Introduction to Information Systems 11th edition Rainer Solutions Manual

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Excel Activity Lesson 01: Formulas and Dates

(Estimated Time: 10 minutes)

TED Talk Marketing Managers are working with potential speakers, and a question came up about how long it takes for a recorded video to be posted online. They have provided you with a spreadsheet that includes 100 of the videos recorded between 2001 and 2017. Using this data, calculate the average, minimum and maximum number of days between the recording and publishing dates.

Detailed Instructions:

1. Download the spreadsheet. TED Talk Activity 1.xlsx.
2. Highlight both the film date and publish date columns. Make sure both are formatted as dates.
3. Write a formula that will calculate the difference in the publish date and the film date.
4. Be sure to format this new column as a number rather than a date.
5. Beneath the newly created data, write a formula that will calculate the average number of days between the publish date and the film date. Be sure to set the number of decimal points to 0.
6. Beneath the average formula, write another formula that will display the minimum number of days between the publish date and the film date.
7. Beneath the minimum formula, write a final formula that will display the maximum number of days between the publish date and the film date.
8. Be sure to label your average, min, and max using the cell directly to the left of each formula so any viewer will know what they are viewing.

Excel Activity 1: MC Questions

1. What is the average (to the hundredth decimal place)?
    a. 218.56
    b. 216.58
    c. 215.86 **(correct)**
    d. 230.7
2. What is the minimum?
    a. 1 **(correct)**
    b. 2
    c. 10
    d. 5
3. What is the maximum?
    a. 2307 **(correct)**
    b. 1703
    c. 1207
    d. 2370

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CHAPTER 1 – AI Therapy Becomes New Use Case for ChatGPT	
Video Summary	Some users see the chatbot as a way to supplement traditional mental health services, despite troubling privacy implications. Hugging Face AI Chief Ethics Scientist Meg Mitchell joins Caroline Hyde and Bloomberg's Rachel Metz for her take on this new trend.
Discussion Questions:	1. Would you use ChatGPT or another form of AI to seek mental health assistance? Why or why not? 2. Do you think that OpenAI's ChatGPT policy is sufficient to safeguard individuals from using it inappropriately or sharing too much personal data? 3. How is Hugging Face considering ethics in their AI model code development?

QUESTIONS FOR DISCUSSION WITH GUIDED ANSWERS:

1. Would you use ChatGPT or another form of AI to seek mental health assistance? Why or why not?

Answer:

Student answers will vary.

2. Do you think that OpenAI's ChatGPT policy is sufficient to safeguard individuals from using it inappropriately or sharing too much personal data?

Answer:

ChatGPT has both policy statements, and the model is trained to flag therapeutic requests; however, students will likely required that individuals would have to be aware of the policy and the model may be limited in its effectiveness to stop individuals from using it for these reasons.

3. How is Hugging Face considering ethics in their AI model code development?

Answer:

The company is using gating mechanisms such as submitting a request (which could involve including clinicians eventually). They also try to provide documentation for data and model protocols.

Multiple Choice:

1. What feedback have those who have used of AI for therapy indicated?

A) Individuals are worried about the cost associated with the use of AI for therapy.
B) Individuals only see the benefit if it fully replaces a therapist.
C) Individuals are experiencing some benefits.
D) Individuals have expressed significant concern and do not see any benefit in such non-human interaction.

Answer: C

2. How can AI be useful for mental health?

A) To expedite triage to those requiring assistance.
B) To encourage individuals to keep their concerns private.
C) To increase the cost associated with mental health assistance.
D) To encourage individuals to share more personal data for personalized advice.

Answer: A

3) What is 'rubber ducking'?

A) Talking something out with another entity
B) Misleading AI to obtain the response you want
C) Providing standard responses to streamline the need for AI model training
D) Masking your identity to ask questions

Answer: A

CHAPTER 1 – Chunk: Siegel on Work, Technology and Society	
Video Summary	Two Sigma Co-Founder and Co-Chairman David Siegel sees the positive potential of technology and artificial intelligence -- but he's worried about the negative impact it can have on what he calls "the human experience." Siegel discusses this dilemma in an exclusive interview with Sonali Basak as part of Bloomberg's "Next Big Risk" series.
Discussion Questions:	1. Do you believe that technology and artificial intelligence are enhancing the human experience overall? Why or why not? 2. What measures would you suggest gauging the impact technology is having on the human experience as it continues to evolve? 3. Consider the community you live in. Is the adoption and availability of advanced technology by those with access creating greater reward than those without?

