MASTERY SERIES

Microsoft® Access 2019 & 365

LEVEL 3 OF 3

IAN EWELL
Davis Technical College

LABYRINTH
LEARNING™

Microsoft Access 2019 & 365: Level 3

LABYRINTH LEARNING™

Labyrinth Learning
PO Box 2669
Danville, CA 94526
800.522.9746
On the web at lablearning.com

President:
Brian Favro

Product Manager:
Jason Favro

Development Manager:
Laura Popelka

Senior Editor:
Alexandra Mummery

Editor:
Alexandria Henderson

Developmental Editing:
Laura Popelka

Production Manager:
Debra Grose

Compositor:
Happenstance Type-O-Rama

Indexing:
BIM Creatives, LLC

Cover Design:
Sam Anderson Design

Interior Design:
Debra Grose

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Preface

This textbook is part of our new approach to learning for introductory computer courses. We've kept the best elements of our proven, easy-to-use instructional design and added interactive elements and assessments that offer enormous potential to engage learners in a new way.

Why Did We Write This Content?

In today's digital world, knowing how to use the most common software applications is critical, and those who don't are left behind. Our goal is to simplify the entire learning experience and help every student develop the practical, real-world skills needed to be successful at work and in school. Using a combination of text, videos, interactive elements, and assessments, we begin with fundamental concepts and take learners through a systematic progression of exercises to achieve mastery.

What Key Themes Did We Follow?

We had conversations with dozens of educators at community colleges, vocational schools, and other learning environments in preparation for this textbook. We listened and adapted our learning solution to match the needs of a rapidly changing world, keeping the following common themes in mind:

Keep it about skills. Our content focus is on critical, job-ready topics and tasks, with a relentless focus on practical, real-world skills and common sense. We use step-by-step instructional design to ensure that learners stay engaged from the first chapter forward. We've retained our proven method of progressively moving learners through increasingly independent exercises to ensure mastery—an approach that has successfully developed skills for more than 25 years.

Keep it simple. Our integrated solutions create a seamless experience built on a dynamic instructional design that brings clarity to even the most challenging topics. We focus our content on the things that matter most and present it in the easiest way possible. Concise chunks of text are combined with visually engaging and interactive elements to increase understanding for all types of learners.

Keep it relevant. Fresh, original, and constantly evolving content helps educators keep pace with today's student and work environments. We reviewed every topic for relevancy and updated it where needed to offer realistic examples and projects for learners.

How Do I Use This Book?

Our comprehensive learning solution consists of a print textbook, a groundbreaking interactive ebook, and our easy-to-use eLab course management tool featuring additional learning content, such as overviews and video tutorials, and assessment content. Our interactive ebook contains learning content delivered in ways that will engage learners.

Included with Your Textbook Purchase

Depending on your purchase option, some or all of the following are included with your textbook:

Interactive ebook: A dynamic, engaging, and truly interactive textbook that includes elements such as videos, self-assessments, slide shows, GIFs, and other interactive features. Highlighting, taking notes, and searching for content is easy.

eLab Course Management System: A robust tool for accurate assessment, tracking of learner activity, and automated grading that includes a comprehensive set of instructor resources. eLab can be fully integrated with your LMS, making course management even easier.

Instructor resources: This course is also supported on the Labyrinth website with a comprehensive instructor support package that includes detailed lesson plans, lecture notes, PowerPoint presentations, a course syllabus, test banks, additional exercises, and more.

Student Resource Center: The exercise files that accompany this textbook can be found within eLab and in the Student Resource Center, which may be accessed from the ebook or online at: **labyrinthelab.com/office19**

We're excited to share this innovative, new approach with you, and we'd love you to share your experience with us at: lablearning.com/share

Visual Conventions

This book uses visual and typographic cues to guide students through the lessons. Some of these cues are described below:

Cue Name	What It Does
`Type this text`	Text you type at the keyboard is printed in this typeface.
Action words	The important action words in exercise steps are presented in boldface.
Ribbon	Glossary terms are highlighted with a yellow background.
	Tips, notes, and warnings are called out with special icons.
	Videos, WebSims, and other ebook or online content are indicated by this icon.
Command→Command→ Command→Command	Commands to execute from the Ribbon are presented like this: Ribbon Tab→Command Group→Command→Subcommand.
Design→Themes→Themes	These notes present shortcut steps for executing certain tasks.

Display Settings

Multiple factors, including screen resolution, monitor size, and window size, can affect the appearance of the Microsoft Ribbon and its buttons. In this textbook, screen captures were taken at the native (recommended) screen resolutions in Office 2019 running Windows 10, with ClearType enabled.

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Many individuals contribute to the development and completion of a textbook. We appreciate the careful attention and informed contributions of Jane Bauer of Northcentral Technical College, Deb Pheris Blencowe of Collin College, Marcio de Paula Wai of Martinez Adult School, Kimberly Duffey of North County Community College, Tracy Foreman of Huntington Beach Adult School, Lynne Kemp of North County Community College, Olivia Kerr of El Centro College, Theresa Loftis of San Bernardino Adult School, Nataliya O'Neil of North County Community College, Suzanne Wright of Francis Tuttle Technology Center, and Claudia Young of Ventura Adult School, for their assistance in the development of this book.

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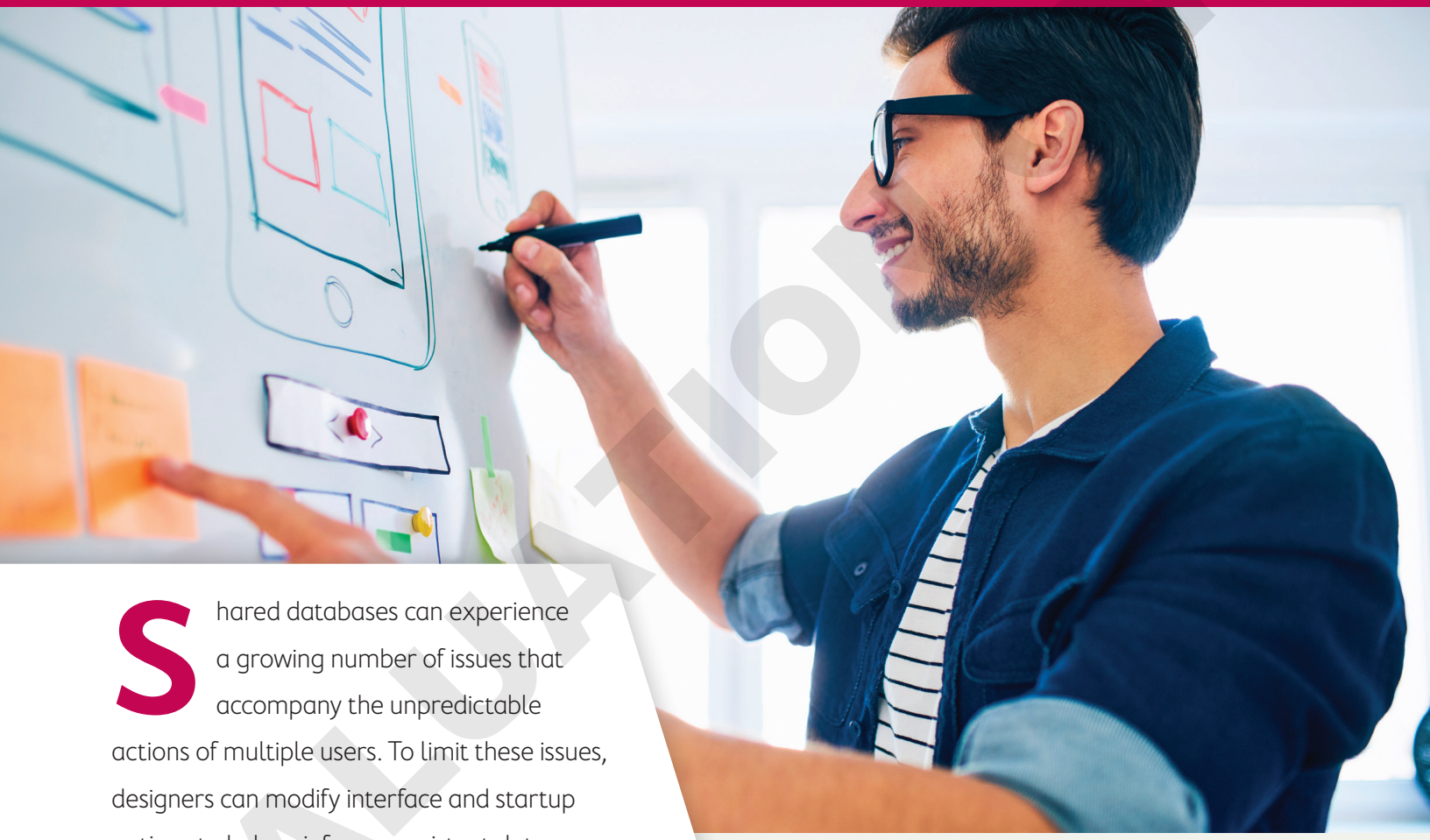
ACCESS

9 Customizing the Database Interface and Startup Options



Shared databases can experience a growing number of issues that accompany the unpredictable actions of multiple users. To limit these issues, designers can modify interface and startup options to help reinforce consistent data entry and protect vital data. In this chapter, you will create a navigation form, which is an attractive, user-friendly interface that allows for quick and accurate data entry. You will also split a database to protect the database tables and their data while still allowing users to create and modify their own personal queries, forms, and reports. Finally, you will set and modify various Access options.

LEARNING OBJECTIVES

- Set Access options
- Split a database
- Explore switchboards and create a navigation form
- Set and modify startup options

Project: Customizing—As You Like It

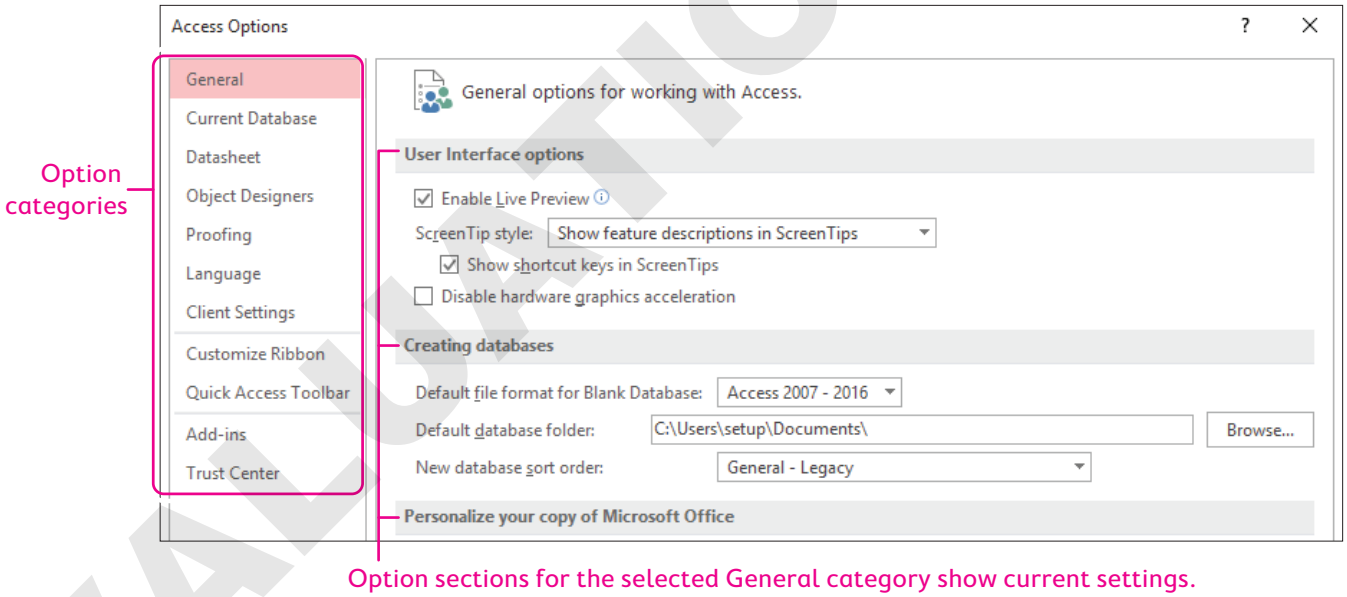
Winchester Web Design is a website development company that specializes in building websites for small businesses. You are building the company's database, which is almost complete. The owner is concerned about its ease of use and future maintenance and would like to allow individuals to make their own customized queries and reports while maintaining a standard company interface and ensuring data validity and database security.

Setting Access Options

Each Microsoft Office application provides options to control the way the application performs. Access options can control the color of datasheets, set default fonts, create sections on the Navigation pane, add a title to the application window, customize the Quick Access toolbar, set a default startup form, and so on. Some options control settings for the active database, while others control default settings for all databases used on a particular device.

Displaying Access Options

The Access Options dialog box groups features by type. It lists the categories in a panel on the left side and their associated options in the panel on the right side. Some options are used frequently while others are rarely used.



Datasheet Effects

Users may prefer a specific font or cell style and don't want to apply the desired changes each time they enter data. Options to customize how a datasheet will appear by default can be found in the Datasheet category of the Access Options dialog box. Examples of datasheet options that can be set include gridlines, cell effects, column widths, and font properties.

File→Options→Datasheet

DEVELOP YOUR SKILLS: A9-D1

In this exercise, you will display and explore options in the Access Options dialog box.

Before You Begin: *Download the student exercise files from your eLab course or the Student Resource Center (labyrinthelab.com/office19) and determine your file storage location before beginning this exercise.*

1. Open **A9-D1-WinDesign** from your **Access Chapter 9** folder and save it as: **A9-D1-WinDesignRev**
2. Choose **File→Options** and click the **Datasheet** category.
3. Explore the options for the current database but don't change any.

   These settings apply to any database opened using your installation of Access. Changing these settings will affect any database opened on this device from here out.
4. Click **Cancel** when you have finished.

Note! *Unless otherwise directed, keep Access and any databases or database objects being used open at the end of each exercise.*

Setting Personal Information and Database Properties

The Access Options dialog box includes a General category that allows you to set the format in which databases are created and to set personal information for your copy of Microsoft Office.

Database properties are similar to other object properties, except they identify or describe an *entire* database, such as the database title and author, names of objects contained in the database, or the date and time it was created or last updated.

File→Options→General

File→Info

DEVELOP YOUR SKILLS: A9-D2

In this exercise, you will you will personalize your copy of Microsoft Office and change database properties.

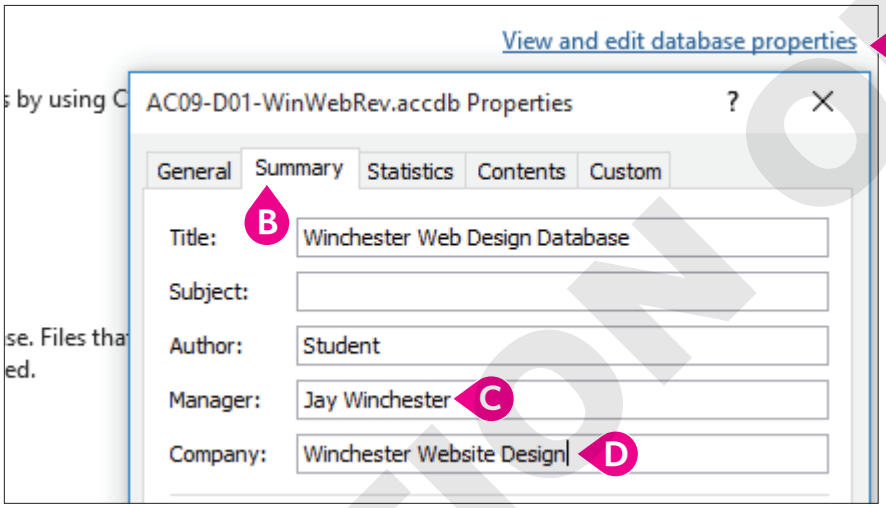
1. Choose **File→Options**.

   The Access Options window opens with the Datasheet category selected.

2. Explore the general options for the database but don't change them.
3. Click **Cancel** to close the Access Options dialog box.

   Now you will set database properties.

4. Choose **File→Info** and follow these steps to set the database properties:



   A. Click the **View and Edit Database Properties** link.
   B. If necessary, click the **Summary** tab on the Properties dialog box.
   C. Type **`Jay Winchester`** in the Manager line.
   D. Type **`Winchester Website Design`** in the Company line.

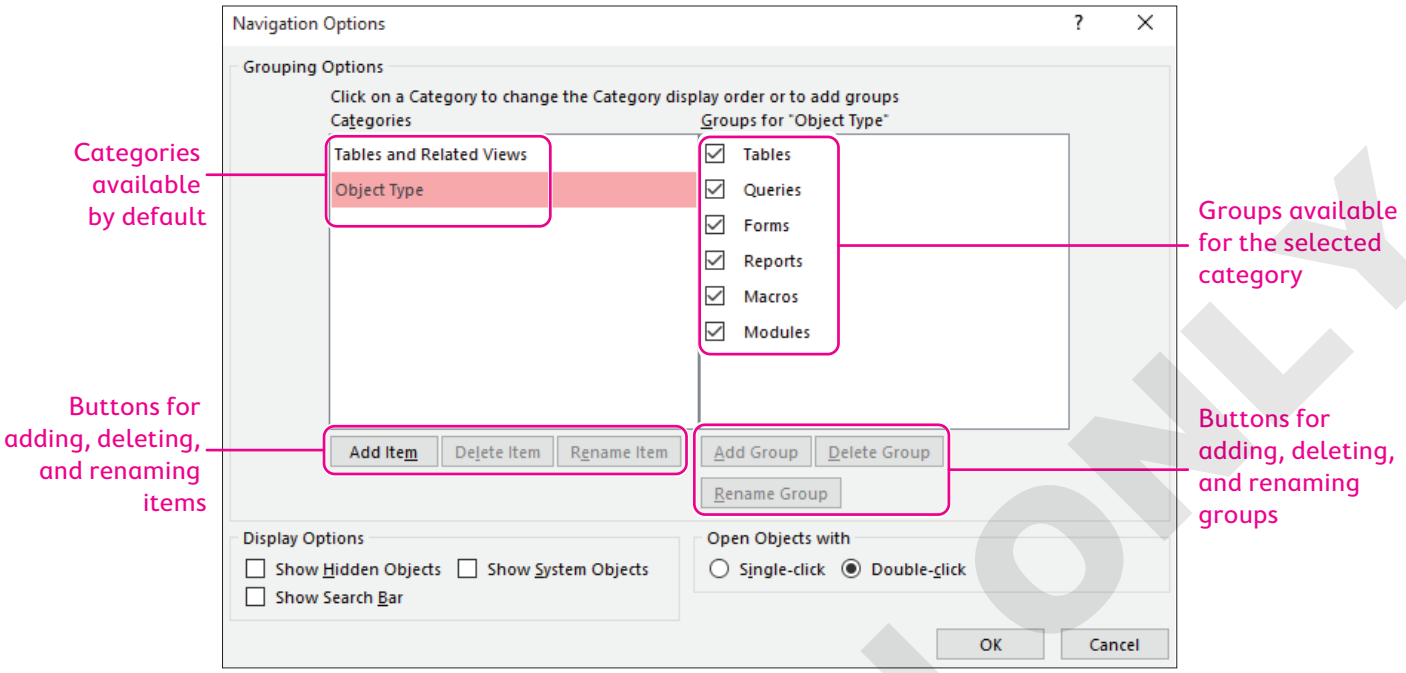
5. Click **OK**.

Customizing the Navigation Pane

The Navigation pane is your tool for selecting database objects and identifying objects associated with each object type. You use the Navigation pane to display objects in different views. You can also customize it to contain additional sections to make the pane even more useful.

Navigation Pane Categories and Groups

The Navigation Options dialog box shows two list boxes: one that identifies the categories of objects displayed on the Navigation pane and one that shows the groups available for display on the pane.



Working with Groups

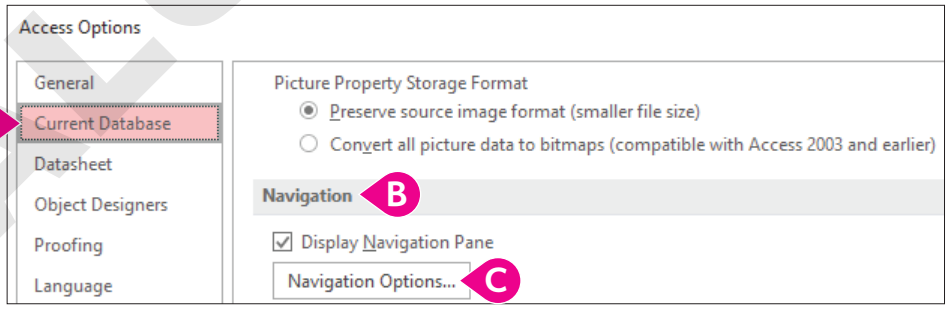
Access prevents you from changing, deleting, or adding additional object type groups to the essential Tables and Related Views and Object Type categories. However, the Custom category allows you to rename, delete, and add groups to a category. When you add or rename groups in the Navigation pane, you must reassign objects to the groups so Access knows where to place them.

Note! *Customizing the Navigation pane applies the control settings to the active database only. You must customize the Navigation pane for any other databases.*

DEVELOP YOUR SKILLS: A9-D3

In this exercise, you will customize the Navigation pane and assign objects to new Navigation pane groups.

1. Choose **File→Options** and follow these steps to customize the Navigation pane:



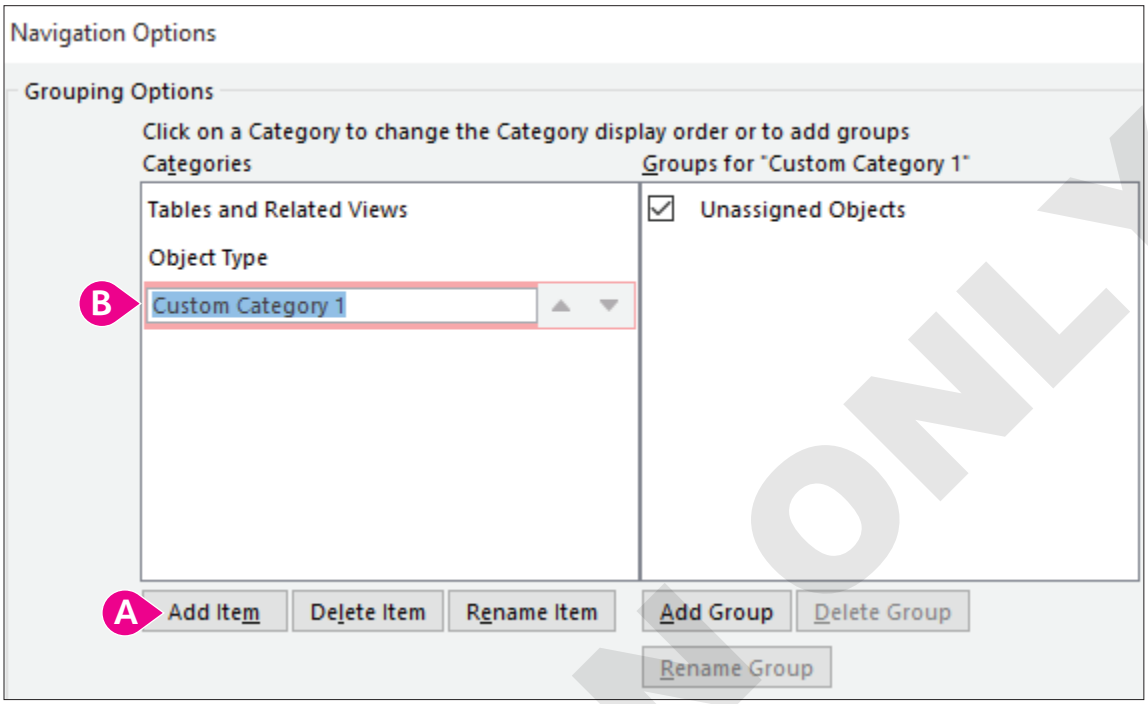
A. Choose **Current Database**.

B. Scroll, if necessary, to the Navigation section.

C. Click the **Navigation Options…** button.

Access displays the Navigation Options dialog box.

2. Follow these steps to create a new item:

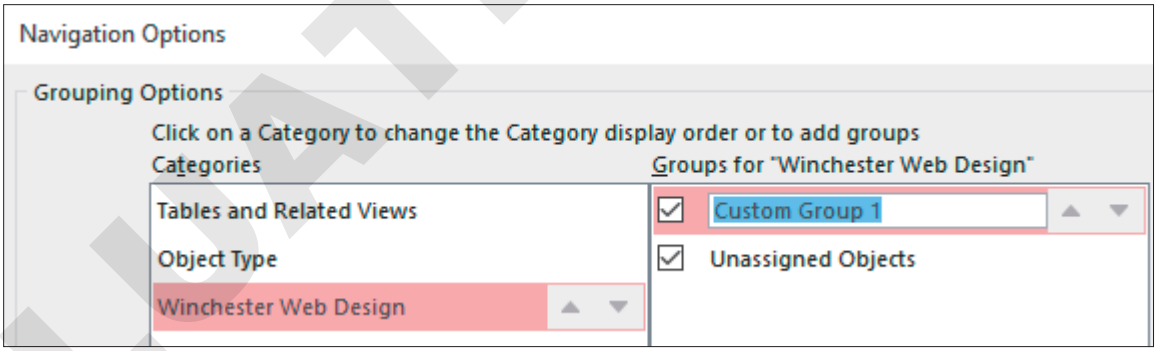


A Click **Add Item**.

B Type **`Winchester Web Design`** in the Custom Category 1 box and tap Enter.

A new item named Winchester Web Design appears in the Categories list.

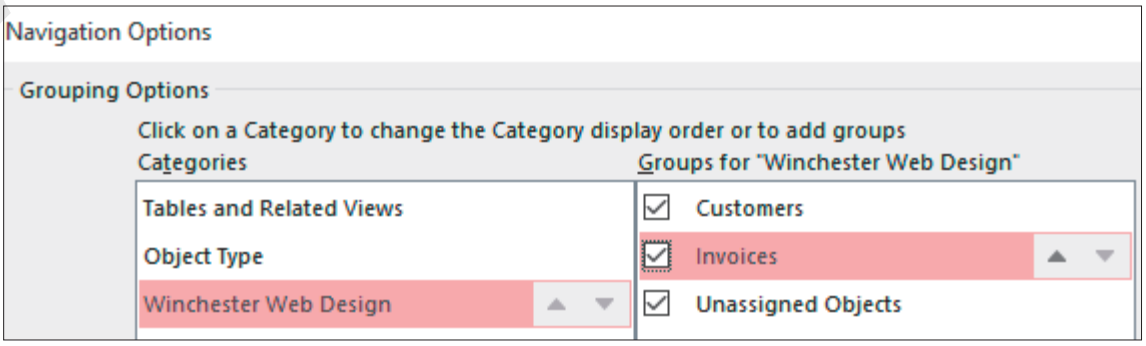
3. Click **Add Group**.



