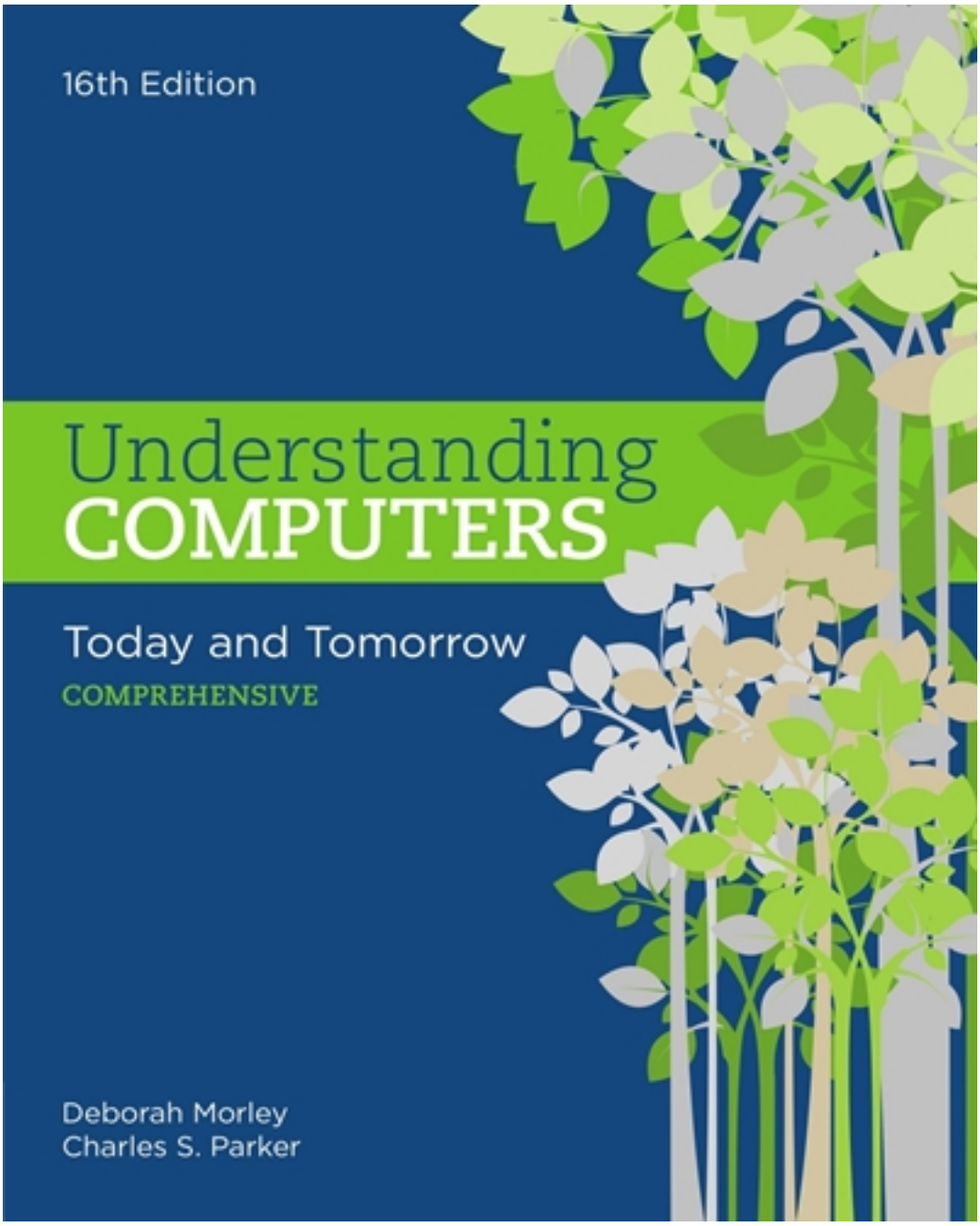
Solutions for Understanding Computers Today and Tomorrow Comprehensive 16th Edition by Morley

