# Computer Basics

**Chapter Objectives**  After completing this chapter, you will be able to:

▶ **Section 19.1**  *Computer Hardware*
- **Describe** some ways that people use computers.
- **Identify** the parts of a computer system.

▶ **Section 19.2**  *Computer Software*
- **List** some types of software.

## Ask STANDARD &POOR'S

### Stock Buying Strategies

**Q:** What are some strategies I can use to acquire stocks if I'm investing for the long term?

**A:** There are many different stock strategies floating around out there. Value investing involves purchasing stocks considered undervalued by one or more fundamental measures. Growth investing focuses on companies that have quickly increased their earnings or revenues. Market-timing investors aggressively buy and sell based on their prediction of whether a stock will go up or down. For example, daytraders buy and sell with all activity occurring within a single day. But for a long-term investor, a strategy such as dollar cost averaging makes the most sense. You invest a fixed amount of money in the same stock or stocks on a regular basis. In this way you establish a position in a stock over a long, steady period of time. During that time, the stock price is likely to fluctuate, and you can take advantage of periods of weakness by buying more shares for the same amount of money.

**Mathematics**  You are investing $180 each month in stock in the McKay Brick Company. The stock sells for $6 in January, and drops to $5 in February and $4 in March. How many shares do you buy over the three months?

**CONCEPT**  **Dollar Cost Averaging**  Since you are spending a fixed amount each month, the number of shares you can buy varies with the price.

● **Computer Applications** Businesses use many different types of software applications. **What software applications do you use on your computer that a business might also use?**

# Computer Hardware

## Reading Guide

### Before You Read

Think about the ways you use computer systems for your personal use.

### Read to Learn
- Describe some ways that people use computers.
- Identify the parts of a computer system.

### The Main Idea

Each day, businesses and individuals use computers to perform different tasks. Desktop computers, laptops, tablet PCs, and handheld devices allow many tasks to be done easily and quickly. Hardware enables a computer system to function properly.

### Key Concepts
- The Importance of Computers
- Parts of a Computer System

### Vocabulary

**Key Terms**

computer
ergonomics
e-learning
hardware
random access memory (RAM)

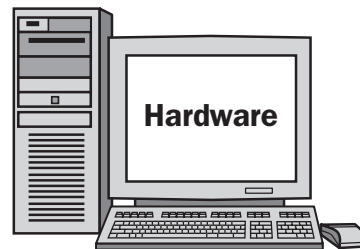### Academic Vocabulary

You will find these words in your reading and on your tests. Make sure you know their meanings.

linked            element
quotes            random

### Graphic Organizer

In a figure like the one below, list four components of a computer's hardware system.



**Hardware**

1. _____
2. _____
3. _____
4. _____

Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a printable graphic organizer.

### Academic Standards

**English Language Arts**

**NCTE 1** Read texts to acquire new information

**Mathematics**

**Number and Operations** Understand numbers, ways of representing numbers, relationships among numbers, and number systems

# The Importance of Computers

People depend on computers to handle all kinds of tasks. When a person pays a bill online, buys gasoline, or withdraws money from a bank, computers handle the transactions. Computers also handle different tasks in the workplace. Businesses of all sizes use computers to collect data and keep track of records. Laptops and tablet PCs allow people to work outside the office. Handheld devices track appointments, telephone numbers, and other data. Most businesses consider computers to be essential.

## Computers for Business

A **computer** is an electronic device that accepts, processes, stores, and outputs data at high speeds, based on programmed instructions. A *personal computer,* or PC, is a small computer that is intended to be used by one person. A *desktop computer* is a personal computer that is small enough to fit in an individual workspace. PCs and desktop computers are generally the same. Dell and Hewlett-Packard are two of the world's top PC makers. Apple is also a leading computer maker. Its Macintosh systems are personal computers, too. However, they are usually called "Macs" rather than PCs.

In most companies, computers are linked through either a central mainframe computer or a network. A *mainframe* is a fast, powerful computer with a large storage capacity. It can accommodate several users at the same time. Linking workstations allows users to share files, data, and printers, send e-mails, and access the Internet.