A new item named Custom Group 1 *appears in the Groups list.*

4. Type **`Customers`** in the Custom Group 1 box and tap Enter.

5. Click **Add Group** and then type **`Invoices`** and tap Enter.



6. Click **OK** to close the Navigation Options dialog box. Click **OK** to close the Access Options dialog box.
7. Follow these steps to display the new Winchester Web Design category:

   A Click the **Navigation Pane Options** button.

   B Choose **Winchester Web Design**.

   All objects for the Winchester Web Design category are in the Unassigned Objects group.

8. In the Unassigned Objects group on the Navigation pane, right-click the **Customers** table object and choose **Add to Group→Customers**.
9. One at a time, right-click the **Customers Form**, the **Customer Invoice Report**, and the **Customer Invoice Subreport** to add them to the Customers group.
10. Assign these objects to the Invoice group:
    - **InvoiceDetails**
    - **Invoices**
    - **Invoice Details Query**
    - **Invoices Query**
    - **Invoice Form**
    - **Invoice Details Subform**
    - **Invoice Details Report**
11. Click the **Navigation Pane Options** button and choose **Object Type**.

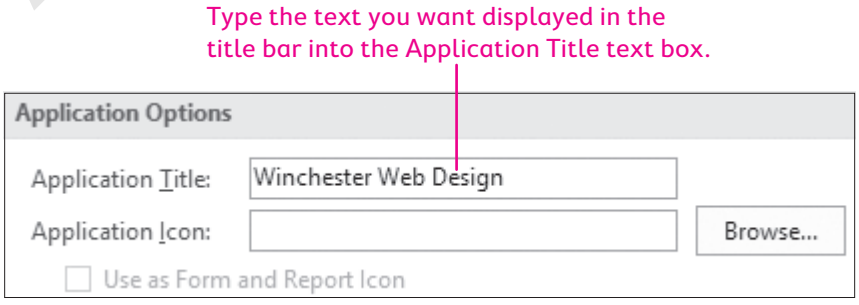
    The Navigation pane returns to the more traditional view, which groups objects by type (Tables, Queries, Forms, and Reports).

Setting Up Current Database Formats

Current database settings enable you to change the way Access displays and works with the *active* database. You can, for example, change the text Access displays in the title bar when the database is open, show or hide the Navigation pane, enable views, or change the way Access displays open objects.

Changing Title Text in the Application Bar

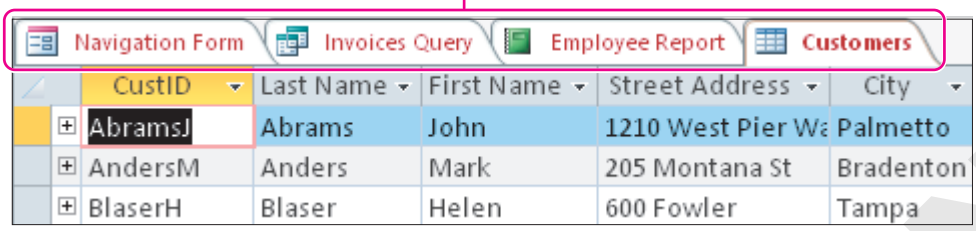
Sometimes, the actual filename assigned to a database may be different from the text you want users to see when they open the database. You can change the text that appears in the title bar using the Current Database options window.



Setting Object Window Format

Open database objects are set to format as tabs within the database work area. You have to click the tab of the object you want to see in the work area.

Tabs for opened documents are aligned at the top of the work area.



You can change the format so objects display as overlapping windows in the work area, or you can move and resize the objects for easier comparison of styles, layout, and contents.

Overlapping windows have individual title bars that "float" in the work area.

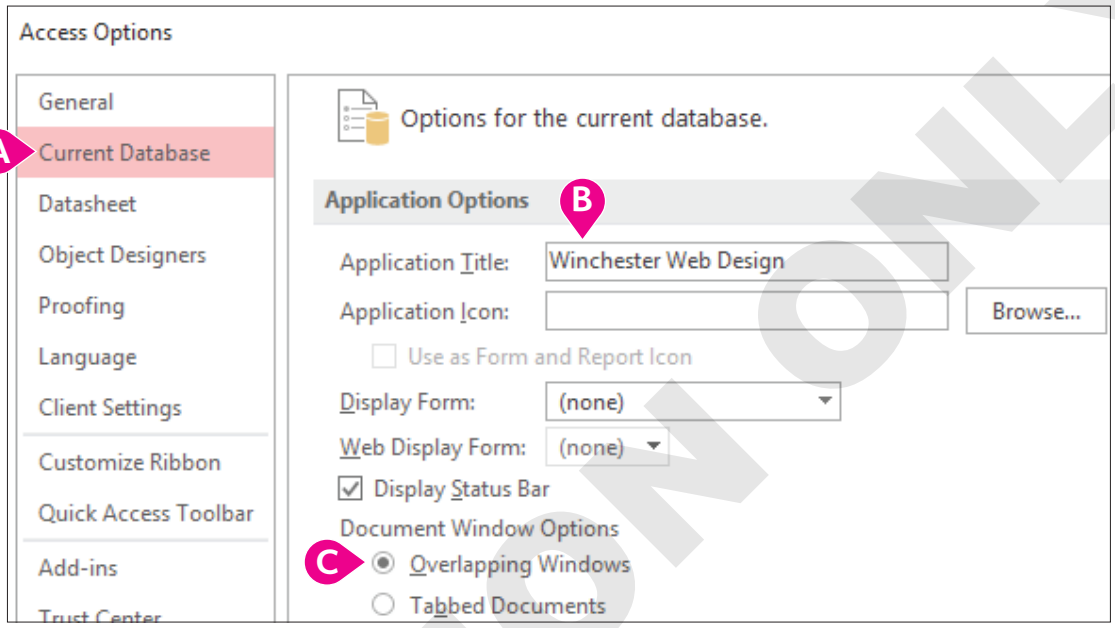
Tip! *After changing the document window options, close and then reopen the database to view the new settings.*

File→Options

DEVELOP YOUR SKILLS: A9-D4

In this exercise, you will change settings for the current database, editing the title and changing the window options.

1. Choose **File→Options** and follow these steps to change the application title text and window display:

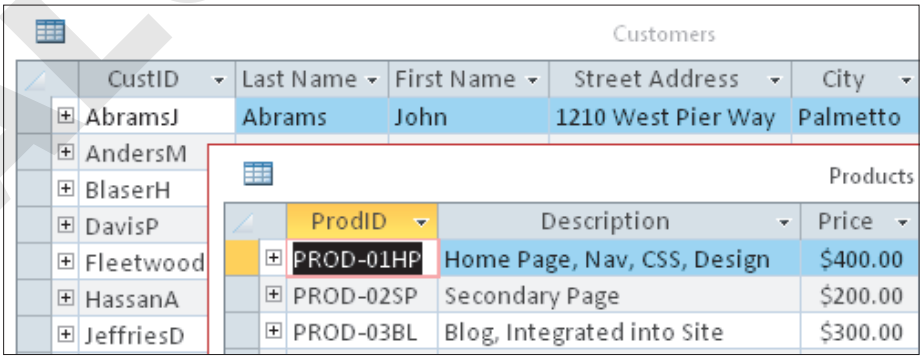


   A. Choose **Current Database**.
   B. Type **`Winchester Web Design`** as the application title.
   C. Choose **Overlapping Windows**.

2. Explore the other options for the current database and then click **OK**.

   You must close and then reopen the database for the settings to take effect.

3. Choose **OK** in the message dialog box and then close and reopen the database.
4. Display the **Customers** and **Products** tables in separate windows.
5. Drag the title bar of the Products table window down slightly to view the Customers table.



   Move and resize the open objects so you can see both at the same time.

6. Choose **File→Options→Current Database**, set the document window preference back to **Tabbed Documents**, and click **OK**. Then click **OK** in the message box.
7. Close the tables and then close the database.

Splitting a Database

Sometimes users want to edit the design and layout of queries, forms, and reports or even develop their own objects to meet their particular needs. If the database is shared with other users, this may cause problems.

Record Locking

Multiple users can simultaneously use an Access database to add, edit, and delete data. Whenever an Access database is opened, Access creates a small temporary file by the same name but with the extension *.laccdb*. This file manages record locking. The initial file extension character, *l*, stands for *locked,* which means whenever one user edits a record, no other user can edit it until the first user moves to another record—essentially "unlocking" it. Record locking helps maintain consistent data and protects the integrity of record updates.

Reasons for Splitting Databases

Allowing users to create their own objects in a shared database can create confusion and increase the chance of data corruption or broken database relationships. To protect company data, many businesses prohibit users from creating and saving new objects. One way to protect table data when allowing users to create and customize objects to meet their personal needs is to split the database.

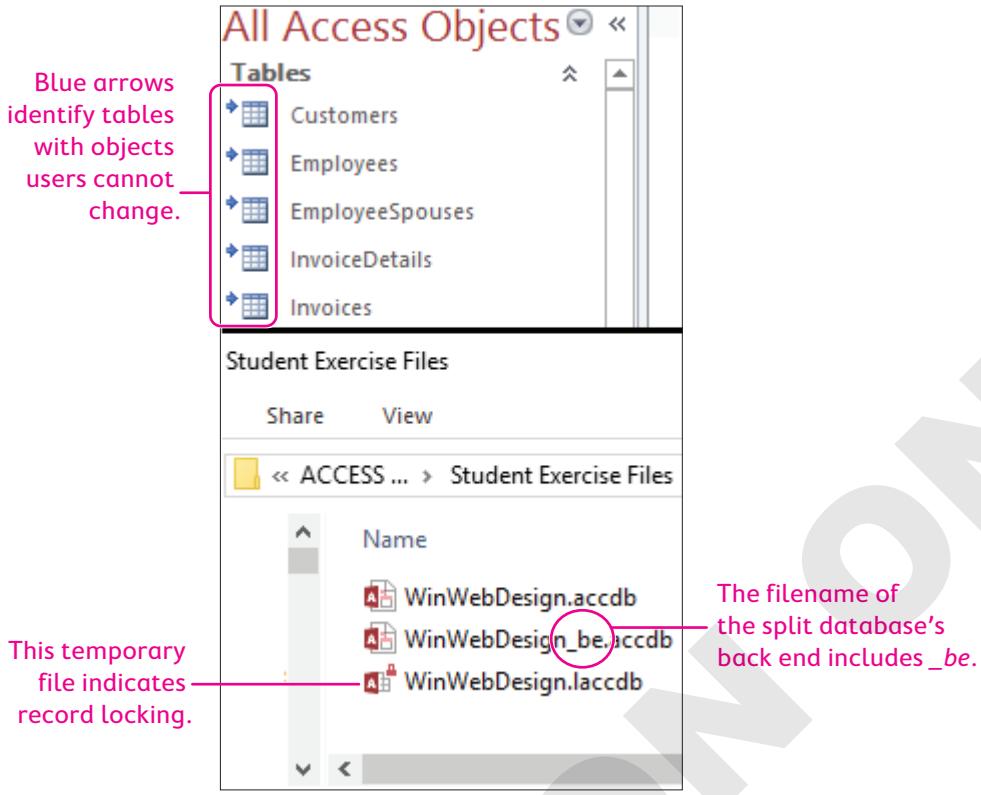
The Database Splitter

The database splitter converts a database into two files: one that contains the tables holding the data that support all other database objects and one that contains the database reports, forms, queries, and other objects that use the data. After a database is split, multiple users in a networked environment can access the database at the same time. As a result, each user can access, design, and modify their own database objects and update data from the database tables without interrupting other users or increasing the number of objects contained in the central database.

Split Database Terminology

Two terms are often associated with split databases:

- Front end refers to the up-front portion of a split database with which users interact—the queries, forms, and reports they use or may create and customize. Access places a blue arrow beside each table name in a split database to identify objects users can view but not change.
- Back end refers to the underlying database tables that support the front end. These tables are protected so users cannot modify their structure. Access adds *_be* to the end of the back-end portion of the database filename.



When you split a database, Access links the front and back ends of the database so users can work with controls on forms, queries, and reports.

Backing Up a Database Prior to Splitting

Access recommends you back up a database before you split it to preserve the database in case an error occurs during the splitting process. One quick way to do this is to select and copy the database in Windows Explorer and then paste a backup copy in the desired folder.

Database Tools→Move Data→Access Database→Split Database

DEVELOP YOUR SKILLS: A9-D5

In this exercise, you will split the Winchester Web Design database.

1. Open **A9-D1-WinDesignRev** from your **Access Chapter 9** folder.

   Do not open any database objects.

2. Choose **File→Save As→Save Database As→Save As**.
3. Navigate to your **Access Chapter 9** folder; then change the filename to **A9-D6-WinDesign-Backup** and click **Save**.

   You back up the database so you have a copy in case errors occur when the database is split.

4. Close the new backup database and then reopen **A9-D1-WinDesignRev** but don't open any objects.
5. Choose **Database Tools→Move Data→Access Database**.
6. Review the information in the Database Splitter dialog box and then click **Split Database**.

   Access opens the Create Back-End Database dialog box and displays the same filename with _be at the end to identify it as the back-end file.

7. Navigate to your **Access Chapter 9** folder and click **Split**.
8. Click **OK** in the message box.

   All the table names now have a blue arrow in front of them.
9. Right-click the **Customers** table in the Navigation pane and choose **Design View**.

   Access warns you that Customers is a linked table that can't be modified; it's linked to the back-end database. You can open the table in Design View, but you can't modify the structure or data types. To add, change, and delete records, you'd open the table in Datasheet View. Any changes to data in the front-end database are reflected in the table in the back-end database.
10. Read the warning message and then click **No**.
11. Right-click the **Customers Form** in the Navigation pane and choose **Design View**.

    The front-end form displays in Design View.
12. Select the **Notes** label and **Notes** text box and tap Delete.
13. Save the form and close **A9-D1-WinDesignRev**.
14. Choose **File→Open** and navigate to your **Access Chapter 9** folder; rename **A9-D1-WinDesignRev** to **A9-D6-WinDesign-Split** and then open **A9-D1-WinDesignRev_be**.

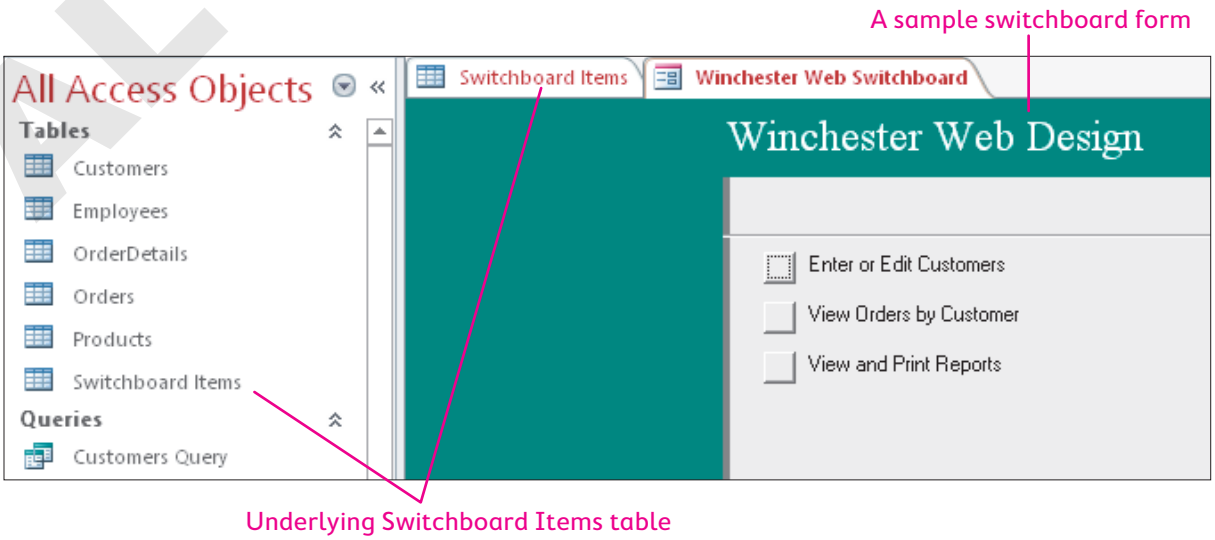
    The Winchester Web Design tables are the only objects in the back-end database.
15. Close the back-end database.

Customizing the Database Interface

Access offers multiple options for customizing the user interface. Switchboards and navigation forms can be set to automatically open when a database is opened. They provide buttons and tabs to perform an array of functions from displaying forms and reports to printing, saving, and even closing the database and exiting Access.

Database Switchboards

A switchboard is an easy-to-use interface with menus and buttons for opening database objects and performing common tasks such as adding records and printing reports.



The Switchboard Manager

Switchboards were common in older versions of Access. To create a switchboard, the Switchboard Manager command button must be on the Ribbon, which you can do via the Customize Ribbon group in Access Options. The Switchboard Manager button might be on the Database Tools tab if you open a database created in a previous version of Access or one that already contains a database switchboard.

Navigation Forms

An alternative to the switchboard is a navigation form, a special interface that allows you to quickly access forms and reports in your database. Microsoft introduced navigation forms to accommodate online databases published to the web because the Access Navigation pane will not display in a browser.

Navigation Form Features

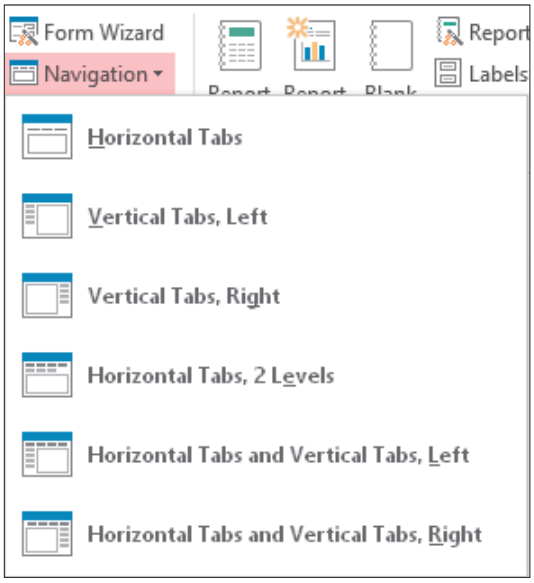
A navigation form usually has tabs across the top to group common elements with subnavigation links along the left side or directly below. The navigation form opens like a regular form in the Access window.

Note! *When you create a tab that matches the name of a form or report in the database, Access automatically assigns the form or report to the tab in the navigation form.*

Navigation Form Layouts

The Winchester Web Design database includes the Employees Form, the EmployeeSpouses Form, and the Employee Report that you can place on the same Employees tab on a navigation form. You

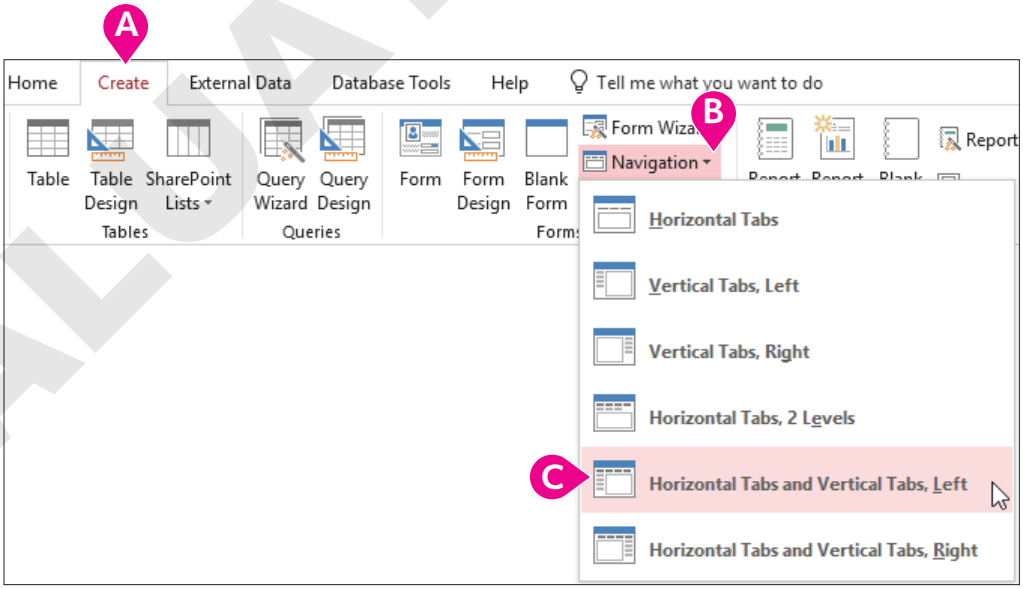
can also add other forms and reports. Access offers six different navigation form layouts from which you can choose. You can also change the fonts, colors, and themes.



DEVELOP YOUR SKILLS: A9-D6

In this exercise, you will create a navigation form with tabs for the categories in the Winchester Web Design database. Then you will add subnavigation links for forms and reports within each tab's category.

1. Choose **File→Open** and navigate to your **Access Chapter 9** folder; rename **A9-D6-WinDesign-Backup** as **`A9-D7-WinDesignRev`** and then open that file.
2. Follow these steps to create a new navigation form:



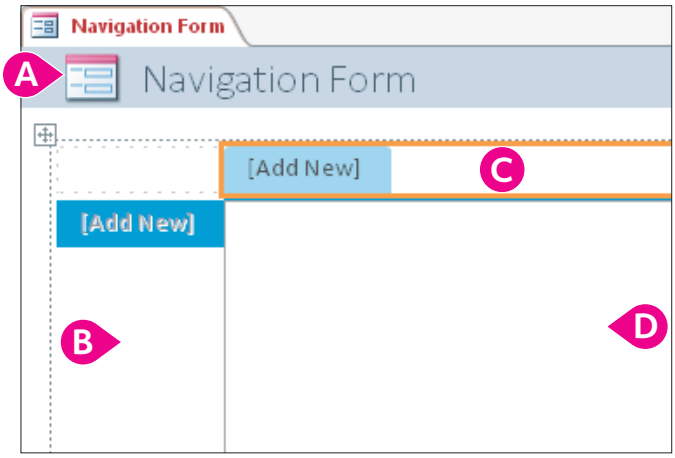
A. Click the **Create** tab.

B. Choose **Forms→Navigation**.

C. Choose **Horizontal Tabs and Vertical Tabs, Left**.

The new navigation form opens in Layout View, which is the recommended view for editing.

3. Follow these steps to review the new navigation form:



A. Notice the form icon and title in the Form Header section.

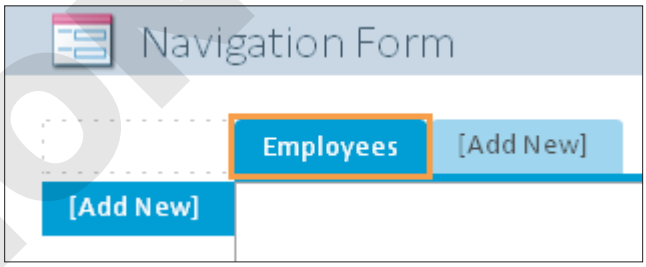
B. Click to select the **Vertical Navigation** control.

C. Click to select the **Horizontal Navigation** control.

D. Click to select the **Navigation Subform**.

4. Double-click the **Add New** tab in the Horizontal Navigation control and then type **`Employees`** and tap Enter to display another Add New tab.

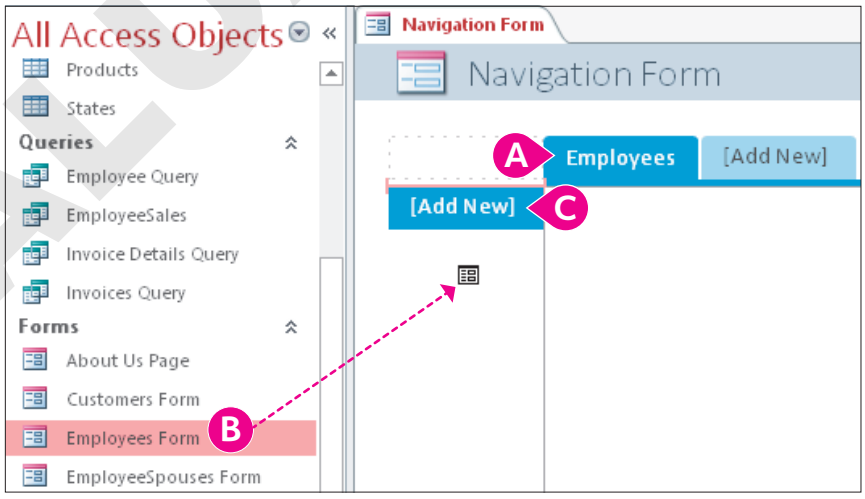
   You can point to the right border of a tab until the mouse appears as a two-headed pointer and drag the border to the left or right until the tab title is best displayed.



5. Create additional tabs for: **`Customers`**, **`Invoices`**, and **`Products`**

Add Items to Tabs

6. Follow these steps to add an item to a tab:



A. Click the **Employees** tab.

B. Drag the **Employees Form** into the Vertical Navigation control.

C. When the pink bar appears just above the Add New tab, drop the form.

7. Drag the forms and reports to the tab indicated:

Tab	Form or Report
Employees	EmployeeSpouses Form
Employees	Employee Report
Customers	Customers Form
Customers	Customer Invoice Report
Invoices	Invoice Form
Invoices	Invoice Details Report
Products	Product Form
Products	Products Report

8. Save the form as **`WWD Navigation Form`** and then switch to **Design View**.

Add a Title and Logo and Apply Formatting

9. Delete the Title and Logo controls in the Form Header section.
10. Choose **Form Design Tools→Design→Controls→Label** and draw a label in the Form Header section.
11. Type **`Welcome to Winchester Web Design`** as the label, tap Enter, and then set these properties on the Property Sheet:

Property	Value
Width	**5.5**
Height	**0.45**
Top	**0.1875**
Left	**1.5**
Font Name	**Georgia**
Font Size	**22**
Text Align	**Center**
Font Weight	**Semi-bold**
Fore Color	**Blue, Accent 1, Darker 50%**

12. Click the **Form Header** section bar; type **`0.8`** for the Height property and choose **Blue, Accent 1, Lighter 80%** for the Back Color property.
13. Choose **Form Design Tools→Design→Controls→Insert Image**, navigate to your **Access Chapter 9** folder, and choose **WWD-Logo**.