CLICK HERE TO ACCESS COMPLETE Solutions



Solutions

Understanding Computers

Chapter One: Introduction to the World of Technology

Table of Contents

Key Term Matching Answers

1. j

2. i

3. a

4. h

5. d

6. f

7. g

8. e

9. c

10. b

Answers to Self-Quiz

1. T

2. F

3. F

4. T

5. F

6. Input

7. hybrid notebook-tablet, convertible tablet, or 2-in-1 computer

8. Virtualization

9. hyperlink

10. **a.** 4 **b.** 2 **c.** 1 **d.** 3

Answers to Exercises

1.
a. P
b. O
c. I
d. I
e. S
f. C
g. O
h. S
i. P

2.
a. network; computer network
b. home page
c. username; domain
d. billg@microsoft.com

3. A desktop computer is larger, designed to be used on a desk, and can connect a wide variety of peripheral devices. A portable computer is designed to be carried around and used while on the go.

4. To share hardware, software, Internet access, easily exchange files, access shared documents, etc.

5. http://apex.com or http://www.apex.com; *studentname*@apex.com

Discussion Question Solutions

Student should participate in a class discussion about the topics listed below. Discussions should include the questions mentioned in the included paragraph and student should form an opinion on this topic and express it using clear and coherent statements.

1. Positive and negative side to technological improvements

2. Ubiquitous nature of mobile phones

Project Solutions

Answers to the projects will vary, but the following answers include a suggested grading rubric and guidelines for what types of information should be included in a student's project solution in order to receive full credit. **NOTE**: The totals in the rubric tables are formulas. To recalculate them after changing the possible point values or entering a student's score, right-click on the total and select *Update Field.*

HOT TOPICS

1. Wearables Student should submit a one-page paper summarizing the student's research into one type of wearable device, including the main purpose of that wearable and if it is designed to work alone or in conjunction with another device. The summary should also include a comparison of two possible products, including battery life, compatibility with other devices, how they are recharged, how they share data, and their cost, and the student's opinions about the wearables.

Description	Pts	Student Score
Student prepares a one-page summary which evaluates one type of wearable.	2	
Student states the main purpose of the selected wearable, such as the type of data it collections, notifications, and if it is designed to work alone or in conjunction with another product.	2	
Student compares two possible products, including battery life, compatibility, how they are recharged, how they share data, and cost.	3	
Student addresses his or her experience about the usefulness of this wearable, any privacy risks, and if he or she would want to buy any of the products researched, with an explanation why.	2	
Paper is reasonably free of typographical, spelling, and grammatical errors.	1	
TOTAL POSSIBLE POINTS:	**10**	**0**

SHORT ANSWER/RESEARCH

2. Buying a New PC Student should submit a comparison sheet and any other written documentation gathered from the student's search for a personal computer that meets his or her stated needs. Comparison should include required hardware and software requirements and then list specifications, prices, brand, shipping, delivery time, warranty terms, etc. for three possible devicesA one-paragraph statement indicating which computer the student would buy and why should be included.

Description	Pts	Student Score
Student prepares a comparison chart containing his or her requirements for a new computer.	2	
Student includes three different systems on the chart, and completes the chart information for each system.	3	
Student marks the system he or she would prefer to buy.	1	
Student includes a one-paragraph summary explaining why he or she chose that system.	2	
Chart is prepared neatly and is reasonably free of typographical, spelling, and grammatical errors.	1	
Student submits documentation along with the comparison sheet.	1	
TOTAL POSSIBLE POINTS:	**10**	**0**

HANDS ON

3. The Internet Student should submit printouts or recorded information as directed in the project instructions. Student should have:

a. A printout of a page defining the term *Internet.*

b. On the printout from part (a), student should include the number of hits from Googling himself or herself and if the first page of hits were relevant.

