabriel	Martinez	16 Ripley Ct	Celebration	FL				
2163	128	Sandra	Medina	41 19th St	Orlando	FL				
2166	109	Linda	Salinas	122 Bolcher Ave	Orlando	FL				
2169	125	Susan	Miller	98 Riva Ct	Orlando	FL				
2172	112	Allison	Torres	42 Baker Rd	Orlando	FL				
2175	136	Taylor	Rivera	32 Sago Cir	Orlando	FL				

- Address field: "Street", size "40", caption deleted
- City field: Size "25", caption deleted
- State field: "State", size "2", caption deleted, FL is default value
- ZIPPostal field: "Zip", size 10, caption deleted
- CountryRegion field deleted from Member table structure
- "OptionBegin" field added (data type: "Date/Time"; format: "Short Date"; Caption: "Option Begins") between Phone / OptionEnd fields

Records in Fig 2-49 entered. 1<sup>st</sup> / last names entered. Columns resized to their best fit

Data imported from Customers text file



One-to-many relationship between primary Option / Member table. All field names visible. Referential integrity, cascade updates defined for the relationship

Beauty database compacted / repaired

- a. PatronID: Description “Primary key”, field size 5, caption “Patron ID”
- b. Title: Field size 4
- c. FirstName: Field size “20”, caption “First Name”
- d. LastName: Field size “25”, caption “Last Name”
- e. Phone: Field size “14”
- f. Email: Field size “35”

The screenshot shows the Microsoft Access interface with the 'Patron' table open in Datasheet view. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, FIELDS, and TABLE. The ribbon tabs are active, showing options like Filter, Sort & Filter, Refresh, New, Save, Delete, Records, Find, and Replace. The left-hand pane shows 'All Access Objects' with a search bar and categories for Tables, Queries, Forms, and Reports. The 'Patron' table is selected under Tables. The main area displays a grid of data with columns: Patron ID, Title, First Name, Last Name, Phone, and Email. The first row is highlighted in blue, and the 'Patron ID' cell contains the value '3001'. A green arrow points from the text box above to this cell. The status bar at the bottom indicates 'Record: 1 of 20' and 'No Filter'.

Patron ID	Title	First Name	Last Name	Phone	Email
3001	Stud	Student First	Student Last	404-987-1234	student@example.com
3003	Ms.	Sarah	Johanson	404-987-3985	johan19@example.com
3006	Dr.	Elbert	Schneider	678-492-9101	countrydoc@example.com
3008	Mrs.	June	Franklin	404-987-0915	junebug@example.net
3011	Mr.	Henry	Shelton	678-492-0091	hshelton42@example.com
3014	Mr.	Ben	Jackson	706-917-4019	bennie@example.net
3016	Mr.	Edward	Jones	404-972-1102	edwardo@example.net
3019	Mrs.	Jane	Michaels	706-489-3310	jjmichaels@example.com
3022	Dr.	Taylor	Williams	404-812-9301	thefootdoc@example.net
3024	Ms.	Catherine	McGill	706-421-4491	mcgill12@example.com
3025	Mr.	David	Thomas	706-921-8830	funnyman@example.net
3027	Mrs.	Kathy	Johnston	404-489-4108	johnstonk123@example.com
3028	Mrs.	Sue	Jackson	678-321-2019	susieq@example.net
3030	Mr.	David	Hampton	404-824-3381	thehamptons@example.net
3031	Ms.	Elinor	Zak	404-435-9120	elinorzak@example.net
3033	Mrs.	Lauren	Shelbert	404-421-0021	bertie32@example.com
3035	Mr.	Bill	Thomas	678-876-9419	thombo42@example.com
3038	Ms.	Gail	Fordham	404-349-9310	thefordhams@example.net
3041	Mr.	Frank	Miller	404-824-3431	frankmiller12@example.net
3044	Mr.	Victor	Washburn	706-982-0184	thewashburns@example.net

Primary key DonationID,  
table named "Donation"

Table created with data  
imported from the  
Donations workbook

Table matches design in  
Fig 2-55

Donation ID	Patron ID	Donation Date	Description	Donation Value	Cash Donation?	Possible Auction Item?
5100	3022	07/05/2017	Cash donation	\$50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5105	3035	07/08/2017	Cash donation	\$25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5110	3044	07/13/2017	Cash donation	\$25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5115	3001	07/13/2017	Clothing	\$125	<input type="checkbox"/>	<input type="checkbox"/>
5120	3006	07/15/2017	Shoes	\$100	<input type="checkbox"/>	<input type="checkbox"/>
5123	3041	07/17/2017	Cash donation	\$75	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5126	3014	08/03/2017	Pots and pans	\$50	<input type="checkbox"/>	<input type="checkbox"/>
5129	3003	08/05/2017	Grandfather clock	\$500	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5132	3028	08/07/2017	Dining room furniture	\$250	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5135	3033	08/11/2017	Towels	\$50	<input type="checkbox"/>	<input type="checkbox"/>
5138	3025	08/14/2017	Hats and gloves	\$60	<input type="checkbox"/>	<input type="checkbox"/>
5140	3027	08/17/2017	Cash donation	\$25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5143	3031	08/18/2017	Girls clothes	\$125	<input type="checkbox"/>	<input type="checkbox"/>
5146	3030	08/21/2017	New television	\$250	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5149	3008	08/21/2017	Toys	\$150	<input type="checkbox"/>	<input type="checkbox"/>
5152	3011	08/28/2017	Jewelry	\$200	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5155	3038	08/29/2017	Cash donation	\$25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5160	3016	08/30/2017	Cash donation	\$75	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5163	3024	09/05/2017	Cash donation	\$100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5166	3019	09/06/2017	Boys clothes	\$150	<input type="checkbox"/>	<input type="checkbox"/>
5169	3001	09/08/2017	Cash donation	\$100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5172	3016	09/08/2017	Cash donation	\$150	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5175	3019	09/09/2017	Cash donation	\$200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5178	3028	09/11/2017	Stamp collection	\$500	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5181	3035	09/11/2017	Cash donation	\$50	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Columns resized to  
their best fit

DonationDescription  
left-justified

Donation Value: Made  
current field, 0 decimal  
places

Primary key AuctionID, table saved as "Auction"