**Real World**

**Computers in Marketing** Nielsen Media Research® is the top media researcher in the United States. It is best known for its TV ratings. Nielsen uses small computers to gather data from 10,000 TV meters placed in U.S. homes. They record the viewing activities of participants and transmit these records nightly to Nielsen. *Why are computers important in this type of research?*



● **Digital Security** Biometric devices such as this fingerprint reader can be used to limit access to computers and data. **How can these devices save time, too?**

### Intellectual Property

■ **Critical Reading** Life is full of important decisions. Think about the kinds of decisions that you make as you read the question below.

You work in the human resources department of a large computer company. The company is developing a new software platform, but the developers are having problems working out the bugs, and the project is behind schedule. Your manager asked you to contact a friend who works in the information technology department of a competitor to see if she would be interested in joining your company. You find out that she is working on a secret project that's very similar and would surely be able to help you solve your problems.

■ **Decision Making** Is it appropriate to hire a competitor's employee who can help you solve a problem even if it means she will use your competitor's company secrets to do it? Explain your answer.

**As You Read**

Think about special computers and how they might affect your work. If you worked in a graphic arts studio, what type of computer do you think you would need?

*The Computer Workstation* A well-organized computer workstation is important for both business and home use. **Ergonomics** are design factors for the workplace that are intended to maximize productivity by minimizing a worker's discomfort. Well-designed workstations can help workers reduce stress and avoid straining their eyes, neck, shoulders, and wrists. They also help to increase efficiency.

To create a safe and comfortable computer workstation:

• Place the tools you need most close to you.
• Place your monitor at or just below eye level and at arm's length.
• Keep your wrists straight when you type.
• Use a chair that is adjustable, and keep it at a height that suits you.
• Position your chair so that it supports your lower back.
• Keep your feet flat on the floor or on a footrest.

*Computers as Learning Tools* Businesses also use computers to provide workers with the information, tools, and training they need to do their job. **E-learning**, or electronic learning, is the process of learning online. For instance, a large insurance company uses a Web-based system to train new employees to handle quotes and claims. Some training companies specialize in online education and tutorials for workers. Training with simulation software lets employees practice new tasks at their own pace. With e-learning, workers can be trained in an efficient and cost-effective way.

# Parts of a Computer System

A computer system includes three main parts: hardware, software, and data. The physical components of a computer system are the ==hardware==. Computer systems include at least four hardware *elements*: a microprocessor; memory; input and output devices; and data storage devices. Computers control data made up of characters, sound, graphics, and numbers. Here is a closer look at the parts of the system.

**Reading Check**   **Identify** What are the three main parts of a computer system?

## Microprocessors

A *microprocessor* is a small computer chip. It is the brain of a computer. It is also called the central processing unit (CPU), or microchip. A microprocessor receives instructions and carries them out at extremely high speeds. Each chip contains millions of circuits for data storage. A circuit is an electrical device that provides a path for the flow of electricity. Devices such as calculators, PDAs, electronic toys, and mobile phones also use computer chips.

## Memory

*Memory* is hardware that stores information for instant retrieval and processing. It can be thought of as a kind of scratch pad. The computer uses its ==random access memory (RAM)== to hold all the data and instructions required during operations. When a computer is using information, it stores it in *random* access memory. As long as your computer is on, the information remains in this temporary memory so that the computer can use it quickly. As soon as you turn off the computer, RAM loses information. For that reason, data storage devices are a very important part of a computer.

● **Portable Hardware** Laptop computers contain several hardware devices in a single product. **Where are the input devices on this computer? Where are the output devices?**

Photo Credit: Justin Sullivan/Getty Images

## Input and Output Devices

An *input device* is hardware that is used for entering data into a machine, such as a computer. Input devices include keyboards, computer mice, touchpads, joysticks, and scanners. An *output device* is hardware that is used for producing results from a machine. Output devices include computer monitors, printers, fax machines, and speakers.

## Data Storage Devices

There are a variety of devices for storing large amounts of data. *Data storage devices*—which include hard drives, CD-ROM drives, and DVD drives—save information for later use. Portable storage devices are also popular because they can easily be moved from one machine to another. Disks, flash drives, and DVDs are widely used for portable storage. Data storage helps to protect important information. Data storage is measured in

- kilobytes (1,024 bytes),
- megabytes (1,024 kilobytes),
- gigabytes (1,024 megabytes), and
- terabytes (1,024 gigabytes).