Description	Pts	Student Score
Student uses Google to search for a definition of the term *Internet* and prints the page of the first hit.	6	
Student indicates how many hits were returned from Googling himself or herself and if the first page of hits contained relevant hits.	4	
TOTAL POSSIBLE POINTS:	10	0

ETHICS IN ACTION

4. Gossip Sites Student should participate in a discussion (in class, via an online class forum, or via a class blog, depending on the instructor's directions) about the ethical ramifications of gossip Web sites. Discussions should include the questions mentioned in the included paragraph and student should form an opinion on this topic and express it using clear and coherent statements. A short written summary of the student's position should be turned in, if assigned.

Description	Pts	Student Score
Student expresses his or her opinion about the ethical ramifications of gossip Web sites.	2	
Student supports his or her position on this issue.	2	
Student explains his or her position clearly and understandably.	2	
Student actively participates in discussion.	2	
Student is respectful of other students' opinions.	2	
TOTAL POSSIBLE POINTS:	10	0

PRESENTATION/DEMONSTRATION

5. Online Education Student should give a 10-minute or less presentation summarizing the student's research into the online education options available at his or her college or university and at least two other institutions of higher learning, including a comparison of the programs in general (such as the types of courses and fees) as well as a more in-depth look at one particular online course (including any face-to-face time required, if exams and assignments are submitted online, any required software, etc.). Student should include an opinion regarding whether or not he or she would be interested in taking an online course and why. The student should use good presentation techniques (speaking clearly and slowly at an appropriate volume, no distracting mannerisms, etc.) and use at least one of the following: whiteboard, handouts, or a computer-based slide presentation. A short written summary should be turned in, if assigned.

Description	Pts	Student Score
Student compares and contrasts at least three different online courses.	3	
Student explains one course in more depth, including whether face-to-face time is required, how exams and assignments are submitted, and other class requirements.	2	
Student includes an opinion regarding whether or not he or she would be interested in taking an online course and why and explains his or her position clearly and understandably.	2	
Presentation includes at least one of the following: whiteboard, handouts, or a computer-based slide presentation.	1	

Student uses good presentation techniques (such as speaking clearly and slowly at an appropriate volume with no distracting mannerisms) and the presentation lasts an appropriate length.	**2**	
TOTAL POSSIBLE POINTS:	**10**	**0**

BALANCING ACT

6. Should Social Media Activity Cost You a Job? Student should pick a side and gather supporting evidence about this issue and then participate in a classroom discussion or prepare a short paper (depending on the instructor's directions). Discussions should include the issues and questions mentioned in the included paragraph and student should express his or her position using clear and coherent statements.

Description	Pts	Student Score
Student expresses his or her opinion on this issue and states his or her position clearly and understandably.	**5**	
Student adequately supports his or her position on this issue.	**2**	
Student actively participates in discussion and is respectful of other student's opinions or the position paper is of reasonable length and reasonably free of typographical, spelling, and grammatical errors, depending on which method of discussion was assigned.	**3**	
TOTAL POSSIBLE POINTS:	**10**	**0**

Chapter Quiz Answers

The Chapter Quiz (located in the Instructor's Manual) may be reproduced to distribute to your students for an additional homework or an in-class quiz.

Answers:

1. T
2. F
3. F
4. T
5. T
6. b
7. c
8. b
9. a
10. e

Understanding Computers

Chapter One: Introduction to the World of Technology

A Guide to this Instructor's Manual:

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

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

In addition to this Instructor's Manual, the Instructor Companion Site contains PowerPoint Presentations, Test Banks, and other supplements to aid in your teaching experience.

Table of Contents

Chapter Objectives

Students will have mastered the material in Chapter One when they can:

1. Explain why it is essential to learn about technology today and discuss several ways computing devices are integrated into our business and personal lives.
2. Define a computer and describe its primary operations.
3. List some important milestones in computer evolution.
4. Identify the major parts of a personal computer, including input, processing, output, storage, and communications hardware.
5. Define software and understand how it is used to instruct the computer what to do.
6. List the six basic types of computers, giving at least one example of each type of computing device and stating what that type of device might be used for.
7. Explain what a network, the Internet, and the World Wide Web are, as well as how computers, people, and Web pages are identified on the Internet.
8. Describe how to access a Web page and navigate through a Web site.
9. Discuss the societal impact of computers and technology, including some benefits and risks related to their prominence in our society.