    If the WWD-Logo is displayed in the Image Gallery, you can just click it.
14. Draw the new logo image in the Form Header section to the left of the title.
15. In the Property Sheet, make these settings:

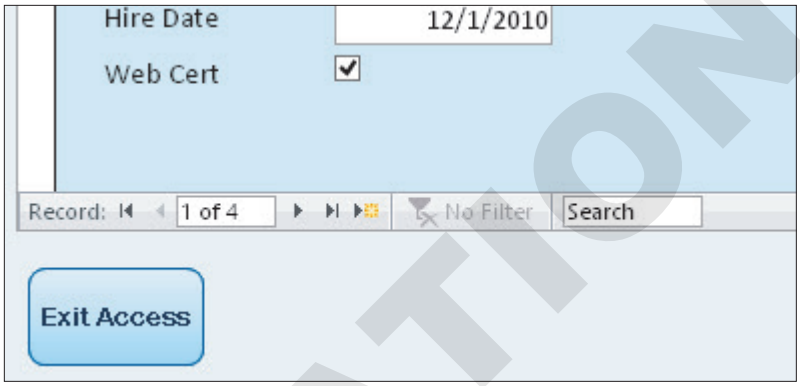
Setting	Value
Width	**0.7**
Height	**0.7**
Top	**0.05**
Left	**0.5**

16. Click the **Detail** section bar and type **`Accent 1, Lighter 90%`** for the Back Color and Alternate Back Color properties.
17. Click the left column of the navigation form (**NavigationControl5**) in the Selection Type list and choose **Transparent** for the Back Style property.
18. Select the top navigation control row (**NavigationControl0**) and choose **Transparent** for the Back Style property.
19. Switch to **Form View** and click the **Employees** tab.

    The form includes three objects listed for the Employees tab and the selected object displayed in the Navigation Subform.
20. Save the WWD Navigation Form.

Adding Custom Command Buttons

Now that you have a navigation form that opens each of the forms and reports in the database, you can use Design View to add command buttons that will perform functions. Then you can size and position the buttons and add the text that will be displayed on each button.



A button is added to the form to exit Access when work is completed.

When you use the Command Button control from the Ribbon to create an action command button on a form, the Command Button Wizard opens and walks you through the process. Placing command buttons in the Detail section will replicate the button for each entry in the form.

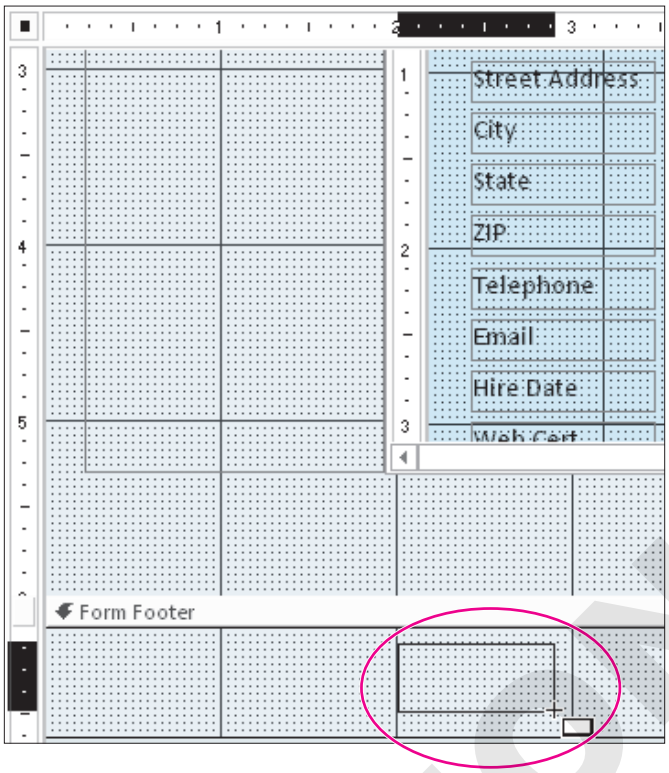
Form Design Tools→Design→Controls→Button

DEVELOP YOUR SKILLS: A9-D7

In this exercise, you will create a command button on the WWD Navigation Form. You will then add text and attach a command to the button.

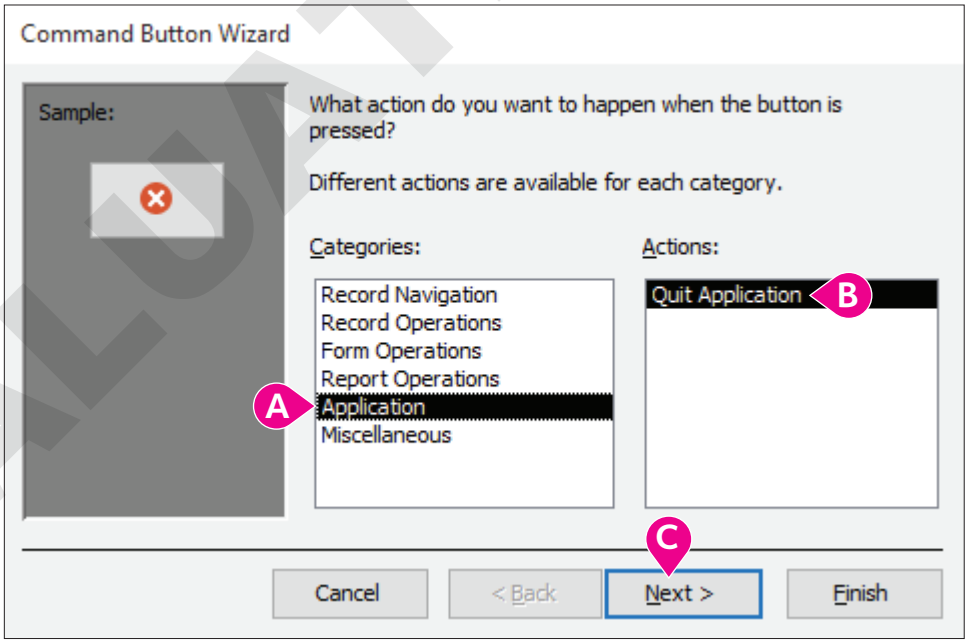
1. Display the **WWD Navigation Form** in **Design View**.
2. Expand the Form Footer section by dragging the bottom of the form down.
3. Click the **Form Footer** section bar and type **`Accent 1, Lighter 90%`** for the Back Color of the Form Footer section.

4. Choose **Form Design Tools→Design→Controls→Button** and draw a button in the main Form Footer section.



Access launches the Command Button Wizard after you draw the command button.

5. Follow these steps to complete the first button:

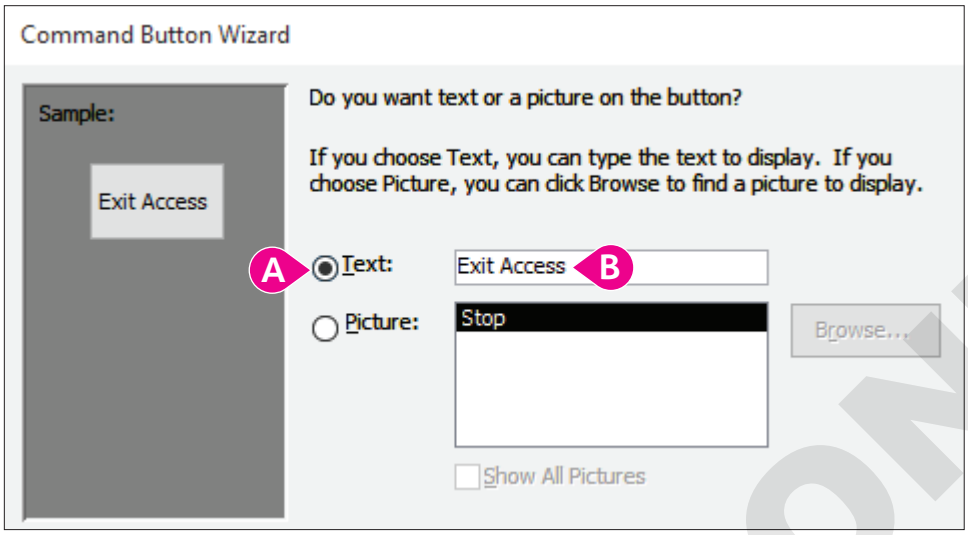


A. Choose **Application**.

B. Choose **Quit Application**.

C. Click **Next**.

6. Follow these steps to complete the button:



A. Choose the **Text** option.

B. Type **`Exit Access`** as the text to appear on the button.

C. Click **Finish**.

7. Save changes to the form and then switch to **Form View**.

8. Click the **Exit Access** command button on the form.

   The database and Access close.

Setting Startup Options to Open a Form

Switchboards and navigation forms provide an interface between the user and the forms, queries, and reports contained in the database. In many cases, data entry personnel have no need to create objects or see the Navigation pane.

As a result, many businesses set startup options that display either the most commonly used form, such as the Invoice Form, or the database interface so it is the first thing users see when they open the database. Setting these startup options is also a way to protect the database from unauthorized access.

Overriding Startup Options

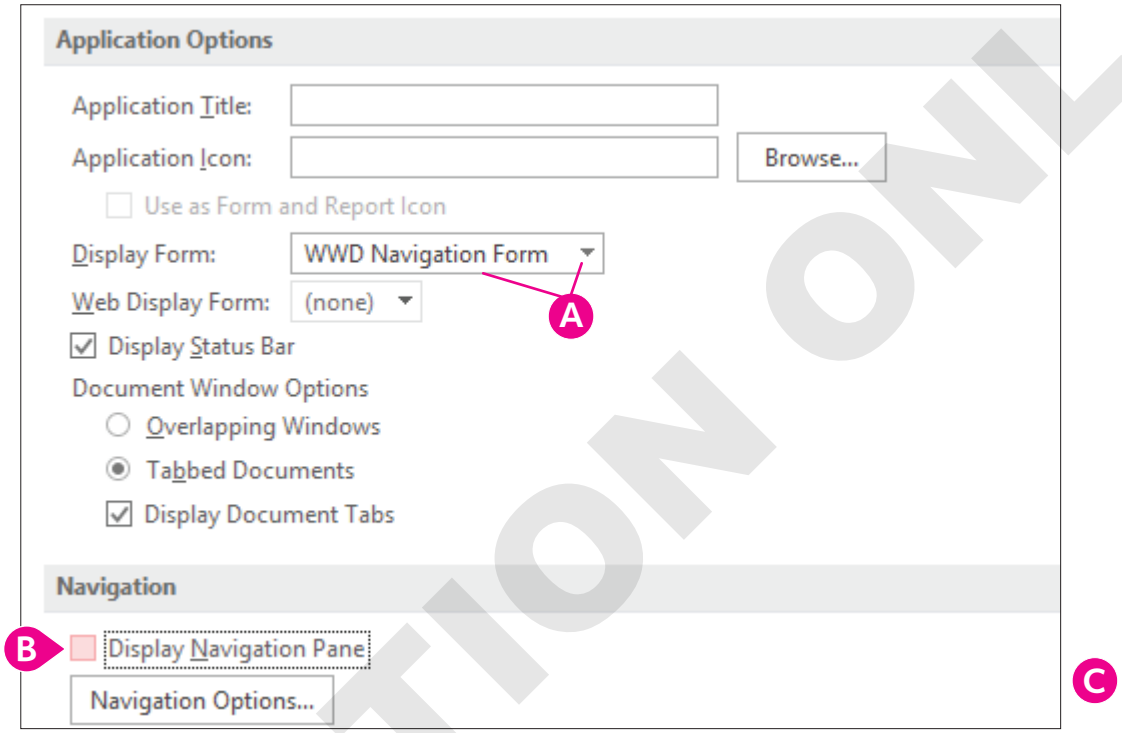
After you set startup options for a database, the Navigation pane and many of the underlying objects and database tools may be hidden. To override the startup settings, press and hold the Shift key as you open the database in Access.

File→Options→Current Database

DEVELOP YOUR SKILLS: A9-D8

In this exercise, you will set the WWD Navigation Form to open automatically each time you open the database.

1. Open **A9-D7-WinDesignRev** from your **Access Chapter 9** folder.
2. Choose **File→Options→Current Database** and follow these steps to apply startup options:



   A. Click the **Display Form** list button and choose **WWD Navigation Form**.
   B. Uncheck the box to **Display Navigation Pane** located in the Navigation section.
   C. Click **OK**.
3. Click **OK** to acknowledge the message box.
4. Close the database and open it again.

   Access opens the database with the navigation form hidden and the WWD Navigation Form displayed.
5. Click the **Exit Access** command button.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills using the Self-Assessment in your ebook or online (eLab course or Student Resource Center).

Reinforce Your Skills

REINFORCE YOUR SKILLS: A9-R1

Set Options and Properties

You have been promoted to lead designer and are now responsible for all security aspects of the Kids for Change database. In this exercise, you will personalize Access, modify navigation options, and display multiple objects in an overlapping format.

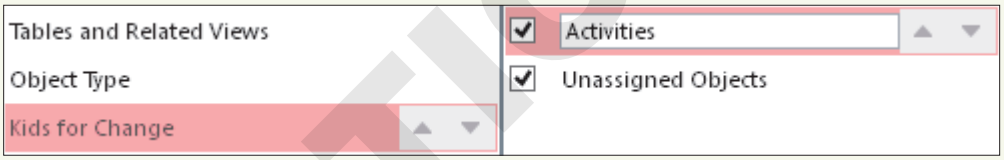
1. Start Access, open **A9-R1-K4C** from your **Access Chapter 9** folder, and save it as: **`A9-R1-K4CRev`**

   Don't forget to enable content.

2. Choose **File→Options**. In the General category, modify the username and/or initials as you feel necessary.
3. Choose **Current Database**, scroll to the Navigation section, and click the **Navigation Options...** button.
4. Click **Add Item**.

   A new item appears in the Categories list named Custom Category 1.

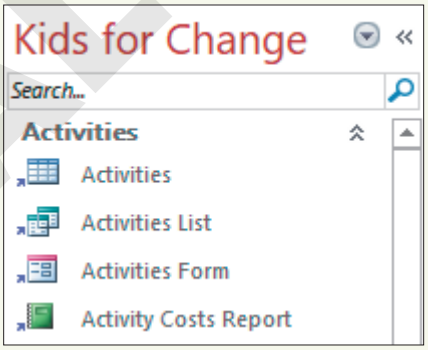
5. Type **`Kids for Change`** in the Custom Category 1 box and tap Enter.
6. Click **Add Group** and type **`Activities`** for the new item that appears in the Groups List.



7. Add two more groups, using **`Children`** as the first name and **`Volunteers`** as the second.
8. Click **OK** twice.
9. Click the **Navigation Pane Options** button and choose **Kids for Change**.

   Access places all objects for the Kids for Change category into the Unassigned Objects group.

10. In the Unassigned Objects group on the Navigation pane, right-click the **Activities** table object and choose **Add to Group→Activities**.



11. Right-click the **Activities List** query and add it to the Activities group and then add the **Activities Form** and **Activity Costs Report**.
12. Assign the **Children** table, **Children List**, **Children Form**, and **Children Report** to the Children group.
13. Assign the **Volunteers** table, **Volunteers Subform**, **Volunteers Form**, and **Volunteers Report** to the Volunteers group.
14. Click the **Navigation Pane Options** menu button ▾ and choose **Object Type**.

    The Navigation pane groups objects by type (Tables, Queries, Forms, and Reports).

Set Database Properties

15. Open the **Access Options** dialog box and choose **Current Database**.
16. Click the **Application Title** text box and type: **`Kids for Change`**
17. Choose the **Overlapping Windows** option and click **OK**.

    You must close and then reopen the database for the settings to take effect.
18. Choose **OK** in the message dialog box; then close and reopen the database.
19. Open the **Activities** and **Children** tables to display the objects in separate overlapping windows.

    You can move and resize the open objects so you can see both at the same time.
20. Close the database.

REINFORCE YOUR SKILLS: A9-R2

Create a Navigation Form and Set Startup Options

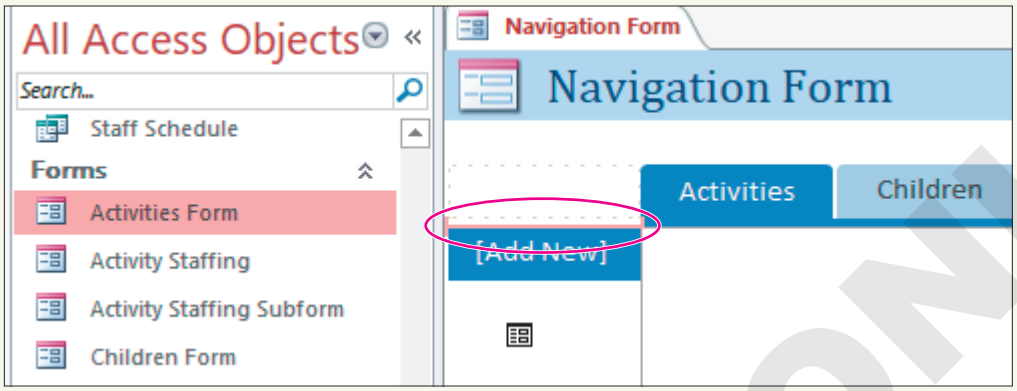
Kids for Change has asked you to provide a more efficient way for its data entry personnel to access forms and reports. In this exercise, you will create a navigation form that displays when the Kids for Change database is opened.

1. Open **A9-R2-K4C** from your **Access Chapter 9** folder and save it as: **`A9-R2-K4CRev`**
2. Choose **Create→Forms→Navigation→Horizontal Tabs and Vertical Tabs, Left**.

   The new navigation form opens in Layout View.
3. Double-click the **Add New** tab in the horizontal navigation control; type **`Activities`** as the tab name and tap Enter.
4. Create four more tabs:
   - **`Children`**
   - **`Donors`**
   - **`PaidStaff`**
   - **`Volunteers`**

5. Click the **Activities** tab and then drag the **Activities** form from the Navigation pane into the vertical navigation link area, placing it above the Add New tab.

Tip! *When the pink bar appears just above the Add New tab, drop the form.*



6. Add the forms and reports to the tab indicated:

Tab	Form or Report
Activities	• Activity Costs Report
Children	• Children Form • Children Report
Donors	• Donors Form • Donations Report • Monthly Donations Report
PaidStaff	• Staff Form • Activity Staffing • Activity Costs Report
Volunteers	• Volunteers Form • Volunteers Report

7. Save the form as **`K4C Navigation Form`** and then switch to **Design View**.
8. Delete all the controls in the Form Header section.
9. Choose **Form Design Tools→Design→Controls→Label**, draw a title label named **`Kids for Change`** in the Form Header section, and tap Enter.
10. Enter these properties for the new title label:

Property	Value
Width	**4**
Height	**0.4**
Top	**0.2**
Left	**2**
Font Name	**Cambria**
Font Size	**23**
Text Align	**Center**
Fore Color	**Blue, Accent 1, Darker 50%**

11. Click the **Form Header** section bar; type **`0.8`** for the Height property and choose **Dark Blue, Text 2, Lighter 80%** for the Back Color property.

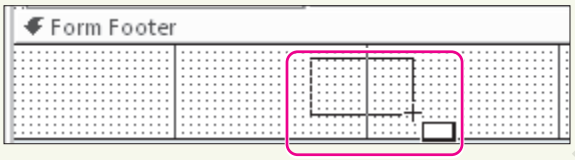
12. Choose **Form Design Tools→Design→Controls→Insert Image**, navigate to the **Access Chapter 9** folder, and choose **K4C-logo.bmp**.

    If the K4C-Logo is in the Image Gallery, you can click it there.

13. Draw the logo image in the Form Header section to the left of the title.
14. With the **K4C-Logo** selected, type **0.7** for the Width and Height properties, **0.05** for the Top property, and **0.5** for the Left property.
15. Switch to **Form View** and click each tab to verify that the objects display in the navigation subform; save your changes to the form.

Add a Command Button

16. Switch to **Design View** and expand the **Form Footer** section downward.
17. Choose **Form Design Tools→Design→Controls→Button** and draw a button in the Form Footer section.



18. Choose **Application** and **Quit Application**, and then click **Next**.
19. Choose the **Text** option; type **Exit Access** and click **Next**.
20. Name the command button **cmdExitAccess** and click **Finish**.
21. Save your changes to the form.

Set Access Startup Options

22. Choose **File→Options→Current Database**.
23. Type **Kids for Change** for the application title.
24. Click the **Display Form menu** button and choose **K4C Navigation Form**.
25. Click **OK** twice and then close and reopen the database.

    The K4C Navigation Form opens when the database is opened and includes Kids for Change in the title bar and the Exit Access command button in the Form Footer.

26. Click the **Exit Access** command button to close the database and exit Access.

REINFORCE YOUR SKILLS: A9-R3

Split a Database and Hide the Navigation Pane

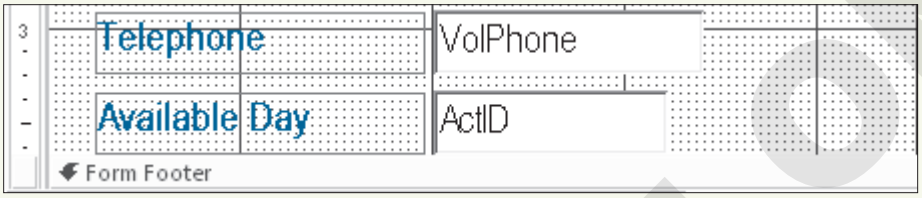
Kids for Change would like its table data to be protected. In this exercise, you will split the database and hide the Navigation pane to protect the table data from unauthorized users.

1. Open **A9-R3-K4C** from your **Access Chapter 9** folder and save it as: **A9-R3-K4C-Backup**
2. Close the new backup database and reopen **A9-R3-K4C**, but don't open any objects.
3. Choose **Database Tools→Move Data→Access Database**.

4. Click the **Split Database** button and then navigate to your **Access Chapter 9** folder and click **Split**.
5. Click **OK** in the message box.

   Table names now have a blue arrow in front of them.
6. Right-click the **Activities** table in the Navigation pane and choose **Design View**.

   Access informs you that Activities can't be modified because it is linked to the back-end database.
7. Click **No** in the message box.
8. Right-click the **Volunteers Form** in the Navigation pane and choose **Design View**.
9. Select the **Available Day** label and the **ActID** text box at the bottom of the Detail section and tap Delete.



10. Save the form and then save the database as: **A9-R3-K4CRev**

Hide the Navigation Pane

11. Choose **File→Options→Current Database**.
12. In the Navigation section, uncheck the box next to **Display Navigation Pane** and then click **OK**.
13. Close and then reopen the database.

    Access opens the database but does not display the Navigation pane.
14. Close the database.

Apply Your Skills

APPLY YOUR SKILLS: A9-A1

Set Options and Properties

As head of technology for Universal Corporate Events you have been tasked with fine-tuning the company's database. In this exercise, you will personalize Windows settings, modify the object navigation options, and alter the way open objects appear on the screen.

1. Start Access, open **A9-A1-UCE** from your **Access Chapter 9** folder, and save it as: **`A9-A1-UCERev`**
2. Choose **File→Options**. In the General category, modify the personal settings as you feel necessary.
3. Choose **Current Database** and open the **Navigation Options** dialog box.
4. Create a new item named: **`Universal Corporate Events`**
5. Create a new group named: **`Events`**
6. Add two more groups: **`Menus`** and **`Venues`**
7. Close the Navigation Options dialog box and the Access Options dialog box.
8. Click the **Navigation Pane Options** button and choose **Universal Corporate Events**.

   Access places all objects for Universal Corporate Events into the Unassigned Objects group.
9. In the Unassigned Objects group, right-click the **Events** table object and choose **Add to Group→Events**.
10. Assign these objects to their appropriate groups:

Group	Object
Events	• Event Revenue • Event Pricing Entry • Event Schedules • EventCosts Subform • Events Form
Menus	• Menus table • Menus Form • Event Menus Report
Venues	• VenueLiaisons table • Venues table • Venue Events • Venue Events Subform • Venues Form • Venues Report

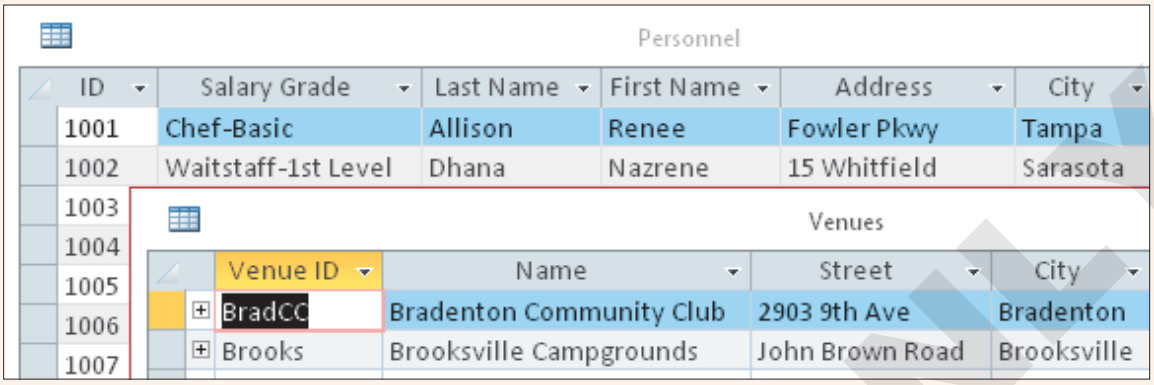
11. Click the **Navigation Pane Options** button and choose **Object Type**.

Set Database Properties

12. Open the **Access Options** dialog box and choose **Current Database**, if necessary.
13. Click the **Application Title** text box and type: **`Universal Corporate Events`**
14. Choose the **Overlapping Windows** option and click **OK**.
15. Choose **OK** in the message dialog box; then close and reopen the database.

16. Open the **Personnel** and **Venues** tables in separate overlapping windows.

    You can move and resize the open objects so you can see both at the same time.