## Section 19.1

● **After You Read**

### Review Key Concepts
1. What are some ways that people use computers at work?
2. What are the parts of a computer system?
3. Name five data storage devices.

### Academic Skills
4. **Mathematics** *Kilo-, mega-, giga-, tera-,* and *peta-* are prefixes used to note the quantity of something, such as a bit in computing. Sometimes called *prefix multipliers,* these prefixes can denote powers of 10. For example, bits per second is a measurement used to express the transmission rate of data. 1 kbps (1 kilobit per second) is $1 \times 10^3$ bits per second. Express $10^3$, $10^4$, and $10^5$ as numbers in standard form.

**CONCEPT** **Exponents** An exponent tells how many times the base number is multiplied by itself.

**Math** For math help, go to the Math Appendix.

@ Go to the *Introduction to Business* Online Learning Center through **glencoe.com** to check your answers.

# Computer Software

## Reading Guide

### Before You Read

Think about the different types of software that businesses and people use.

### Read to Learn
• List some types of software.

### The Main Idea

Without software, a computer is just a collection of parts. Software tells a computer what to do. Programs such as word-processing and spreadsheet applications allow the creation of documents for business and personal use.

### Key Concept
• Software Programs

### Vocabulary

**Key Terms**

software
operating system
word processing
spreadsheet

database management
presentation program
desktop publishing

@ Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a printable graphic organizer.

### Academic Vocabulary

You will find these words in your reading and on your tests. Make sure you know their meanings.

creating
incorporate

schedules
facilitate

### Graphic Organizer

In a figure like the one below, list and describe 10 different types of software.

| Software | Purpose |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |
| 9. | |
| 10. | |

## Academic Standards

### English Language Arts

**NCTE 1** Read texts to acquire new information

**NCTE 4** Use written language to communicate effectively

**NCTE 7** Conduct research and gather, evaluate, and synthesize data to communicate discoveries

**NCTE 9** Develop an understanding of diversity in language use across cultures

**NCTE 11** Participate as members of literacy communities

### Science

**Content Standard C** Students should develop an understanding of the behavior of organisms

# Software Programs

Computers are just machines. They cannot do anything without instruction from people. **Software** is a computer program that contains a set of instructions that tells a computer what to do. Software is also referred to as a program or an application. Some software programs tell a computer how to calculate numbers or arrange words.

## Operating Systems

An **operating system** is software that controls the operation of a computer and directs the processing of programs. It maintains files, runs software applications, and handles devices such as a computer mouse and printer. The most widely used operating system is Microsoft Windows®. Windows-based PCs are used in most businesses and perform many tasks, such as creating word processing documents, presentations, and spreadsheets. Apple uses its own operating system, called OS X. Newer Macs can also run using the Windows operating system. Macs are often used to create graphic designs and illustrations.

## BusinessWeek *Reader and Case Study*

### Digital Books Start a New Chapter

**Lighter devices, better displays, and the iPod craze could make them best-sellers**

Richard D. Warren, a 58-year-old lawyer in California, is halfway through Ken Follett's novel *Jackdaws.* But he doesn't bother carrying around the book itself. Instead, he has a digital version of Follett he reads on his Palm® Treo™ each morning as he commutes by train to San Francisco from his home in Berkeley. He's a big fan of such digital books. Usually, there are around seven titles on his Treo, and he buys at least two new ones each month. "It's just so versatile," he says. "I've tried to convert some friends to this, but they think it's kind of geeky."

Geeky? For now, maybe, but not for much longer. Many experts are convinced that digital books, after plenty of false starts, are finally ready for takeoff. "Every other form of media has gone digital—music, newspapers, movies," says Joni Evans, a top literary agent who just left the William Morris Agency® to start her own company that will focus on books and technology. "We're the only industry that hasn't lived up to the pace of technology. A revolution is around the corner."

**CASE STUDY** Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for the *BusinessWeek* Reader Case Study.

**Active Learning**

For thousands of years, people have been making books based on stories about their lives. Write a story of at least 500 words. Print it on both sides of several sheets of paper and staple them together so that it can be read as a book. Present the book to a family member.