Table created using design in Fig 2-56

Data imported to Auction table from Auctions text file

The screenshot shows the Microsoft Access interface with the 'Auction' table open in Datasheet View. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, FIELDS, and TABLE. The left-hand pane shows 'All Access Objects' with a search bar and categories: Tables (Auction, Donation, Patron), Queries (PatronContactList), Forms (PatronInfo), and Reports (PatronList). The main area displays the following data:

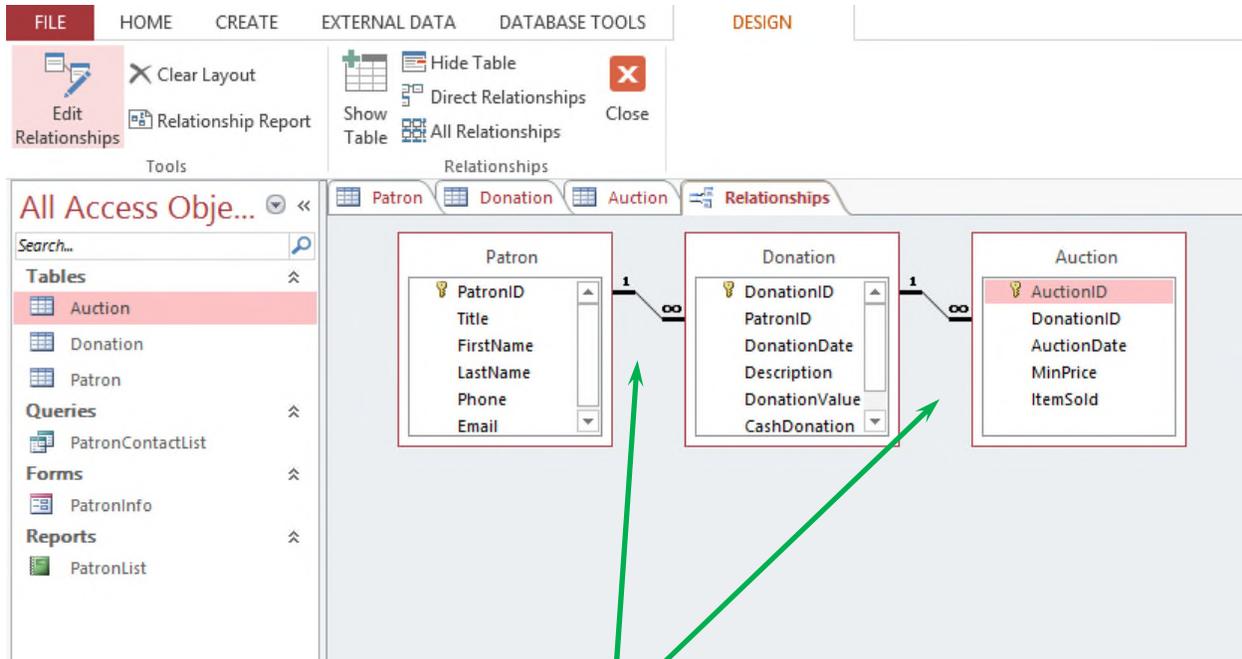
Auction ID	Donation ID	Date of Auction	Minimum Sales Price	Item Sold at Auction?
200	5129	08/12/2017	\$300	<input type="checkbox"/>
205	5132	08/12/2017	\$200	<input type="checkbox"/>
210	5146	09/09/2017	\$150	<input type="checkbox"/>
215	5152	09/09/2017	\$125	<input type="checkbox"/>
220	5178	10/14/2017	\$350	<input type="checkbox"/>
225	5187	10/14/2017	\$200	<input type="checkbox"/>
230	5205	10/14/2017	\$175	<input type="checkbox"/>
235	5217	10/14/2017	\$150	<input type="checkbox"/>
240	5238	10/14/2017	\$225	<input type="checkbox"/>
245	5241	10/14/2017	\$400	<input type="checkbox"/>
250	5244	11/11/2017	\$50	<input type="checkbox"/>
255	5260	11/11/2017	\$100	<input type="checkbox"/>
*			\$0	<input type="checkbox"/>

At the bottom, the status bar shows 'Record: 1 of 12' and 'No Filter'.

Records added from Fig 2-57

DonationID: made 2nd field, description "Foreign key".

Columns resized to their best fit



One-to-many relationships between tables: Primary Patron table / related Donation table, primary Donation table / related Auction table. All field names visible. Referential integrity, cascade updates defined for each relationship

Center database compacted / repaired

Programming database,  
Tutor table, field properties  
set as in Fig 2-50

Field added as last field  
with name “Groups”,  
“Yes/No” data type,  
caption “Groups Only”

Tutor ID	First Name	Last Name	Major	Year In School	School	Hire Date	Groups Only
1001	Tom	Johnson	Computer Science	Senior	Hogan University	2/5/2017	<input type="checkbox"/>
1003	Carey	Billings	Information Systems	Junior	Eikenville College	3/1/2017	<input checked="" type="checkbox"/>
1005	Bob	Smith	Computer Science	Graduate	Hogan University	4/18/2017	<input type="checkbox"/>
1008	Sally	Gilbert	Information Systems	Senior	Ellings College	1/15/2017	<input type="checkbox"/>
1010	Cathy	Cowler	Computer Engineering	Graduate	Eikenville College	2/1/2017	<input type="checkbox"/>
1013	Aaron	Black	Computer Science	Junior	Smith Technical College	5/14/2017	<input type="checkbox"/>
1015	Douglas	Arrendale	Computer Engineering	Senior	Ellings College	3/27/2017	<input type="checkbox"/>
1018	Fredrik	Karlsson	Mechatronics	Junior	Smith Technical College	2/6/2017	<input checked="" type="checkbox"/>
1020	Ian	Rodriguez	Computer Science	Senior	Potswan College	2/27/2017	<input type="checkbox"/>
1023	Jake	Ballard	Mechatronics	Senior	Smith Technical College	4/2/2017	<input type="checkbox"/>
1025	Larry	Smith	Computer Science	Graduate	Hogan University	5/21/2017	<input type="checkbox"/>
1028	Mike	Johnson	Mechatronics	Senior	Smith Technical College	1/8/2017	<input type="checkbox"/>
1031	Nichole	Schneider	Computer Science	Junior	Switzer University	2/28/2017	<input type="checkbox"/>
1033	Barbara	Alzo	Information Systems	Senior	Hogan University	3/12/2017	<input type="checkbox"/>
1036	Ellen	Desoto	Computer Science	Graduate	Hogan University	4/16/2017	<input checked="" type="checkbox"/>
1039	Gail	Fordham	Information Systems	Junior	Switzer University	2/22/2017	<input type="checkbox"/>
1042	Henry	Justice	Computer Science	Graduate	Smith Technical College	4/20/2017	<input type="checkbox"/>
1045	Kelly	Rudd	Computer Science	Graduate	Potswan College	2/27/2017	<input type="checkbox"/>
1048	Angie	Hinson	Computer Engineering	Senior	Franklin University	5/10/2017	<input type="checkbox"/>
1051	Donald	Gallager	Computer Science	Graduate	Hogan University	1/18/2017	<input checked="" type="checkbox"/>
1060	Student First	Student Last	Computer Science	Senior	Ellings College	2/14/2017	<input type="checkbox"/>