17. Choose **File→Options→Current Database** and reset the Document Window option to **Tabbed Documents**.
18. Close the database.

APPLY YOUR SKILLS: A9-A2

Create a Navigation Form and Set Startup Options

The president of Universal Corporate Events wants a custom navigation form. In this exercise, you will create a navigation form with links that open associated forms and reports as well as a command button that closes the database and exits Access. You will also modify the startup options.

1. Open **A9-A2-UCE** from your **Access Chapter 9** folder and save it as: **A9-A2-UCERev**
2. Choose **Create→Forms→Navigation→Horizontal Tabs and Vertical Tabs, Left**.

   The new navigation form opens in Layout View.
3. Double-click the **Add New** tab in the horizontal navigation control and then type **Events** and tap Enter.
4. Create two more tabs, naming the first **Menus** and the second **Venues**.
5. Click the **Events** tab and then drag the **Event Costs** form from the Navigation pane into the vertical navigation link area.
6. Add these forms and reports to the tab indicated:

Tab	Form or Report
Events	• Events Form • Event Pricing Entry • Event Schedules • Event Revenue Report
Menus	• Menus Form • Event Menus Report

Tab	Form or Report
Venues	• Venues Form • Venue Events Form • Venues Report

7. Save the form as: **UCE Navigation Form**
8. Switch to **Design View** and delete all controls in the Form Header section.
9. Display the **Personnel Form** in **Design View**.

10. Copy the logo and title from the Personnel Form and paste them into the Form Header of the UCE Navigation Form. Then close the Personnel Form.
11. Click the **Form Header** section bar; on the Property Sheet, enter **0.8** for the Height property and choose **Blue, Accent 5, Lighter 80%** for the Back Color property.
12. Select the pasted title control and replace *Personnel Form* with: **Navigation Form**
13. Type **2** for the Left property.
14. Select the logo and type **0.5** for the Left property.
15. Switch to **Form View** and verify that each object displays in the navigation subform.
16. Save your changes to the form.

Add a Command Button

17. Switch to **Design View**.
18. Expand the Form Footer section of the main form by dragging the bottom of the form down.
19. In the main Form Footer section, create a command button with the text **Exit Access** that will close the application.

    Hint: Choose the Application category with the Quit Application action.
20. Name the command button: **cmdExitAccess**
21. Save the form. Switch to **Form View** and click the new command button to close the database and Access.

APPLY YOUR SKILLS: A9-A3

Display the Navigation Form on Startup and Split the Database

The president of Universal Corporate Events wants the navigation form to be displayed on startup. She also wants to protect the table data from unauthorized use. In this exercise, you will set the newly created navigation form to display each time someone opens the database. You will then split the database.

1. Open **A9-A3-UCE** from your **Access Chapter 9** folder and save it as: **A9-A3-UCERev**
2. Choose **File→Options→Current Database**.
3. Type **Universal Corporate Events** for the application title.
4. Click the **Display Form** list button and choose **UCE Navigation Form**.
5. Click **OK** twice.
6. Close and then reopen the database.

   Access opens the database and displays the UCE Navigation Form.

   The UCE Navigation Form automatically opens in Form View when the database is opened. The form includes Universal Corporate Events in the title bar and the Exit Access command button in the Form Footer.

Split a Database

7. Close any open database objects and then choose **File→Save As→Save Database As→Save As**.
8. Navigate to your **Access Chapter 9** folder, change the filename to **`A9-A3-UCERev-Backup`** and click **Save** to create a backup copy, and then close the database.
9. Open **A9-A3-UCERev**, choose **Database Tools→Move Data→Access Database**, and click **Split Database**.
10. Navigate to your **Access Chapter 9** folder and click **Split**; click **OK** in the message box.

    All the table names now have a blue arrow in front of them.
11. Right-click the **Personnel** table in the Navigation pane and choose **Design View**.

    Personnel is linked to the back-end database and can't be modified.
12. Click **No** in the message dialog box.
13. Right-click the **Personnel Form** in the Navigation pane and choose **Design View**.
14. Delete the word *Grade* from the Salary Grade label.
15. Close the Personnel Form, saving the changes.
16. Navigate to your **Access Chapter 9** folder and open **A9-A3-UCERev_be**.

    Tables are the only objects in the back-end database.
17. Close the database.

Project Grader

This chapter does not include Project Grader exercises. Project Grader content is based on the learning objectives for a chapter, and sometimes those learning objectives cannot be accurately graded by the system. Objectives from this chapter that can be accurately graded may be included in later chapters, if applicable.

Extend Your Skills

These exercises challenge you to think critically and apply your new skills in a real-world setting. You will be evaluated on your ability to follow directions, completeness, creativity, and the use of proper grammar and mechanics. Save files to your chapter folder. Submit assignments as directed.

A9-E1 That's the Way I See It

You would like to create a navigation form in the Blue Jean Landscaping database. Open **A9-E1-BJL** and save it as: **A9-E1-BJLRev**

Use these guidelines to create horizontal tabs and a vertical left navigation form:

- Create five tabs: **Customers**, **Equipment**, **Manufacturers**, **Merchandise**, and **Sales**
- Add all related forms and reports to the corresponding tabs.
- Add a title control with the name **BlueJean Landscaping Navigation Form** and then add a logo using **BLJ-Logo.bmp**.
- Add a command button labeled **Exit Database** that exits the application.
- Name the form: **BlueJean Landscaping Navigation Form**

Enhance the appearance of the forms and add any features you feel will help facilitate effective data entry.

A9-E2 Be Your Own Boss

As the owner of Blue Jean Landscaping, you would like to set startup options and apply database properties to help streamline user performance and security in the company database. Open **A9-E2-BJL** and save it as: **A9-E2-BJLRev**

Set an application title using the company name. Display the Blue Jean Landscaping Navigation Form on startup and apply overlapping windows. Then, hide the Navigation pane. Apply any other Access options you feel will help facilitate effective data entry or security.

A9-E3 Demonstrate Proficiency

Stormy BBQ is concerned about lower-level staff accessing database tables and inadvertently introducing errors and would like the database split to ensure data accuracy. It would also like to set navigation options. Open **A9-E3-SBQ** and save it as: **A9-E3-SBQRev**

Create a new navigation item labeled with the company name. Add the indicated groups. Add as many related objects as you can to the corresponding group and then split the database. Finally, apply any other Access options you feel will help facilitate effective data entry.

Groups
Daily
Menu
Merch
Staff
Restaurants

ACCESS

10 Importing and Exporting Data Using Word, Excel, and HTML

Data can be stored on all types of computer systems and in many formats. Maintaining files and other data so they're easy to share with others can be challenging; fortunately, Access tools make it relatively easy to import, export, format, and upload files for sharing. In this chapter, you will share Access data with other Microsoft Office programs, as well format data for other systems and the web.

LEARNING OBJECTIVES

- Convert Access 2019 files to previous Access formats
- Host Access files in SharePoint
- Attach files to database records
- Integrate Access data with Word and Excel
- Display Access data on the web

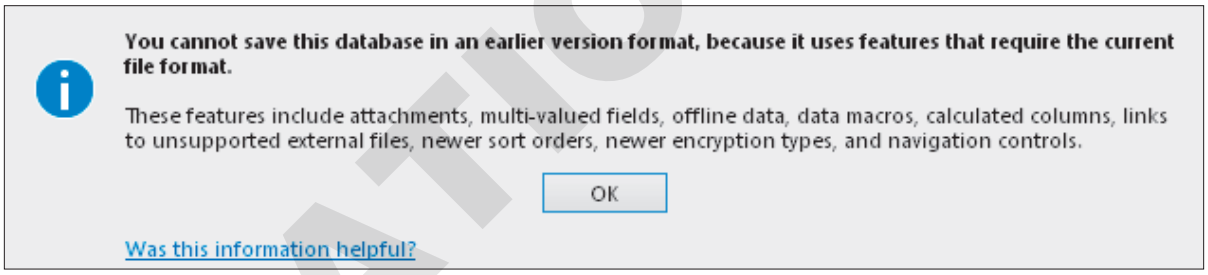
Project: Capturing More Data

The Winchester Web Design database stores all data related to customers, employees, products, and invoices. Having all the data stored in one electronic file makes it very convenient for sharing it within the company. Sometimes, however, data must be exported so it can be used offsite by someone who may not have Access on their computer. You have been assigned the task to experiment with file formats to make both non-sensitive and sensitive data available to others.

Converting Access 2019 Databases to Earlier Formats

Access 2019 databases carry a unique format that is incompatible with versions of Access older than 2007. The obvious difference is the filename extension. Versions of Access prior to 2007 created files with an *.mdb* extension. Access 2007–2019 versions create files with an *.accdb* extension (for *Access database*). To share a database made in a more current version of Access with someone who has an Access version prior to 2007, you must save the database in a format that the older version recognizes.

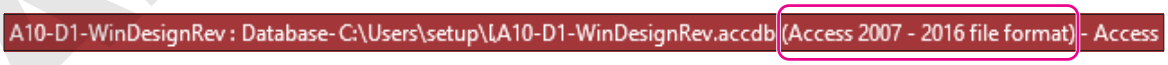
When you try to convert some newer databases to an earlier version of Access, you may get an error message.



Older versions of Access do not support some of the features and formats supported in more current versions, such as the Long Text data type that has replaced the Memo field, the Attachment data type that has replaced the OLE object field, and the Custom Web App and Web App Action Bar.

Identifying the Format of an Access Database

When you open a database, Access identifies the version of the file in the title bar.



When you open a database created in Access 2007–2019, the title bar will reference the Access 2007–2016 file format.

When you open a file created in an older version of Access, the title bar will reference the Access 2002–2003 file format.

File→Save As→Save Database As→Access 2002–2003 Database

DEVELOP YOUR SKILLS: A10-D1

In this exercise, you will save an Access 2019 database in the Access 2003 file format.

1. Open **A10-D1-WinDesign** from your **Access Chapter 10** folder and save it as: **`A10-D1-WinDesign2019`**

   Remember to enable content, if necessary.

2. Choose **File→Save As→Save Database As→Access 2002–2003 Database** and then click **Save As**.

   The Save As dialog box opens.

3. Change the filename to **`A10-D1-WinDesign2003`** and click **OK**.

   A10-D1-WinDesign2003 : Database- C:\A10-D1-WinDesign2003.mdb (Access 2002 - 2003 file format) - Access

   The filename and file format information display in the title bar, indicating that the database is now in Access 2002–2003 file format. The filename and path might be too long to show the file format, however. If you click the File tab, more of the path is visible.

4. Close all open databases.

Attaching Files to Database Records

Older versions of Access used fields with the OLE Object data type to add images to records. For example, a company might want to include employee photos in their employee table. However, adding a single uncropped, high-resolution image taken from one of today's smartphones or adding long and wordy comments to records with long text fields can significantly increase the size of the database.

A database's size affects its speed and efficiency. Attaching files—rather than embedding the data—can significantly reduce the size of the database.

Using the Attachment Data Type

The Attachment data type allows you to attach one or more pictures, spreadsheet files, documents, charts, and other file types to a specific field in the table. You can use an Attachment field to store multiple files of varying file types without increasing the size of the actual database file.

Attachment Limitations and Notes

- After assigning the Attachment data type to a field, you cannot change it.
- A maximum of 2 gigabytes of data can be attached to a database.
- The file size for individual attachments is limited to 256 megabytes.
- You cannot attach files to a record in Access 2003 or earlier.

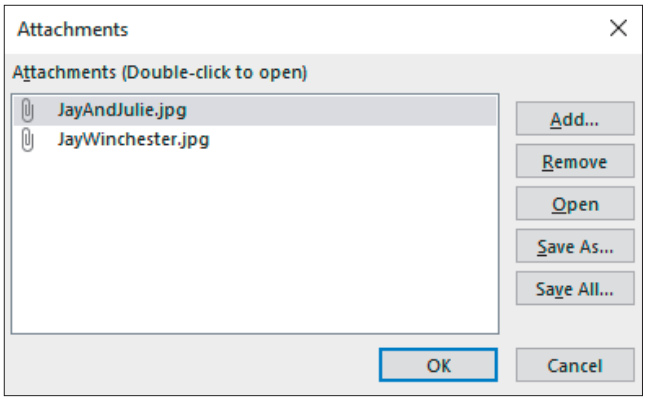
Managing Attachments

Access identifies fields that contain attachments with a paperclip icon in the field name. A paperclip icon followed by a number indicates the number of attachments for each individual record. For instance, you might have a products database where you have

Hire Date	Web Cert	📎
3/14/2019	☑	📎(2)
3/22/2019	☑	📎(0)
7/30/2019	☐	📎(1)
	☐	📎(0)

one photo of the product front and another of the product back. Or perhaps you want to store both a casual and a publicity dress photo for your employees.

Adding an attachment is as simple as double-clicking the paperclip icon for the record to which you want to attach the file. Then you navigate to the image or file you want to attach.



DEVELOP YOUR SKILLS: A10-D2

In this exercise, you will add an Attachment field to the Winchester Web Design Employees table in Design View and attach two photos to a table record.

1. Open **A10-D2-WinDesign** from your **Access Chapter 10** folder and save it as: **`A10-D2-WinDesignRev`**
2. Display the **Employees** table in **Design View**.
3. Follow these steps to add a new field to the table:

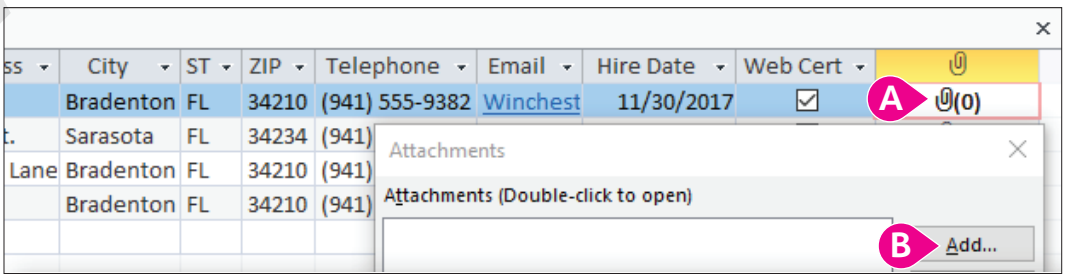
Field Name	Data Type	Description (Optional)
EmpPhone	Short Text	
EmpEmail	Hyperlink	
HireDate	Date/Time	
WebCert	Yes/No	Web Certification
A EmpPhoto	Attachment B	Office ID Photo C

   A Type **`EmpPhoto`** in the first available row in the Field Name column.

   B Choose **Attachment** from the Data Type list.

   C Type **`Office ID Photo`** in the Description column.

4. Save the changes to the table and then switch to **Datasheet View**.
5. Follow these steps to add an attachment to the first table record:



   A Scroll to the new attachment field and double-click the **paperclip** icon for the first record.

   B Click **Add**.

6. Navigate to your **Access Chapter 10** folder, double-click **JayWinchester.jpg**, and click **OK**.

   Access places the number 1 in parentheses following the attachment icon for the first record.

7. Double-click the **paperclip** icon for record 1 to open the Attachments dialog box.
8. Click **Add** and then double-click **JayAndJulie.jpg**; click **OK** to close the Attachments dialog box.

   Now a 2 follows the paperclip icon for the first record.

9. Double-click the **paperclip** icon again, select **JayWinchester.jpg**, and click **Open**.

   The photo displays in your default program used to view images.

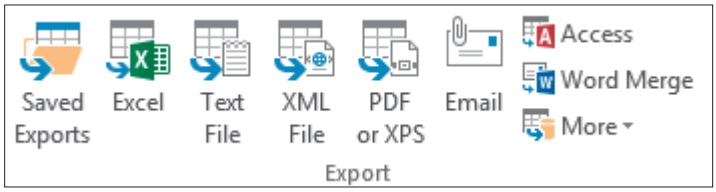
10. Switch to Access and close the Attachments box; save and close the Employees table.

Integrating Access with Word

There are several ways to share data between Access and Word—the easiest being to use Copy and Paste. For instance, you can select all or part of an Access table or query, copy it, and then open a Word document and paste the copied Access selection as an unlinked object.

A variation of this is to select the desired rows or columns in an Access table or query and *export* the data as a linked source to a Word document. A linked file allows source data to be placed into a destination file that is automatically updated when changes are made to the source file, so if you were to link an Access table to a Word document on Monday and then change the Access data on Tuesday, those changes would be reflected in the Word document the next time the Word file is opened (as long as the Access file hasn't been deleted or moved).

Another process is Mail Merge, which allows you to merge selected data fields (such as names and addresses) with a Word document, producing personalized letters that can be mailed to thousands of potential customers. You can also publish Access data into a Word document for inclusion in a report.



There are additional Export tools on the External Data tab of the Ribbon that let you connect to other Microsoft Office applications using various file formats. One is a text file, or a plain alphanumeric text file without any formatting or font information. A variation of a text file is a rich text file (RTF), which contains minimal formatting, such as color or bold. Both text files and rich text files are very small in size, relative to normal Word documents, and are compatible across virtually all hardware and software platforms.

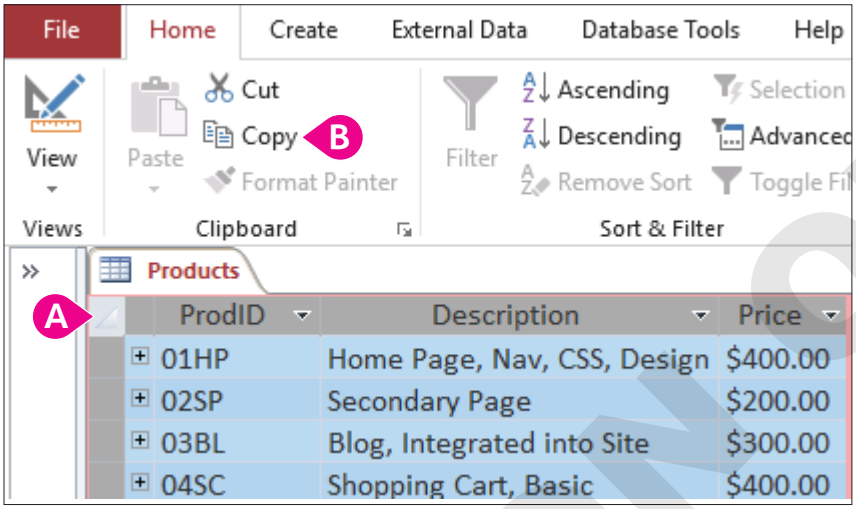
Copying Data from Access to Word

You can use copy-and-paste and drag-and-drop techniques to copy Access data into a Word document. Note that pasted data is not linked, so editing data that has been inserted into Word has no effect on the data stored in Access and vice versa.

DEVELOP YOUR SKILLS: A10-D3

In this exercise, you will copy data from an Access table into a new Word document using copy-and-paste and drag-and-drop techniques.

1. Display the **Products** table in **Datasheet View**.
2. Follow these steps to make a copy of all the records in the Products table:



   A Click the **table selector** button to select all product records.

   B Choose **Home→Clipboard→Copy**.

3. Start Word, choose **Open Other Documents**, navigate to your **Access Chapter 10** folder, and double-click **A10-D3-WWD-ProdLetter.docx**.

   The document, a letter to the company's customers, opens in Microsoft Word.

4. Position the insertion point under the line that reads *...and consider adding one of these product features to your current website*.

WINCHESTER WEB DESIGN
9972 2ND AVE. BRADENTON, FL 34210
WINCHESTERJAY@EMAIL.COM
(941) 555-9382

March 11, 20XX

Dear Valued Customer,

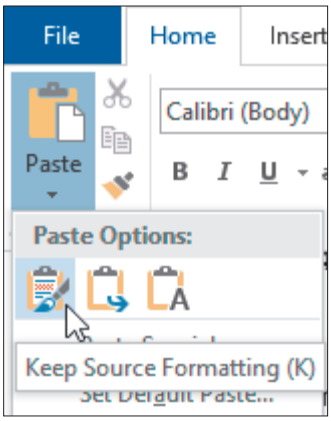
We would like you to review our products and services and consider adding one of these product features to your current website:

If we can be of assistance, please contact any of our employees at your convenience.

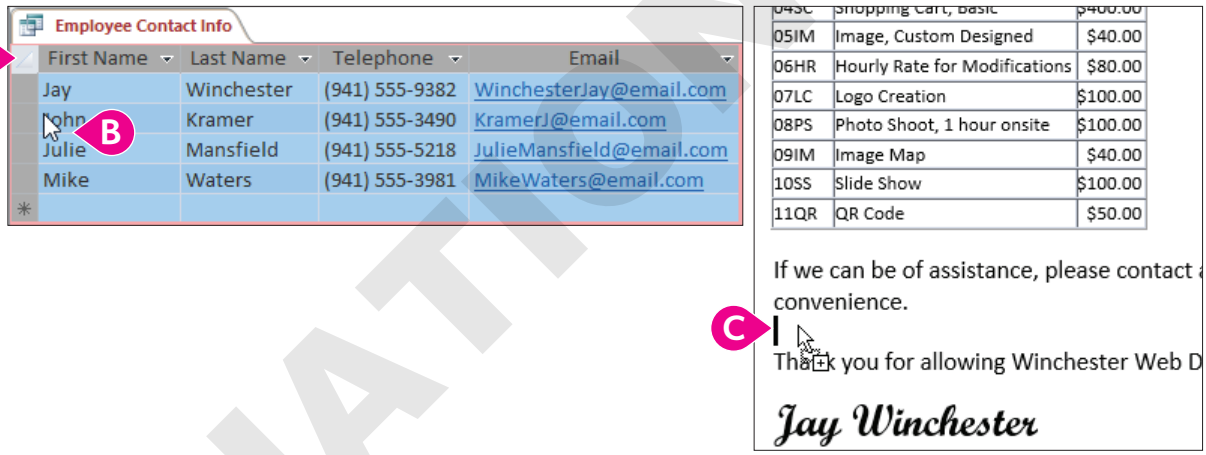
Thank you for allowing Winchester Web Design to serve you,

Jay Winchester
WinchesterJay@email.com
(941) 555-9382

5. Choose **Home→Clipboard→Paste menu button ▾→Keep Source Formatting**.



6. Close the Products table in Access.
7. Arrange your Word and Access windows side by side so you can view both programs simultaneously.
8. In Access, open the **Employee Contact Info** query.
9. Follow these steps to drag the Employee Contact Info query records into Word:



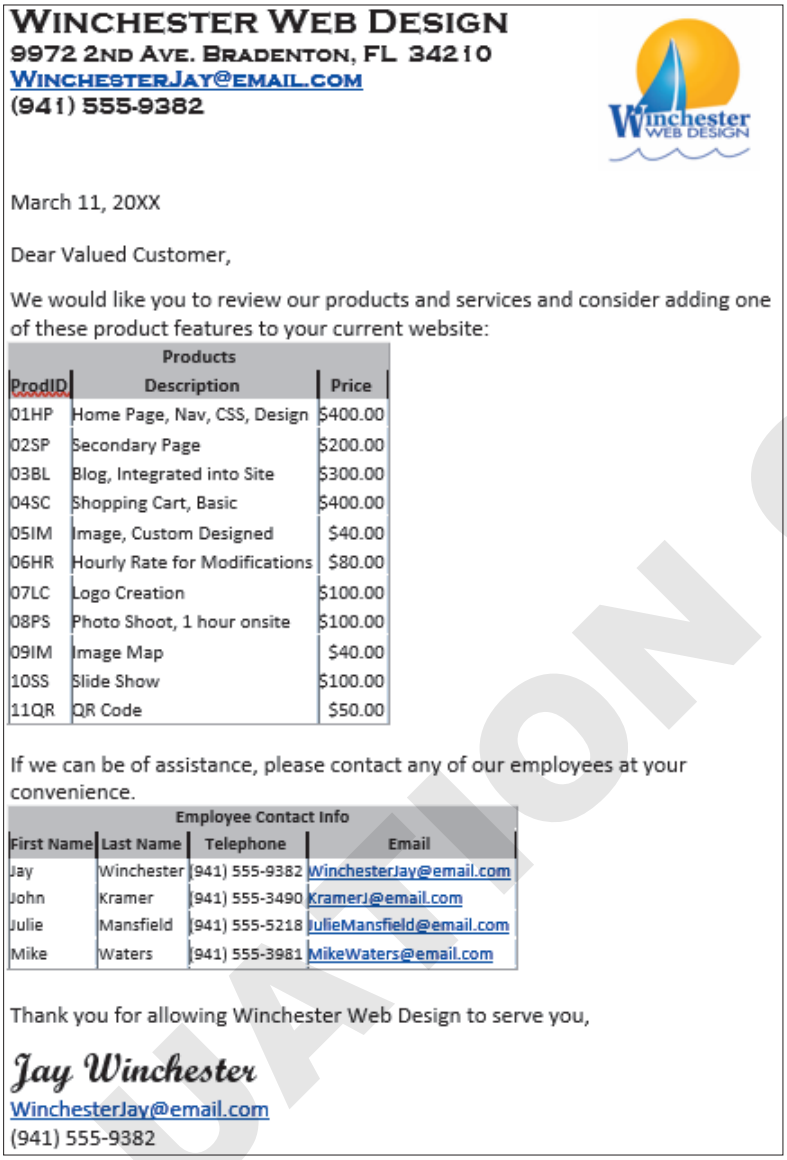
- A Click the **table selector** button.
- B Hover the mouse pointer over the left side of a field in the first column so it becomes a white arrow.
- C Drag the records into the Word document and drop them where the insertion point is located.

The mouse pointer becomes a black circle with a line through it as you drag records over the Access work area. When you cross onto the Word document, it becomes a white move arrow with a plus sign. When you copy and paste or drag data to a Word document, the name of the Access object (Employee Contact Info) is displayed as a title at the top of the object.

Note! *The drag-and-drop process can be challenging. You must precisely position the mouse pointer over the left side of a field in the first column. If you can't get it to work, use Copy and Paste.*

10. Compare your Word document to this example.

If the report extends to a second page, delete any unnecessary blank lines.



WINCHESTER WEB DESIGN
9972 2ND AVE. BRADENTON, FL 34210
WINCHESTERJAY@EMAIL.COM
(941) 555-9382

March 11, 20XX

Dear Valued Customer,

We would like you to review our products and services and consider adding one of these product features to your current website:

Products		
ProdID	Description	Price
01HP	Home Page, Nav, CSS, Design	$400.00
02SP	Secondary Page	$200.00
03BL	Blog, Integrated into Site	$300.00
04SC	Shopping Cart, Basic	$400.00
05IM	Image, Custom Designed	$40.00
06HR	Hourly Rate for Modifications	$80.00
07LC	Logo Creation	$100.00
08PS	Photo Shoot, 1 hour onsite	$100.00
09IM	Image Map	$40.00
10SS	Slide Show	$100.00
11QR	QR Code	$50.00

If we can be of assistance, please contact any of our employees at your convenience.