## Office Suites

A *suite* is a collection of integrated application programs or software applications that works as a single program. In a suite, each program can **incorporate** data from the others, eliminating the need to re-enter or transfer data. An office suite usually includes word-processing, spreadsheet, database management, presentation, and communications software. Microsoft Office, Lotus® SmartSuite®, Corel® WordPerfect Office®, and Sun Microsystems™ StarOffice are office suites.

**✔ Reading Check** **Define** What is a suite?

*Application Programs* Application programs handle different tasks. Each type of application program performs a specific function for the user. **Word processing** is the writing, editing, and production of documents, such as letters and reports, through the use of a computer program. Word-processing software, such as Microsoft Word, is used to create, edit, and print documents. A **spreadsheet** program is a computerized worksheet for entering and charting data. Sales figures, quantities, prices, and production costs can be listed and compared with a spreadsheet.

## Science / TechTRENDS

### Heads-Up Display

A Heads-Up display, or HUD as it is commonly known, is any display that doesn't alter the user's view when it displays data. HUD was first used in military aircraft but can now be seen in a wide variety of applications. Many games include HUDs. One example is the speedometers and instrument panels on the screen in racing games. The two types of HUD are fixed and helmet-mounted. The fixed type would typically be mounted to a surface such as an aircraft's airframe. The helmet-mounted display moves with the user's head. The user must wear a helmet or other headgear that is secured to the head. Two characteristics of any HUD are that the image is transparent, and the information is projected with its focus at infinity, which allows users to change their focus of attention between the data and the outside world without having to refocus their eyes.

### WebQuest

Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for links to Web sites where you can research different applications of Heads-Up displays. Look for ways HUD has helped the industries in which they are used. Write a few paragraphs describing what you find.

A **database management** program is used to store data organized especially for rapid search and retrieval. With database software, lists can be updated, changed, or rearranged. A **presentation program** includes software for creating slide shows for presentations. Data from word-processing documents and spreadsheets can be put into graphs, charts, or figures as part of a presentation.

**Desktop publishing** software is used to produce publications such as reports, newsletters, and magazines. A user can write, design, and lay out documents on a computer like a professional publisher. Users can create high-quality publications with art and illustrations. Desktop publishing software can be a part of an office suite. Adobe® InDesign® and QuarkXPress® are desktop publishing software packages. The illustration below shows some of the options available in Microsoft Office Publisher, which is also used for desktop publishing.

There are many other types of software that businesses depend on in their day-to-day operations. *Accounting software* helps people keep accurate records and prepare reports. Intuit® Quick-Books® is a well-known accounting program. *Communications software* allows access to databases, accounts, schedules, and other shared files. It makes it possible for computers to communicate or transfer files. With communications software, users can receive faxes and voice mail directly on their computer. Microsoft Outlook® is a communications program. *Speech recognition software* allows a user to enter text and give commands to the computer by speaking into a microphone. Philips® SpeechExec Pro® is a speech recognition program.

**Software Options**
Many software programs come with preformatted templates for you to customize. **What software templates have you used?**
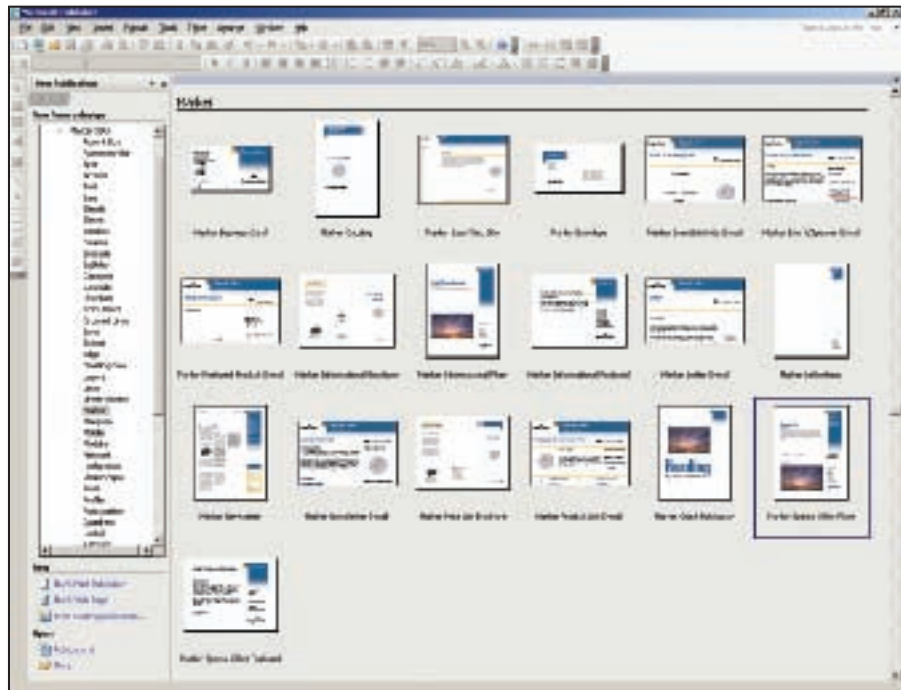


