ON THE JOB

Daven Walliman is a retired temporary clerical employee who works part time for Oregon’s Employment Department. During her career spanning almost fifty years, Daven has seen changes in the filing systems from paper and punch cards to microfiche and then to electronic and image files. Her advice to students studying records management is to “eliminate paper.”

Daven’s first job with the State of Oregon was data entry. She converted paper records to punch cards. The punch cards were then processed by a main frame computer to print checks. In the next phase of her career, Daven transferred magnetic tape to magnetic disk, part of data migration so the data could be read by new technology.

When Daven was an executive assistant, she learned to use a personal computer. Documents were then electronic, although the paper records were still filed. The filing system used subject codes. She followed the retention schedule and disposed of records when needed.

Currently, Daven’s job duties include the scanning of documents into images. The images are part of an enterprise content management (ECM) system. Other workers can access the images to look up information, and the images are authentic. Daven’s reputation as a fast, accurate, and timely worker is a result of her strong work ethic.
ELECTRONIC DATABASES

Sorting data and records in electronic files and organizing electronic files and folders are important aspects of managing electronic records. Electronic files, also called records, can be created using many software applications. You have probably created electronic files using word processing, spreadsheet, and presentation programs. If you completed the applications for Chapters 2, 3, and 4, you have created or edited electronic files using a database program, Microsoft Access®. As with paper records, electronic files should be managed so the data can be retrieved quickly when needed. In Chapters 2, 3, and 4, you focused on learning alphabetic indexing rules for use in indexing, coding, sorting, and storing paper records. In this chapter, you will learn about how computers sort electronic data and how to organize electronic files.

An electronic database is a collection of related data stored on a computer system. The data can be used with various applications but managed independently of them. For example, records in a database that contain names and addresses can be used to create personalized letters with a word processing program. Databases are organized especially for rapid search and retrieval of specific data. People have been using databases on large mainframe computers for over 50 years. A variety of database programs are available for personal computers as well. Microsoft Access is a popular database program and is typical of modern database programs.

Database Elements

A database contains tables that hold the data. Data in a table is organized in fields and records. A field is a set of one or more characters treated as a unit of information. The combination of characters forms words, numbers, or a meaningful code. For example, your first name, middle name, and last name could each be entered in a separate field. Your date of birth, Social Security number, telephone number, the year you started school, and the month and year you finished high school are all examples of facts about you. Each fact could be entered in a separate field.

All the fields related to one person or organization make up a record (sometimes called a computer record to distinguish it from a paper record). Records related to one subject or topic (customers, students, orders) are usually stored in one or more related tables. A database can also contain several other objects such as forms and reports. Figure 5.1 shows a database created with Microsoft Access.

A field has a unique name and a specified number of characters, and it contains a defined type of information. Commonly used field types are text fields (sometimes called alphanumeric fields for letters, numbers, symbols, and punctuation) and number fields (for numbers, punctuation characters, and symbols). Other typical field types are date fields, logical fields, and memo fields.
When using database software, the user can assign a field as a primary key. The database will not allow the same data to be entered in the primary key field for two or more records. The primary key creates a unique identifier for each record. For example, when you change a service to your telephone, the person making the change asks for your phone number (which is unique to you). Your phone number is entered as the search criteria in the database. The database then finds and displays your personal information.

Word processing and spreadsheet software can contain simple databases. A relational database program such as Microsoft Access, MySQL®, or Oracle® allows more flexibility in working with the information in the database. When a document is set up in database form with fields (whether the document is in a word processing, spreadsheet, or database program) sorting on any field is possible. The procedures vary depending on the software. Usually a field or column is selected. The type of sort is defined: ascending (A–Z, 1–10) or descending (Z–A, 10–1). The sort command is carried out, and the list is placed in alphabetic or numeric order by the chosen field. Several words can be entered in the same field and the correct alphabetic order is maintained.

Finding Information in a Database

Finding a specific piece of information in a database is easy. Use the Find feature to enter the data you want to find such as a name, address, or phone number. Tell the database to search all fields or selected fields, give the command to start the search, and the information will display on the screen within seconds. What if you don’t know the exact name you wish to find? In this case, you can enter the first few letters of the last name. When that information displays on the screen, scroll through the records until you find the correct one. You may need other information to validate that the name is the correct one.
A database is useful for sorting various fields alphabetically. As you learned in Chapters 2, 3, and 4, an alphabetic listing of customer names makes it much easier to look up a particular customer. Database software can sort records using fields in a database. If you want to sort the database by the city in which customers live, simply sort on the City field. If you want to sort the database by the Postal Code for a large customer mailing, sort on the Postal Code field. If you want to sort the database by the City then alphabetically by customer, the database will return this information with the proper query. Remember that the purpose of sorting data is for retrieval—finding and using information again. A **query** is a database object used to instruct the program to find specific information. For example, Figure 5.2 shows the design view of a query in *Microsoft Access* and the resulting query table.

Figure 5.3 on page 133 shows a portion of a report based on the query shown in Figure 5.2. Customers are grouped alphabetically by city, and then sorted by name. Queries also help a user summarize information. For example, a video store has a database of customer names, addresses, phone numbers, video rentals organized by types of movies, and the dates of rentals. The store manager wants to know which category of movies had the most rentals last month. The query would ask the database to sort the Movie Category field, and then identify the beginning and ending dates of the last month in the Date Rented field. The database would return a list of customers in sorted order by the Movie Category field for the last month.
How could this information be used? The store manager could count the number of rentals for a specific category of movie. If comedies were rented more often than dramatic movies, the manager could obtain more comedies. Keeping track of the rental dates will help the store manager know which days are the busiest. Would you guess Fridays and Saturdays? The database will return a listing of days of the week so that the store manager has solid data to use in making decisions.