QUESTIONS FOR DISCUSSION WITH GUIDED ANSWERS:

1. Do you believe that technology and artificial intelligence are enhancing the human experience overall? Why or why not?

Answer:

Student answers will vary.

2. What measures would you suggest gauging the impact technology is having on the human experience as it continues to evolve?

Answer:

Student answers will vary.

3. Consider the community you live in. Is the adoption and availability of advanced technology by those with access creating greater reward than those without?

Answer:

Student answers will vary.

Multiple Choice:

1. What is meant by the ‘human experience’?

A) Humans want to focus on rewarding careers.
B) Humans want to prioritize technology over a society meant for humans.
C) Humans want a society that provides the benefits they want to experience.
D) Humans want to guarantee that technology won't replace careers.

Answer: C

2. What is important to consider as society evolves?

A) The rewards should be directly aligned to nations with the greatest productivity.
B) The rewards need to benefit many individuals.
C) The rewards should be focused on the calculation of GDP.
D) The rewards need to benefit individuals with the greatest influence on innovation.

Answer: B

3) What is a non-financial way that we can measure the success of our society?

A) Measure of gross domestic product
B) Measure of engagement
C) Measure of wealth
D) Measure of health

Answer: B

Chapter 1 – Introduction to Information Systems

Chapter Outline

1.1 Why Should I Study Information Systems?
1.2 Overview of Computer-Based Information Systems
1.3 How Does IT Impact Organizations?
1.4 Importance of Information Systems to Society

Learning Objectives

1. Identify the reasons why being an informed user of information systems is important in today's world.
2. Describe the various types of computer-based information systems in an organization.
3. Discuss ways in which information technology can affect managers and nonmanagerial workers.
4. Identify positive and negative societal effects of the increased use of information technology.

Teaching Tips and Strategies

Today's students use technology in ways that were not even dreamed of just a decade ago. Because these students have grown up surrounded by and using technology, information technology is an integral part of their lives. Unfortunately, many students seldom think about the whys and wherefores behind the technology they use every day.

I have found they often fail to recognize, understand, or even see how information technology impacts them, their lives, and their careers. It is important to let them know what is in it for them, even if they are not majoring in information systems. The textbook authors do a good job of this by including a "What's In IT for Me?" section at the start of each chapter.

Throughout this course, it is important for us to encourage our students to step back and observe the bigger picture of what comprises the fundamentals of management information systems. Unfortunately, you will find some students who will think this class is boring or even complain that they already "know it all."

Point out that they should look at the "What's In IT for Me?" section of the chapters. This should be done early in the course. As part of your introductions on the first day of class, you might consider asking students what their major is. Knowing each student's major and possible career goals will help you tailor examples, classroom assignments and discussions to the interests of the students.

Explaining how MIS has affected businesses as well as workers helps to get students interested in this class. It also helps when they are told stories of how computers have evolved and how MIS and decision support systems (discussed in a later chapter) have made management decision-making easier and more reliable.

As an instructor, I make it a point to remind my students that while they may feel comfortable using technology, their future roles will demand more than just familiarity. They'll need to make thoughtful decisions about how and when to use it strategically. In the professional world, technology isn't just about convenience; it's a means to drive organizational goals. I encourage them to think critically about aligning tech choices with broader business objectives, so they're not just users, but strategic contributors.

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To support your class discussions and examples through the course, I try to bring in examples from the local area. Most communities around college and university campuses have businesses or government agencies that operate data centers. Many times, students are unaware that they are there. In most cases, the local Chamber of Commerce or, if your school has one, a group of local business leaders who periodically meet with your dean might help you find these sites.

You might also consider supporting your class discussions on the importance of computer technology with examples of how companies have moved to e-mail to save money over using snail mail (postal service). Students can be introduced to the concept that IT must be paired with business processes to harness IT's potential.

IT is important to business leaders all over the world. There are salary statistics for all majors. You can get this information from *USA Today*'s website at www.usatoday.com, Payscale.com (www.payscale.com), or Salary.com (www.salary.com). Historically, there are usually a few IT-related jobs in the top 10 highest-paying jobs for college grades. This usually gets some students' attention, especially if they realize that if they are more technologically savvy they will tend to make more money.