Employee Contact Info			
First Name	Last Name	Telephone	Email
Jay	Winchester	(941) 555-9382	WinchesterJay@email.com
John	Kramer	(941) 555-3490	KramerJ@email.com
Julie	Mansfield	(941) 555-5218	JulieMansfield@email.com
Mike	Waters	(941) 555-3981	MikeWaters@email.com

Thank you for allowing Winchester Web Design to serve you,

Jay Winchester
WinchesterJay@email.com
(941) 555-9382

11. Close the **Employee Contact Info** query.

12. Save the Word document as **`A10-D3-WWD-ProdLetterRev`** and then close it and exit Word. Maximize Access.

Publishing Data to Word

The most commonly used tools for integrating Access data with other applications appear in the Export group on the External Data tab, and other tools appear on the More list. These tools enable you to send data from a database object to Word and other applications. When you export a database object to Word, Access formats it in rich text format, launches Word, and opens the data in a new document. You can then edit and save the document in Word without affecting the data in the database.

Tip! *You can use these same techniques to drag Access table data into Excel and PowerPoint.*

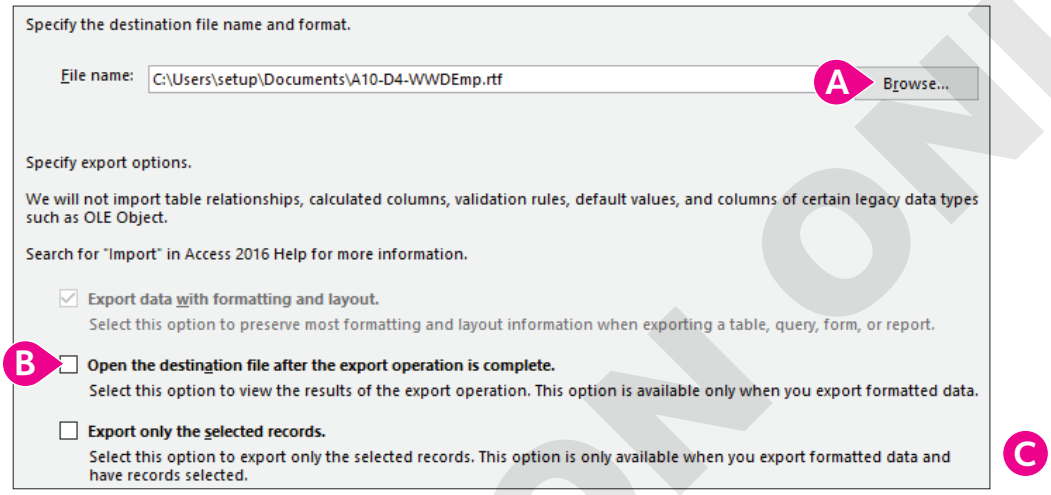
External Data→Export→More→Word

DEVELOP YOUR SKILLS: A10-D4

In this exercise, you will export a list of the Winchester Web Design employees to a Word document.

1. Open the **Employees** table in **Datasheet View**.
2. Choose the **External Data→Export→More menu button ▾→Word**.

   The Export – RTF File dialog box opens.
3. Follow these steps to export the table to Word as a small, cross-platform rich text file:



   A. Click **Browse**, open your **Access Chapter 10** folder, and save the file as: **`A10-D4-WWDEmp.rtf`**

   B. Click the **Open the destination file after export…** checkbox.

   C. Click **OK**.

   Access exports the table and opens it in Word. When you export data to a Word document, there is no title added as there is when you copy data into Word.
4. Close the Export – RTF File dialog box and switch to Word.
5. Choose **Layout→Page Setup→Margins** and then choose **Narrow** to fit more of the data on the page.
6. Choose **Layout→Page Setup→Orientation→Landscape**.
7. Resize the columns to fit as much of the data on the page as possible.

EmpID	Last Name	First Name	Street Address	City	ST	ZIP	Telephone	Email	Hire Date	Web Cert	EmpPhoto
JFW	Winchester	Jay	9972 2nd Ave.	Bradenton	FL	34210	(941) 555-9382	WinchesterJay@email.com	11/30/2017	Yes	2
JK	Kramer	John	5050 Milton St.	Sarasota	FL	34234	(941) 555-3490	KramerJ@email.com	1/6/2018	No	0
JMM	Mansfield	Julie	400 South Lily Lane	Bradenton	FL	34210	(941) 555-5218	JulieMansfield@email.com	12/8/2017	Yes	0
MJW	Waters	Mike	124 26th St.	Bradenton	FL	34210	(941) 555-3981	MikeWaters@email.com	4/16/2018	No	0

8. Close the Word file, saving changes, if prompted.
9. Switch to Access and close the Employees table.

Merging Access Data with Word Documents

Access databases often contain valuable data that can be used in letters, mailings, and other documents. Retyping such data can be time-consuming and may result in inaccurate data entry. The Export tool is useful for merging data with Word.

When merging data with Word, Access gives you two options:

1. **Link to an existing Word document:** This option creates a link to an existing document so Word can locate the database and pull the most up-to-date data into the merge document. The link between the Word document and the database includes a path used to locate the data each time you open the merge document. If the database file is moved to a different folder, Word will be unable to locate it and cannot complete the merge.
2. **Create a new Word document:** This option creates a new Word document and merges it with the data linked to an Access database table. The next time you open the Word document, Word automatically looks for the database containing the merge data.

External Data→Export→Word Merge

DEVELOP YOUR SKILLS: A10-D5

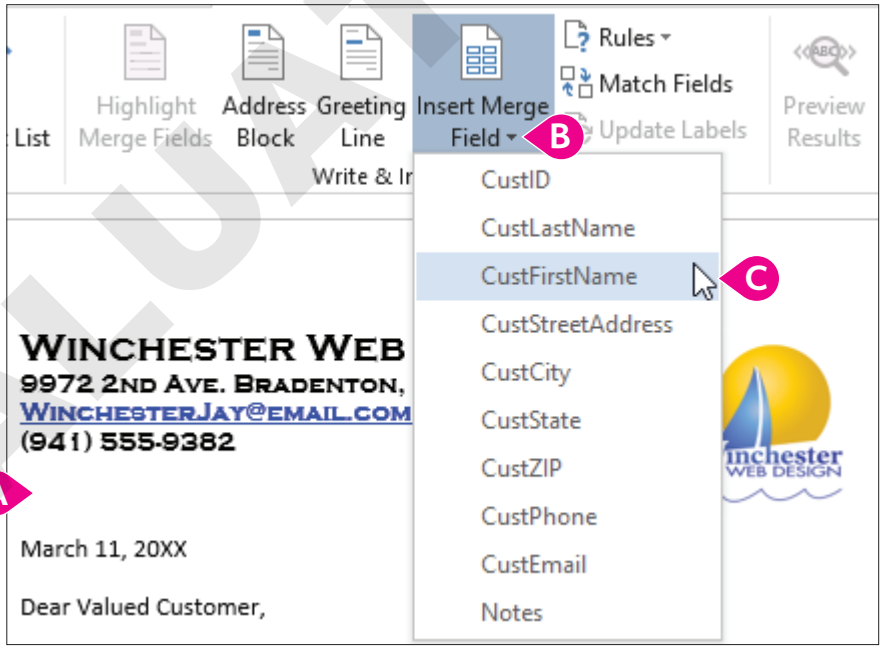
In this exercise, you will export Access data containing customer addresses and link it to the Word customer letter.

1. Open the **Customers** table and choose **External Data→Export→Word Merge**.

   The Microsoft Word Mail Merge Wizard opens.
2. Choose the **Link Your Data to an Existing Microsoft Word Document** option and click **OK**.

   Access opens the Select Microsoft Word Document dialog box.
3. Navigate to your **Access Chapter 10** folder and open **A10-D3-WWD-ProdLetter**.

   Word opens your document along with the Mail Merge task pane.
4. Follow these steps in Word to add fields to the merge document:



A. Click in the blank line between the phone number and the date.

B. Choose **Mailings→Write & Insert Fields→Insert Merge Field menu button**.

C. Choose **CustFirstName**.

5. Tap Spacebar to insert a space after *«CustFirstName»*.
6. Choose **Mailings→Write & Insert Fields→Insert Merge Field→CustLastName**.
7. Tap Enter and choose **CustStreetAddress** from the Insert Merge Field list.
8. Tap Enter and choose **CustCity** from the Insert Merge Field list.
9. Type a comma, tap Spacebar, and choose **CustState** from the Insert Merge Field list.
10. Tap Spacebar and choose **CustZIP** from the Insert Merge Field list.

    If the field names were FirstName, LastName, City, etc., instead of CustFirstName, CustLastName, CustCity, you could click the Address Block icon to insert the address fields in one step.

11. Choose **Mailings→Preview Results→Preview Results** to verify the customer name and address display properly.

12. Save and close the Word document; exit Word.
13. Switch to Access and close the Customers table.

Integrating Access with Excel

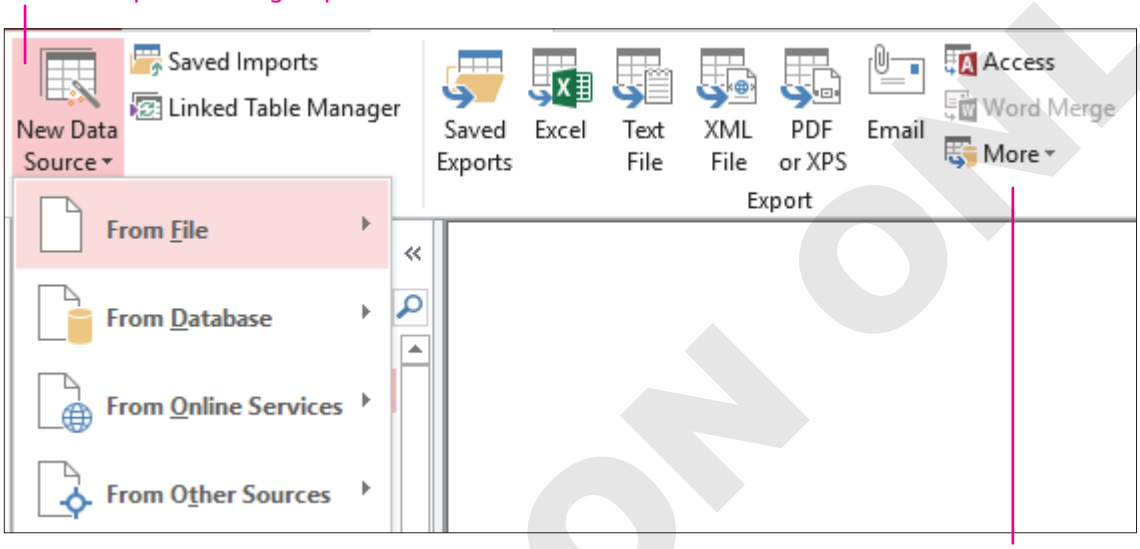
Many people find using formulas in Excel more user-friendly and sophisticated than the calculated fields in Access. Luckily, you can send Access data to Excel to perform calculations. The process of sending data to other files or applications is called exporting data. The process of retrieving data from other files or applications is called importing data.

Importing Data from Excel Files

When you import data from Excel, Access uses the Import Spreadsheet Wizard to guide you through the process. Imported data becomes part of the database file. Because the data is imported and not linked, any changes made to the Excel file after the import have no impact on the table data in Access.

Tools on the External Data tab can be used to import and to export data.

The tool for importing from Excel is in the Import & Link group.



The tool for exporting to Excel is in the Export group.

External Data→Import & Link→New Data Source→From File→Excel.

DEVELOP YOUR SKILLS: A10-D6

In this exercise, you will import an Excel worksheet into your database.

1. Close all Access database objects and choose **External Data→Import & Link→ New Data Source** to open the menu.
2. Choose **From File→Excel**.

   Access launches the Get External Data – Excel Spreadsheet dialog box.
3. Choose the **Import the Source Data into a New Table in the Current Database** option, click **Browse** and navigate to your **Access Chapter 10** folder, and double-click **A10-D6-WebContacts.xlsx**.
4. Click **OK** to launch the Import Spreadsheet Wizard.
5. Choose the **Show Worksheets** option and click **Next**.
6. Check the **First Row Contains Column Headings** box and click **Next**.
7. Click **Next** to import all worksheet fields to the new table, without changes.
8. Click **Next** to let Access create a primary key.
9. Type `Web Contacts` in the Import to Table Name box and click **Finish**.
10. Close the Get External Data window.

View Imported Table Data

11. Open the new **Web Contacts** table.

    The data imported is not linked to the Excel spreadsheet. If you update the data in Excel, it will not be updated in the Access file. Once this data is imported, there is no longer a connection between the two files.

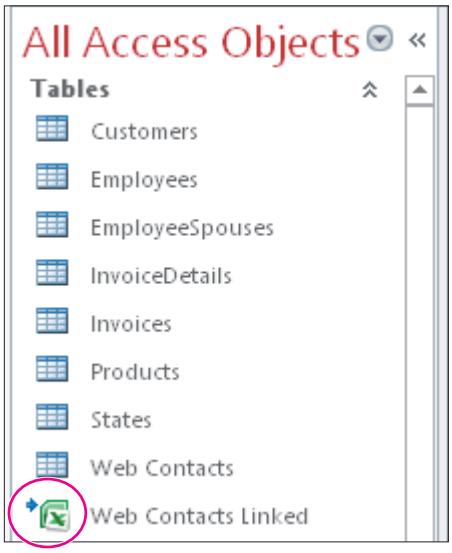
12. Adjust column widths as needed and then save and close the Web Contacts table.
13. Close the WinWebDesign database.
14. Start Excel and open **A10-D6-WebContacts.xlsx** from your **Access Chapter 10** folder.
15. Change the street address in **cell C2** to: **888 Import Lane**
16. Save and then close the **A10-D6-WebContacts.xlsx** file.
17. In Access, open **A10-D2-WinWebDesignRev**, close any open objects, and open the **Web Contacts** table.

    Notice the address has not changed because the Excel worksheet was imported into Access but not linked to an Access table.

18. Close the Web Contacts table.

Linking an Excel Worksheet to an Access Database

When you want the data in the Access database to reflect the most current data contained in an Excel spreadsheet, you can import and link the Excel spreadsheet to the Access database table. When you link a spreadsheet to a database, any change to the spreadsheet data is reflected in Access when you open the linked table in Access. Access uses an Excel icon, with a small arrow to the left, to identify a table linked to a spreadsheet.



No edits can be made to linked spreadsheets from within the Access table. You must open the source Excel spreadsheet to make changes to the data or structure.

DEVELOP YOUR SKILLS: A10-D7

In this exercise, instead of importing, you will link the WebContacts spreadsheet to the Winchester Web Design database.

1. Choose **External Data→Import & Link→New Data Source→From File→Excel**.
2. Choose the **Link to the Data Source by Creating a Linked Table** option, click **Browse**, navigate to your **Access Chapter 10** folder, and open **A10-D6-WebContacts.xlsx**.
3. Click **OK** to launch the Link Spreadsheet Wizard.

4. Click **Next** to accept Sheet1.
5. Check the **First Row Contains Column Headings** checkbox and click **Next**.
6. Type **`Web Contacts Linked`** in the Linked Table Name box and click **Finish**.
7. Click **OK** in the Link Spreadsheet Wizard message and locate the linked item, identified by the Excel icon and arrow in the Navigation pane Tables group.
8. Open the **Web Contacts Linked** table in Access and try to edit the data.

   The object icon indicates that the table is linked. Access prevents data editing when the linked file is open in Access.
9. Close the Web Contacts Linked table.
10. Switch to Excel and open **A10-D6-WebContacts.xlsx**.
11. Change the street address in **cell C2** to: **`222 Link Lane`**
12. Save and then close **A10-D6-WebContacts**.
13. Switch to Access and open the **Web Contacts Linked** table.

    The street address for the first record is now 222 Link Lane *because the table is linked to the updated Excel worksheet.*
14. Close the Web Contacts Linked table.

Fixing Broken Links

When you link an Excel spreadsheet to an Access database, Access identifies the drive and folder in which the Excel file was located at the time you created the link. Access searches for the Excel file each time you open the database. If the original Excel file was moved and the path is no longer valid, Access is unable to connect to the linked file.

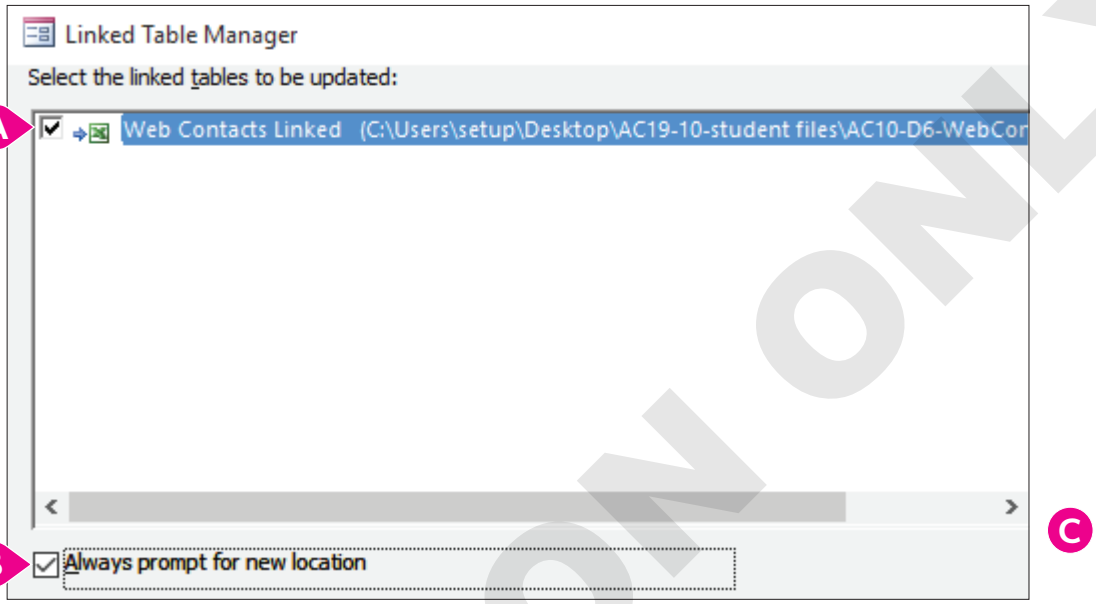
As a result, Access contains a feature called the Linked Table Manager that aids in locating and redirecting the database to the correct file so you can view the data. A list of linked files along with the external location in which it is stored are displayed in the Linked Table Manager dialog box. Linked files can then be selected along with an option to tell Access you want to redirect the link to a new location where the file has been moved.

External Data→Import & Link→Linked Table Manager 

DEVELOP YOUR SKILLS: A10-D8

In this exercise, you will open the Linked Table Manager and update the linked table location.

1. Choose **External Data→Import & Link→Linked Table Manager**.
2. Follow these steps to review the information contained in the dialog box:



   A. Click the checkbox beside the linked filename and review the linked file identified.
   B. Check the **Always Prompt for New Location** checkbox.
   C. Click **OK**.

   The Always Prompt for New Location option enables you to navigate to the folder containing the linked file if the file has been moved.

3. Locate the Excel file **A10-D6-WebContacts.xlsx** and click **Open**.
4. Click **OK** to acknowledge that the linked tables were successfully refreshed.
5. Click **Close** in the Linked Table Manager dialog box.
6. Close the **A10-D2-WinDesignRev** database.

Exporting Access Data to Excel

If you want to use the Excel calculations on Access data, you can export the data to create a new Excel file. Some fields, such as ZIP codes, which are defined as the Short Text data type, or a Yes/No data type, which displays values of True/False, may require additional formatting or manipulation in Excel. Overall, though, the steps are similar to those used to export Access data to merge with Word.

External Data→Export→Excel

DEVELOP YOUR SKILLS: A10-D9

In this exercise, you will export data from an older Winchester Web Design Invoices table to create a new Excel workbook.

1. Open **A10-D9-Invoices** from your **Access Chapter 10** folder and save it as: **`A10-D9-InvoicesRev`**
2. Click the **Invoices** table in the Navigation pane to select it (but don't open it).
3. Choose **External Data→Export→Excel**  .
4. Ensure the file format is set to **Excel Workbook (*.xlsx)** and check the first two available checkboxes under Specify Export Options.
5. Click **Browse**, navigate to your **Access Chapter 10** folder, and save the file as: **`A10-D9-Invoices.xlsx`**
6. Click **Save** and then click **OK** in the Export – Excel Spreadsheet dialog box.

   Excel opens the new workbook containing the invoice data. Resize columns as necessary.

ID	InvDate	LastName	FirstName	Phone	Description	Amount
1	10-Sep-17	Walters	Sue	555-4578	Website for Pottery	$400.00
2	08-Oct-17	Williamson	Dan	555-9769	Mowing company site	$500.00
3	04-Nov-17	Roberts	Nancy	555-3421	Family Photo Website	$350.00
4	16-Nov-17	Hamilton	Becky	555-4673	Blog	$200.00
5	02-Dec-17	Sanchez	Javier	555-0879	Memorabilia site	$450.00
6	14-Dec-17	Smithers	Tim	555-8072	Add 1 page to existing site	$159.00

7. Close the workbook, saving if prompted. Exit Excel and switch back to Access.

   The Save Export Steps dialog box is displayed and indicates that Invoices was successfully exported.
8. Close the Export dialog box, without saving the export steps, and close the database.

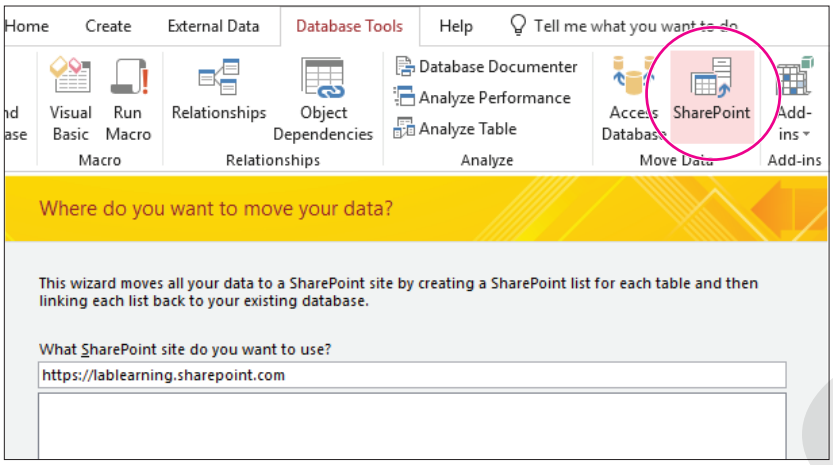
Displaying Access Data on the Web

In addition to sharing data from Access with other Microsoft Office applications, Access allows data to be stored on the web, either by hosting data on a SharePoint site, saving the database file directly to online storage, or exporting database objects in an HTML format universally available to anyone in the world. Additionally, there may be times when you want to add web page access to database objects.

Storing Data on Microsoft SharePoint

A database file can be hosted on Microsoft SharePoint. This allows any SharePoint user to access the data from a SharePoint list at any location with an Internet connection using a web browser. You can assign permission levels for each user, restricting or allowing them to complete specified actions such as only reading data, making changes to data, or having full control over the design. A database synchronized to a SharePoint site can be modified in Access offline and any changes will appear to the SharePoint site when reconnected.

Alternately, you can save a database file directly to SharePoint, allowing users to access the database at any location with an Internet connection. Doing so requires an active SharePoint site with user authentication for accessing and editing the database file.



Exporting Access Objects as Web Pages

Hypertext Markup Language (HTML), the code or language in which web pages are written, allows files to be formatted and viewed in any web browser, anywhere in the world. Access allows you to save each database object separately as an HTML file and display that data online.

Updating HTML Data

When data in the database changes, HTML files do not automatically update. Consequently, many companies update their HTML files regularly and display a date and time to indicate when data was published. To create a web-based file for Access data, you use the External Data tab to export the object as an HTML file.

Saving HTML-Formatted Objects

When you export a database object as an HTML file, you can preserve the formatting and layout of what you have already designed in Access. When you click OK, Access displays the HTML Output Options dialog box, which enables you to choose the default or other encoding to apply to the file.

External Data→Export→More→HTML Document

DEVELOP YOUR SKILLS: A10-D10

In this exercise, you will export a table in HTML format and view it in a web browser.

1. Open **A10-D2-WinWebDesignRev** and close any open objects.
2. Click the **Products** table in the Navigation pane to select it.
3. Choose **External Data→Export→More→HTML Document**.

   The Export-HTML Document window appears.
4. Click **Browse**, navigate to your **Access Chapter 10** folder, and click **Save**.
5. Check the first two checkboxes under Specify Export Options and click **OK**.

   The HTML Output Options dialog box appears.

6. Click **OK** to create the file with the default encoding.

   Access creates the HTML file and opens it as a web page in your default web browser. You can now upload it to your website or to your network.

Products

ProdID	Description	Price
01HP	Home Page, Nav, CSS, Design	$400.00
02SP	Secondary Page	$200.00
03BL	Blog, Integrated into Site	$300.00
04SC	Shopping Cart, Basic	$400.00
05IM	Image, Custom Designed	$40.00
06HR	Hourly Rate for Modifications	$80.00
07LC	Logo Creation	$100.00
08PS	Photo Shoot, 1 hour onsite	$100.00
09IM	Image Map	$40.00
10SS	Slide Show	$100.00
11QR	QR Code	$50.00

7. Close your web browser window.
8. Switch back to Access and close the dialog box.

Importing HTML Files

When data you want to use is in an HTML file, you can import that data to create a new table, append it to an existing table, or link the HTML file to the database. The steps for importing HTML data are similar to those used to import Excel and other types of data.

External Data→Import & Link→New Data Source→From File→HTML Document

DEVELOP YOUR SKILLS: A10-D11

In this exercise, you will import a list of web resources contained in an HTML file into Access as a new table.