### Using Databases in Records Management and E-Commerce

Many records departments create a database index of their paper and/or non-paper records. For example, a database is created that contains the names, addresses, and telephone numbers of customers of the symphony. An electronic database allows rapid creation of mailing labels to notify customers of special concerts or other events to help generate more sales.

In Chapter 1 you learned about e-commerce and how RIM professionals work with IT professionals to manage electronic records created via the Internet. E-commerce is another way of doing business using electronic resources. Most large organizations have a web presence and many allow some type of dynamic interaction with the visitors to their websites. The dynamic interaction usually involves filling out a form, clicking the Send button, and receiving some type of response on the web page.

HTML (HyperText Markup Language) is the language that Internet browsers (such as Microsoft® Internet Explorer or Mozilla Firefox®) interpret.
Chapter 5  Electronic File Management

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The server computer that houses the web pages sends instructions from the HTML document to web server application software which in turn queries or displays the database. The application server software acts as a translator between the form on the web page and the data in the database. Filling out a form and clicking the Send button causes the server application software to create a new record in the database. If you signed up for an electronic newsletter, for example, a record is created indicating your e-mail address. When the newsletter is sent the next time, you will receive a copy in your e-mail inbox. If you change your e-mail address, you fill out another form on the web page. Clicking on the Send button updates your record in the database.

If you were to contact the organization in person or over the phone, the customer service representative would access the same database. Your record would be found by searching using a unique field. In the case of the newsletter example, the unique field would be your e-mail address.

A bigger role for databases in e-commerce is played when the actual transaction for services or merchandise is completed. The dynamic form on the web page not only accesses the database, but also starts the procedure for products to be “picked” off the warehouse floor, sent to shipping, and then

Career Corner

Certified Records Manager

CRM Exam
The Certified Records Manager (CRM) professional designation is conferred on candidates who have passed the six-part test administered by the Institute of Certified Records Managers. The examination is offered twice a year, and candidates must apply to take the exam. A candidate’s educational background and professional work experience is also taken into consideration for the CRM.

Exam Parts
Parts 1–5 of the examination include 100 multiple choice questions on each part. The passing score for each part is 70 percent. Each part contains different subject matter and the broad categories are listed here.

- Management principles and the records and information program
- Records creation and use
- Records systems, storage, and retrieval
- Records appraisal, retention, protection, and disposition
- Facilities, supplies, and technology

The last part, Part 6 Case Studies, is taken after the candidate has passed the first five parts.

Benefits
Earning the right to use CRM as a professional title is a respected and professional accomplishment. People with a CRM designation usually have a higher salary than those in similar jobs who do not. The Institute of Certified Records Managers website lists jobs for which the CRM designation is required.
sent to the customer. The payment part of the transaction is completed via electronic fund transfer (EFT). The customer receives the product and a credit card is charged for the amount of the product. The customer receives a credit card statement showing the bill for this product.

**HOW COMPUTERS SORT DATA**

A computer performs sorting operations quickly and can store a great amount of data in a small space. It pays great attention to detail and can retrieve information faster and more accurately than humans if the input is accurate. You should be aware, however, that computers sort data differently than you would sort records manually. When you sort records manually, you look at each letter, number, or symbol. You understand each one to have a different meaning. When sorting, for example, you know that key indexing units that begin with numbers are placed before key indexing units that begin with letters. You know that the letter A comes before the E. Computers understand only numbers. Computer programs use character codes to represent the symbols, numbers, and letters in the data you enter.

**Character Standards**

In Chapter 1 you learned about the International Organization for Standardization (ISO). The American National Standards Institute (ANSI) is a member of the ISO. Remember that the volume of information is growing. Standards help all computers interpret data in the same way. Data standards work on the computer so that it is readable on all machines using the English language or any other language. As more information is displayed on the Internet, standardization is even more important to global communication.

For the United States, ANSI uses the American Standard Code for Information Interchange (ASCII, pronounced “Ask E”) for compliance to the ISO standard. ASCII is a character code that was developed as a standard and logical way to recognize character data on computers. ASCII assigns specific numeric values to the first 128 characters of the 256 possible character combinations. ANSI, an expanded version of the code, is used for other characters. Notice the order of the decimal numbers and the ASCII characters in Figure 5.4 on page 136.

Each character you enter in an electronic record is represented by a unique number in the character code. For example, in ASCII, the code number for letter C is 67. The code number for letter W is 87. When a computer program sorts data, it uses the character code numbers assigned to the symbols, numbers, and letters you have entered. The resulting sort order may be quite different from the way you would sort the same records manually.

The Company Name Computer Sort column of Figure 5.5 on page 137 shows a computer sort of example names. The names were keyed into the computer as they were written. The Indexed Order Manual Sort column shows the same list of names (with no punctuation) keyed in indexing order (as would be used for manual filing) and sorted. Notice the difference in the
order of the examples. What causes the difference? Part of the difference is due to placing the names in indexing order. Part of the difference is due to the way computers sort data.