Finally, have your students look at local help-wanted ads to see how many job postings for what might be considered non-technical jobs require some IT knowledge.

Blackboard/CMS Suggestions

Most colleges and universities have design requirements on the structure of online courses and what should be included in the campus's course management system, whether the class is online or as a supplement to an in-person lecture-based class. So what I am including in this section for this and the rest of the chapter Instructor Manuals is based on what I have learned from nearly twenty years of teaching this class, and almost fifteen years teaching it online.

I usually start the term with an online discussion question asking the students about their majors, what they think their technical knowledge is (this can sometimes be surprising because they usually overestimate what they really know), and if they have any fears about technology. For this exercise, I usually do not permit others in the class to comment on another student's response. I use this mainly to gauge the knowledge and background of the class.

I always record a short video for each chapter for my online classes. I have found that if I record a complete lecture, most students do not watch it. So I do a ten- to fifteen-minute chapter overview video.

If you are teaching an online class or are looking for a short video for a lecture class, I can usually find topic-relevant videos on YouTube. Sometimes they are product demos or sales videos, but they still usually present relevant information or concepts.

Opening Case: American's Water Supply Under Cyberattack

Questions for this case are included in the closing section of the chapter and solutions are provided under 'Closing Case: Outcomes of the Water Utility Cyberattack'.

IT's About Business 1.1 Informed Users Are an Important Part of System Stability

1. How might a more robust quality control system have prevented the leap year glitch?

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A stronger quality control system could have flagged the leap year issue during routine software testing, especially in scenarios involving date changes. Regular checks and timely updates would have ensured the patch was installed before the glitch occurred. By simulating rare calendar events like February 29, developers could have caught and fixed the error early.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Comprehension
AACSB Category: Technology

2. What stands out about the far-reaching effect of a simple software malfunction?.

ANSWER:
What stands out is how a small coding oversight, a date miscalculation, caused widespread disruption across an entire country's fuel system. It affected everyday routines, led to financial losses, and damaged public trust in automated services.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Comprehension
AACSB Category: Technology

3. How might informed users of technology help to avoid future interruptions of this kind??

ANSWER:
IT staff could have prevented the leap year glitch by ensuring all systems were updated with the available patch before February 29. Their role includes anticipating rare but predictable events like leap years and testing software accordingly. With better oversight and routine maintenance, they could have avoided the disruption to payment systems and customer service. Even informed users at stations may have been able to raise the unique event and reach out proactively to ensure calculations would be accurate.

Level: Medium
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Application
AACSB Category: Technology

IT's About Business 1.2 AI and NFL Safety

1. How has AI informed rules and penalties in the NFL?

ANSWER:
AI has helped the NFL refine its rules by analyzing thousands of hours of game footage to identify patterns in high-risk collisions. By studying the speed, angle, and force of impacts, flagged AI systems are most likely to result in concussions. This data informed the league's decision to enforce stricter penalties for dangerous tackles and improve helmet technology. It also led to the adoption of independent medical evaluations during games, ensuring player safety decisions are based on objective analysis rather than team pressure.

Level: Medium

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Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

2. How is AI used to inform coaches and trainers about players' physical conditions?

ANSWER:
AI is also used to track players' physical health through wearable devices that collect real-time data like heart rate, movement, and neurological responses. These systems analyze trends to detect early signs of fatigue, stress, or potential injury. For example, if a player's movement pattern shifts subtly, AI might alert trainers to adjust practice intensity or schedule a medical check. This proactive approach helps prevent injuries before they happen and allows for more personalized care and training strategies.

Level: Medium
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

3. How might the NFL's use of AI help other industries avoid accidents?

ANSWER:
Student answers will vary. They may consider other industries such as healthcare or transportation. The discussion should be based on how AI is used to analyze risk patterns to predict and prevent accidents before they happen.