Tutors conduct group  
tutoring sessions only:  
Carey Billings, Fredrik  
Karlsson, Ellen Desoto,  
Donald Gallager



Structure of Student table in Client database imported into table named Student in Programming database

Fields related to phone numbers added between Zip / BirthDate

New fields added at end: "BirthDate" (Date/Time), "Gender" (Short Text)

Student ID	First Name	Last Name	Address	City	State	Zip	Home Phone	Cell Phone	Birth Date	Gender
AND4010	Joshua	Anderson	55 Boone Ct	Raleigh	NC	27601	919-263-4938	919-665-0119	4/27/1998	M
BAR4018	Andrew	Bartles	47 King St	Cary	NC	27511	919-663-9118	919-678-1612	11/2/1997	M
COW4100	Darcy	Cowler	88 Earth Way	Raleigh	NC	27601	919-264-5981	919-664-4454	12/2/1998	F
DOR4030	Barbara	Dorman	65 Kirby Ct	Raleigh	NC	27602	919-265-6549	919-664-0971	9/16/1997	F
EIG4042	Fredrik	Eigenmeyer	16 Emporium Ct	Raleigh	NC	27603	919-264-2598	919-665-5540	3/2/1995	M
FRA4045	Salvador	Francisco	11 Bobcat Dr	Cary	NC	27512	919-664-9810	919-678-4719	5/25/1998	M
GAL4050	Elizabeth	Gallagher	44 Winner Cir	Raleigh	NC	27602	919-265-1410	919-664-9988	4/12/1997	F
HIC4055	Hildago	Hickman	22 Pinwheel Ln	Cary	NC	27511	919-664-0129	919-678-4960	11/12/1998	M
JOH4075	Amber	Johnson	2 14th Ave	Raleigh	NC	27602	919-263-4432	919-664-1992	4/1/1997	F
KIL4085	David	Killian	123 Berry Dr	Apex	NC	27503	919-234-1413	919-698-9381	11/14/1997	M
LON4105	Wilbur	Long	55 Pond Rd	Holly Springs	NC	27540	919-355-8450	919-712-2139	1/5/1997	M
LOP4015	Henry	Lopez	19 8th St	Raleigh	NC	27601	919-264-9981	919-665-8110	2/19/1998	M
MAL4115	Dystra	Malik	14 Gaston St	Raleigh	NC	27602	919-264-6450	919-664-9125	6/22/1998	M
NIV4110	Christy	Niver	617 Echo Ln	Apex	NC	27503	919-234-6693	919-699-0158	4/12/1996	F
PAS4020	Victor	Pasquez	42 Nightingale Ct	Cary	NC	27511	919-662-1002	919-678-8240	8/2/1998	M
PER4055	Rosalyn	Perez	421 Pine Ln	Cary	NC	27511	984-662-4761	919-678-0012	4/12/1996	F
RAM4025	Ellen	Ramsey	45 7th St	Holly Springs	NC	27540	919-355-5340	919-713-1654	12/29/1997	F
TOL4035	Jack	Tolliver	12 19th St	Apex	NC	27503	919-235-1109	919-698-1585	6/2/1997	M
VAS4040	Anton	Vasquez	32 Wolf Dr	Raleigh	NC	27602	919-263-9531	919-665-5329	10/22/1998	M
WIL4050	Sue	Williams	99 Skyblue Rd	Apex	NC	27503	919-235-5343	919-699-5339	2/6/1996	F