*The first 31 decimal numbers are reserved for non-printing characters, sometimes known as control characters.*

<table>
<thead>
<tr>
<th>Decimal Number</th>
<th>ASCII Character</th>
<th>Decimal Number</th>
<th>ASCII Character</th>
<th>Decimal Number</th>
<th>ASCII Character</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>32</em></td>
<td>Space</td>
<td>64</td>
<td>@</td>
<td>96</td>
<td>`</td>
</tr>
<tr>
<td>33</td>
<td>!</td>
<td>65</td>
<td>A</td>
<td>97</td>
<td>a</td>
</tr>
<tr>
<td>34</td>
<td>&quot;</td>
<td>66</td>
<td>B</td>
<td>98</td>
<td>b</td>
</tr>
<tr>
<td>35</td>
<td>#</td>
<td>67</td>
<td>C</td>
<td>99</td>
<td>c</td>
</tr>
<tr>
<td>36</td>
<td>$</td>
<td>68</td>
<td>D</td>
<td>100</td>
<td>d</td>
</tr>
<tr>
<td>37</td>
<td>%</td>
<td>69</td>
<td>E</td>
<td>101</td>
<td>e</td>
</tr>
<tr>
<td>38</td>
<td>&amp;</td>
<td>70</td>
<td>F</td>
<td>102</td>
<td>f</td>
</tr>
<tr>
<td>39</td>
<td>'</td>
<td>71</td>
<td>G</td>
<td>103</td>
<td>g</td>
</tr>
<tr>
<td>40</td>
<td>(</td>
<td>72</td>
<td>H</td>
<td>104</td>
<td>h</td>
</tr>
<tr>
<td>41</td>
<td>)</td>
<td>73</td>
<td>I</td>
<td>105</td>
<td>i</td>
</tr>
<tr>
<td>42</td>
<td>*</td>
<td>74</td>
<td>J</td>
<td>106</td>
<td>j</td>
</tr>
<tr>
<td>43</td>
<td>+</td>
<td>75</td>
<td>K</td>
<td>107</td>
<td>k</td>
</tr>
<tr>
<td>44</td>
<td>,</td>
<td>76</td>
<td>L</td>
<td>108</td>
<td>l</td>
</tr>
<tr>
<td>45</td>
<td>-</td>
<td>77</td>
<td>M</td>
<td>109</td>
<td>m</td>
</tr>
<tr>
<td>46</td>
<td>.</td>
<td>78</td>
<td>N</td>
<td>110</td>
<td>n</td>
</tr>
<tr>
<td>47</td>
<td>/</td>
<td>79</td>
<td>O</td>
<td>111</td>
<td>0</td>
</tr>
<tr>
<td>48</td>
<td>0</td>
<td>80</td>
<td>P</td>
<td>112</td>
<td>p</td>
</tr>
<tr>
<td>49</td>
<td>1</td>
<td>81</td>
<td>Q</td>
<td>113</td>
<td>q</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>82</td>
<td>R</td>
<td>114</td>
<td>r</td>
</tr>
<tr>
<td>51</td>
<td>3</td>
<td>83</td>
<td>S</td>
<td>115</td>
<td>s</td>
</tr>
<tr>
<td>52</td>
<td>4</td>
<td>84</td>
<td>T</td>
<td>116</td>
<td>t</td>
</tr>
<tr>
<td>53</td>
<td>5</td>
<td>85</td>
<td>U</td>
<td>117</td>
<td>u</td>
</tr>
<tr>
<td>54</td>
<td>6</td>
<td>86</td>
<td>V</td>
<td>118</td>
<td>v</td>
</tr>
<tr>
<td>55</td>
<td>7</td>
<td>87</td>
<td>W</td>
<td>119</td>
<td>w</td>
</tr>
<tr>
<td>56</td>
<td>8</td>
<td>88</td>
<td>X</td>
<td>120</td>
<td>x</td>
</tr>
<tr>
<td>57</td>
<td>9</td>
<td>89</td>
<td>Y</td>
<td>121</td>
<td>y</td>
</tr>
<tr>
<td>58</td>
<td>:</td>
<td>90</td>
<td>Z</td>
<td>122</td>
<td>z</td>
</tr>
<tr>
<td>59</td>
<td>;</td>
<td>91</td>
<td>[</td>
<td>123</td>
<td>{</td>
</tr>
<tr>
<td>60</td>
<td>&lt;</td>
<td>92</td>
<td>\</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>=</td>
<td>93</td>
<td>]</td>
<td>125</td>
<td>}</td>
</tr>
<tr>
<td>62</td>
<td>&gt;</td>
<td>94</td>
<td>^</td>
<td>126</td>
<td>~</td>
</tr>
<tr>
<td>63</td>
<td>?</td>
<td>95</td>
<td>_</td>
<td>127</td>
<td>DEL</td>
</tr>
</tbody>
</table>

**FIGURE 5.4 ASCII Values Chart**
FIGURE 5.6  Word and Excel Provide an Option to Make a Sort Case Sensitive.

**Sort Order**

When you manually sort a list of names, you look at the letters to determine the order. When a computer sorts data, it reads each character as a value in the character code. Because these values are numbers, the computer places the lowest value, or number, first. The sort order will depend on the character code used by the computer and possibly on other settings that have been selected. For example, some computer applications ignore the case of letters when sorting. Microsoft Word and Microsoft Excel® have options the user can set to determine whether the sort is case sensitive. The default setting is no checkmark in the case sensitive box. Figure 5.6 shows the options for selecting Case Sensitive for sorting in Word and in Excel. Access ignores the case when sorting on a particular field. If Access encounters two identical values, for example, one uppercase and the other lowercase, Access lists them in the order in which they were entered. For example, if a record with the value Jones in the Last Name field was entered before a record with the value jones in the same field, the record containing jones will be displayed before the record containing Jones.