Level: Medium
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

Before You Go On Review Questions

Section 1.1

1. Rate yourself as an informed user. (Be honest; this isn't a test!)

ANSWER:
Student answers will vary. Some will think they have a higher level of technological knowledge than they actually do.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Knowledge
AACSB Category: Technology

2. Explain the benefits of being an informed user of information systems.

ANSWER:

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Informed users tend to get more value from whatever technologies they use. You will enjoy many benefits from being an informed user of IT. First, you will benefit more from your organization's IT applications because you will understand what is "behind" those applications (see Figure 1.1). That is, what you see on your computer screen is brought to you by your MIS department operating "behind" your screen. Second, you will be in a position to enhance the quality of your organization's IT applications with your input. Third, even as a new graduate, you will quickly be in a position to recommend—and perhaps help select—the IT applications that your organization will use. Fourth, being an informed user will enable you to keep abreast of both new information technologies and rapid developments in existing technologies. Remaining "on top of things" will help you to anticipate the impacts that "new and improved" technologies will have on your organization and to make recommendations on the adoption and use of these technologies. Finally, you will understand how IT can be used to improve your organization's performance and teamwork as well as your own productivity.

Level: Medium
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Comprehension
AACSB Category: Technology

3. Discuss the various career opportunities offered in the IT field.

ANSWER:
Career opportunities in IS are strong and are projected to remain strong. Students can use any of the references under the heading 'IT Offers Career Opportunities'.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Knowledge
AACSB Category: Technology

Section 1.2

1. What is a computer-based information system?

ANSWER:
A computer-based information system (CBIS) is an information system that uses computer technology to perform some or all of its intended tasks. Although not all information systems are computerized, today most are. For this reason the term "information system" is typically used synonymously with "computer-based information system."

Level: Easy
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Knowledge
AACSB Category: Technology

2. Describe the components of computer-based information systems.

ANSWER:
- Hardware is a device such as the processor, monitor, keyboard, and printer. Together, these devices accept data and information, process them, and display them.
- Software is a program or collection of programs that enable the hardware to process data.

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- A database is a collection of related files or tables containing data.
- A network is a connecting system (wireline or wireless) that permits different computers to share resources.
- Procedures are the set of instructions about how to combine the above components in order to process information and generate the desired output.
- People are those individuals who use the hardware and software, interface with it, or utilize its output.

Level: Medium
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Knowledge
AACSB Category: Technology

3. What is an application program? What examples can you provide?

ANSWER:
An application (or app) is a computer program designed to support a specific task or business process. Student examples will vary but may include MS suite of applications (Word, Excel) or even their university's learning management system/platform (i.e. Blackboard).

Level: Easy
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Knowledge
AACSB Category: Technology

4. How do knowledge workers use information systems in their day-to-day jobs?

ANSWER:
Knowledge workers make decisions about situations that can significantly change the manner in which business is done. Information systems provide the databases, communications, and applications that allow them to store critical data used in analysis and tactical decision making.

Level: Easy
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Comprehension
AACSB Category: Technology

5. As we move up the organization's hierarchy from clerical workers to executives, are information systems more important in some areas than others??

ANSWER:
At the lower organizational levels, systems are used primarily to automate routine tasks. Moving up in the organization, systems are used to analyze information for decision-making purposes.

Level: Easy
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Comprehension
AACSB Category: Technology

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Section 1.3

1. Why should employees in all functional areas be knowledgeable about IT?

ANSWER:
Information systems are important for several reasons, regardless of the employee's functional area of responsibility: (1) IT facilitates the organizational activities and processes of today's businesses. (2) Most jobs students will go to after graduating will require some knowledge of information technology. (3) Employees that are able to use information technology will be able to give themselves an important advantage over their peers in the workplace. (4) Students will find that information systems will make their job easier and more efficient.

Level: Medium
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Comprehension
AACSB Category: Technology

2. Describe how IT has changed and how AI might further change a manager's job.

ANSWER:
IT often provides managers with near real-time information, meaning that managers have less time to make decisions, making their jobs even more stressful. AI is changing a manager's job by automating routine tasks and providing data-driven insights that support faster, smarter decision-making.

Level: Easy
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Comprehension
AACSB Category: Technology

3. Discuss several ways in which IT impacts employees at work.

ANSWER:
Many people have experienced a loss of identity because of computerization. They feel like "just another number" because computers reduce or eliminate the human element that was present in noncomputerized systems.

The Internet threatens to exert an even more isolating influence than computers and television. Encouraging people to work and shop from their living rooms could produce some unfortunate psychological effects, such as depression and loneliness.