Design from Fig 2-51, including revised field names / data types

Records in Fig 2-52 added

BusinessPhone /  FaxNumber fields deleted

LastName field follows FirstName field

Fields resized to their best fit

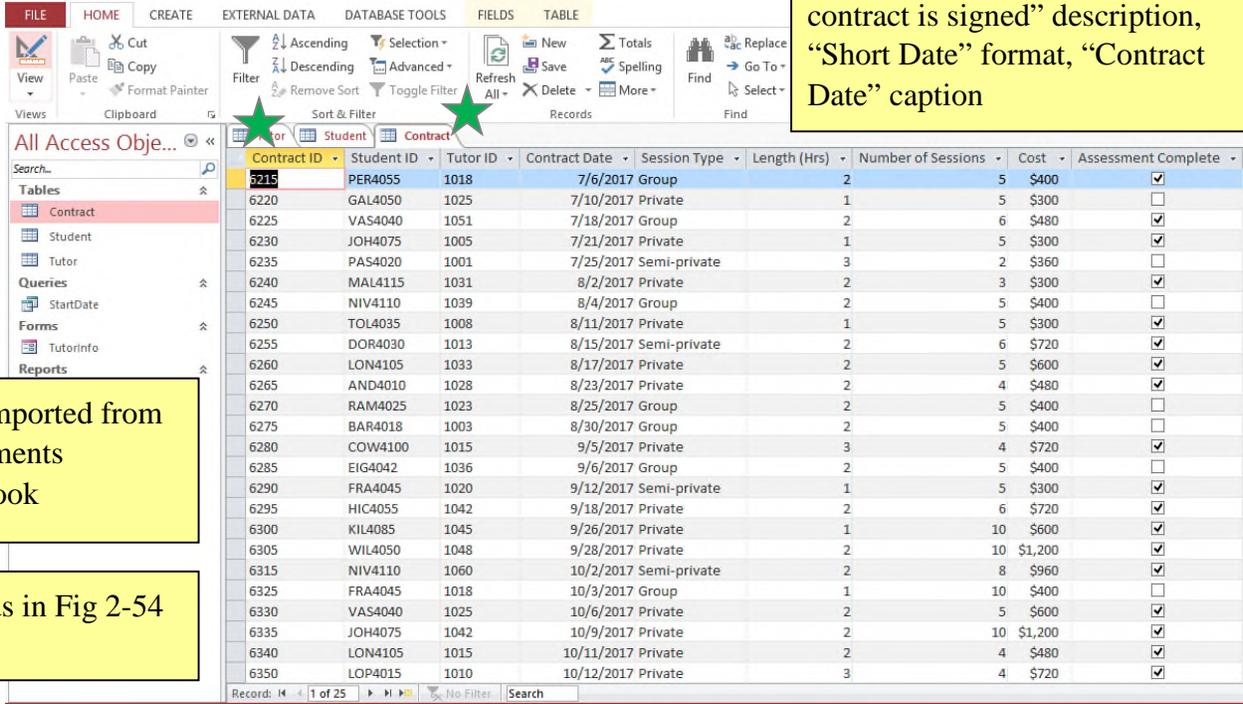
Data imported from Students text file

Columns resized to their best fit

Table created using design in Figure 2-53

ContractID is primary key, table saved as "Contract" 

Field added, between TutorID / SessionType fields: "ContractDate" name, "Date/Time" data type, "Date contract is signed" description, "Short Date" format, "Contract Date" caption

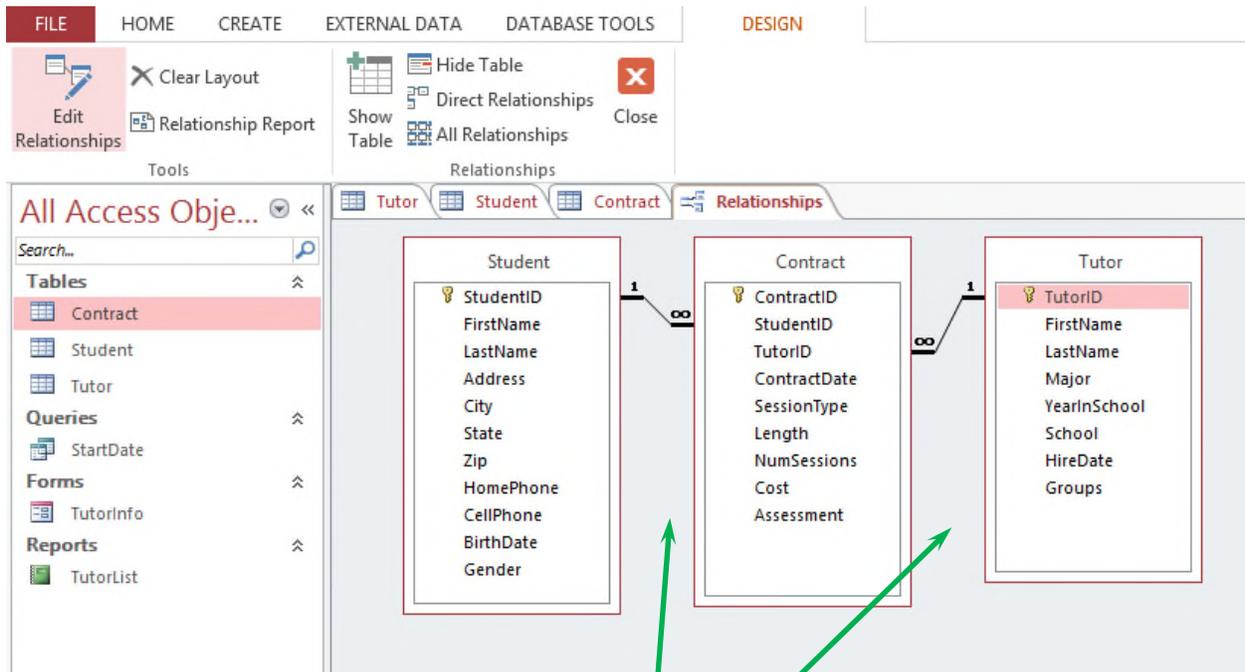


Contract ID	Student ID	Tutor ID	Contract Date	Session Type	Length (Hrs)	Number of Sessions	Cost	Assessment Complete
5215	PER4055	1018	7/6/2017	Group	2	5	\$400	<input checked="" type="checkbox"/>
6220	GAL4050	1025	7/10/2017	Private	1	5	\$300	<input type="checkbox"/>
6225	VAS4040	1051	7/18/2017	Private	2	6	\$480	<input checked="" type="checkbox"/>
6230	JOH4075	1005	7/21/2017	Private	1	5	\$300	<input checked="" type="checkbox"/>
6235	PAS4020	1001	7/25/2017	Semi-private	3	2	\$360	<input type="checkbox"/>
6240	MAL4115	1031	8/2/2017	Private	2	3	\$300	<input checked="" type="checkbox"/>
6245	NIV4110	1039	8/4/2017	Group	2	5	\$400	<input type="checkbox"/>
6250	TOL4035	1008	8/11/2017	Private	1	5	\$300	<input checked="" type="checkbox"/>
6255	DOR4030	1013	8/15/2017	Semi-private	2	6	\$720	<input checked="" type="checkbox"/>
6260	LON4105	1033	8/17/2017	Private	2	5	\$600	<input checked="" type="checkbox"/>
6265	AND4010	1028	8/23/2017	Private	2	4	\$480	<input checked="" type="checkbox"/>
6270	RAM4025	1023	8/25/2017	Group	2	5	\$400	<input type="checkbox"/>
6275	BAR4018	1003	8/30/2017	Group	2	5	\$400	<input type="checkbox"/>
6280	COW4100	1015	9/5/2017	Private	3	4	\$720	<input checked="" type="checkbox"/>
6285	EIG4042	1036	9/6/2017	Group	2	5	\$400	<input type="checkbox"/>
6290	FRA4045	1020	9/12/2017	Semi-private	1	5	\$300	<input checked="" type="checkbox"/>
6295	HIC4055	1042	9/18/2017	Private	2	6	\$720	<input checked="" type="checkbox"/>
6300	KIL4085	1045	9/26/2017	Private	1	10	\$600	<input checked="" type="checkbox"/>
6305	WIL4050	1048	9/28/2017	Private	2	10	\$1,200	<input checked="" type="checkbox"/>
6315	NIV4110	1060	10/2/2017	Semi-private	2	8	\$960	<input checked="" type="checkbox"/>
6325	FRA4045	1018	10/3/2017	Group	1	10	\$400	<input type="checkbox"/>
6330	VAS4040	1025	10/6/2017	Private	2	5	\$600	<input checked="" type="checkbox"/>
6335	JOH4075	1042	10/9/2017	Private	2	10	\$1,200	<input checked="" type="checkbox"/>
6340	LON4105	1015	10/11/2017	Private	2	4	\$480	<input checked="" type="checkbox"/>
6350	LOP4015	1010	10/12/2017	Private	3	4	\$720	<input checked="" type="checkbox"/>