FIGURE 5.5  Comparison of Sort Orders

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Computer Sort</th>
<th>Indexing Order Manual Sort</th>
</tr>
</thead>
<tbody>
<tr>
<td># Off Diet Center</td>
<td>3 Rs Nursery School</td>
<td></td>
</tr>
<tr>
<td>$ Value Store</td>
<td>26 Highway Service</td>
<td></td>
</tr>
<tr>
<td>“A-OK” Smart Shop</td>
<td>405 Shopping Center</td>
<td></td>
</tr>
<tr>
<td>26 Highway Service</td>
<td>AOK Smart Shop</td>
<td></td>
</tr>
<tr>
<td>3 Rs Nursery School</td>
<td>Dollar Value Store</td>
<td></td>
</tr>
<tr>
<td>405 Shopping Center</td>
<td>Labelle Fashion Boutique</td>
<td></td>
</tr>
<tr>
<td>LaBelle Fashion Boutique</td>
<td>Larry's Restaurant</td>
<td></td>
</tr>
<tr>
<td>Larry's Restaurant</td>
<td>Pounds Off Diet Center</td>
<td></td>
</tr>
</tbody>
</table>
In *Access*, the user can select a default sort order for a new database. The option selected will affect how data is sorted. The *General* option, shown in Figure 5.7, is appropriate for a variety of languages, including English.

**FIGURE 5.7** New Database Sort Option in Access

![New Database Sort Option in Access](image)

The sort order of electronic data can be affected by general settings selected for the computer. For example, for computers that use the *Microsoft Windows*® operating system, settings can be selected on the Regional and Language Options in the Control Panel as shown in Figure 5.8.

**FIGURE 5.8** Regional and Language Options Tab

![Regional and Language Options Tab](image)
Other Sorting Differences

When you are entering records for computerized storage, careful attention to
detail and knowledge of how a computer processes data are important points
to remember. You have learned that computers sort records in a particular
way depending on the character code used and other settings specified by
the user. This section points out some other specific differences you may find
between how a computer sorts records and how the records would be sorted
for manual filing.

Titles and Suffixes

Names with titles and suffixes are indexed for paper records according
to Rule 5, Chapter 3. Numeric suffixes (I, II) are filed before alphabetic
suffixes (CPA, Jr., Sr.). The computer reads Roman numerals as letters
and sorts them after numbers. Figure 5.9 shows examples of names with
suffixes sorted by a computer and sorted for manual filing. Note the
differences in the sort order. In Example 1, CPA is filed before Roman
numeral II.

FIGURE 5.9 Comparison of Sort Order for Suffixes

<table>
<thead>
<tr>
<th>Example 1 Computer Order</th>
<th>Example 2 Manual Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>First Name</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
<tr>
<td>Jones</td>
<td>Allen</td>
</tr>
</tbody>
</table>

Numbers in Business Names

As mentioned earlier, a computer program may not sort numbers in a text
field in consecutive order. Most people know that 2 comes before 10 in a
listing of numbers. To a computer, which reads from left to right, 1 comes
first, then 10 through 19, then 2, followed by 20 through 29, continuing
to 99. Be aware that numbers in text fields may not sort in consecutive
order. However, numbers in a database number field can be sorted in
consecutive order.

Numbers in a database such as customer IDs, invoice numbers, or
product numbers are sometimes keyed with leading zeros so that all num-
bers are the same number of digits and can be sorted consecutively even in
a text field. This works well with numbers a company can control or assign.
Figure 5.10 on page 140 shows examples of numbers with and without
leading zeros.
### Spacing and Punctuation
When filing paper records, spaces are disregarded in some situations. For example, in last names such as De La Torres or Van de Hoef, the spaces are disregarded when filing paper records. When keying these names in computer records, the spaces will be considered and the filing order will be different than it would be for paper records.

When filing paper records, punctuation is disregarded in determining filing order. When records are keyed in a database, punctuation is not ignored. Therefore, the same names will sort in a different order than that used for manual filing of paper records.

When filing paper records, the word *The* at the beginning of a business name is considered the last indexing unit. When keying such a name in a computer database, the name stays in its original order with *The* as the first word. Therefore, the same names will sort in a different order than that used for manual filing of paper records.

### Indexes for Paper Records
In some cases, you may want to change the way you enter records into a computer to achieve the same sorted order as when related paper records are sorted. For example, you might have an index of company names in an electronic database that corresponds to paper records. In this case, you might want the electronic index to show the same sort order as that used for the paper records. An easy way to achieve this would be to add an Indexing Order field to the database table. The company name would be entered in the Company Name field as it is written. This field would be used for tasks such as creating mailing labels where the name should appear as written. In the Indexing Order field, the name would be keyed in indexing order according to manual filing rules. When sorted electronic records are needed to match sorted paper records, the Indexing Order field can be used for the sort.
ELECTRONIC RECORD LIFE CYCLE

Electronic records are being created at an increasing rate. As the number of computer files increases, the need to organize these files is more important than ever. In this section, you will learn how the record life cycle is applied to electronic file management. Figure 5.11 shows the record life cycle for electronic files. Notice the distribution and use phases are shown as one for electronic records. Each phase of the electronic record life cycle is described below.