TECHNOLOGY IN YOUR LIFE (pg. 5)

LECTURE NOTES

- Introduce the concept of **computer literacy** and explain why all individuals need to know something about computers today.
- Contrast life today vs. life before computers.
- Discuss the ways in which computers are used at home, in education, on the job, and while on the go.

BOXES

- Technology and You, Restaurant iPad Ordering Systems (pg. 9)

FIGURES

- Figure 1-1, Figure 1-2, Figure 1-3, Figure 1-4, Figure 1-5

TEACHER TIP

Stress that computers are everywhere and that understanding how to use a computer and how computers work can help individuals become better consumers, students, and employees.

CLASSROOM ACTIVITIES

1. Group Activity: Brainstorm with the class about all the computers they might use in a single day. Make lists on the board or overhead. The lists may include home computers, computers in classrooms, ATM machines, library catalogs, handheld computers, smartphones, home

appliances, and computers in retail establishments and restaurants. Challenge them to remember computers in unexpected places, such as in their car.

2. How many different computer examples were generated by the entire class? Count how many computers the entire class uses in one day, or pick one person, and count how many computers that person has used in a day. Does this number surprise anyone?
3. Quick Quiz:
   1) Approximately what percentage of all U.S. mobile phone users today are smartphone users? (Answer: b)

   a. 20%

   b. 67%

   c. 95%

   2) True or False: The term ubiquitous computing refers to the trend where computers are found virtually everywhere and computing technology is embedded in an increasing number of devices. (Answer: True)

   3) Taking a class from a remote location (your home or office, for example) via a computer and the Internet is called ____. (Answer: distance learning)

3. Critical Thinking Activity: Are there both benefits and disadvantages to convergence? Would students like their living room PC to also be their PC, telephone, and so forth? Why or why not? How many students have both a landline and mobile phone, or a smartphone and laptop PC? Why have they chosen not to consolidate those into a single unit?

WHAT IS A COMPUTER AND WHAT DOES IT DO? (pg. 10)

LECTURE NOTES

- List the four primary operations of a **computer** (**input**, **processing**, **output**, and **storage**) and use a real-life example to run through this cycle. Does your example also use **communications**?
- Define the terms **data** and **information** and discuss the difference between them.
- Discuss the different computer generations, including precomputers and early computers.
- Define the term **hardware** and discuss the various hardware devices found on a typical PC.
- Define the term **software** and explain the difference between system software and application software.
- Discuss the people involved in computer systems – end users and professionals.

BOXES

- Ask the Expert: Francois Chardavoine, Executive Director, Head of Pipeline, Sony Pictures Imageworks: What position might a college student graduating with a computer degree qualify for at Sony Pictures Imageworks? (pg. 12)

FIGURES

- Figure 1-6, Figure 1-7, Figure 1-8, Figure 1-9, Figure 1-10, Figure 1-11

TEACHER TIP
Refer your students to the "Computer History Timeline" located in the References and Resources Guide at the end of the textbook.

CLASSROOM ACTIVITIES

1. Group Activity: Break the class into three groups, and assign each group the task of thinking of a possible type of computer not already discussed in this class session, and describing its input, process, output, and storage. Possibilities include smart watches, smartphones, computers embedded in exercise equipment or appliances, digital video recorders, and medical devices such as pacemakers. Do all the selected devices perform all four functions? If not, why not? And are they still considered to be computers? Have each group present its conclusions to the class.