Data imported from Agreements workbook

Records in Fig 2-54 added

Columns resized to their best fit



One-to-many relationships between database tables: Between Primary Student table / related Contract table; primary Tutor table / related Contract table. All field names visible. Referential integrity, cascade updates defined for each relationship

Programming database compacted / repaired

“Riverview” database, table created using design in Fig 2-5; table saved as “Billing”

VisitID field (Data type: “Short Text”; Description: “Foreign key”; Size: “4”; Caption: “Visit ID”).  
 InvoiceAmt field (Data Type: “Currency”; Decimal Places: “2” Caption: “Invoice Amt”).  
 InvoiceDate field (Data type: “Date/Time”; Format: “mm/dd/yyyy”; Caption: “Invoice Date”).  
 InvoicePaid field (Data type: “yes/no”; Caption: “Invoice Paid”).

InvoiceNum primary key

“InvoiceAmt” moved and appears before the InvoicePaid field.  
 “InvoiceItem” field added (Data type: “Short Text”; Size: “40”; Caption: “Invoice Item”) between InvoiceAmt/InvoicePaid fields

Invoice Num	Visit ID	Invoice Date	Invoice Amt	Invoice Item	Invoice Paid
42098	1002	11/09/2016	\$50.00	Lab work	<input checked="" type="checkbox"/>
42099	1002	11/09/2016	\$75.00	Updated shots	<input type="checkbox"/>
42100	1002	11/09/2016	\$45.00	Flea & tick medications	<input type="checkbox"/>
42110	1006	11/14/2016	\$35.00	Heartworm medication	<input checked="" type="checkbox"/>
42111	1006	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42112	1006	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42118	1009	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42119	1009	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42125	1012	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42126	1012	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42127	1012	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42128	1013	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42129	1013	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42130	1014	11/14/2016	\$35.00	Heartworm medication	<input type="checkbox"/>
42131	1014	11/21/2016	\$75.00	Lab work	<input checked="" type="checkbox"/>
42132	1015	11/21/2016	\$75.00	Updated shots	<input checked="" type="checkbox"/>
42133	1015	11/21/2016	\$75.00	Lab work	<input checked="" type="checkbox"/>
42134	1016	11/21/2016	\$75.00	Updated shots	<input checked="" type="checkbox"/>
42135	1016	11/21/2016	\$75.00	Lab work	<input checked="" type="checkbox"/>
42145	1020	11/22/2016	\$275.00	Surgery for wing repair	<input checked="" type="checkbox"/>
42146	1020	11/22/2016	\$50.00	Medications for recovery	<input checked="" type="checkbox"/>
42147	1020	11/22/2016	\$75.00	Lab work	<input checked="" type="checkbox"/>
42155	1024	11/23/2016	\$50.00	Lab work	<input checked="" type="checkbox"/>
42156	1024	11/23/2016	\$75.00	Updated shots	<input checked="" type="checkbox"/>
42157	1024	11/23/2016	\$45.00	Flea & tick medications	<input checked="" type="checkbox"/>

Records in Fig 2-21 entered; Data imported from Invoices worksheet into Billing table. ★

Invoice Item column resized to its best fit

Columns resized to their best fit

VisitID field (Format: "Short Date"; Description: "Primary Key"; Size: "4"; Caption: "Visit ID")

AnimalID field (Data Type: "Short Text"; Description: "Foreign Key")

VisitDate field (Data Type: "Date/Time"; Caption: "Date of Visit")

Reason field (Data Type: "Short Text", Size: "60", Caption: "Reason/Diagnosis")

OffSite field (Data Type: "yes/no"; Caption: "Off-Site Visit?")

Visit ID	Animal ID	Date of Visit	Reason/Diagnosis	Off-Site Visit?
1002	12282	11/8/2016	Vaccinations	<input type="checkbox"/>
1006	12290	11/11/2016	Vaccinations	<input type="checkbox"/>
1009	12308	11/15/2016	Nail clipping and grooming	<input type="checkbox"/>
1012	12335	11/18/2016	Vaccinations	<input checked="" type="checkbox"/>
1013	12337	11/18/2016	Vaccinations	<input checked="" type="checkbox"/>
1014	12340	11/18/2016	Vaccinations	<input checked="" type="checkbox"/>
1015	12343	11/18/2016	Vaccinations	<input checked="" type="checkbox"/>
1016	12345	11/18/2016	Vaccinations	<input checked="" type="checkbox"/>
1020	12328	11/21/2016	Injured wing	<input type="checkbox"/>
1024	12312	11/22/2016	Vaccinations	<input type="checkbox"/>
1028	12300	11/28/2016	Grooming	<input type="checkbox"/>
1032	12296	11/28/2016	Grooming	<input type="checkbox"/>
1036	12294	11/29/2016	Declawing	<input type="checkbox"/>
1040	12286	12/1/2016	Vaccinations	<input type="checkbox"/>
1044	12278	12/2/2016	Vaccinations	<input type="checkbox"/>
1048	12318	12/2/2016	Injured paw	<input type="checkbox"/>
1052	12325	12/5/2016	Ear issue	<input type="checkbox"/>
1056	12332	12/6/2016	Spaying	<input type="checkbox"/>
1060	12322	12/8/2016	Vaccinations	<input type="checkbox"/>
1064	12315	12/9/2016	Injured paw	<input type="checkbox"/>
1070	12350	12/12/2016	Vaccinations	<input checked="" type="checkbox"/>
1071	12353	12/12/2016	Vaccinations	<input checked="" type="checkbox"/>
1072	12356	12/12/2016	Vaccinations	<input checked="" type="checkbox"/>
1073	12359	12/12/2016	Vaccinations	<input checked="" type="checkbox"/>
1074	12362	12/12/2016	Vaccinations	<input checked="" type="checkbox"/>