FIGURE 5.11 Electronic Record Life Cycle

Creation and Storage

Electronic files are created in specific software applications such as Word, Excel, Access, and many others. When the application is opened, the user starts keying the needed information in a new document. Creating and storing (saving) the document is the first step in the records life cycle. One way to save a document the first time is to choose Save or Save As from the File menu. When the Save As dialog box opens, navigate to the proper drive and folder. Then, key a filename that is meaningful to the task you are performing. A filename is a unique name given to a file stored for computer use that must follow the computer’s operating system rules. If the user doesn’t change the drive or folder, many programs will automatically save a new document to the Documents folder on the hard drive for computers that use Microsoft Windows.
Electronic documents are stored as bytes on some type of computer storage device. Chapter 11 goes into more detail about storage devices and their media. In many offices, electronic files are stored on a stand-alone computer’s hard drive or on shared drives on a local area network (LAN). Some workers might use external storage devices. Removable external storage devices include devices such as CDs, tape drives, magnetic hard drives, and USB flash drives. These devices are removable; thus, the user can take a device from one computer and use it on another computer. You will learn more about external storage devices in Chapter 11. Whatever type of storage device is used, the data should be stored using meaningful filenames and in a logical structure of folders or directories to facilitate retrieving the data.

Folder Structure

Dividing storage space into folders is an important part of managing electronic information. A folder or directory is a subdivision of storage space created by the operating system of a computer. An operating system is an organized collection of software that controls the overall operations of a computer. A folder can contain many files. For example, you might have a folder for this class named Records Management. You might save a file in the folder named Chapter 4 Review Questions. The full path to this document would be C:\Records Management\Chapter 4 Review Questions. Notice that a backward diagonal (\) is used to separate the drive, the folder, and filename. This notation, called the path, indicates where the file is stored.

Creating folders on any storage device is easy. As with many operations on a computer, different procedures can be used to achieve the same result. Figure 5.12 shows the Windows Explorer application that comes with the

FIGURE 5.12 New Folder in Windows Explorer

| folder or directory: a subdivision of storage space created by the operating system of a computer |
| operating system: an organized collection of software that controls the overall operations of a computer |
| path: a notation that includes the drive, the folder, and filename where a file is stored |
Microsoft Windows operating system. To create a new folder using this program, the user can choose Organize from the menu bar and select New Folder. The new folder appears with the name New Folder. The user can change the name of the folder to a meaningful name.

Folders (sometimes called subfolders) can be created within other folders. This allows the user to create a folder structure. For example, suppose you work for Safety First, a company that sells smoke alarms, fire extinguishers, and other fire prevention products. You handle routine correspondence to customers who regularly buy Safety First products. Safety First has a LAN where shared folders are available for any of the office workers. Figure 5.13 shows a partial listing of customer folders.

**FIGURE 5.13 Partial List of Customer Correspondence Folders**

Using the example in Figure 5.13, if you wanted to retrieve a letter you sent to Fred Bassett, you would open the Customer Correspondence folder, the Bassett, Fred subfolder, and then the appropriate file. Correspondence for a new customer would necessitate creating a folder for the customer name. Correspondence such as letters to the new customer would be stored in the customer's folder. When many files are stored in one customer's folder, it may be helpful to create subfolders to organize the files by dates such as by year. These subfolders are shown in Figure 5.13 in the Burke, Terry folder.

Folder structure should be designed to facilitate finding files quickly. A shallow folder structure has many folders at the same level. This may mean that the user has to look through a long list of folders to find the one needed. A deep folder structure has folders within folders within folders. Seeing the logic of the folder structure can be difficult when too many levels of folders are used. A folder structure that is neither too shallow nor too deep is ideal. The structure should have enough levels of folders to organize files in a meaningful way, but not so many levels that the structure is hard to understand. Choose meaningful names for folders and files for quick retrieval of files.

**Filenames**

Using meaningful filenames is an important part of managing electronic files. An organization may have procedures in place for naming files and folders. If no procedures or guidelines exist, think about how the data might be...
My Records

Backing Up Data

What back-up operations are needed for your computer records?
Do you know how to restore data on the computer system?

Storage disk failure is a matter of when rather than if. The software loaded on your computer can be re-installed if the hard drive fails; thus, backing up the software applications is usually not necessary. Three types of back-up operations are needed on your personal computer (PC).

Windows System Restore

The purpose of this utility is to allow you to undo harmful changes to your computer. For example, suppose you loaded some software that is not as compatible with your system as you thought it would be. Restoring the system through Microsoft Windows allows you to go back to an earlier time (called a restore point) and restore the settings in effect at that time. Windows will automatically set restore points. You can also create a restore point before you install a new hardware device or a new program. Make sure the Windows System Restore is turned on.

Specific Program and Data Back-up

Some financial programs such as Microsoft Money® or Quicken® allow users to create a back-up of the data used in the program. For example, Quicken requests a back-up when you close the program. Quicken stores your data in its own folder on your hard drive and provides instructions to make a back-up on another drive or folder. Make the back-up copy on removable storage such as a rewritable compact disk or a flash drive. This type of back-up ensures that the data is safe even if the hard drive on the computer fails. For these types of programs, plan and schedule back-ups at least once a week. Store the back-up copy in another location so it will be safe from fire or other disasters that may occur at your office.

Back Up Data

Regularly schedule and back up data on your hard drive. For example, suppose you are in college and are completing homework assignments using software on your computer. Make a back-up copy of the homework assignments on removable storage devices. When the hard drive fails, you will be able to read your data from removable storage.

requested when you need to retrieve it later. Using the earlier Safety First example, suppose you write to Conn’s Market to answer a question about changing the company’s credit terms. You might name the document Conn’s Market credit terms 5-6-10. The document would be stored in the customer’s folder. The complete path would be F:\Customer Correspondence\Conn’s Market\Conn’s Market credit terms 5-6-10. Using a date in the filename will help distinguish different files about the same topic within the customer’s folder.