1. Close any open objects in the **A10-D2-WinDesignRev** database.
2. Choose **External Data→Import & Link→New Data Source→From File→HTML Document**.
3. Click **Browse** and navigate to the **Access Chapter 10** folder.
4. Double-click **A10-D11-WebResources.html** and select the **Import the Source Data into a New Table in the Current Database** option.
5. Click **OK** to launch the Import HTML Wizard.
6. Check the **First Row Contains Column Headings** checkbox and click **Next**.
7. Click **Next** again, this time to keep the existing field names and data types and to import all fields into the table.
8. Choose the **No Primary Key** option and click **Next**.

   Because the HTML document is just a short list of website addresses, there is no need to set a primary key to uniquely identify each site.

9. Type **`Resources`** for the Import to Table name and click **Finish**.

10. Close the dialog box. Open the **Resources** table and resize the columns as necessary.
11. Review the data and then save and close the **Resources** table.

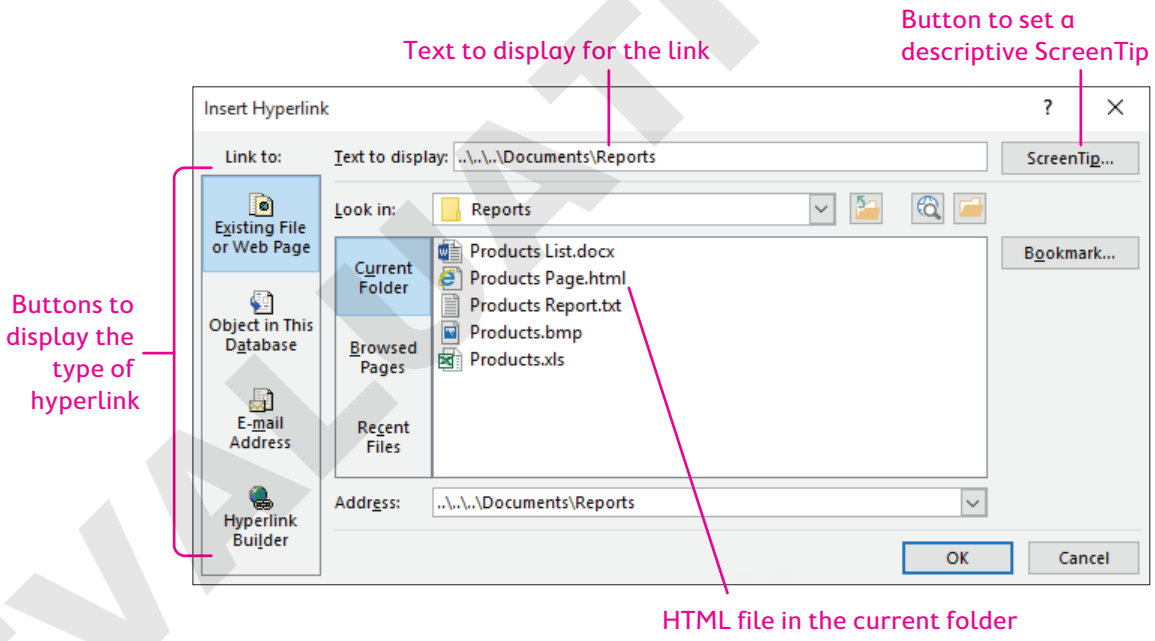
Adding Hyperlinks to Database Objects

Hyperlinks attached to database forms and reports are a convenient way to access other database objects, external files associated with the database, or websites. You can create a hyperlink to:

- Open an external website.
- Launch another application and open a specific file.
- Add a new table field for a customer's email address.

The Insert Hyperlink dialog box enables you to select an existing file or web page, an object in the active database, or an email address. Although the hyperlink text generally identifies the action of the hyperlink, you can also add a ScreenTip to display more descriptive text when the user points to the hyperlink. Typically, hyperlinks are underlined and formatted a light blue text color. When you point to a hyperlink, the mouse pointer appears as a pointing hand. Clicking (rather than double-clicking) performs the action associated with the hyperlink.

Resource	Web Address
Style Sheet (CSS) Web Resources	http://msdn.microsoft.com/en-us/library/gg309314.aspx
Web Page (HTML) Web Resources	http://msdn.microsoft.com/en-us/library/gg309536.aspx
Image (JPG, PNG, GIF, ICO) Web Resources	http://msdn.microsoft.com/en-us/library/gg334549.aspx
Create Accessible Web Resources	http://msdn.microsoft.com/en-us/library/jj602948.aspx
Import Files as Web Resources	http://msdn.microsoft.com/en-us/library/gg327924.aspx



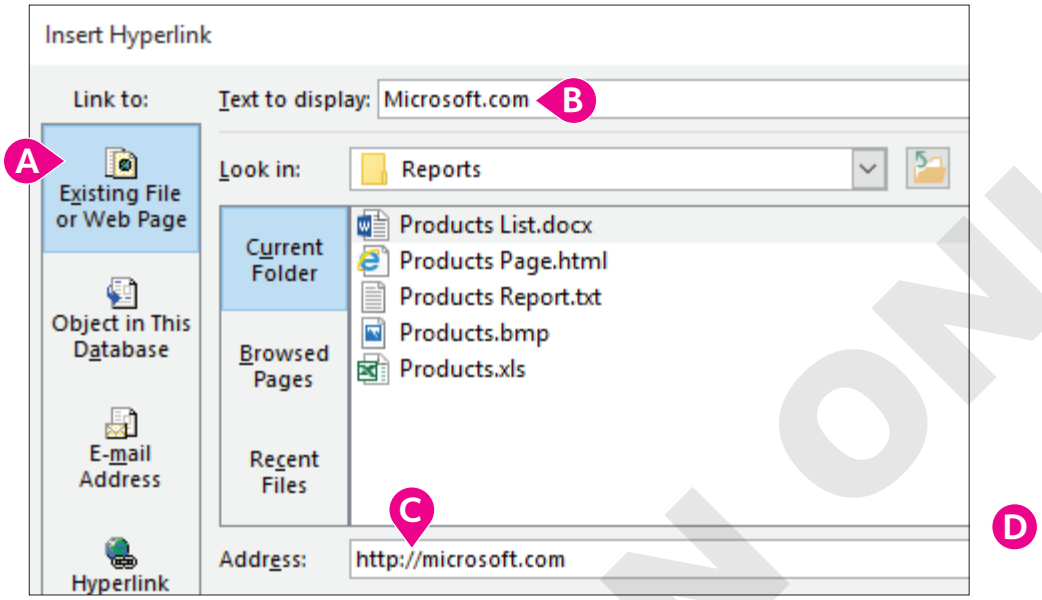
Form Design Tools→Design→Controls→Link

DEVELOP YOUR SKILLS: A10-D12

In this exercise, you will add a hyperlink to Winchester's About Us Page form.

1. Display the **About Us Page** form in **Design View**.

2. Click the **Detail** section bar and choose **Form Design Tools→Design→Controls→Link** to open the Insert Hyperlink dialog box.
3. Follow these steps to add a hyperlink to the company web address:



A. Choose **Existing File or Web Page**.
B. Type **`Microsoft.com`** for the text to display.
C. Type **`http://microsoft.com`** for the address.
D. Click **OK**.

Access places the hyperlink control in the top-left corner of the Detail section.

4. Switch to **Form View** and click the hyperlink.

The Microsoft website opens in your web browser.

5. Close your browser window. Close all database objects, saving changes if necessary, and then exit Access.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills using the Self-Assessment in your ebook or online (eLab course or Student Resource Center).

Reinforce Your Skills

REINFORCE YOUR SKILLS: A10-R1

Format Fields and Integrate with Word

As lead designer for Kids for Change, you are in charge of database maintenance. Kids for Change has asked you to store staff photos in the database and export data to a Word document. In this exercise, you will add an attachment field for staff photos, copy Access data to Word, and export a table to Word in rich text format.

1. Open **A10-R1-K4C** from the **Access Chapter 10** folder and save it as **`A10-R1-K4C-Rev`**, choosing **Yes** when asked to close all open objects.

   To begin, you will create an Attachment field.

2. Display the **PaidStaff** table in **Design View**.
3. Scroll down to the first empty row and complete the field using these guidelines:
   - Type **`StaffPhoto`** in the Field Name column.
   - Choose **Attachment** from the Data Type list.
   - Type **`Staff ID Photo`** in the Description column.
4. Save the **PaidStaff** table and switch to **Datasheet View**.
5. Double-click the **paperclip** icon for the first record (Matthew Bryant).

   The Attachments dialog box opens.

6. Click **Add**, navigate to your **Access Chapter 10** folder, and double-click **MathewBryant.jpg**.

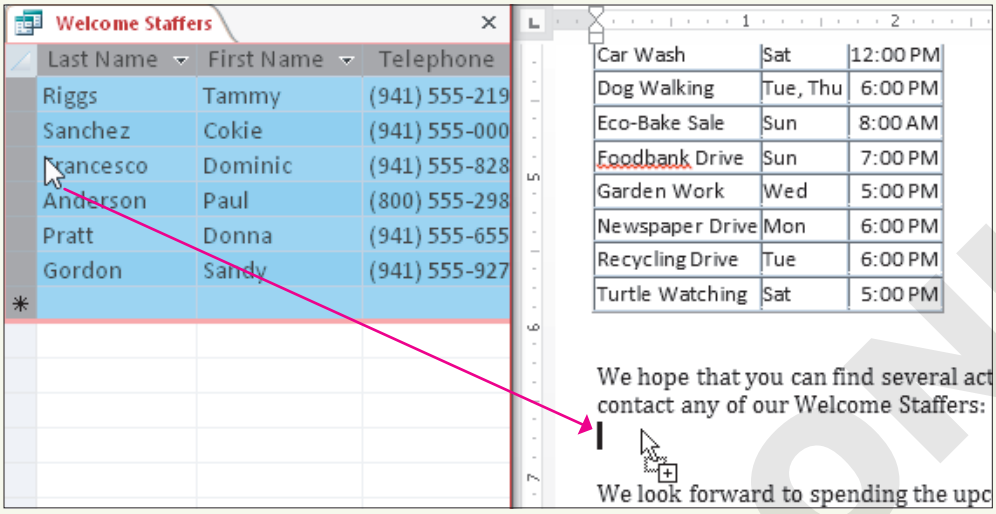
   Access adds the filename of the photo to the Attachments dialog box.

7. Click **OK** to close the Attachments dialog box and then close and save the PaidStaff table.

Copy Access Data to Word

8. Display the **K4CActivityList** table in **Datasheet View**.
9. Click the **table selector** button and then choose **Home→Clipboard→Copy**  .
10. Start Word and open **A10-R1-K4C-Welcome.docx** from your **Access Chapter 10** folder.
11. Position the insertion point under the line *Below are just a few of the activities we are offering this year* and choose **Home→Clipboard→Paste**.
12. Save the Word document in your **Access Chapter 10** folder as: **`A10-R1-K4C-WelcomeRev`**
13. Switch back to Access and close **K4CActivityList**.
14. Position the Word and Access windows side by side and make sure the *We hope that you…* paragraph is visible in the Word document.
15. Open the **Welcome Staffers** query in Access and click the **table selector** button to select all staffer records.

16. Hover the pointer over the left side of the first column so it becomes a white arrow and then drag and drop the records below *We hope that you...* in the Word document.



17. Save and close the Word document.

Export Access Data to Word

18. Switch to Access and maximize the window.
19. Close the **Welcome Staffers** query and then click the **Venues** table to select it.
20. Choose **External Data→Export→More→Word**.
21. Click the **Browse** button, navigate to your **Access Chapter 10** folder, and save the file as: **`A10-R1-K4C-Venues`**
22. Click the **Open the Destination File After the Export Operation Is Complete** checkbox and click **OK**.
23. Close the Word document, saving the changes if prompted, and then close the Export – RTF File dialog box in Access.

Merge Access Data into a Word Document

24. Open the **Volunteers** table and choose **External Data→Export→Word Merge**.

    The Microsoft Word Mail Merge Wizard opens.
25. Choose **Link Your Data to an Existing Microsoft Word Document** and click **OK**.
26. Open **A10-R1-K4C-WelcomeRev** from your **Access Chapter 10** folder; maximize the Word window.
27. Position the insertion point under the K4C logo and above *Dear K4C Volunteer*, and then choose **Mailings→Write & Insert Fields→Insert Merge Field menu button ▾→VolFirstName**.

    Access inserts the table field between chevrons on the document.

    «VolFirstName»

    Dear K4C Volunteer,
28. Tap Spacebar and enter the **VolLastName** field.
29. On the next line, enter the **VolStreet** field.

30. On the next line, enter the **VolCity** field, then the **VolST** field, and then the **VolZIP** field, taking care to include spaces between fields and a comma after the city.
31. Choose **Mailings→Preview Results** to verify the customer name and address display properly.

32. Save and close the Word document and exit Word. Save and close the database.

REINFORCE YOUR SKILLS: A10-R2

Integrate Access with Excel

Kids for Change would like you to share some of the data in its database with Excel. In this exercise, you will add a table that is linked to an Excel spreadsheet and export a table to Excel.

1. Open **A10-R2-K4C** from your **Access Chapter 10** folder and save it as: **`A10-R2-K4CRev`**

   To begin, you will import unlinked Excel data into Access.
2. Choose **External Data→Import & Link→New Data Source →From File→Excel**.

   Access launches the Get External Data – Excel Spreadsheet dialog box.
3. Choose **Import the Source Data into a New Table in the Current Database**, click **Browse**, and open **A10-R2-K4C-Contacts.xlsx** from your **Access Chapter 10** folder.
4. Click **OK** to launch the Import Spreadsheet Wizard and import the data using these guidelines:
   - First Row Contains Column Headings.
   - Import all worksheet fields to the new table, without changes.
   - Let Access add the primary key.
   - Type **`Venue Contacts`** for the Import to Table name.
5. Close the Get External Data window without saving the import steps.
6. Open the new **Venue Contacts** table and resize the columns as desired.

   The table lists four fields and nineteen records. The data is not linked to the source table in Excel, so if you update the data in Excel, the Access file will not update.
7. Save and close the Venue Contacts table.

Link an Excel Spreadsheet to an Access Database

8. Choose **External Data→Import & Link→New Data Source→From File→Excel**.
9. Choose **Link to the Data Source by Creating a Linked Table**, click **Browse** and open **A10-R2-K4C-Contacts.xlsx** from your **Access Chapter 10** folder, and click **OK**.

10. Check the **First Row Contains Column Headings** checkbox and click **Next**.
11. Type **`Venue Contacts Linked`** for the Linked Table name and click **Finish**; click **OK** in the message box.

    The imported table has a different icon than the other tables in the Navigation pane. The icon has an arrow pointing toward the Excel icon instead of the Access table icon.
12. Open **A10-R2-K4C-Contacts** in Excel and change the contact for All Angels Church from *Kevin Gregory* to: **`Dina McMullen`**
13. Save and close Excel and then switch to Access and open the **Venue Contacts Linked** table.

    The name is also changed in the table.
14. Close the Venue Contacts Linked table.

Use the Linked Table Manager

15. Choose **External Data→Import & Link→Linked Table Manager**  .
16. Click the checkbox beside the linked filename and review the linked file identified.
17. Check the **Always Prompt for New Location** checkbox and click **OK**.

    Access opens the Select New Location dialog box so you can navigate to the folder containing the linked file—in the event the file has been moved.
18. Open **A10-R2-K4C-Contacts.xlsx** from your **Access Chapter 10** folder.
19. Click **OK** in the dialog box and then close the Linked Table Manager dialog box.

Export Access Data to Create a New Excel Workbook

20. Click **Donations Query** in the Navigation pane and then choose **External Data→Export→Excel**  .
21. Ensure the file format is set to Excel Workbook (*.xlsx) and check the **Export Data with Formatting and Layout** and **Open the Destination File After the Export Operation Is Complete** checkboxes.
22. Save the export in your **Access Chapter 10** folder as: **`A10-R2-K4C-Donations.xlsx`**
23. Click **OK** in the dialog box. Close Excel and then close the Export – Excel Spreadsheet box.

REINFORCE YOUR SKILLS: A10-R3

Integrate Access with the Web

Kids for Change would like you to share some of the data in its database for display on the web. In this exercise, you will import an HTML file as a new database table, export a table to view on the web, and add a hyperlink from the Activities Form to the Activity Costs Report.

1. Open **A10-R3-K4C** from your **Access Chapter 10** folder and save it as: **`A10-R3-K4CRev`**

   You will begin by exporting an object in HTML format.
2. Close the navigation form and then select the **Activities Query** in the Navigation pane.
3. Choose **External Data→Export→More→HTML Document**  .
4. Click **Browse**, navigate to your **Access Chapter 10** folder, and save the file as: **`A10-R3-K4C-Activities.html`**
5. Check the **Export Data with Formatting and Layout** and **Open the Destination File After the Export Operation Is Complete** checkboxes.

6. Click **OK** twice to create the file with the default encoding.

   Access creates the HTML file and opens it as web page in your default web browser. You can now upload it to your website or to your network.

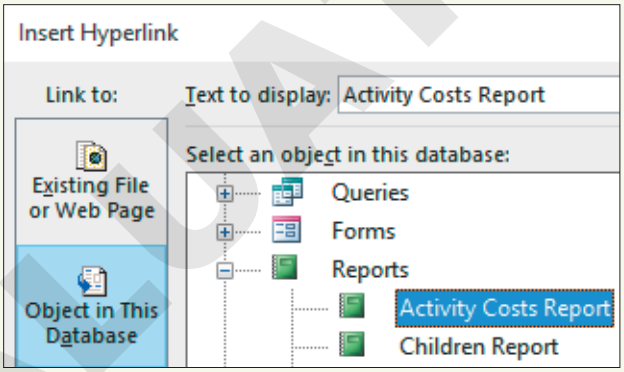
7. Close your web browser window; switch back to Access and close the Export – HTML Document dialog box.

Import an HTML File as a Database Object

8. Close any open objects and then choose **External Data→Import & Link→New Data Source→From File→HTML Document**.
9. Click **Browse** and open **A10-R3-K4C-Partners.html** from your **Access Chapter 10** folder; select **Import the Source Data into a New Table in the Current Database** and click **OK**.
10. Check the **First Row Contains Column Headings** checkbox and click **Next**.
11. Click **Next** to accept the default field names and data types, choose **No Primary Key** on the next screen, and click **Next**.
12. Type **`NonProfits`** for the Import to Table name and click **Finish**.
13. Close the Get External Data dialog box. Open the **NonProfits** table and size the columns so you can view the data.
14. Review the data and then save and close the NonProfits table.

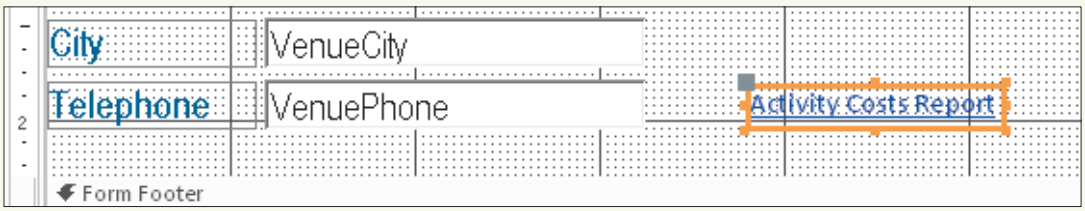
Add a Hyperlink to a Form

15. Display the **Activities Form** in **Design View**.
16. Click the **Detail** section bar and choose **Form Design Tools→Design→Controls→Link**.
17. Choose **Object in This Database**, expand the Reports section, choose **Activity Costs Report**, and click **OK**.



Access places the hyperlink control in the top-left corner of the Detail section.

18. Drag the new hyperlink control to the right of the Telephone controls.



19. Save the changes to Activities Form, switch to **Form View**, and click the hyperlink.

    The Activity Costs Report opens.

20. Close Access, saving any changes.

Apply Your Skills

APPLY YOUR SKILLS: A10-A1

Change the Database Format, Create Attachments, and Integrate Access with Word

Universal Corporate Events needs your help adding employee photos and merging data with Word. In this exercise, you will add an attachment field to a table for employee photos. Then you will copy Access data into Word, export a table to Word, and merge Access data into a Word document.

1. Start Access, open **A10-A1-UCE** from your **Access Chapter 10** folder, and save it as: **`A10-A1-UCERev`**
2. Open the **Personnel** table in **Design View**. Type **`PerPhoto`** in the first available Field Name record, choose the **Attachment** data type, and enter the description: **`Personnel ID Photo`**
3. Save the Personnel table and switch to **Datasheet View**.
4. Add the **ReneeAllison.jpg** photo from your **Access Chapter 10** folder to the Renee Allison record.
5. Close the Attachments dialog box; save and close the Personnel table.

Copy and Export Access Data to Word

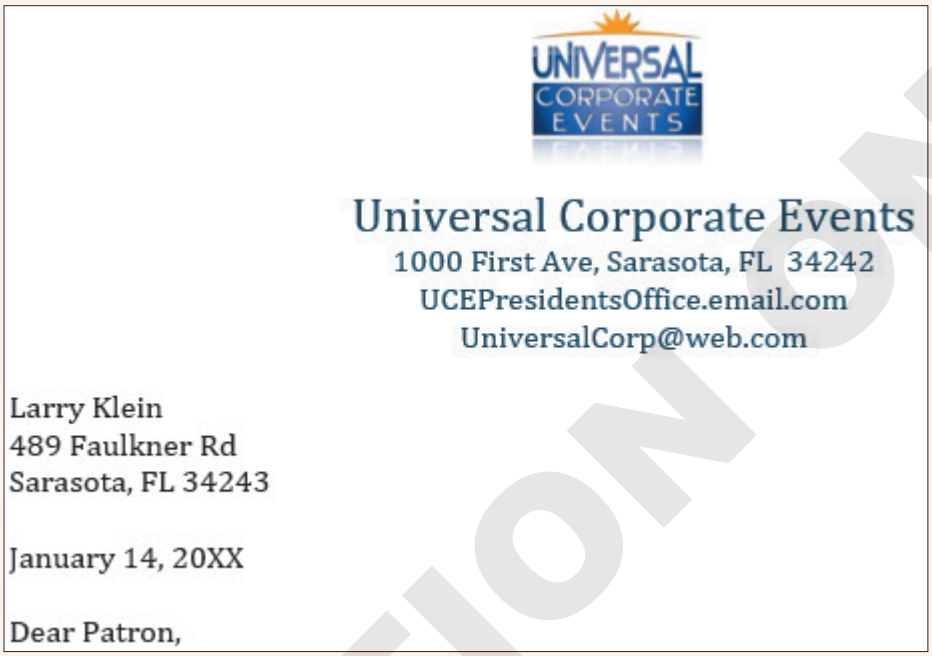
6. Start Word and open **A10-A1-UCE-Promotions.docx** from your **Access Chapter 10** folder.
7. Run the **Event Organizers** query in Access and then select all records in the query datasheet.
8. Position the Word and Access windows side by side and then drag and drop the Access query records into the Word document on the empty line below the paragraph that ends *...contact one of our Event Organizers first!*
9. Close the Event Organizers query and then maximize the Word window.

   The bottom portion of the letter includes the Event Organizers query. The name of the Access object is displayed as a title at the top of the object.
10. Save the Word document in your **Access Chapter 10** folder as: **`A10-A1-UCE-PromotionsRevised`**
11. Select the **Menus** table and choose **External Data→Export→More→Word**.
12. Click **Browse** and save the file in your **Access Chapter 10** folder as: **`A10-A1-Menus.rtf`**
13. Check the **Open the Destination File After the Export Operation Is Complete** checkbox and click **OK**.
14. Close the Word document; switch to Access, close the dialog box, and then maximize the Access window.

Merge Access Data into a Word Document

15. Open the **BusinessOwners** table in **Datasheet View** and choose **External Data→Export→Word Merge**.
16. Link your data to the Word document **A10-A1-UCE-PromotionsRevised** in your **Access Chapter 10** folder.

17. Position the insertion point under the UCE URL and above the date and then create an address block as described:
    - On the first line, choose **First_Name** from the merge fields list, tap Spacebar, and choose **Last_Name**.
    - On the second line, choose **Address**.
    - On the third line, choose **City, ST**, and **ZIP** and add a comma and space between each field.
18. Choose **Mailings→Preview Results→Preview Results**.



19. Close the files in Word and Access, saving changes when prompted.

APPLY YOUR SKILLS: A10-A2

Integrate Access Data with Excel and Link Spreadsheets

The president of Universal Corporate Events wants you to integrate some of the company's data with Excel. In this exercise, you will add a table that links to an Excel spreadsheet and export a table to Excel.

1. Open **A10-A2-UCE** from your **Access Chapter 10** folder and save it as: **`A10-A2-UCERev`**
2. Choose **External Data→Import & Link→New Data Source→From File→Excel**.
3. Choose to link your data by creating a linked table and then browse to your **Access Chapter 10** folder and open **A10-A2-UCE-Customers.xlsx**.
4. Check the **First Row Contains Column Headings** checkbox and click **Next**.
5. Type **`BestCustomers-Linked`** for the Import to Table name and click **Finish**.
6. Click **OK** in the message box and then open the new **BestCustomers-Linked** table.

   In the next few steps you will change the last name Fran to Francesca in the second record of the Excel spreadsheet. This change will be reflected in the Access table because they are linked.
7. Close the table, saving it if prompted, and then open **A10-A2-UCE-Customers.xlsx** in Excel and change the first name in the second record from *Fran* to: **`Francesca`**

8. Save and close the Excel workbook and then open the **BestCustomers-Linked** table in Access.

   The first name is also changed to Francesca in the table.

9. Close the BestCustomers-Linked table.
10. Choose **External Data→Import & Link→Linked Table Manager**.
11. Mark the checkbox beside the linked filename, check the **Always Prompt for New Location** checkbox, and click **OK**.
12. Locate the **A10-A2-UCE-Customers** file and click **Open**.
13. Click **OK** in the dialog box and then close the Linked Table Manager.

Export Access Data to Create a New Excel Workbook

14. Select the **Menus** table in the Navigation pane and choose **External Data→Export→Excel**.
15. Ensure the file format is set to **Excel Workbook (*.xlsx)** and check the two available checkboxes under Specify Export Options.
16. Click **Browse**, save the file as **`A10-A2-UCE-Menus`** in your **Access Chapter 10** folder, and click **OK**.

    Excel opens and displays the workbook containing the Menus data.

17. Close the Excel workbook and then switch to Access and close the Export - Excel Spreadsheet box.
18. Close the database, saving any changes.

APPLY YOUR SKILLS: A10-A3

Export and Import to the Web and Add Hyperlinks

In this exercise, you will export a table to make it available for viewing on the web, import an HTML file as a table, and add a hyperlink from the Venues Form to the Venue Revenue Report.