**Source:** Microsoft Office Publisher

## Groupware

*Groupware* is project management software. It provides tools for groups of users on a computer network to plan, develop, and complete a project. Team members on the same network can use groupware to track costs, schedules, and tasks for a project.

There are three categories of groupware: communication tools, conferencing tools, and collaborative management (or coordination) tools. Communication tools send messages, files, data, or documents between people. Examples include e-mail, faxing, voice mail, and Web publishing. Conferencing tools also **facilitate** the sharing of information, but in a more interactive way. Internet forums, chat rooms, and videoconferencing are conferencing tools. Collaborative management tools facilitate and manage group activities. They include electronic calendars (or time management software) and project management software.

## Web Site Development Programs

The Internet plays an important part in many businesses' ability to reach consumers around the world. Web pages make it possible for companies to market their goods and services globally. Web site development programs allow users to choose from several templates or designs, or to customize their site according to their needs. Macromedia Dreamweaver® and Microsoft Front-Page® are Web site development programs.

### Section 19.2

**After You Read**

#### Review Key Concepts
1. What is software?
2. Name three types of software programs and their purposes.
3. What kind of software is useful for managing team projects?

#### Academic Skills
4. **English Language Arts** Locate and read a review of a software program commonly used in or designed for use in business. Write a one-paragraph summary of the review. Explain what the software is designed to do, describe its positive and negative characteristics, and tell whether the reviewer recommends the software.

5. **English Language Arts** Work in groups of four. Choose a category of software. List four to six popular software programs that fit within the category you have chosen. Use software to create a chart showing cost, features, benefits, and the availability of each program.

Go to the *Introduction to Business* Online Learning Center through **glencoe.com** to check your answers.

| Section 19.1 *Summary* | Section 19.2 *Summary* |
|---|---|
| ***Computer Hardware*** People and businesses depend on computers to handle all kinds of tasks. Computers record data and keep track of records. Businesses also use them to provide workers with the information, tools, and training they need to do their jobs. Many people use a personal computer at home and at work, where they may be part of a network. A computer system includes three main parts: hardware, software, and data. Its physical components make up the hardware. The four hardware elements found in each computer system—a processor; memory; input and output devices; and storage devices—enable a computer to function as needed. | ***Computer Software*** A computer needs instructions to perform tasks. Software tells it what to do. There are many different types of software. An operating system is software that controls the operation of a computer. It maintains files, runs software applications, and handles devices such as computer mice and printers. Application programs handle specific task-oriented functions. Word-processing software is used to create, edit, and print documents. Spreadsheet software is an electronic worksheet for entering and charting data. These and other forms of software allow users to do certain tasks easily and quickly. |

## Vocabulary Review

**1.** On a sheet of paper, use each of these key terms and academic vocabulary terms in a sentence.

**Key Terms**

| | |
|---|---|
| computer | operating system |
| ergonomics | word processing |
| e-learning | spreadsheet |
| hardware | database management |
| random access memory | presentation program |
|   (RAM) | desktop publishing |
| software | |

**Academic Vocabulary**

| | |
|---|---|
| linked | creating |
| quotes | incorporate |
| elements | schedules |
| random | facilitate |

## Review Key Concepts

**2.** Describe some ways that people use computers.

**3.** Identify the parts of a computer system.

**4.** List some types of software.

## Critical Thinking

**5.** If you leave high school with very few computer skills, what problems might you face in the future?

**6.** What advice would you give users about protecting information on their computer?

**7.** A *chat room* is a form of groupware that lets computer users communicate instantly. What are some advantages and disadvantages of using chat rooms?