In Chapters 8, 9, and 10 you will learn about subject, numeric, and geographic order. Any of these methods are appropriate for organizing your electronic files and folders.
Use and Distribution

The next phase of the record cycle is distributing and using the information contained in the electronic folders and files. Distribution can be through electronic channels described below; or files can be printed and sent by regular mail, by facsimile, or by courier.

E-Mail

Documents can be created in Word, Excel, Access, and other programs and then attached to an e-mail message for distribution. The user can also key the information in a program such as Word and copy and paste the information into an e-mail. Electronic mail is the most common type of internal communication for large companies. Depending on the e-mail software used, folders can be created to help organize messages. Using the example of the Safety First business, you could send correspondence within the company via e-mail to communicate with people in other departments such as the Shipping or Accounting Department. If you receive an inquiry from a customer, you could access the order number from the company database and know which stage of processing has been completed. You could then send an e-mail to the department that is currently working on the order. When your inquiry is answered, you could forward the information to the customer.

For customers who order many products from the company, create a customer name folder into which you store all e-mails to and from the customer. If you have a few customers who only order once or twice a year, you can create a folder named A for all customers whose names begin with an A. The procedures for setting up files to hold paper correspondence are given in Chapter 6. With a little adaptation, the same procedures can be followed for e-mail folders.

All the phases of the record life cycle can be completed using e-mail software. For example, Figure 5.14 shows a folder structure in Microsoft Outlook® organized by customer names. In this program, folders can be created by right-clicking on the Inbox icon and then keying the name you want the folder to have.

Other Digital Communications

Text messages, tweets, and instant messages are electronic communications. These three media are most like telephone messages because they are useful for only a short period of time. These media are used in social situations, and they can be used in business settings.
Blogs, wikis, Internet forums, webinars, and podcasts are used for evaluation, review, and discussion in business and social settings. All five of these media can be archived and referenced for additional review or research.

Intranets

Many organizations post internal documents such as procedure manuals, reference documents, a personnel directory, and correspondence on a secure intranet site where employees see and use distributed information. Browser software, such as Internet Explorer, interprets and displays HTML documents. Users may also be allowed to download documents to their computers. The Information Technology (IT) Department may work with RIM professionals to update and manage the intranet site. An intranet site allows employees access through password-protected user names. Some companies do not allow access to the intranet site unless you are using a company computer on the premises of the business. Many companies do not print and distribute manuals to everyone in the organization but, instead, post the information on an intranet site. Because the information is available on the intranet and updated regularly, the documents are not made available in printed form, and the company saves the cost of printing. An individual could print the data from the intranet site if desired.

An intranet site is usually organized by the subject method of storage which you will learn about in Chapter 8. Search engines are available on most large company intranets so the user can find the appropriate information. An IT Department is usually in charge of a company intranet site. However, IT

Is it okay to Twitter or update your Facebook page at work?

Tweets are usually 140 words or less, but the major players in sports, media, business, the courts, the military, and other fields are feeling anxious about them. Regulating tweets at work, at school, or on government time is growing because of fines, lawsuits, scolding, and shame.

Some employers are restricting Twitter use by making policies that describe or ban what employees can say on such sites and when they can say it. Some policies say that the employees are personally liable for what they write and are banned from sharing sales numbers and proprietary information.

• Tweets are responsible for mistrials in Arkansas and Pennsylvania.
• A renter was sued for $50,000 for mentioning her Chicago landlord’s name in connection with a moldy apartment.
• The Marine Corps banned the use of social media sites on government computers, and the military is considering wider restrictions even as recruiters acknowledge the tool’s usefulness.

Twitter’s strength is its timeliness. Will that strength balance its usefulness? Social media experts advise, “Even short sentences can have long-lasting effects.”* Know what the social networking rules are for school and work before you use them.

works with a team of workers from all departments of the company to help test the site and help guide its evolution.

**Shared Folders on a LAN**

Another place for distribution and use of electronic documents is on shared drives or folders on the company’s local area network. The LAN may be set up so that certain departments have use of a particular shared drive. For example, department workers have the right to create, save, edit, modify, and delete files and folders on the shared drive. Some shared drives are available to everyone in the company. Confidential information is usually on a restricted drive available only to employees who are cleared to access confidential information.

Cooperation and coordination between IT and RIM professionals determine the procedures for creating, maintaining, and disposing of folders and files on shared drives.

**Search Features**

Programs or features that allow users to search for files on a computer drive, LAN drives, or intranet are important tools for electronic records management. On a computer that uses *Microsoft Windows*, for example, users can search by filename, date, or text on any drive on the computer and/or any drives to which the computer connects. Advanced search options for *Windows Explorer* are shown in Figure 5.15.

**FIGURE 5.15** Advanced Search Options in Windows Explorer

Which *Windows* function can help you find a file?

**Maintenance**

The next phase of the record life cycle is maintenance of the files. In Chapter 1, you learned that a records retention schedule is used to specify how long to keep the records in an organization. Based on retention schedules, maintenance of electronic files follows regularly scheduled times to keep or dispose of the files.
Moving Files and Folders

Files and folders can be moved from one folder to another as part of managing electronic records. Moving electronic files that are over a year old, for example, to a different folder leaves fewer files in the original folder so that the more active files are easier to find. At the Safety First business, customer files older than a year are moved to removable storage devices. On the removable drive, the same alphabetic system with the customer name for the folder is used. The dates are noted in the folder name also.