2. Quick Quiz:
   1) Which of the following was *not* a first generation computer? (Answer: a)
      a. IBM PC
      b. UNIVAC
      c. ENIAC
   2) True or False: Fifth-generation computers are most commonly defined as those that are based on artificial intelligence. (Answer: True)
   3) Speakers are an example of a(n) ____ device. (Answer: output)
   4) The main system software is the ____, which starts up the computer and controls its operation. (Answer: operating system)

COMPUTERS TO FIT EVERY NEED (pg. 19)

LECTURE NOTES

- Explain that computers are generally classified into six main categories, but the distinction between these categories is not always clear-cut.
- Discuss embedded computers and why they are increasingly being used in products.
- Discuss the various types of mobile devices available today. Can they all be used for general purpose computing?
- Explain the various types of personal computers and how they differ in use.
- Explain the purpose of server computers.
- Discuss mainframe computers and supercomputers and compare and contrast their purposes.

BOXES

- Trend: Apple Watch (pg. 20)
- Inside the Industry: Smartphone Driver Licenses (pg. 22)
- Ask the Expert: Sarah Beddoe, Vice President of Marketing, Sonic, America's Drive-In: How long will it be until paying for fast-food purchases by mobile phone is the norm? (pg. 22)

- Ask the Expert: Brandon Mairs, CEO, President, Arubixs: How will emerging hardware technologies impact computing in the future? (pg. 24)

FIGURES

- Figure 1-12, Figure 1-13, Figure 1-14, Figure 1-15, Figure 1-16, Figure 1-17, Figure 1-18, Figure 1-19

TEACHER TIP
Refer your students to the "Guide to Buying a PC" located in the References and Resources Guide at the end of the textbook.

CLASSROOM ACTIVITIES

1. Class Discussion: Use the list of computers generated in the 'Technology in Your Life' activity and have the class sort them into categories. Do all the computers fit into the traditional categories? Of those that do not, is it possible to define a category type that covers all of them? Which category does the class believe will be the most prominent in the future? Will additional categories emerge?
2. Quick Quiz:
   1) An Android tablet is an example of a(n) ____. (Answer: b)
      a. desktop computer
      b. mobile device
      c. server
   2) True or False: The terms mainframe computer and supercomputer are interchangeable; both refer to the largest, most powerful computers. (Answer: False)
   3) A smartphone is an example of a(n) ____. (Answer: mobile device)

COMPUTER NETWORKS AND THE INTERNET (pg. 27)

LECTURE NOTES

- Explain what comprises a **computer network** and briefly describe its purpose.
- Define the term **Internet** and explain how **ISPs** are used to access it.
- Define the term **World Wide Web** and explain the role of **Web pages**, **Web sites**, **Web servers**, and **Web browsers**.
- Explain the process involved in accessing a local computer network and its resources.
- Explain the difference between **IP addresses**, **domain names**, **URLs**, and **e-mail addresses**, and which Internet resource is used to access each.
- Explain (or ideally demonstrate) how to use a URL to access a Web page and how **hyperlinks** **Favorites**, and History lists are used. Be sure to give tips on what to do if a typed URL does not reach the intended page.
- Explain (or ideally demonstrate) how to perform a simple search using Google or another search site.
- Discuss how e-mail works.
- Discuss the rules involved in pronouncing Internet addresses.

BOXES

- How It Works: Cloud Computing (pg. 32)

FIGURES

- Figure 1-20, Figure 1-21, Figure 1-22, Figure 1-23, Figure 1-24, Figure 1-25, Figure 1-26, Figure 1-27

TEACHER TIP
Use Figure 1-23 on page 31 to explain the various parts of a URL.

TEACHER TIP
Explain how the campus e-mail system works. Are students automatically provided with an e-mail address or do they need to sign up for one? Are students' e-mail messages stored on a campus server or a Web mail server? In either case, are they available from any location and any device? If your school prefers that students use their own Web-based e-mail account, show the students how to sign up for a free Yahoo, Gmail, or Outlook.com account.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask for a show of hands to find out how many people have a PC at home and how many have Internet access. Find out how the students with home Internet access connect. Are there any students with dial-up access or are all broadband users? Are there any that connect at public wireless access points or through a mobile wireless provider? Do any tether a smartphone? Ask the students to share their experiences—are they satisfied with their current means of Internet access? Why or why not?