**8.** What can companies that make computer hardware and other items do to improve ergonomics?

**9.** Why is a microprocessor called the "brain of a computer"?

**10.** Describe the ways e-learning helps business. Do you think e-learning will become more or less popular in the future? Explain your answer.

**11.** Some people list four components of computer systems: hardware, software, data, and *people*. Why do you think it is important to include people as part of the system?

**12.** What types of businesses can you think of that do not use computers or that use them infrequently?

**13.** Discuss some ways to make sure both the classroom and computer equipment are safe.

## Write About It

**14.** With two classmates, research ways to avoid computer problems. Use software to prepare a demonstration presentation on tips for keeping your computer running smoothly.

**15.** Ask family members and friends about the ways they use computers and the types of software they use. Write a report of at least one page about your findings.

**16.** Interview someone who works with your school's computer system. Ask him or her about the types of problems that occur and how they are addressed. Write a one-page article based on your interview.

**17.** Technology usually improves an old invention. In two or more paragraphs, describe how the PC improved on the typewriter.

**18.** List ways in which business software may be used. Include the types of documents that can be created using software.

**19.** Research speech recognition software. How does it work? Why do businesses use it? What type of equipment is needed to use speech recognition? Write a one-page report on your findings.

## Technology Applications

### Software Programs
**20.** Go to a computer lab or use your own computer to research database, spreadsheet, presentation, scheduling, and integrated software packages. Use tutorials, online help, or information from the software maker to find out how each can be used to enhance communications. Then write a report of at least one page on your findings.

## Business Ethics

### Using Computers Ethically
**21.** Ethics are the principles and standards we use to decide how to act. Your behavior while using a computer is also guided by ethics. Team up with a classmate. Develop a list of at least three ethical situations and problems associated with computers. Then list possible reactions to these issues and problems.

## Applying Academics to Business

### English Language Arts

**22.** Biometric devices identify people by physical traits such as fingerprints, voices, and faces. Separate the word *biometric* into its prefix and base word. Write a definition of each part and list other words in which they appear. Then write a definition for the word *biometrics.*

### Mathematics

**23.** The relationship between the width and height of a computer screen is 4:3. How could you use the Pythagorean theorem to figure out the length of the diagonal of a screen that is 15 inches in height?

> **CONCEPT** **Geometry** The Pythagorean Theorem states that the square of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides: $a^2 + b^2 = c^2$.

### English Language Arts

**24.** Compound words are words made up of two or more parts, each of which can stand alone as a word. Compound words can often mean something very different from the meaning the two words would have if they were used separately. Skim the chapter, and list as many compound words as you can. Alphabetize your list.

### Mathematics

**25.** Clarice bought a 128 MB memory chip and a 256 MB memory chip to upgrade the memory in her computer. List the factors of 128 and 256, and explain why 128 has an even number of factors and 256 has an odd number of factors.

> **CONCEPT** **Factoring** Factors are the numbers you multiply to get another number.

## Active Learning

### Hold a Tech Fair

**26.** Work in small groups. Set up booths in your classroom for a tech fair. Each group should bring in a technology item or a picture of one. Categorize the hardware as an input, output, or storage device, or as other computer hardware. Decide ahead of time which device each group should bring. Be prepared to demonstrate or explain the item and answer questions about it. Afterward, write a short essay on what you learned about the different items.

## Business in the Real World

### Technology Product Development

**27.** Form groups. Go online to research a company that makes hardware or software. Contact the company for more information. Ask how it learns about ways that consumers use its products. How does it decide if something should be changed or discontinued? What does the company do when another company offers a new technology that is successful? Write a report on your findings. Present your report to the class.

## Real LIFE skills

### DEVELOPING KEYBOARDING SKILLS

28. Open a Microsoft Word file that contains a previous assignment. Click "Help" on the menu bar. Go to "Keyboard shortcuts for Word" and find the quick reference link. Practice using the shortcuts listed by retyping the first paragraph from your assignment. Include the following in a printout: Make the letters of the first word bold and italic; decrease the font size of the second word to 9 points; and increase the font size of the third word to 16 points.