Copying Files and Folders

The Copy command in programs such as Windows Explorer is used to create a duplicate of a file or a folder. The copy may have a different name than the original file or folder or it may have the same name if it is stored in a different folder. Copying allows files to be available in two or more locations. For example, a worker can copy a file to a removable storage device and then edit the file on his or her home computer. When the worker returns to work, the updated file is copied to the work computer. Having files readily available can be a convenience to the worker. However, keeping unnecessary copies of files should be avoided to make the best use of storage capacity on hard drives or other devices. Figure 5.16 shows the Copy option in Windows Explorer. To copy a file, select it in the current folder and choose Copy. Move to the folder for the duplicate file and choose Paste. To move a file, select it in the current folder and choose Cut. Move to the folder for the new location and select Paste.

FIGURE 5.16 Cut, Copy, and Paste Options in Windows Explorer

Backing Up and Restoring Data

A back-up is a copy of electronic files and/or folders as a precaution against the loss or damage of the original data. Users should follow a regular schedule to back up vital and important electronic records. Many LANs use software that automatically makes copies of some or all of the data on the network on a regular schedule.

If data is lost or damaged, it can be restored using back-up copies. The process of restoring back-up copies ensures that the electronic files can be used again without interruption to the flow of business.
Disposition
Several disposition methods are available for electronic records. In Chapter 7, you will learn about records retention and disposition in more detail.

Data Migration
Data migration is used to copy electronic folders and files onto new media as it becomes available. In the 1980s, floppy disks 8 inches in size were commonly used. Today, disk drives that can read the 8-inch floppy disks are no longer commonly used. Implementing a data migration procedure ensures that today’s electronic storage can be read with new devices used in the future.

Deleting Files
When electronic records reach the end of their retention period, the information can be deleted. RIM professionals work with users to help manage disposition of electronic records. When files are deleted from a hard drive, users may be able to recover the data if the sectors where the data were stored have not been written over with new data. When deleting confidential information, use a special disk wipe utility program that makes the data unrecoverable. CDs and DVDs used to store confidential data should be completely destroyed when the records are to be destroyed.

Managing Data on Portable Devices
Electronic file management is necessary for smaller digital devices such as cell phones and personal digital assistants. A personal digital assistant (PDA) is a handheld computer that is portable, easy to use, and capable of sharing information with a desktop or notebook computer. PDAs can be used to manage contact data for business associates and friends.

Tools
Many types of software, such as word processing, spreadsheet, games, and graphics, are available for PDAs. They may come with the PDA or be purchased separately and loaded on the PDA. PDAs come with personal digital assistant (PDA): a small handheld computer that can share data with other computers. Portable devices allow users to organize and share data.
information management (PIM) software already loaded. The programs or features allow users to do tasks such as those listed below. Some of the tasks, such as connecting to the Internet, may require subscription services or special features such as a wireless connection to implement.

- Store names, addresses, phone numbers, e-mail addresses
- Make to-do lists
- Take notes
- Track appointments using a calendar feature
- Set reminders for appointments
- Perform calculations
- Synchronize with personal computers
- Connect to the Internet
- Send and receive e-mails

**Synchronization with Personal Computers**

**Synchronization** is the process of bringing items into agreement, usually in relation to time or rates. In the case of PDAs and personal computers, this means updating the data on the PC and the PDA so that both contain the same data. For example, suppose you use *Microsoft Outlook* on your desktop computer to enter contact data for business associates and to schedule appointments. While at a meeting, you use your PDA to take notes, enter data for a new business contact, and schedule an appointment. Once the meeting is over and you return to your desktop PC, you need to upload the information from your PDA to *Outlook* on your PC.

Synchronization software on the PDA works with software that you install on your PC when you purchase a PDA. On your PC, you also need an application similar to *Microsoft Outlook* that stores information on your computer.

Most PDAs have a cable that connects the PDA to a USB port on a PC. Many PDAs can send data to another PDA or to a PC through wireless transmissions. Once the PDA and PC are connected, select the synchronization button or command on the PDA. Follow the instructions to upload and download information from one device to the other. An advantage of synchronizing regularly is that you always have a back-up copy of your data on the PDA or on your desktop or notebook computer. Plan to synchronize your PDA and your PC at least once daily.

**Device Information Security**

Businesses and governments realize the importance of securing electronic data. Confidential information can now be removed from the workplace on computer laptops, flash drives, cell phones, smartphones, or other portable data devices (PDDs). A major focus within businesses and governments is the use of security controls to protect against theft of PDDs
and the unauthorized disclosure of confidential information that resides upon them. Security policies being implemented may include:

- Encryption on employer-owned laptops and other PDDs that store confidential information
- Clear guidelines for reporting loss of equipment and repercussions for failure to do so in a timely manner
- Prohibition against personal PDDs being connected to the computer network
- Regular scanning for viruses and spyware using programs such as Norton AntiVirus or AVG Anti-Virus (shown in Figure 5.17)

For more information about records safety and security, see Chapter 11.

FIGURE 5.17 AVG Anti-Virus Software
Chapter Review and Applications

KEY POINTS

• Sorting data and records in electronic files and organizing electronic files and folders are important aspects of managing electronic records.

• An electronic database is a collection of related data stored on a computer system. In a database, data is stored in tables containing fields and records.

• The Find or Query feature of database software can be used to find information. Reports can be made from the data in a table or query results.

• Databases are an integral part of e-commerce. Web server and web application software use a form on a web page to create or append records.

• In an e-commerce transaction for services or merchandise, the dynamic form on a web page not only accesses the database but also starts the procedure for products to be sent to the customer. The payment part of the transaction is completed via electronic fund transfer (EFT).