They can adversely affect individuals' health and safety. To illustrate this point, we consider two issues associated with IT: job stress and long-term use of the keyboard.

Computers can create new employment opportunities for people with disabilities by integrating speech- and vision-recognition capabilities.

Level: Easy
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

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Section 1.4

1. What are some of the quality-of-life improvements made possible by IT? Has IT had any negative effects on our quality of life? If so, explain, and provide examples.

ANSWER:
The workplace can be expanded from the traditional 9-to-5 job at a central location to 24 hours a day at any location. IT can provide employees with flexibility that can significantly improve the quality of leisure time, even if it doesn't increase the total amount of leisure time.

However, IT can also place employees on "constant call" where they are never truly away from the office, even when they are on vacation.

Level: Easy
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Application
AACSB Category: Technology

2. Describe the robotic revolution, and consider its possible implications for humans. How do you think robotics will affect your life in the future?

ANSWER:
In fact, "cyberpooches," nursebots, and other mechanical beings may be our companions before we know it. Around the world, quasi-autonomous devices have become increasingly common on factory floors, in hospital corridors, and in farm fields. In our homes, iRobot (www.irobot.com) produces the Roomba to vacuum our floors, the Scooba to wash our floors, the Dirt Dog to sweep our garages, the Verro to clean our pools, and the Looj to clean our gutters.

We also have to look at advances made in building robotic devices to replace hands, legs, and arms.

To do some tasks, companies have started to replace human workers with robotic workers.

Student answers will vary with regards to the impact it will have on their lives.

Level: Easy
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Application
AACSB Category: Technology

3. Explain how IT has improved health care practices. Has the application of IT to health care created any problems or challenges? If so, explain, and provide examples.

ANSWER:
Medical personnel use IT to make better and faster diagnoses and to monitor critically ill patients more accurately. IT also has streamlined the process of researching and developing new drugs. Expert systems now help doctors diagnose diseases, and machine vision is enhancing the work of radiologists. Surgeons use virtual reality to plan complex surgeries. They have also used a surgical robot to perform long-distance surgery by controlling the robot's movements. Finally, doctors discuss complex medical cases via videoconferencing. New computer simulations recreate the sense of touch, allowing doctors-in-training to perform virtual procedures without risking harm to an actual patient. Challenges

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identified may vary by student based on their own knowledge and experience. They may highlight the challenge of individuals trying to self-diagnose and the implications of doing so.

Level: Medium
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Application
AACSB Category: Technology

Discussion Questions

1. Would your university be a good candidate for digital transformation? Why or why not? Support your answer.

ANSWER:
Answers will vary by student.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Application
AACSB Category: Technology

2. If you responded yes, then what types of digital initiatives should your university undertake to transform itself?

ANSWER:
Answers will vary by student.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Application
AACSB Category: Technology

3. Describe a business that you would like to start. Discuss how information technology could: (a) help you find and research an idea for a business, (b) help you formulate your business plan, and (c) help you finance your business.

ANSWER:
This will be different depending on each student's background and major. The responses related (a), (b), and (c) will depend on the service the business would be providing.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Application
AACSB Category: Technology

4. Your university wants to recruit high-quality high school students from your state. Provide examples of (a) the data that your recruiters would gather in this process, (b) the information that your recruiters would process from these data, and (c) the types of knowledge that your recruiters would infer from this information.

ANSWER:

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Senior testing scores—potential for success in college classes
ACT/SAT scores—potential for success in college classes
Location—some students may want to stay close to home
Alumni parents (legacy students)—chance parents would want their children to attend same school as they did
Other factors that may be unique to your school.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Comprehension
AACSB Category: Technology

5. Can the terms *data, information*, and *knowledge* have different meanings for different people? Support your answer with examples.

ANSWER:
Yes. Students will have different responses based on their personal experiences and possibly their majors.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Comprehension
AACSB Category: Technology

6. Information technology makes it possible to never be out of touch. Discuss the pros and cons of always being available to your employers and clients (regardless of where you are or what you are doing).

ANSWER:
This discussion should touch on e-mail and instant messaging and their impact on a 24/7/365 business environment. If you are teaching an online class or the students are familiar with the concept, discuss how being available has changed the way you are interacting with students. Social media such as Facebook Instagram, and Twitter should also be considered in the overall discussion given that businesses have embraced these as marketing tools.