Columns resized to their best fit

Import "Animal" table from AllAnimals database into the Riverview database

The screenshot shows the Microsoft Access interface with the 'Animal' table selected. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, FIELDS, and TABLE. The table view shows the following data:

Animal ID	Owner ID	Animal Name	Animal Birth Date	Animal Type	Animal Breed
12278	2412	Bailey	05/09/2013	Dog	Beagle
12282	2310	Whiskers	04/10/2014	Cat	Burmese
12286	2318	Lady	08/12/2015	Dog	Border collie
12290	2325	Rustle	09/02/2015	Dog	Australian shepherd
12294	2335	Bushy	03/02/2015	Cat	Himalayan
12296	2350	Patches	02/09/2013	Cat	Siberian
12300	2358	Buddy	08/02/2013	Dog	Russell terrier
12304	2366	Tweets	11/12/2010	Bird	Parakeet
12308	2375	Rosie	07/05/2013	Dog	Dalmatian
12312	2412	Molly	04/29/2009	Dog	Labrador retriever
12315	2380	Silly	05/02/2012	Dog	Chihuahua
12318	2314	Tracker	04/29/2013	Dog	Bloodhound
12322	2322	Ellie	12/22/2014	Dog	Scottish terrier
12325	2340	Butch	11/16/2012	Dog	Bulldog
12328	2354	Lovie	02/03/2002	Bird	Lovebird
12332	2370	Smittie	05/19/2014	Cat	American shorthair
12335	2384	Hereford1	02/04/2015	Cattle	Hereford
12337	2384	Hereford2	03/18/2015	Cattle	Hereford
12340	2384	Hereford3	04/02/2015	Cattle	Hereford
12343	2384	Hereford4	04/17/2015	Cattle	Hereford
12345	2384	Hereford5	04/28/2015	Cattle	Hereford
12350	2388	Merino1	03/14/2014	Sheep	Merino
12353	2388	Merino2	04/21/2014	Sheep	Merino
12356	2388	Merino3	04/28/2014	Sheep	Merino
12359	2388	Merino4	08/02/2014	Sheep	Merino

Import "Owner" table from Kelly database into the Riverview database

Add fields to the Owner database using the Data Type gallery Address field via QuickStart section (5 fields added ("Address", "City", "State Province", "ZIP Postal", "Country Region"))

Owner ID	First Name	Last Name	Phone	Address	City	State	Zip	Email
2310	Student First	Student Last	307-824-1245	12 Elm Ln	Cody	WY	82414	student@example.com
2314	Sally	Cruz	307-406-4321	199 18th Ave	Ralston	WY	82440	scruz@example.com
2318	Sandra	Pincher	307-982-8401	12 Rock Ln	Cody	WY	82414	sp231@example.com
2322	Billy	Ruffton	307-843-9810	21 Simple Cir	Garland	WY	82435	br299@example.com
2325	Barbara	Fishman	307-987-0092					
2330	Jimmy	Gonzalez	307-987-0334	16				
2335	Joey	Smith	307-888-4239	17				
2340	Melanie	Jackson	307-882-1925	42				
2345	Dan	Poleman	307-887-8873	75				
2350	Samantha	Smith	307-887-1239	14 Rock Ln	Ralston	WY	82440	ssmith@example.com
2354	Randy	Blacksmith	307-882-9987	245 18th Ave	Cody	WY	82414	blacksmith@example.com
2358	Angie	Hendricks	307-943-2234	27 Locklear Ln	Powell	WY	82440	angie@example.com
2362	Thomas	Jones	307-985-9981	622 Bobcat Tr	Ralston	WY	82440	tj@example.com
2366	Aaron	Jackson	307-984-1182	17 Ridge Rd	Cody	WY	82414	aj17@example.com
2370	Curt	Billings	307-824-1802	14 Elm Ln	Cody	WY	82414	curtbillings@example.com
2375	Joseph	Otterman	307-824-9863	42 Rock Ln	Cody	WY	82414	otterman42@example.com
2380	Billy	Smith	307-887-4829	312 Oak Rd	Ralston	WY	82440	bsmith@example.com
2384	Susan	Miller	307-824-2756	1283 Old Roundabout Rd	Cody	WY	82414	susanfarms@example.com
2388	Jack	Sprawling	307-824-8305	1 Sprawling Farm Rd	Cody	WY	82414	sprawlingfarms@example.com
2392	Elmer	Jackson	307-843-8472	22 Jackson Farm Rd	Garland	WY	82435	ElmerJ22@example.com
2396	Richie	Upton	307-824-9876	155 Cherry Canyon Rd	Cody	WY	82414	uptonfarms@example.com
2400	Leslie	Smith	307-883-9481	123 Sheepland Rd	Elk Butte	WY	82433	sheepland@example.com
2404	Reggie	Baxter	307-943-2469	880 Powell-Cody Rd	Powell	WY	82440	baxterfarms@example.com
2408	Tom	Rascal	307-824-3575	1 Rascal Farm Rd	Cody	WY	82414	rascalfarms@example.com
2412	Taylor	Johnson	307-868-8862	412 River Rd	Cody	WY	82414	taylorj@example.com