• Computers sort data by using standard character code values such as ASCII values. The sort order may be different than the sort order that would be used for the same records in a manual filing system.

• General settings selected for a computer (such as language) and options chosen in a particular program may affect the sort order for electronic data.

• Electronic records have a life cycle as do paper records. The stages of the electronic record cycle include creation and storage, use and distribution, maintenance, and disposition.

• Tools (such as Windows Explorer) are available on computers to manage all phases of the record life cycle.

• Using meaningful filenames is an important part of managing electronic files.

• Electronic file management is necessary for smaller digital devices such as cell phones and personal digital assistants.

TERMS

ASCII  operating system
back-up  path
database  personal digital assistant (PDA)
field  query
filename  record
folder or directory  synchronization
leading zeros  table
1. Describe the relationship among a database and its tables, records, and fields. (Obj. 1)

2. What is the purpose of a database query? (Obj. 1)

3. Describe how a database is used during an e-commerce transaction. (Obj. 3)

4. How does a character code used by a computer, such as ASCII, affect how the computer sorts data? (Obj. 4)
5. What settings on a computer or program might affect the sort order of electronic records? (Obj. 4)

6. Describe the life cycle for electronic records. (Obj. 5)

7. What is a computer folder or directory? (Obj. 6)
8. You are taking the following classes: WR 121 English Composition, SOC 104 Introduction to Sociology, HST 201 History of Western Civilization, and BA 244 Records Management. List the folder names you will create for your disk to store files for each of your classes. (Obj. 6)

9. How can you assure that confidential data deleted from a computer hard drive or from a CD or DVD cannot be recovered?

10. What is synchronization as it applies to PDAs and desktop or laptop computers? (Obj. 6)
**APPLICATIONS**

5-1 Create a Logical Folder Structure (Obj. 6)

1. Copy the folder named Sheraden Investment Services found in the data files to your hard drive or other storage device.

2. Study the list of files contained in the folder. The files are also listed below. Open some of the files to see the type of data they contain. Determine how to organize the files into a meaningful folder structure.

3. Create a logical folder structure with appropriate folders and subfolders. Move appropriate files to their folders. Submit your work as your instructor directs.

<table>
<thead>
<tr>
<th>Filenames</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott Kenneth 2009</td>
</tr>
<tr>
<td>McAllister Vicky Annual</td>
</tr>
<tr>
<td>Abbott Kenneth 2010</td>
</tr>
<tr>
<td>Reston Brenda 2009</td>
</tr>
<tr>
<td>Abbott Kenneth Annual</td>
</tr>
<tr>
<td>Reston Brenda 2010</td>
</tr>
<tr>
<td>Abbott Paul 2009</td>
</tr>
<tr>
<td>Reston Brenda Annual</td>
</tr>
<tr>
<td>Abbott Paul 2010</td>
</tr>
<tr>
<td>St Amand Dennis 2009</td>
</tr>
<tr>
<td>Abbott Paul Annual</td>
</tr>
<tr>
<td>St Amand Dennis 2010</td>
</tr>
<tr>
<td>Annual Appointment Letter</td>
</tr>
<tr>
<td>St Amand Dennis Annual</td>
</tr>
<tr>
<td>Demarco David 2009</td>
</tr>
<tr>
<td>TenPass Margaret 2009</td>
</tr>
<tr>
<td>Demarco David 2010</td>
</tr>
<tr>
<td>TenPass Margaret 2010</td>
</tr>
<tr>
<td>Demarco David Annual</td>
</tr>
<tr>
<td>TenPass Margaret Annual</td>
</tr>
<tr>
<td>Investment Summary</td>
</tr>
<tr>
<td>Thatcher Linda 2009</td>
</tr>
<tr>
<td>McAllister Vicky 2009</td>
</tr>
<tr>
<td>Thatcher Linda 2010</td>
</tr>
<tr>
<td>McAllister Vicky 2010</td>
</tr>
<tr>
<td>Thatcher Linda Annual</td>
</tr>
</tbody>
</table>

5-2 Input and Sort Records (Obj. 2)

1. Open Access and create a new database named 5-2 Customers.

2. Create a table named Customers with the following fields: Customer ID, Business, First Name, Middle Name, Last Name, Title, and Suffix. Select Number as the field type for the Customer ID field. Select Text as the field type for all other fields. Select the Customer ID field as the primary key.

3. Enter the following data into the table.
4. Create a query to list only the customers that are businesses. Show the Business and the Customer ID fields in the query results. Sort in ascending order using the Business field. Remember to enter an asterisk (*) in the Criteria row for the Business field so that only records with data in this field will display. Print the query results table.

5. You need to locate the customer name for the company or person with customer ID 2115. Use the Find feature with the Customers table to locate this record. What is the company or person’s name?

5-3 Research Personal Digital Assistants (Obj. 4)

You’ve just been given a $300 scholarship for purchasing a PDA. Your benefactor will give you the money when you have justified your choice of PDA.

1. Make a list of the features or programs you want on your PDA.

2. Access a search engine on the Internet. Search using the key words personal digital assistant.
3. Choose three PDA devices that match your list of features. Compare and contrast the brands and models of the PDAs. Recommend a device to purchase.

4. Send the summary of your findings in an e-mail to your instructor.

**E-STUDY GUIDE**

For self-assessment and additional activities, go to the study guide within Records Management CourseMaster.

**SIMULATION**

**Job 4 Alphabetic Filing Rules 1–10**

Continue working with Auric Systems, Inc.
Complete Job 4.

*For More Activities Go To:*
www.cengage.com/officetech/read