1. Open **A10-A3-UCE** from your **Access Chapter 10** folder and save it as: **`A10-A3-UCERev`**
2. With the **Menus** table selected, choose **External Data→Export→More→HTML Document**.
3. Click **Browse** and save the file in your **Access Chapter 10** folder as: **`A10-A3-UCE-Menus.html`**
4. Check the boxes for **Export Data with Formatting and Layout** and **Open the Destination File After the Export Operation Is Complete**; click **OK**.
5. In the HTML Output Options Dialog box, leave the option for **Default Encoding** selected and click **OK**.

   Access creates the HTML file and opens it as a web page in your default web browser.

6. Close your web browser window. Switch back to Access and close the Export – HTML Document dialog box.

Import an HTML File as a Database Object

7. Close any open objects and then choose **External Data→Import & Link→New Data Source→From File→HTML Document**.
8. Click **Browse**, open **A10-A3-UCE-Events.html** from your **Access Chapter 10** folder, and click **OK**.
9. Check the **First Row Contains Column Headings** checkbox and click **Next**.
10. Click **Next** again to accept the default field options, choose **No Primary Key** on the next screen, and click **Next**.

11. Type **`AdditionalEvents`** for the Import to Table name and click **Finish**.
12. Close the Get External Data dialog box and then open the **AdditionalEvents** table and widen the columns as necessary.
13. Review the data and then save and close the AdditionalEvents table.

Add a Hyperlink to a Form

14. Display the **Venues Form** in **Design View**.
15. Click the **Detail** section bar and choose **Form Design Tools→Design→Controls→Link**.
16. Type **`Open Venue Revenue Report`** for the Text to Display.
17. Choose **Object in This Database** in the Insert Hyperlink dialog box.
18. Expand the Reports section, click **Venue Revenue Report**, and click **OK**.

    Access places the hyperlink control in the top-left corner of the Detail section.
19. Drag the hyperlink control to the right of the Venue ID.
20. Save changes to the Venues Form and then switch to **Form View**.

When you point to the hyperlink, a ScreenTip displays the hyperlink's destination.

21. Click the hyperlink to open the Venue Revenue Report in **Report View**.
22. Close all open database objects and then close the database.

Project Grader

This chapter does not include Project Grader exercises. Project Grader content is based on the learning objectives for a chapter, and sometimes those learning objectives cannot be accurately graded by the system. Objectives from this chapter that can be accurately graded may be included in later chapters, if applicable.

Extend Your Skills

These exercises challenge you to think critically and apply your new skills in a real-world setting. You will be evaluated on your ability to follow directions, completeness, creativity, and the use of proper grammar and mechanics. Save files to your chapter folder. Submit assignments as directed.

A10-E1 That's the Way I See It

To streamline customer outreach, you want to export data from the Blue Jean Landscaping database to Word. Open **A10-E1-BJL** and save it as **`A10-E1-BJLRev`**

Use the Customers table and the Mail Merge function to export the indicated fields into the **A10-E1-BJL-Promotion** document in the empty area between the date and body of the letter.

Fields to Add:
First Name
Last Name
Street Address
City
ST
ZIP

Open the Services table and copy the Services column header and field data, pasting it into empty space between the two body paragraphs. Enhance the appearance of the Word document using any techniques you feel will help improve customer outreach.

A10-E2 Be Your Own Boss

You want to export data in the Blue Jean Landscaping database to a spreadsheet so you can perform quick calculations. You also need to link new merchandise data from Excel. Open **A10-E2-BJL** and save it as: **`A10-E2-BJLRev`**

Export the Merch Sales Query as an Excel spreadsheet named **`Merch Sales.xlsx`** and preserve the data with formatting and layout. Use **A10-E2-BJL-NewMerchandise.xlsx** to create a linked table named **`New Merch`** that contains the column headings from the sheet's first row. Apply any changes to the table you feel will help improve data entry or visual appearance.

A10-E3 Demonstrate Proficiency

Stormy BBQ is concerned that sales employees cannot access merchandise data while they are on the road. They would like you to publish it to the web for easy access and to add a hyperlink to the MerchSales form. Lastly, they've asked you to begin adding photos of the current staff. Open **A10-E3-SBQ** and save it as: **`A10-E3-SBQRev`**

Export the MerchSales table as an HTML document named **`MerchSales.html`** (preserve the data with formatting and layout). Add a hyperlink to the Merchandise table at the bottom-left corner of the MerchSales form using **`Available Merchandise`** as the text to display. Add an Attachment field to the Staff table and attach the **HankGore.jpg** file to the Hank Gore record. Apply any other changes you feel will help improve the database.

ACCESS

11 Maintaining a Database

As you prepare your database for distribution, you will make your last design tweaks and confirm it is optimized for speed and ease of use. At this stage, security should be a main priority, as protecting a database from data loss and unauthorized access is critical. In this chapter, you will customize Access settings and add easy-to-use command buttons to a form. You will also create macros; explore database security features; set a database password; and then analyze, compact, and repair a database.

LEARNING OBJECTIVES

- Add command buttons to forms
- Manage database objects and create macros
- Back up, restore, analyze, compact, and repair a database
- Set database security using encryption and passwords

Project: Improving and Maintaining a Database

The prototype of the Winchester Web Design database is almost complete. After reviewing the database, the company's owner is pleased with the overall design. He now wants to add some command buttons and macros to improve navigation and to ensure the database runs as efficiently as possible. A major concern is the security of the database and the data it contains. The owner would like to institute both security protocols and a regular backup policy.

Using Command Buttons to Improve Navigation

In addition to adding labels, text boxes, images, and other controls to database forms, you can add command buttons to use for record navigation, such as finding a record or going to the previous/next record, and report operations, such as printing a specific report or even exiting Access. To create a button, you draw a button shape in the desired location on the form and use the Command Button Wizard to walk you through the process.

Form Design Tools→Design→Controls→Button

DEVELOP YOUR SKILLS: A11-D1

In this exercise, you will add command buttons to the Form Footer section of the Invoice Form to make navigation easier and to quickly view an invoice report.

1. Open **A11-D1-WinDesign** from your **Access Chapter 11** folder and save it as: **A11-D1-WinDesignRev**
2. Enable content and then close the Winchester Web Design Navigation Form.

Note!

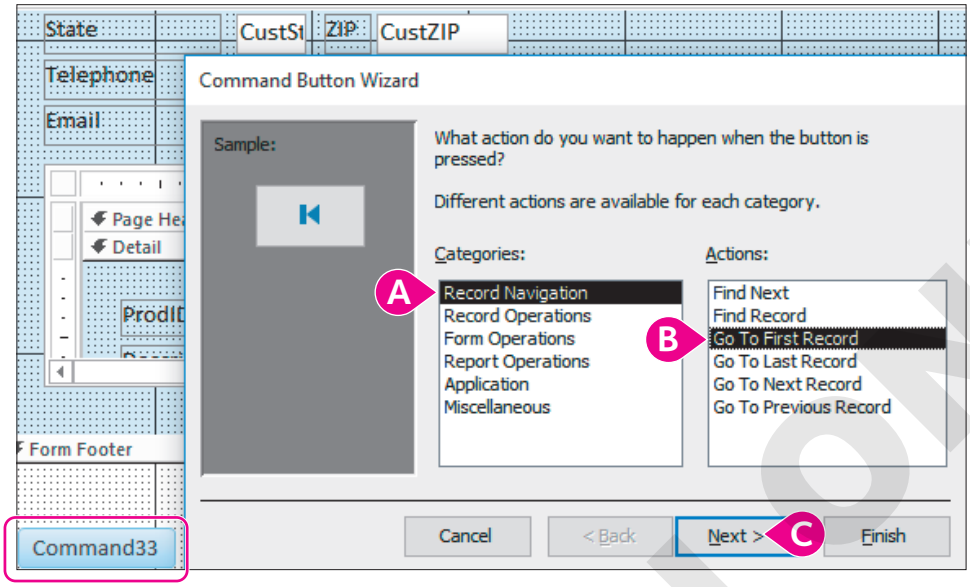
Many of the activities in this chapter require you to enable content to function properly. Enable content when the option appears.

3. Open the **Invoice Form** in **Design View**.
4. Click the **Form Footer** section bar and type **0.75** for the Height property on the Property Sheet. (Hint: Tap F4 to open the Property Sheet.)
5. Choose **Form Design Tools→Design→Controls→Button**.
6. Draw a button in the Form Footer under the left end of the subform.

   If the Command Button Wizard doesn't open, delete the button and then choose Form Design Tools→Design→Controls→Use Control Wizards and draw the button again.

7. Follow these steps to add a command button:

   Your command button may show a different number than 33.



   A Choose the **Record Navigation** category.

   B Choose the **Go To First Record** action.

   C Click **Next**.

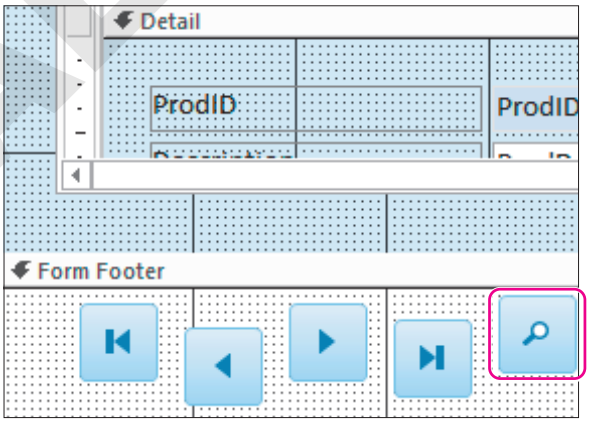
8. Click the **Picture** option, choose **Go To First**, and click **Next**.

9. Enter **`cmdFirst`** as the meaningful name and click **Finish**.

   The command button shows the Go To First picture in the Form Footer section and is programmed to go to the first record when in Form View.

10. Repeat steps 5–9 to add commands in the order shown:

Category	Action	Picture	Name
Record Navigation	Go To Previous Record	Go To Previous	**`cmdBack`**
Record Navigation	Go To Next Record	Go To Next	**`cmdNext`**
Record Navigation	Go To Last Record	Go To Last	**`cmdLast`**
Record Navigation	Find Record	Binoculars (Find)	**`cmdFind`**

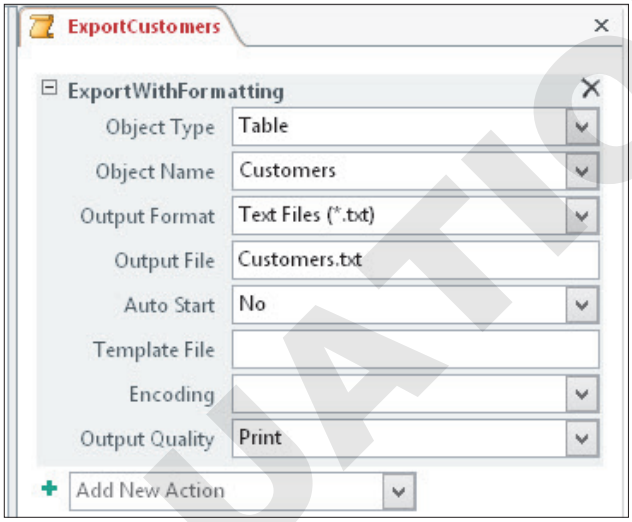


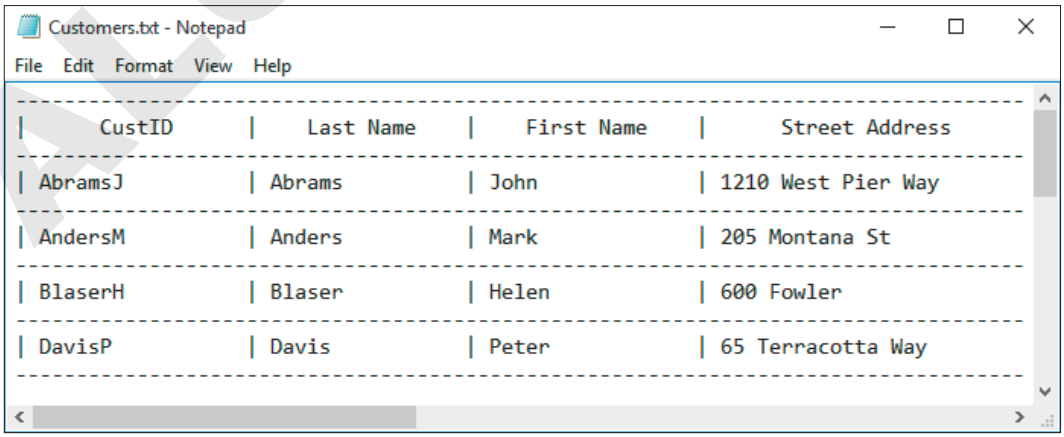
11. Draw a button to the right of the Find button, choosing **Report Operations** as the category and **Preview Report** as the action; click **Next**.

12. Select the **Invoice Details Report** as the report to preview and click **Next**.
13. Choose the **MS Access Report** picture, if necessary, and click **Next**.
14. Enter the name **`cmdPreviewInvoices`** and click **Finish**.
15. Select the new buttons and choose **Form Design Tools→Arrange→Sizing & Ordering→Align→Top**.
16. With the buttons still selected, choose **Form Design Tools→Arrange→Size & Ordering→Size/Space→Equal Horizontal**.
17. Switch to **Form View** and test each button.
18. If necessary, close the **Invoice Details Report** and then save and close the Invoice Form.

Creating Macros to Improve Efficiency

A macro is an object that combines a series of steps into a single step so a more detailed task can be automated. For example, if you regularly export your data to another database, instead of choosing External Data→Export→Text File and then entering the filename and selecting export options, you could create a macro to perform all the steps with one double-click of the mouse.





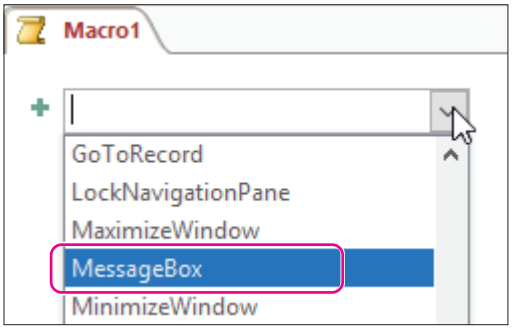
The ExportCustomers macro exports the Customers table to the default My Documents folder as a text file (bottom figure). If needed, a specific file path could be entered for the output file.

Create→Macros & Code→Macro

DEVELOP YOUR SKILLS: A11-D2

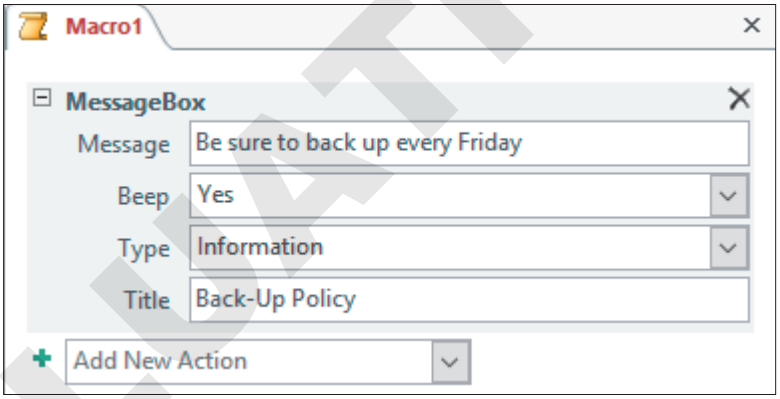
In this exercise, you will create a macro that will display a message box to provide basic directions on when and where to back up the Winchester Web Design database.

1. Choose **Create→Macros & Code→Macro**.
2. Choose **MessageBox** from the Add New Action drop-down menu.



3. Enter the following into the MessageBox text boxes:

Property	Setting
Message	**`Be sure to back up every Friday`**
Beep	**Yes**
Type	**Information**
Title	**Back-Up Policy**



4. Save the macro as: **`Back-Up Policy`**
5. Choose **Macro Tools→Design→Tools→Run** to test the macro.

   A message box should appear with the title, message, and icon you entered.
6. Click **OK** to close the message box.
7. Close the Back-Up Policy macro.

   Back-Up Policy is now listed in the Navigation pane under the Macros group heading.

Using Macros to Display Adaptable Reports

Now that you have created a simple macro to display a reminder message, you can add a command button to a form that will run a macro to display a report. By adding a "where" condition, you can

not only open the report of your choosing, you can also specify the macro to display a specific record within the report based on matching the criteria for a field in the current object. For example, if you would like to print the invoice that corresponds to the record displayed in your Orders form, you can set the macro to display only the record that matches the Order ID field in both the Orders form and the Invoices report.

DEVELOP YOUR SKILLS: A11-D3

In this exercise, you will create a macro button that will be placed on the Employees Form to display a report of all the sales for the specific employee selected.

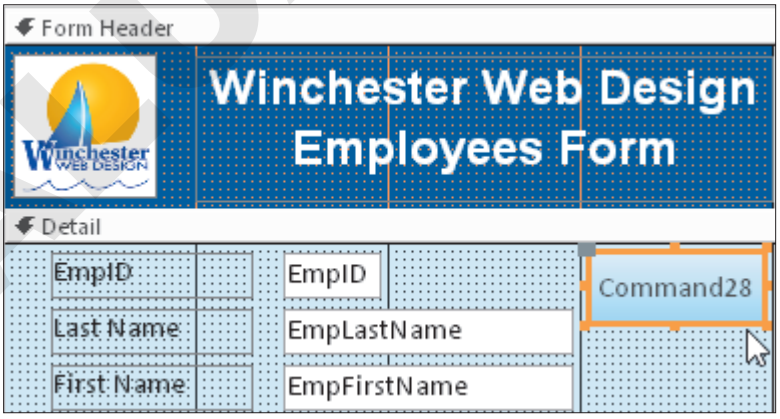
1. Choose **Create→Macros & Code→Macro**.
2. Open the **Add New Action** drop-down menu, scroll the list downward, and choose **OpenReport**.
3. Open the **Report Name** drop-down menu and choose **Invoice Details Report**.
4. Complete the OpenReport text boxes as indicated:

   As you start to enter in the Where Condition text box, Access will suggest field names from a drop-down menu, allowing you to quickly and more accurately select from the list.

Property	Setting
Report Name	**`Invoice Details Report`**
View	**Report**
Where Condition	**`[EmpID]=[Forms]![Employees Form]![EmpID]`**
Window Mode	**Normal**

5. Save the macro as: **`Invoice Details Report by Employee`**
6. Display the **Employees Form** in **Design View**.
7. Choose **Design→Controls→Button** and draw a button in the top-right corner of the Details section of the Employees Form.

   The Command Button Wizard starts.



8. Choose the **Miscellaneous** category and the **Run Macro** action; click **Next**.
9. Choose **Invoice Details Report by Employee** and click **Next**.
10. Accept the default macro picture and click **Next** again.
11. Name the button **`cmdRptByEmployees`** and click **Finish**.

12. Switch to **Form View** and navigate to *Mike Waters* (EmpID MJW).
13. Click the new **Run Macro** button to display all records in which the EmpID is *MJW*.
14. Close the report and form, saving the changes to the form.

Managing Database Objects

Protecting databases and the quality of data they contain is vital to the reliability and performance of any database. At the same time, learning efficient ways to manage database objects helps to save a great deal of time as you build a database. The general cleanup and maintenance of a database can be accomplished in a number of ways. You can create new objects from existing objects, rename database objects, and delete unneeded or duplicate database objects.

Creating New Objects from Existing Objects

Often, databases contain separate objects that are similar in structure and in the data they hold. For example, the Employees table in the Winchester Web Design database contains fields similar to those found in the Customers table. When you build a database that contains similar objects, you can copy the original object, save it using a new name, and then modify the new object to fit its specific needs. There are two basic ways to copy objects:

- Use the Save Object As command and rename the object to create another instance of it.
- Use the contextual menu Copy and Paste commands.

Renaming Database Objects

You might create a table, query, form, or report and save it with the first name that comes to mind and then, after working with the object for a while, you might want to change the name. When an object is renamed, Access automatically renames all the relationships and record sources that use the renamed object. For instance, if you update the Invoices table to Orders, the record source for the queries, forms, and reports based on the table will be updated to reflect the new name.

Deleting Database Objects

During the development of a database, there are times when it is wise to create a temporary table, query, form, or report for testing purposes. Once the database is completed, you should remove these objects so they don't clutter the Navigation pane or confuse users.

DEVELOP YOUR SKILLS: A11-D4

In this exercise, you will copy, rename, and delete a report. You will also save a table in the Winchester Web Design database as a new table and edit the field names for the new table.

1. Right-click the **Products Report** in the Navigation pane and choose **Copy**.
2. Right-click again and choose **Paste**, keep *Copy Of Products Report* as the report name, and click **OK**.
3. Right-click **Copy Of Products Report** and choose **Rename**; type **`Delete This Report`** and tap Enter.

4. Select the **Delete This Report** report in the Navigation pane.
5. Tap Delete and click **Yes** to confirm the deletion.

Tip! *You can also right-click an object and choose Delete from the menu.*

6. Open the **Employees** table and choose **File→Save As→Save Object As→Save As**.
7. Type **`Business Contacts`** in the Save 'Employees' To text box and click **OK**.
8. Switch to **Design View**.
9. Select and edit the **Business Contacts** field names, replacing each *Emp* prefix with a **`Bus`** prefix (so *EmpID* is *BusID*, *EmpLastName* is *BusLastName*, and so on).
10. Right-click the **HireDate** field, choose **Delete Rows**, and then click **Yes** to confirm.
11. Delete the WebCert field and then save the changes to the Business Contacts table.
12. Switch to **Datasheet View** to confirm your changes and then close the Business Contacts table.

Backing Up a Database

All databases should be safeguarded to protect their data. Most organizations have a scheduled procedure to back up all files on their network, including the databases.

When you back up a database using the built-in Access tools, Access automatically places the date of the backup in the filename so you can easily identify and retrieve each backup file. You choose the drive and folder in which you want to save the backup. To restore the database, simply open the backup.

File→Save As→Save Database As→Back Up Database

DEVELOP YOUR SKILLS: A11-D5

In this exercise, you will back up your Winchester Web Design database.

1. Close any open objects in the Winchester Web Design database.
2. Choose **File→Save As→Save Database As→Back Up Database** and then click **Save As**.

   Access opens the Save As dialog box and adds the current date to the end of the filename.
3. Save the file in your **Access Chapter 11** folder.

   Access saves the backup file to the desired location, adding the date the backup occurred to the filename. However, the open database file is still the original Winchester Web Design database.
4. Close the database, navigate to your **Access Chapter 11** folder, and open the backup database.

   A backup is only as current as the time the backup was created. It's important to have a policy that schedules and mandates a daily or weekly backup.
5. Close the backup database and reopen **A11-D1-WinDesignRev**.

Analyzing and Documenting Databases

Each time you change the design or content of a database, the chance that the database will become corrupted increases. Access includes several tools that help you protect, document, analyze, and even repair databases. The main tools found in the Analyze group on the Database Tools tab are:

- Performance Analyzer: This tool analyzes the performance of a database to locate and identify potential trouble spots that affect how the database functions.
- Database Documenter: This tool documents objects in the database so you can track changes to design and relationships. It builds an Object Definition document that provides a detailed description of each database object.

Reviewing and Analyzing Performance

When you run the Performance Analyzer, Access reviews each selected object in the database, looks at all the relationships, and identifies any problems that might affect database performance. Access often makes recommendations for improvements to optimize database efficiency. In some cases, Access identifies tables in which no primary key is set. In other cases, Access will suggest a more efficient data type or that you use fewer controls on a form.

Some changes recommended by the Performance Analyzer may not be necessary. For example, Access frequently recommends that phone numbers be formatted using the Number data type. Not only is this unnecessary, it may even cause problems for extensions that are commonly preceded by an X, such as X209. As you review the recommended changes, you will begin to identify those requiring your attention and those you can ignore.

There are two options for analyzing database performance. The Analyze Performance tool enables you to choose the database objects you want to analyze. The Analyze Table tool analyzes a table using the Table Analyzer Wizard.

Database Tools→Analyze→Analyze Performance 

Documenting a Database

As you plan a new database, you must analyze the needs of the business and the requirements of the database. In the process, you create a list of fields required and then organize and group those fields into the tables that will provide the data for forms, queries, and reports. The list identifies and defines each field and the tables and objects in which the fields are used within the database. When the database is finished, you may choose to document the database so it can be efficiently updated and maintained in the future.

Documentation provides insight into the structure of the entire database as well as the structure of each object within the database. Maintaining a database can be very time-consuming. Without proper documentation to identify potential impacts of changing field properties, object structures, and so forth, you can potentially corrupt one database object that, in turn, wreaks havoc on the entire database. Each time you change the structure of any database object, remove an object from, or add an object to the database, you should run the Database Documenter to provide up-to-date documentation about the database. Such information will prove invaluable to database administration.

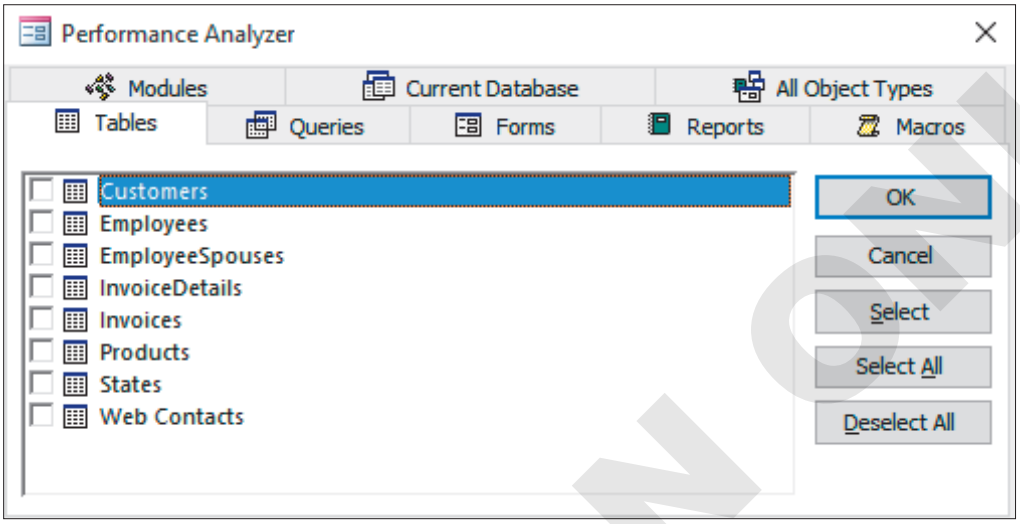
Database Tools→Analyze→Database Documenter 

DEVELOP YOUR SKILLS: A11-D6

In this exercise, you will analyze and document your Winchester Web Design database.