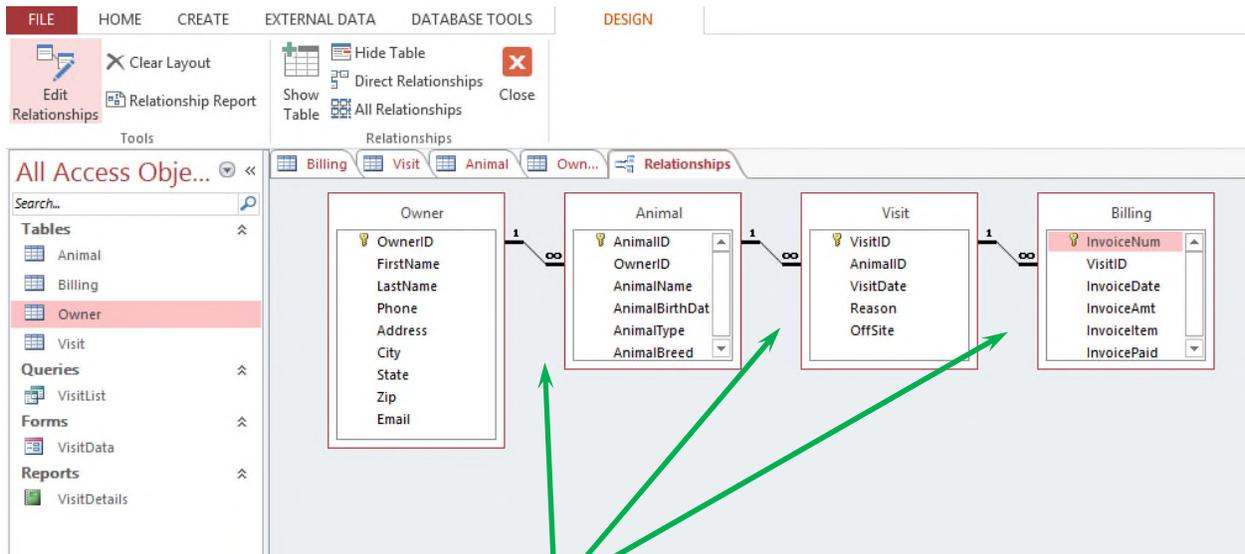
Rename: "StateProvince" as "State"; "ZIPPostal" as "Zip"

Edit data types:  
 Phone field: Data type: "Short Text"; Size: "14"  
 Address field: Size: "35"; caption deleted  
 City field: Size: "25"; caption deleted  
 Sate field: Size: "2"; caption deleted; Default: "WY"  
 Zip field: Size: "10"; caption deleted  
 OwnerID field: Type: "Primary Key"; Caption: "Owner ID";  
 FirstName field: Caption: "First Name"  
 LastName field: Caption: "Last Name" ★

Delete "Country Region", "County", and "Notes" fields

Add two records to the Owner table, resize columns for best fit; Data imported from Owner text file into Owner table ★

Columns resized to their best fit



One-to-many relationships between tables:  
 Primary Owner table / related Animal table;  
 Primary Animal table / related Visit table;  
 Primary Visit table / related Billing table.  
 All field names visible. Referential integrity,  
 cascade updates defined for each relationship

Riverview database  
 compacted / repaired

“Vendor” database,  
 “Supplier” table: Field  
 properties set as in Fig 2-45

Columns resized to their  
 best fit

The screenshot shows the Microsoft Access interface with the 'Supplier' table open in Datasheet View. The columns are: Supplier ID, Company, Category, Address, City, State, Zip, Contact Phc, Contact First, Contact Last, and Initial Contact. The columns are resized to fit the data, with the 'City' column being notably wider than the others. A green arrow points from the text box to the column headers.

Supplier ID	Company	Category	Address	City	State	Zip	Contact Phc	Contact First	Contact Last	Initial Contact
APL616	A+ Labs	Equipment	619 West Dr	Omaha	NE	68022	531-219-7206	Jacques	Dupont	4/10/2017
ATB512	All Things for Birds	Resale	512 Canary Way	Tulsa	OK	74102	539-498-0041	Shou	Miyamoto	1/16/2017
BOS412	Boston Medical	Equipment	412 Mass Way	Boston	MA	02110	617-984-3961	Ellen	Smith	3/2/2017
CW1444	Cat World Inc.	Supplies	444 Boxcar Way	San Diego	CA	92110	619-477-9482	Amelia	Kline	5/1/2017
DEX012	Dexter Supplies	Supplies	12 Supply Rd	Wichita	KS	67202	316-811-2109	Aiden	Claxton	4/16/2017
FTS123	Flea & Tick Supplies	Resale	123 Overlook Ln	Atlanta	GA	30301	404-341-2981	Robert	Jackson	3/6/2017
GGF099	Green Gill Food	Resale	99 Guppie Ln	Orlando	FL	32802	321-564-1492	Brittany	Lowry	4/2/2017
HPF042	Henry's Pet Food	Resale	42 Elm Rd	Knoxville	TN	37902	865-321-0081	Bob	Samuels	1/16/2017
IPS009	Iomega Pet Supplies	Supplies	9 International Dr	Dallas	TX	75202	469-592-9401	Xavier	Jackson	3/21/2017
JMS499	Jimison Medical Supplies	Supplies	499 Techway Blvd	Columbia	SC	29202	803-418-9982	Louise	Jimison	5/7/2017
KLS321	Kilgore Lab Supplies	Supplies	321 Production Ave	Adolphus	KY	42120	270-397-1008	Tammy	Kilgore	4/19/2017
LAS011	Luxury Aminoal Supplies	Resale	11 Peakview Rd	Asheville	NC	28801	828-432-9401	Sharlene	Packson	1/26/2017
MMS311	Montreat Medical Supplies	Supplies	311 Supply Rd	Montreat	NC	28757	828-432-9910	Charley	Smith	2/6/2017
NFG001	No Flea Guarantee	Resale	1 Plyler Cir	Hillsville	VA	24343	276-942-8820	Zack	Plyler	3/21/2017
PMC019	Pet Medical	Equipment	19 Waverly Ct	Blacksburg	VA	24061	540-702-0098	Julie	Baxter	2/21/2017
PUP092	Puppy World	Resale	92 Bark Rd	Athens	GA	30602	762-498-5081	Makayla	Robinson	2/15/2017
QLS002	Quincy Lab Supplies	Supplies	2 Plainview Rd	Columbus	OH	43085	614-591-3091	Jackson	Palmer	4/17/2017
RPF001	Ramsey Pet Foods	Resale	1 Mountainview Way	Billings	MT	59102	406-824-9980	Phillip	Ramsey	3/19/2017
YUM345	Yummy Dog Food	Resale	345 Riverside Dr	Charlotte	NC	28201	704-205-8725	Student First	Student Last	2/1/2017
ZPS006	Zack's Pet Supplies	Resale	6 Pond Dr	Worcester	MA	01602	508-431-9200	Zack	Brown	3/21/2017

Table created using design in Fig 2-46

Field added, "Weight" (Data type: "Number"; Size: "Single"; Decimal Places: "2"; Caption: "Weight in Lbs"; Default Value: [no]) between Price / TempControl fields. "Units/Case" positioned between Price/Weight fields