### Cool Business CAREERS

### FIND YOUR DREAM JOB

29. Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a link to the Occupational Outlook Handbook Web site. Click on the "OOH Search/A-Z Index" link and enter the job title "computer programmer." Then write a one-page report about this type of occupation. Conclude your report with a list of things you could do now to prepare yourself to pursue the occupation.

## Role Play

### USING SOFTWARE FEATURES

30. **Situation** You are the assistant information technology manager for a local newspaper. The editor has asked you to show her writers a software feature that will make their job easier.

   **Activity** Plan and demonstrate how to use the feature. If necessary, use online help, tutorials, or manuals for the software.

   **Evaluation** You will be evaluated on how well you meet the following performance indicators:

   - Explain ways in which the feature can be used.
   - Present the feature in steps that your audience can follow easily.
   - Answer questions from your audience about the feature and how to use it.
   - Prepare a written outline of the points of your presentation.
   - Speak clearly and use correct grammar.

## Standardized Test Practice

**Directions** Choose the letter of the best answer. Write the letter for the answer on a separate piece of paper.

1. **The hypotenuse of a triangle measures 20 mm. Which could be the lengths of the legs?**

   A   6 mm and 8 mm
   B   9 mm and 16 mm
   C   12 mm and 16 mm
   D   13 mm and 14 mm

   **TEST-TAKING TIP** Make sure you do not read too much into test questions. Avoid imagining detailed scenarios in which the answer could be true. In most cases, "trick questions" are not as difficult as you think.

**READING** Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a list of outside reading suggestions.

# Real-World Business and Career Profile

## Antwanye Ford

### President/CEO/Co-Founder, Enlightened Inc.

## Andre Rogers

### CFO/Co-Founder, Enlightened Inc.

Enlightened Inc. is an information technology consulting firm based in Washington, D.C. Friends and founders Antwanye Ford, Andre Rogers, and Thomas Spann met at George Washington University.

## Q & A

### Describe your job responsibilities.

**Antwanye:** As the President of the company, I am responsible for the general direction and vision of the company. This is done by establishing the corporate goals and objectives, and ensuring we have the necessary people in place to achieve those goals.

**Andre:** I am in charge of two main areas, all financial and administrative duties, and all technical projects. My daily duties include ensuring that projects are done on time and on budget, while making certain that the customer receives more than they expect.

### What skills are most important in your business?

**Antwanye:** Passion, vision, belief in yourself, a thick skin, an ability to deal with failure, self-motivation, and persistence. Interpersonal and academic skills are also essential.

**Andre:** The most important aspect of being an entrepreneur is passion. There will be some things that a person would be natural at doing, while others would be a stretch. But drive and passion will allow a person to do both.

### What is your key to success?

**Antwanye:** I believe that you must see what others cannot see, and see it as if it already exists.

**Andre:** Relationships have been key to obtaining customers. Delivering high-quality services and exceeding customers' expectations have allowed us to retain several of our customers for years.

### What advice would you give students interested in starting a business?

**Antwanye:** You need to find something you have passion for beyond what money you might make.

**Andre:** If it is your passion, then do it! Don't let anything stop you. Learn as much as you can about your passion. Value your relationships. Find a mentor—no one knows everything.

## Critical Thinking
*Why is being known for a product or service—developing a brand identity—important to a company?*

## Some Qualifications to be the Owner of an Information Technology Consulting Company

### Academic Skills and Abilities

Computer science; mathematics; information systems; computer programming; interpersonal skills; general business management skills; verbal and written communication skills; multitasking, organizing, and planning skills

| Academic Skills Required to Complete Tasks at Enlightened Inc. | | | |
|---|:---:|:---:|:---:|
| **Tasks** | **Math** | **Science** | **English Language Arts** |
| Hold meetings | | | ◆ |
| Assign duties | | | ◆ |
| Monitor developments in technology | ◆ | ◆ | ◆ |
| Assess marketplace opportunities | ◆ | ◆ | ◆ |
| Customer service | ◆ | ◆ | ◆ |
| Schedule employees | ◆ | | ◆ |
| Order supplies and equipment | ◆ | | ◆ |
| Analyze financials | ◆ | | ◆ |

### Education and Training

Despite employers' preference for those with technical degrees, people with degrees in a variety of majors find employment in information technology. The level of education and the type of training that employers require depend on their needs. One factor affecting these needs is changes in technology.