Level: Medium
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

7. Robots have the positive impact of being able to relieve humans from working in dangerous conditions. What are some negative impacts of robots in the workplace?

ANSWER:
Potentially reducing or eliminating some nonskilled repetitive production line jobs.

Level: Easy
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Comprehension
AACSB Category: Technology

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8. Is it possible to endanger yourself by accessing too much medical information on the Web? Why or why not? Support your answer.

ANSWER:
Discuss the issue of reliability of the sources of information and danger of self-diagnosis, as well as problems related to non-tested "miracle cures" and possible negative interactions with medications a patient may be taking for other conditions.

Level:
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Application
AACSB Category: Technology

9. Describe other potential impacts of IT on societies as a whole.

ANSWER:
Most of your students have grown up using technology and will not remember a time when it was not around. Open the discussion by asking how many students have Facebook and/or Instagram profiles. Ask them how they kept up with their friends before Facebook. Then open the discussion as to how they use social media, how often the access their account, how many "friends" they have and do they block any, and how often they post. If any students have hundreds of friends in FB, ask why and do they consider it a problem (why or why not?). Ask how many of the students have smartphones. Ask of and how often they use text messaging and for what. Do they maintain an electronic calendar to remind them of events (including birthdays and medical appointments)? This question has a number of possibilities.

Level: Medium
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Analysis
AACSB Category: Technology

10. What are the major reasons why it is important for employees in all functional areas to become familiar with IT?

ANSWER:
Hopefully this course will in the end provide an answer to the question. However, the basis of the answer is to help the employee understand what is going on around them within the business and industry so that they might be able to make knowledge-based decisions on ways technology can be used to strategically support or enhance the business process.

Level: Easy
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Application
AACSB Category: Technology

11. Given that IT is impacting every industry, what does this mean for a company's employees? Provide specific examples to support your answer.

ANSWER:
In order to stay competitive, organizations should look to new advances in the use of information technology. This impacts employees in many ways.

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In the case of social media, there has been automation of the employment process by the HR department and, in a growing number of cases, the use of social media to find and track employees. Employees need to understand social media so they can use it effectively.

Another example is the use of social media for the marketing of the organization's products or services. While some companies still advertise on search sites such as Google and Yahoo!, they are now using sites as Facebook and Twitter for this.

Another area is data analytics. This is very important area for many companies. Employees not only need to understand data analysis, but how to collect, store, and manage massive amounts of data.

Have your students research other examples.

Level: Medium
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Analysis
AACSB Category: Technology

12. Given that information technology is impacting every industry, what does this mean for students attending a college of business? Provide specific examples to support your answer.

ANSWER:
New technologies are being announced or released almost every day. In addition, researchers are discovering or developing new ways to use old technologies. Finally, old applications are being updated to utilize these advancements. What this means for business students is that technologies used or learned about as freshman may no longer be around or even be replaced by the time that they graduate.

Examples of this include how businesses have embraced the use of social media, such as Facebook, and how hiring departments use sites such as LinkedIn to find applicants and use social media as part of their background checks.

Another example is the use of mobile apps. Up until around 2014, students had to use a computer to write research papers using a text processer such as Microsoft Word or Apple's Pages. Mobile apps are now available so students can now use their tablets or smartphones (if they really want to).

There are smartphone apps for graphing calculators that are just powerful as a stand-alone calculator.

Have your students research other examples.

Level: Medium
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Analysis
AACSB Category: Technology

13. Is the vast amount of medical information on the Web a good thing? Answer from the standpoint of a patient and from the standpoint of a physician.

ANSWER:
Patient:

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Good: Provides the patient with information that they can discuss with the doctor. Provides the patient more information and possibly options not mentioned by physician.

Bad: Provides some erroneous or false information that might be misinterpreted by the patient, possibly wasting the physician's time or causing a misdiagnosis by the patient themselves.

Physician:
Good: Provides current trends assisting to diagnosis and treatments. Collaboration with other physicians. If patient records are available online, can view test results that were done at other locations.