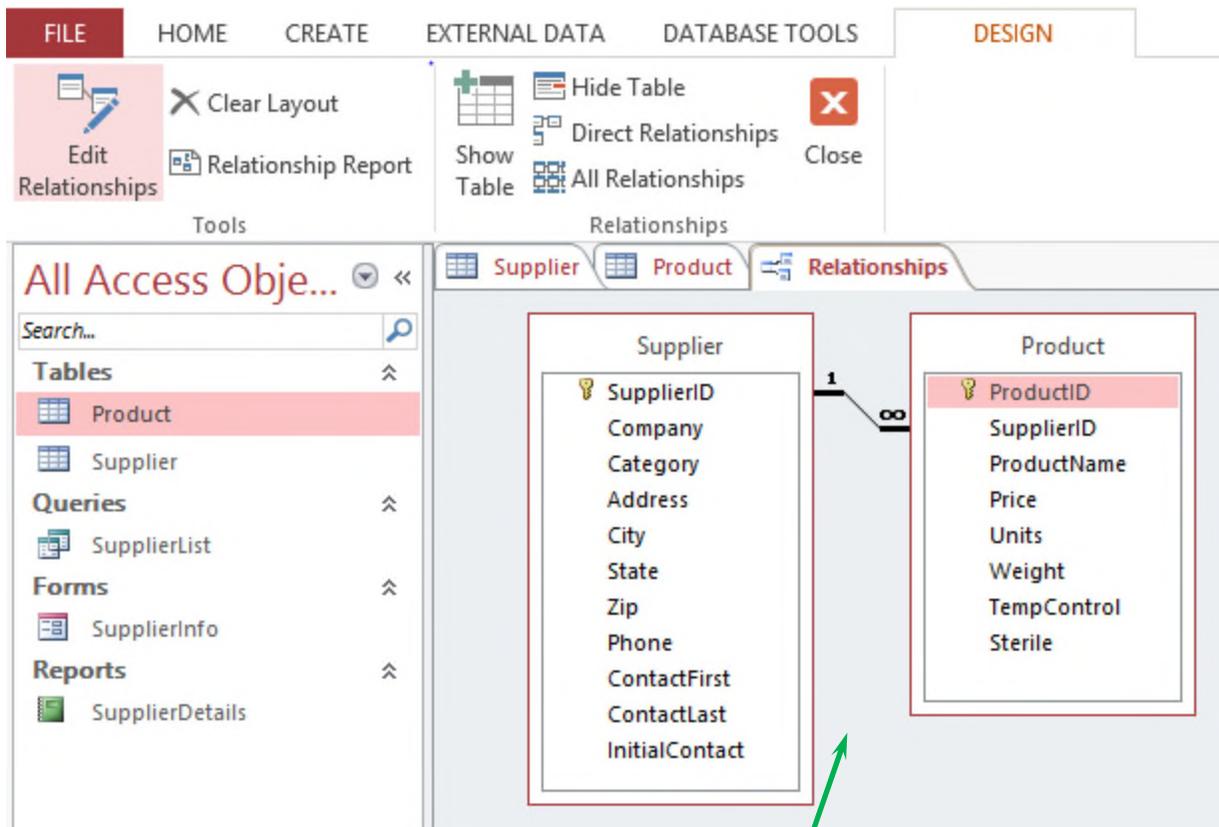
ProductID primary key, table saved as "Product"

Product ID	Supplier ID	Product Name	Price	Units/Case	Weight in Lbs	Temp Controlled?	Sterile?
AT222	KLS321	Adhesive tape roll	75.00	25	3	<input type="checkbox"/>	<input type="checkbox"/>
AU982	BOS412	Autoclave	4,500.00	1	75	<input type="checkbox"/>	<input type="checkbox"/>
BC100	KLS321	Blood collection vial	47.00	20	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BN111	QLS002	Blood collection needle - large	17.00	10	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BN222	QLS002	Blood collection needle - small	16.00	10	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BS100	ATB512	Premium bird seed	50.00	10	20	<input type="checkbox"/>	<input type="checkbox"/>
BV100	JMS499	Bordetella vaccine	72.00	10	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CB100	IPS009	Cat bowl	40.00	10	4	<input type="checkbox"/>	<input type="checkbox"/>
CB999	ZPS006	Cat bed	25.00	1	4	<input type="checkbox"/>	<input type="checkbox"/>
CC001	CWI444	Cat collar	75.00	10	1	<input type="checkbox"/>	<input type="checkbox"/>
CC500	LAS011	Luxury cat collar	47.00	5	2	<input type="checkbox"/>	<input type="checkbox"/>
CE432	APL619	Centrifuge	5,500.00	1	50	<input type="checkbox"/>	<input type="checkbox"/>
CF111	CWI444	Premium moist cat food	60.00	20	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CF222	CWI444	Premium dry cat food	55.00	25	7	<input type="checkbox"/>	<input type="checkbox"/>
CF600	NFG001	Cat flea medicine	62.00	5	1	<input type="checkbox"/>	<input type="checkbox"/>
CG001	ATB512	Deluxe bird cage	75.00	1	15	<input type="checkbox"/>	<input type="checkbox"/>
CT100	FTS123	Cat tick collar	70.00	10	2	<input type="checkbox"/>	<input type="checkbox"/>
CT500	CWI444	Cat toy	10.00	10	2	<input type="checkbox"/>	<input type="checkbox"/>
CV500	NFG001	Cattle viral respiratory vaccine	137.00	10	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DB100	IPS009	Dog bowl	40.00	10	4	<input type="checkbox"/>	<input type="checkbox"/>
DB888	ZPS006	Dog bed - large	48.00	1	7	<input type="checkbox"/>	<input type="checkbox"/>
DB999	ZPS006	Dog bed - small	38.00	1	6	<input type="checkbox"/>	<input type="checkbox"/>
DC500	LAS011	Luxury dog collar	52.00	5	2	<input type="checkbox"/>	<input type="checkbox"/>
DF100	HPF042	Premium dry dog food	65.00	10	40	<input type="checkbox"/>	<input type="checkbox"/>
DF200	HPF042	Premium moist dog food	35.00	10	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Records in Fig 2-47 entered. Columns resized to their best fit

Data imported from Supplies workbook into Product table

Columns resized to their best fit



One-to-many relationships between tables: Primary Supplier table / related Product table. All field names visible. Referential integrity, cascade updates defined for each relationship

Vendor database compacted / repaired