2. Quick Quiz:
   1) 134.170.185.46 is an example of a(n) ____. (Answer: b)
      a. URL
      b. IP address
      c. Web page filename
   2) True or False: In the e-mail address jsmith@abc.com, abc.com is the domain name. (Answer: True)
   3) A computer that hosts Web pages is called a(n) ____. (Answer: Web server)

3. Critical Thinking Activity: Write a URL on the board or overhead or direct the students' attention to a URL printed on a class syllabus or other class handout. As a class, have them determine the Web page filename, the computer and domain name on which it is stored, and if the file is stored in a folder. How intuitive is the URL? Is the Web page easy to access? Is it easy to tell from the domain name which organization the page belongs to? Do any students have any suggestions for improvement?

TECHNOLOGY AND SOCIETY (pg. 36)

LECTURE NOTES

- Discuss some of the benefits of a technology-oriented society and a networked economy.
- Discuss the risks involved in having a technology-oriented society.
- Outline some differences in how individuals communicate online vs. offline.
- Discuss how anonymity might affect online activities.
- Stress that all information on the Internet is not necessarily true or accurate.

FIGURES

- Figure 1-28, Figure 1-29, Figure 1-30, Figure 1-31

TEACHER TIP
Caution students about downloading unfamiliar software from the Web, clicking on e-mail links, and so forth. Explain the security procedures required on campus computers to prevent viruses and other security problems.

CLASSROOM ACTIVITIES

1. Group Activity: Ask students if they are familiar with the term "urban legend." Explain that an urban legend is a story that is widely circulated (in recent years over the Internet), exists in multiple versions (at times with various endings), and is reported to be true (but often isn't). Divide the class into groups and ask them to discuss any urban legends they have heard of via the Internet. Have each group relate a legend to the class, and then discuss how to research the legend to discover whether it is true. Ask students why they think urban legends proliferate. When they receive a story via e-mail, do they generally believe it? Do they pass it along to others? If you have a classroom PC with Internet access, you can review the urban legends posted on http://hoaxbusters.org or http://www.snopes.com.

2. Quick Quiz:
   1) Which of the following is a security risk of using the Internet? (Answer: a)
      a. Computer virus
      b. Beginning medical students performing virtual surgery
      c. Virtual design
   2) True or False: All information published to Web pages is accurate. (Answer: False)
   3) Most people would view the ability to shop or otherwise perform activities 24/7/365 as a(n) ____ of our technology-oriented society. (Answer: benefit/advantage)

3. Critical Thinking Activity: As a class, discuss why some individuals might post untrue information on the Web. Can the students think of any recent examples of urban legends or other types of misinformation published on a Web page or sent via e-mail? What was the apparent motivation? Should there be a governing body to ensure Web-based information is accurate? Why or why not? Discuss which types of sites would be best to use to ensure that

information is accurate (the company that makes the product being researched, a government site for government information, etc.). Suggest students always try to verify information from a second source before including that information in class papers or projects.

GLOSSARY OF KEY TERMS

- Application software (apps) (17)
- Bookmark (34)
- Boot (16)
- Communications (11)
- Computer (10)
- Computer literacy (7)
- Computer network (27)
- Data (11)
- Desktop computer (21)
- Domain names (30)
- Electronic mail (35)
- E-mail (35)
- E-mail address (31)
- Embedded computer (19)
- Favorite (34)
- Hardware (14)
- Hybrid notebook-tablet computer (23)
- Hyperlink (28)
- Information (11)
- Input (10)
- Internet (28)
- Internet address (30)
- Internet appliance (24)
- Internet service provider (28)
- IP address (30)
- ISP (28)
- Laptop computer (23)
- Mainframe computer (26)
- Microcomputer (21)
- Mobile device (20)
- Netbooks (23)
- Notebook computer (23)
- Operating system (16)
- Output (10)
- PC (21)
- Personal computer (21)
- Portable computer (23)
- Processing (10)
- Server (24)
- Smartphone (20)
- Software (16)
- Storage (10)
- Supercomputer (26)
- Tablet (20)
- Tablet computer (23)
- Thin client (24)
- Uniform Resource Locator (31)
- URL (31)
- Username (31)
- Virtualization (25)
- Web browser (28)
- Web page (28)
- Web server (28)
- Web site (28)
- Windows desktop (16)
- World Wide Web (Web) (28)

END OF CHAPTER MATERIAL (solutions for the Review Activities and Projects are located in the Chapter 1 Solutions file)

- **Summary:** Summarizes the main concepts of the chapter-by-chapter objective. Includes all bolded key terms in the chapter.