Bad: Patient records security issues (i.e., HIPPA)

Level: Medium
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Analysis
AACSB Category: Technology

Problem-solving Activities

1. Visit some websites that offer employment opportunities in IT. Prominent examples are : www.linkedin.com, www.indeed.com, www.dice.com, www.monster.com, www.collegerecruiter.com, www.careerbuilder.com, www.job.com, www.career.com, and www.simplyhired.com. Compare the IT salaries offered to accountants, marketing personnel, financial personnel, operations personnel, and human resources personnel. For other information on IT salaries, check Computerworld's annual salary survey.

ANSWER:
Students will provide comparisons about IT positions (suggest classifications—analysts, developers, support) and salary ranges using the sites listed.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category:
AACSB Category:

2. Explore the role of the CIO in today's business world. Access www.cio.com and search through the resources listed under careers. What opportunities are available if you were graduating today?

   ANSWER:
   Student answers will vary.

3. Go to www.fedex.com.
   a. Find out what information is available to customers before they send a package.

   ANSWER:

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The site provides a detailed interface to interact with the company and information about its multitude of services, business locations and support as well as tracking information for customers.

b. Find out about the "package tracking" system.

ANSWER:
Visit https://www.fedex.com/en-us/tracking.html to get information about the Tracking system and its policies. Packages can be tracked by number, location, and type of delivery such as government service. Customers can also obtain roof of delivery from the site.

c. Compute the cost of delivering a box, weighing 40 pounds, from your hometown to Long Beach, California (or to Lansing, Michigan, if you live in or near Long Beach). Compare the fastest delivery against the least costly. How long did this process take? Look into the business services offered by UPS. How do they make this process easier when you are a business customer?

ANSWER:
Cost will vary from most expensive for overnight to the lowest point for slowest option.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Knowledge
AACSB Category: Technology

4. Search the Web for information about the Department of Homeland Security (DHS). Examine the available information, and comment on the role of information technology in the department.

ANSWER:
Students will discuss their findings after searching the Internet.

Level: Easy
Section/Learning Objective: Section 1.3/Learning Objective 3
Bloom's Category: Knowledge
AACSB Category: Technology

5. Go to X.com. Note the number of people on the platform daily and the number of tweets or posts in a 24-hour period. Check out your favorite clothing company and see how many of their customers are using the platform.

ANSWER:
Students will discuss their findings after searching the Internet.

Level: Easy
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Knowledge
AACSB Category: Technology

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6. Access www.irobot.com, and investigate the company's Education and Research Robots. Search the Web for other companies that manufacture robots and compare their products with those of iRobot.

ANSWER:
Students will discuss their findings after searching the site.

Level: Easy
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Knowledge
AACSB Category: Technology

Closing Case: Outcomes of the Water Utility Cyberattack

1. How might informed users have helped avoid these cyberattacks??

ANSWER:
With a working knowledge of how information systems function and where they're vulnerable, they might have spotted outdated software, weak access controls, or suspicious activity before it escalated. Basic cybersecurity awareness, like recognizing phishing attempts, using strong passwords, and understanding system permissions, can go a long way in protecting critical infrastructure. If more staff had been trained and alert, some of the damage might have been avoided. It's a reminder that technology alone isn't enough; people need to know how to use it wisely and securely.

Level: Medium
Section/Learning Objective: Section 1.1/Learning Objective 1
Bloom's Category: Application
AACSB Category: Technology

2. Water as a public utility seems very distant from computer-based IS. What other utilities can you think of that run on computer-based IS?

ANSWER:
Answers will vary but may include:

- Electricity is managed through smart grids that rely on computer systems to monitor usage and control distribution.
- Public transportation uses information systems to track vehicles, manage schedules, and handle payments.
  Even waste management often depends on software to plan routes and monitor service efficiency.

Level: Medium
Section/Learning Objective: Section 1.2/Learning Objective 2
Bloom's Category: Analysis
AACSB Category: Technology

3. Society relies heavily on computer-based IS. To what degree should people understand the IS they are using? Who do you think should be responsible for this level of education??

ANSWER:

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People should understand the basics of the information systems they use, especially when those systems support critical services. Schools, employers, and government agencies all share responsibility for providing this education. Student answers may vary based on personal experience and perspective.

Level: Medium
Section/Learning Objective: Section 1.4/Learning Objective 4
Bloom's Category: Analysis
AACSB Category: Technology

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