### Career Path

Computer scientists employed in private industry may advance into managerial or project leadership positions. Database administrators may advance into managerial positions on the basis of their experience managing data and enforcing security. Computer specialists with work experience and considerable expertise in a particular subject or a certain application may find lucrative opportunities as independent consultants or may choose to start their own computer consulting firms.

*Preparing for a Career*
**Self-Assessment Checklist**
Use this self-assessment checklist to help determine ways you can build your professionalism.

✔ Be informed about careers. Search the newspaper and the Internet for available jobs in your field of interest.

✔ Take advantage of resources available through teachers or your school's guidance counselor.

✔ Create a résumé that highlights your professional and personal strengths.

✔ Write a cover letter that advertises your best qualities.

✔ Utilize all your contacts for networking, including friends and family members.

✔ Prepare for interviews by researching the company and by dressing professionally.

✔ Have confidence in yourself and in your abilities.

✔ Be personable, professional, organized, and ready to take advantage of good opportunities.

## Technology's Effect on Global Business

Improvements in technology have had an enormous impact on international trade. Information exchange that once took days or weeks now takes place in seconds with development of the Internet, fax machines, e-mail, and telecommunication advances.

### Thematic Project Assignment

In this project you will conduct research and design a Web page that illustrates technology's effect on global business. Technology includes the Internet, fax machines, teleconferencing, digital TV, Web conferencing, and other technology used in international business.

### Step 1    Brainstorm Skills You Need to Complete This Activity

Your success in designing your Web site depends on your skills. Preview the activity. Then brainstorm a list of the skills you will need to use to complete the activity and describe how you will use them. Skills you might use include:

| | |
|---|---|
| **Academic Skills** | reading, writing, social studies |
| **Basic Skills** | speaking, listening, thinking, and interpersonal skills |
| **Technology Skills** | word processing, keyboarding, presentation, telecommunications, and Internet skills |

@ **SKILLS PREVIEW** Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a graphic organizer you can use to brainstorm the skills you will use to complete the project.

### Step 2    Choose a Business and a Career That Interest You

Think of a business that you find interesting. Then think of a career related to the business that interests you. As you investigate technology's effects on global business, you will research the effects of technology on the business and career of your choice.

### Step 3    Build Background Knowledge

Preview technology's effects on the global business that you will research.

## Technology's Influence on Global Business

The 21st century has seen technology revolutionize global business. Today, the economies of many countries are based on international trade. E-commerce, or electronic commerce, has made it possible for businesses to directly reach customers anywhere in the world.

For example, the Internet allows a business in India to sell goods to a student in New Mexico. Telecommunications allows for corporate meetings to take place via TV screens with managers being in different parts of the world. Fax machines allow for contracts to be delivered, signed, and returned in a matter of minutes instead of days or weeks.

## Step 4  Connect with Your Community

Interview an older family member about the advances in technology in his or her life-time. Find out what computers were like when he or she first entered the workplace. Ask how he or she communicated with other workers or companies.

## Step 5  Research Technology's Effects on Global Business

Use library and Internet resources to research technology's effects on global business. Use the project research checklist as a guide to your research. Keep records of your sources of information.

## Step 6  Develop a Web Site

Use word processing and other software to develop a Web site that includes all of the information described in the project checklist.

### Technology's Effects on Global Business

✔ Write a summary that explains the effects of technology on global business. Include information that explains how technology helps companies become global.

✔ Make a list of the newest trends and products in technology that are used in business. Identify how the new products and developments impact the way global business is conducted.

✔ Explain how businesspeople can keep up with new developments in technology.

✔ Create a time line that illustrates technological advances in the last 50 years.

✔ Prepare a map of the world and illustrate it with graphics to show how the world is connected through technology.

✔ Use the Internet to find an article on a new technology that is being used in international business. Write a summary of the article. Include your source.

### Self Connections

✔ Discuss the results of your research with a family member or other adult.

✔ Describe how technology effects the business and career in which you are interested.

✔ Explain what the investigation and its results mean to you.

## Step 7  Evaluate Your Presentation

@ **RUBRIC**  Go to the *Introduction to Business* Online Learning Center through **glencoe.com** for a rubric you can use to evaluate your final report.