- **Review Activities:** Helps students test their knowledge of the chapter concepts. Includes the following:
    - **Key Term Matching**. Includes 10 key terms from the chapter to match up with their corresponding definitions.
    - **Self-Quiz**. Includes five True/False and five Completion and/or Matching objective questions. The answers to the Self-Quiz are included in the References and Resources Guide at the end of the textbook.
    - **Exercises**. Includes five Matching, Completion, and/or Short Answer questions.
    - **Discussion Questions**. Introduces a topic and some questions to start a class discussion on that topic.

- **Projects:** A total of six projects are included in the following seven categories. Projects that require Internet access are marked with an Internet icon.
    - **Hot Topics**. Includes a topic for students to research. Typically, they are asked to submit a short summary of their findings.
    - **Short Answer/Research**. Includes a topic for students to research. Typically, they are asked to write a short summary of their findings.
    - **Hands On**. Includes directions for a hands-on activity that students need to perform. Typically, they are asked to write a short summary of their experience.
    - **Ethics in Action**. Includes a topic for students to research and form an opinion about. Typically, they are asked to discuss their position in class, via an online class discussion group, in a class chat room, or via a class blog, depending on the instructor's direction. They may also be asked to write a short paper expressing their opinion.
    - **Presentation/Demonstration**. Provides students with a topic to research or an activity to perform. They are asked to present their findings to the class in the form of a presentation, as well as to submit a written summary, if instructed.
    - **Balancing Act**. States a current issue and directs students to pick and defend a side on that issue in a classroom discussion or short paper.

Expert Insight On…Computers and Technology: This special feature, beginning on page 46, shares the opinions and perspective of Daniel Kelley, Vice President, Marketing, D-Link Systems, Inc.

Reproducible Chapter Quiz

The Chapter Quiz on the following page may be reproduced to distribute to your students for additional homework or an in-class quiz.

Chapter Quiz Answers

1. T
2. F
3. F
4. T
5. T
6. b
7. c
8. b
9. a
10. e

Top of Document

Name: _____

Course: _____

Instructor:_____

Chapter Quiz

Understanding Computers: Today and Tomorrow 16/e, Chapter 1

True/False

Instructions: Circle **T** if the statement is true or **F** if the statement is false.

T F 1. Data entered into a computer is referred to as input.

T F 2. The main processing device of a PC is the hard drive.

T F 3. A Web browser is an example of hardware.

T F 4. The Internet is an example of a computer network.

T F 5. The Internet address *jsmith@cengage.com* is an example of an e-mail address.

Multiple Choice

Instructions: Select the **best** answer for each question and write the corresponding letter in the blank at the left of each question.

_____ **6.** Which of the following would *not* be considered a personal computer?

a. notebook computer **c.** desktop computer **e.** hybrid notebook-tablet computer
b. supercomputer **d.** tablet computer

_____ **7.** A numeric identifying address for a computer accessible through the Internet is called a(n) _____.

a. user name **c.** IP address **e.** domain name
b. e-mail address **d.** URL

Matching

Instructions: Select the term that **best** matches each of the following statements and write the corresponding letter in the blank at the left of each statement (all terms will not be used).

a. consumer kiosk **c.** desktop computer **e.** tablet computer
b. supercomputer **d.** midrange server

_____ **8.** A computer used to forecast the weather, control satellites, and other highly complex applications.

_____ **9.** A self-service computer in a public location used to obtain information or order products.

_____ **10.** A type of computer that would likely use pen input.