1. Choose **Database Tools→Analyze→Analyze Performance**.

   The Performance Analyzer opens.



2. Click the **Tables** tab and click **Select All** to check all the tables listed.
3. Click **OK** and view the suggestions under Analysis Notes.

   The data types have been set properly, so you can ignore the suggested ideas.
4. Click **Close**.
5. Choose **Database Tools→Analyze→Database Documenter**.

   The Documenter opens.
6. Click the **Tables** tab, check the **InvoiceDetails**, **Invoices**, and **Products** tables, and click **OK**.

   Access produces a report about a dozen pages long that documents the tables, fields, and relationships of the selected tables.
7. Scroll through the report and examine the documentation provided.
8. Choose **Print Preview→Data→Excel** to open the Export Excel Spreadsheet Wizard.
9. Check the **Open the Destination File After the Export Operation Is Complete** box, if necessary.
10. Click **Browse**, navigate to your **Access Chapter 11** folder, type **`A11-D6-Objects`** as the filename, click **Save**, and then click **OK**.
11. Browse through the Excel spreadsheet and close it when finished.
12. Close the wizard without saving the export steps and then close the print preview.

Compacting and Repairing a Database

When you delete a record in Access, the record is not really deleted—it's marked for deletion. The process of marking a record as deleted is quicker than completely deleting and reordering or rewriting all the records in a table. A similar process is used when you shorten the contents of a record—the space that was used for the longer data is not released.

As you work with databases, they can become sluggish and the data stored in the databases can become fragmented. Fragmentation occurs when parts of your database file become separated by incidental data that has been added to the disk you are using. For example, if you saved a 10-megabyte database file to your hard drive and saved an Excel spreadsheet to the same hard drive shortly afterward, it would be written next to the 10-megabyte database file.

Then, if a large group of new records were added to the database file, they would have to be stored after the Excel file and not after the original database file because the adjacent space is now occupied by the spreadsheet. As you add more records and save other files, both your files and storage drive become fragmented and less efficient.

Consequently, over time databases can become bulky and inefficient. This issue can be resolved by compacting, or compressing, your database to remove wasted and unused space left from deleted and edited records.

To ensure optimal performance, Access enables you to *compact* and *repair* databases as often as you want. Sometimes Access recognizes a problem when a database is opened and attempts to repair the file before you work with it. Even if there is no file corruption, the normal maintenance tasks of adding, deleting, and editing records, creating and running queries, and so forth, may reduce database performance. You may want to compact and repair the database manually on a regular basis or set an option to automatically compact the database whenever you close Access.

Database Tools→Tools→Compact and Repair Database 

DEVELOP YOUR SKILLS: A11-D7

In this exercise, you will compact and repair your Winchester Web Design database.

1. Close any open database objects.
2. Choose **Database Tools→Tools→Compact and Repair Database**  .

   Access compacts and repairs the file. Because the database is relatively small, the compact and repair process takes only a moment. For larger databases, the process will take longer.
3. Close **A11-D1-WinDesignRev** and exit Access.

Setting Database Security

Imagine your doctor stores all your medical records in a large database that could be accessed by hospitals, clinics, and medical insurance companies who want to know more about the medications you take, conditions you might have, and doctor's visits. Databases, by nature, often hold confidential information. As a result, security is *imperative*. Companies that maintain large database files often restrict access to databases at the login or server level. Splitting a database can protect the data contained in databases, and Access offers tools that enable you to secure a database by assigning a password.

Opening a Database Exclusively

Most large business databases are designed to provide access to multiple users at the same time. As a result, the default setting for a database is as a shared file. Before you can set security for a database, you must ensure no one else is currently using the database. You do this by opening the file exclusively so Access locks the database and prevents others from accessing it at that time.

The Open dialog box contains numerous commands for opening databases after a file has been selected.

COMMANDS FOR OPENING DATABASES

Command	Description
Open	Provides full and typical access to the database and its objects and menus so you can create and edit
Open Read Only	Opens the database so you can view and print data but does not allow design changes; however, you can save the database as a new file and edit that one
Open Exclusive	Opens the database and locks it to prevent other users in a shared environment from accessing it
Open Exclusive Read-Only	Opens the database and locks it so other users cannot access it and prevents edits to data and database objects

Encrypting a Database Using a Password

Regardless of whether a backup routine is in place, valuable time can be lost reconstructing data if unauthorized users damage the database. Database passwords are intended to protect the database just as the passwords you use to access bank accounts or email accounts protect your financial and personal information.

Limits of Passwords

Database passwords provide limited security for databases by preventing unauthorized users from opening the database. You can set a password for any database you have on your personal computer, just as systems administrators set a password for shared databases on a network.

Tip! *Access passwords are case-sensitive, or capable of distinguishing between upper- and lowercase characters.*

Strong Passwords

Access passwords can use a combination of upper- and lowercase characters, symbols, and numbers. Access allows you to use any combination of characters in passwords *except* " \ [ ] : | <> + = ; , . ? and *. Strong passwords are at least thirteen characters long and contain at least one of each of the character types indicated. Passwords cannot start with a space.

Weak Password: webdesign

Strong Password: TooHard2Cr@ck

Setting Up Databases for Assigning Passwords

To assign a database password, the database must initially be closed. The default access setting for databases that appear on a network is as a shared database, accessible to anyone who has access to its file location. To set a password, you must open the database *exclusively* using the Open Exclusive

command in the Open dialog box. This ensures that no one else is currently using the database and that, once you open it, other users are prohibited from opening it until you close it. If the file is not opened exclusively, you will get a warning message.

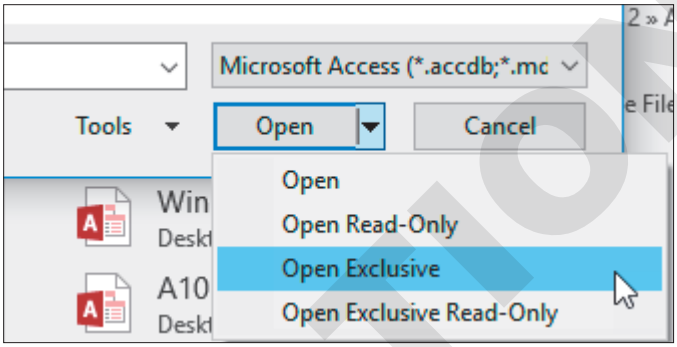
Note! *The Encrypt with Password command is a toggle. When a database has a password, the command button shows Decrypt Database.*

File→Info→Encrypt with Password

DEVELOP YOUR SKILLS: A11-D8

In this exercise, you will open the Winchester Web Design database exclusively and set a database password to protect the database.

1. Start Access, choose **Open Other Files** from the menu, and click **Browse**.
2. Navigate to your **Access Chapter 11** folder; click **A11-D1-WinDesignRev** but *do not* open the database.
3. Click the **Open menu** ▼ button and choose **Open Exclusive**.



4. Enable content and then close the WWD Navigation Form.
5. Choose **File→Info→Encrypt with Password**.
6. Type **`Labyrinth123!`** in the Password text box and again in the Verify text box and then click **OK**.
7. Click **OK** to acknowledge that row level locking will be ignored.
8. Close **A11-D1-WinDesignRev** and then open it again.

Warning! *If you forget your password, you won't be able to open the database.*

9. Type **`Labyrinth123!`** in the Enter Database Password text box and click **OK**.
   You must open the database exclusively again if you want to change or remove the password.
10. Close **A11-D1-WinDesignRev**.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills using the Self-Assessment in your ebook or online (eLab course or Student Resource Center).

Reinforce Your Skills

REINFORCE YOUR SKILLS: A11-R1

Enhance and Clean Up a Database

Kids for Change would like to improve its forms by adding navigation and accessibility to other objects using buttons. It would also like to clean up database objects. In this exercise, you will add command buttons; create a macro that opens a report; and do some cleanup tasks by copying, renaming, and deleting objects.

1. Start Access; open **A11-R1-K4C** from your **Access Chapter 11** folder, and save it as: **`A11-R1-K4CRev`**

   Remember to enable content if the option appears. You will begin by adding command buttons to a form.

2. Open the **Activities Form** in **Design View**.
3. Click the **Form Footer** section bar and set the Height property to: **`0.75`**
4. Choose **Form Design Tools→Design→Controls→Button** and draw a button in the form footer under the *Telephone* label.

   The Command Button Wizard opens.

5. Choose **Record Navigation** as the category and **Go To First Record** as the action; click **Next**.

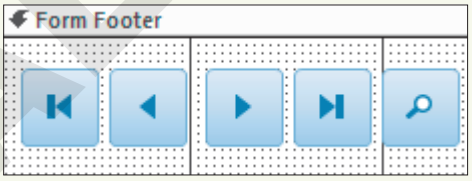
   The wizard displays a sample button picture for each action.

6. Leave the options for pictures as selected, click **Next**, enter **`cmdFirst`** as the meaningful name, and click **Finish**.

   The command button shows the Go To First image in the Form Footer section and is programmed to go to the first record when in Form View.

7. Add these buttons in the order listed:

Category	Action	Picture	Name
Record Navigation	Go To Previous Record	Go To Previous	**`cmdBack`**
Record Navigation	Go To Next Record	Go To Next	**`cmdNext`**
Record Navigation	Go To Last Record	Go To Last	**`cmdLast`**
Record Navigation	Find Record	Binoculars (Find)	**`cmdFind`**



8. Draw a button to the right of the Find button, choosing **Report Operations** as the category and **Preview Report** as the action.
9. Select the **Activity Costs Report** as the report to preview and click **Next**.
10. Choose the **Preview** picture and click **Next**; enter the name **`cmdPreviewCosts`** and click **Finish**.
11. Select the new command buttons and choose **Form Design Tools→Arrange→Sizing & Ordering→Align→Top**.

    All of the command buttons are aligned to the top.

12. With the buttons still selected, choose **Form Design Tools→Arrange→Size & Ordering→Size/Space→Equal Horizontal**.
13. Switch to **Form View** and test each of the new buttons; close the Activity Costs Report.

Create a Macro to Display Adaptable Reports

14. Choose **Create→Macros & Code→Macro**.
15. Choose **OpenReport** from the Add New Action menu.
16. Use this table to create the macro:

Report Name	**`Volunteers Report`**
View	**Report**
Where Condition	**`[ActID]=[Forms]![Activity Staffing]![ActID]`**

17. Save the macro as **`Available Volunteers`** and then close it.
18. Display the **Activity Staffing** form in **Design View** and then choose **Form Design Tools→Design→Controls→Button**.
19. Draw the new button to the right of the Meet Time controls.
20. Choose the **Miscellaneous** category and the **Run Macro** action, click **Next**, choose **Available Volunteers**, and click **Next** again.
21. Accept the default macro picture and click **Next**; name the button **`VolunteersMacro`** and click **Finish**.
22. Switch to **Form View** and click the new **VolunteersMacro** button.

    The macro button displays the Volunteers Report record for the activity on the form.

    To display the Volunteers Report for another activity, close the report, navigate to the desired activity, and click the macro command button.
23. Close the Volunteers Report and then save and close the Activity Staffing form.

Rename, Delete, and Save Object as a New Object

24. Right-click **Donations Report** in the Navigation pane and choose **Copy**.
25. Right-click again, choose **Paste**, type **`Delete This Report`** as the report name, and click **OK**.
26. Select **Delete This Report** in the Navigation pane and tap Delete; click **Yes** to confirm the deletion.
27. Open the **PaidStaff** table and choose **File→Save As→Save Object As→Save As**.
28. Type **`Professional Contacts`** in the Save 'PaidStaff' To text box and click **OK**.
29. Display the new **Professional Contacts** table in **Design View** and rename the **StaffID** field to: **`ProfID`**
30. Right-click the **Parent** field and choose **Delete Field**; confirm the deletion.
31. Delete the **Masters**, **HrlySal,** and **ActID** fields. Click **Yes** to permanently delete the fields and to delete the ActID indexes.
32. Rename the *Email Address* field as: **`ProfEmail`**
33. Save and close the Professional Contacts table and then close the database.

REINFORCE YOUR SKILLS: A11-R2

Perform Database Maintenance and Set a Password

Kids for Change would like a backup of its database. It would also like it to be optimized for speed and secured with a password. In this exercise, you will perform some maintenance procedures on the Kids for Change database, including backing up and analyzing objects. You will also add a password to protect the data from unauthorized users.

1. Start Access; open **A11-R2-K4C** from your **Access Chapter 11** folder, close any open objects, and save the file as: **`A11-R2-K4CRev`**
2. Choose **File→Save As→Save Database As→Back Up Database**  .
3. Click the **Save As** button, navigate to your **Access Chapter 11** folder, and click **Save**.

Analyze and Document a Database

4. Choose **Database Tools→Analyze→Analyze Performance**  .
5. Click the **Tables** tab and click **Select All** to check all the tables listed.
6. Click **OK** and view the Analysis Results.

   Because the data types have already been set properly, you can ignore the suggested ideas.
7. Click **Close** and then choose **Database Tools→Analyze→Database Documenter**  .
8. Click the **Tables** tab, check the **Activities** and **PaidStaff** tables, and click **OK**.

   The report documents the tables, fields, and relationships of the selected tables.
9. Choose **Print Preview→Data→More→Word**  to export the report to a Word RTF.

   RTF files contain minimal formatting, are small, and are compatible across virtually all hardware and software platforms. Exporting to RTF ensures wider compatibility for various users.
10. Browse to your **Access Chapter 11** folder, type **`A11-R2-Tables`** as the filename, and click **Save**.
11. Check the **Open the Destination File After the Export Operation Is Complete** box and click **OK**.

    Access creates and opens the Word document.
12. Page through the Word document and then close it and exit Word.
13. Close the dialog box without saving the export steps and then close the print preview.

Compact and Repair a Database

14. Choose **File→Info→Compact & Repair Database**  .

    Access has compacted and repaired the file. The K4C Navigation Form might open, depending on your system.
15. Close **A11-R2-K4CRev**.

Protect a Database

16. Choose **File→Open→Browse**, navigate to your **Access Chapter 11** folder and click **A11-R2-K4CRev**, and then click the **Open menu** button ▼ and choose **Open Exclusive**.

    No one else will be able to use the database until you exit Access.

    Because you opened the database exclusively, you can set a password to open the database.
17. Choose **File→Info→Encrypt with Password**.

18. Type **Labyrinth123!** as the password, verify it by typing it again, and click **OK**.
19. Click **OK** to acknowledge the message about row-level locking.
20. Close **A11-R2-K4CRev** and then open it again.

    Access displays the Password Required dialog box.
21. Type **Labyrinth123!** in the text box and click **OK**.
22. Close the database.

REINFORCE YOUR SKILLS: A11-R3

Perform Maintenance and Back Up a Database

Kids for Change would like a reminder to back up the database regularly. It would also like to rename a form and save a volunteer list as a query. In this exercise, you will create a macro that reminds users to back up the database. You will also rename, delete, and save objects.

1. Open **A11-R3-K4C** from your **Access Chapter 11** folder, close any open objects, and save the file as: **A11-R3-K4CRev**

   Remember to enable content if the option appears.

Create a New Macro

2. Choose **Create→Macros & Code→Macro**.
3. Choose **MessageBox** from the Add New Action drop-down menu and use this information to create the macro:

Message	**Back up the database to SharePoint at the end of each day!**
Beep	**Yes**
Type	**Information**
Title	**Back-up Routine**

4. Save the macro as: **Back-up Routine**
5. Choose **Macro Tools→Tools→Run**.

   The Back Up Routine Information message box opens.
6. Click **OK** to close the message box and then close the Back-up Routine macro.

   Back-up Routine is now listed under Macros in the Navigation pane.

Manage Database Objects

7. Right-click **Staff Form** in the Navigation pane and choose **Copy**.
8. Right-click again and choose **Paste**; rename the pasted object to **PaidStaff Form** and click **OK**.
9. Select the **Staff Form** in the Navigation pane and tap Delete; click **Yes** to confirm the deletion.
10. Open the **Volunteers** table and choose **File→Save As→Save Object As→Save As**.
11. Type **Volunteers List** in the Save 'Volunteers' To text box.
12. Choose **Query** from the As drop-down menu and click **OK**.
13. Close the Volunteers List Query and then close the database.

Apply Your Skills

APPLY YOUR SKILLS: A11-A1

Enhance a Database

Universal Corporate Events has asked you to improve forms by adding navigation and accessibility to other objects using macros and buttons. In this exercise, you will add command buttons to the Wage and Salary Form and create macros to increase efficiency.

1. Start Access; open **A11-A1-UCE** from your **Access Chapter 11** folder, close any open objects, and save the file as: **`A11-A1-UCERev`**

   Remember to enable content if the option appears.
2. Open **Wage and Salary Form** in **Design View**.
3. Set the Height property for the Form Footer section to: **`0.75`**
4. Draw a button in the Form Footer under the Detail section labels.
5. Create a **Go To First Record** button that uses the Go To First picture option and name it: **`cmdFirst`**
6. Add these command buttons, in the order listed, using the default picture options:
   - **Go To Previous Record** named: **`cmdPrevious`**
   - **Go To Next Record** named: **`cmdNext`**
   - **Go To Last Record** named: **`cmdLast`**
   - **Find Record** named: **`cmdFind`**
7. Draw a button to the right of the Find Record button using these specs:
   - Category: **Report Operations**
   - Action: **Preview Report**
   - Report to preview: **Wage and Salary Report**
   - Picture: **Preview**
   - Name: **`cmdPreviewReport`**
8. Select all new command buttons and then top-align them and set equal horizontal space between them.

   Hint: Go to Form Design Tools→Arrange→Sizing & Ordering.
9. Switch to **Form View**, test the buttons, and then close the Wage and Salary Report.
10. Save and close the Wage and Salary Form.

Create a Macro

11. Choose **Create→Macros & Code→Macro**.

    You will create a macro that opens the Event Revenue Report for the Event ID shown on the form.

12. Create an **OpenReport** macro using these guidelines:

Report Name	**`Event Revenue Report`**
View	**Report**
Where Condition	**`[Forms]![Event Costs]![EventID]=[Event Revenue]![EventID]`**
Macro Name	**`Event Revenue by Name`**

13. Close the macro.
14. Display the **Event Costs** form in **Design View**.
15. Create a new button under the Cost Details label using these specs:
    - Category: **Miscellaneous**
    - Action: **Run Macro**
    - Macro: **Event Revenue by Name**
    - Picture: default option
    - Name: **`cmdEventRevenue`**
16. Switch to **Form View** and navigate to the first record with an Event ID of *BUSMTG*.
17. Click the new macro button.

    The revenue report for this event type is displayed. You can display the report for other Event IDs by navigating to the event and running the macro.
18. Close the Event Revenue Report; save and close the Event Costs form.
19. Close the database.

APPLY YOUR SKILLS: A11-A2

Perform Database Maintenance and Set a Password

Universal Corporate Events would like a backup of its database. It would also like to fine-tune the objects and secure the database. In this exercise, you will perform maintenance procedures to reduce wasted space, defragment objects, and improve efficiency. You will also back up the database and add a password to protect data from unauthorized users.

1. Open **A11-A2-UCE** from your **Access Chapter 11** folder, close any open objects, and save the file as: **`A11-A2-UCERev`**
2. Choose **File→Save As→Save Database As→Back Up Database→Save As**.

   The current date is added to the end of the database filename.
3. Save the file in your **Access Chapter 11** folder.

Analyze and Document a Database

4. Choose **Database Tools→Analyze→Analyze Performance**.
5. On the **Tables** tab, click **Select All** to check all the tables listed and click **OK**.

6. Review the information presented and then close the dialog box.
7. Choose **Database Tools→Analyze→Database Documenter**.

   The Documenter opens.
8. On the **Tables** tab, check **Menus** and **Schedules**, and then click **OK**.

   Access generates a report for the tables, fields, and relationships of the selected tables.
9. Choose **Print Preview→Data→More→Word**.
10. Browse to your **Access Chapter 11** folder, use **`A11-A2-MenuSched`** as the filename, and click **Save**.
11. Check the **Open the Destination File After the Export Operation Is Complete** box and click **OK**.
12. Exit Word. In Access, close the Export – RTF File dialog box without saving the export steps, close the preview, and close any open database objects.

Secure a Database

13. Choose **File→Open** and then navigate to your **Access Chapter 11** folder and open **A11-A2-UCERev** in Exclusive mode.
14. Encrypt the file with the password: **`Labyrinth123`**!
15. Click **OK** to acknowledge the encrypting message.
16. Close and reopen **A11-A2-UCERev**, entering the password when prompted.
17. Close the database.

APPLY YOUR SKILLS: A11-A3

Maintain Database Objects and Create a Macro

Universal Corporate Events would like you to add a message to remind employees to export reports every Friday and to clean up database objects to ensure the database runs smoothly. In this exercise, you will create a macro to display a message, create a new Products table based on data in the Menus table, and compact and repair the database.

1. Open **A11-A3UCE** from your **Access Chapter 11** folder, close any open objects, and save the file as: **`A11-A3-UCERev`**
2. Close the UCE Navigation Form.
3. Create a **MessageBox** macro, using **`Export all new reports on Friday!`** as the message, no beep, **Information** as the type, and **`Report Policy`** for the title.
4. Save the macro as **`Report Policy`** and then run it.
5. Close the information box and then close the Report Policy macro.

Maintain Database Objects

6. In the Navigation pane, copy and paste the Personnel Report, resulting in a new object named *Copy of Personnel Report*.
7. Rename the pasted object as: **`Staff Report`**

8. Delete the Staff Report, confirming the deletion when prompted.
9. Open the **Menus** table, choose **File→Save As→Save Object As**, and click **Save As**.
10. Save the object as a new table named **`Products`** and then display the table in **Design View**.
11. Rename the table fields as indicated:

Field	Rename
MenuCode	**`ProdCode`**
MenuPlan	**`ProdPlan`**
ChgPP	**`Cost`**
CostPP	**`Price`**

12. Save and close the new Products table.

    Last, you will compact and repair the database.
13. Choose **Database Tools→Tools→Compact and Repair Database**.
14. Close the database, choosing **Yes** to empty the Clipboard.

Project Grader

This chapter does not include Project Grader exercises. Project Grader content is based on the learning objectives for a chapter, and sometimes those learning objectives cannot be accurately graded by the system. Objectives from this chapter that can be accurately graded may be included in later chapters, if applicable.

Extend Your Skills

These exercises challenge you to think critically and apply your new skills in a real-world setting. You will be evaluated on your ability to follow directions, completeness, creativity, and the use of proper grammar and mechanics. Save files to your chapter folder. Submit assignments as directed.

A11-E1 That's the Way I See It

You would like to modify a database form to provide buttons for navigation as well as opening a closely related report for the Blue Jean Landscaping database. Open **A11-E1-BJL** and save it as: **A11-E1-BJLRev**

Create a macro named **Service Invoices** that opens the Service Invoices Report in Report View for the last name shown on the form. In the Service Invoices form footer, create command buttons using the default picture options as indicated in the table. Then create a Run Macro button named **cmdServiceInvoicesReport** that opens the Service Invoices macro. Top-align the buttons and set equal space horizontally between all buttons. Make any other changes to the form you feel would improve its look and feel.

Go To First Record	cmdFirst
Go To Previous Record	cmdPrevious
Go To Next Record	cmdNext
Go To Last Record	cmdLast
Find Record	cmdFind

A11-E2 Be Your Own Boss

As the owner of Blue Jean Landscaping, you would like to improve performance and security. Open **A11-E2-BJL** and save it as: **A11-E2-BJLRev**

Analyze the performance of all database tables. Use the Database Documenter to generate a report for the Services, ServiceInvoices, and ServiceInvDetails tables. Export the report to an Excel file (name it **ServicesTables**). Back up the database and then close and open **A11-E2-BJLRev** exclusively. Encrypt the file with a password of your choosing. Write the password down for your instructor or for future reference.

A11-E3 Demonstrate Proficiency

The Stormy BBQ Key West store and restaurant has asked you clean up unnecessary objects in its database and to save a table as a query for easy filtering and sorting of restaurants. Also, it would like the database compacted and repaired in case renaming and removing objects has affected efficiency. Open **A11-E3-SBQ** and save it as: **A11-E3-SBQRev**

Complete these actions:

- Delete the KeyWest Staff Query.
- Rename any form with the name of your choosing.
- Save the Restaurants table as a query named: **Restaurant List**
- Compact and repair the database.

Glossary

back end Refers to the underlying database tables that support the front end

command buttons Controls used to create action buttons that can be placed on a form to perform such actions as opening a report, moving to the next record, or even exiting Access

compacting Removes wasted and unused space left from deleted and edited records

database splitter Converts a database into two files—one that contains the tables holding the data and one that contains the objects that use the data

exporting Process of sending data to other files or applications

fragmentation When parts of your database file become separated by incidental data that has been added to the storage location

front end Refers to the up-front portion of a split database with which users interact

Hypertext Markup Language (HTML) Code or language in which web pages are written

importing Process of retrieving data from other files or applications

linked file Allows source data to be placed in a destination file that automatically updates when changes are made to the source file

Linked Table Manager Aids in redirecting a database to the correct linked file if the file was moved, as in a removed thumb drive or a file moved to a different folder

macro Object that combines a series of steps into a single step so a more detailed task can be automated

Mail Merge Word feature used to personalize standard letters, envelopes, mailing labels, and other documents by combining a main document with a data source

navigation form Form-like interface with tabs across the top to group common elements and sub-navigation links along the left side or directly below, allowing quick access to database forms and reports

Performance Analyzer Analyzes database performance to locate and identify potential trouble spots that affect how the database functions

record locking Helps maintain consistent data and protects the integrity of record updates by creating a small temporary file that locks a record being edited by another user

rich text file (RTF) Variation of a text file that contains minimal formatting, such as bold and color

SharePoint Secure online location used to store, organize, collaborate, and share information from any device using a web browser

switchboard Easy-to-use interface containing menus and buttons for opening database objects and performing common tasks such as adding records or printing reports

text file Small alphanumeric text file that lacks formatting and font information; compatible across virtually all hardware and software platforms

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