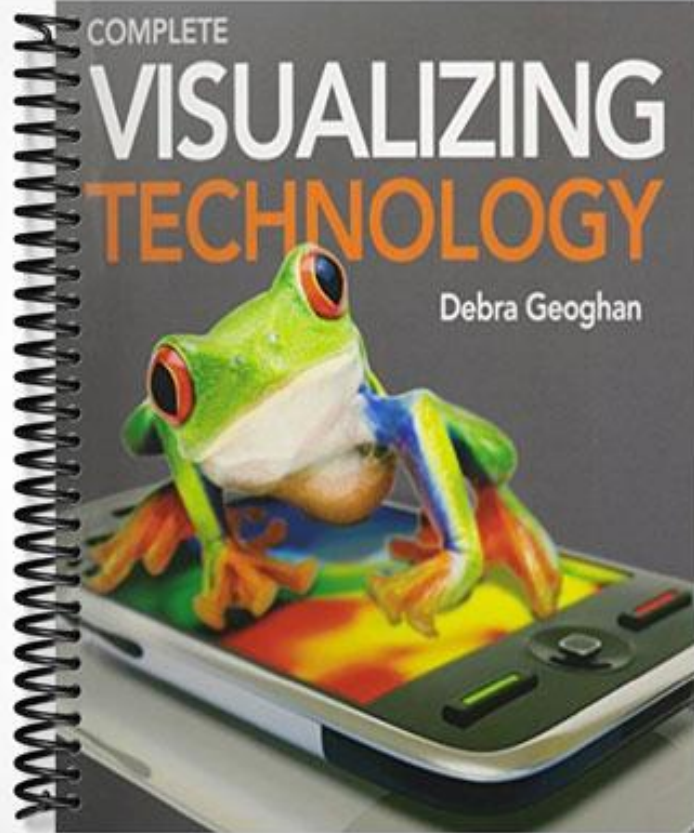


SOLUTIONS MANUAL



Visualizing Technology End of Chapter Solutions - Chapter 2

Running Project Lastname_Firstname_cho2_Project

As a freshman in college last year I spent a lot of time in computer labs and the library using computers. I had my jump drive with me at all times. This year I saved money and now plan to buy a laptop. I have seen other students with laptops in class and know how useful that can be for taking notes and accessing class projects. I think my schoolwork will be easier this year with the help of a laptop.

I've been watching the major online retailers for a few months and particularly like Dell, Gateway, Apple, and HP. I'm looking for the best system in the \$700 range, including shipping and tax. I really like Macs for their video technology; however, they are out of my price range, and I do not need video capability. Today, Dell has an Inspiron 15 on sale for \$479.99. It comes with Windows 7 Home Premium, has a 2.3 GHz processor, 2 GB DDR2 of RAM, and a 320 GB hard drive. I'll need more memory, which will cost an additional \$90 for a total of 4 GB. I can always upgrade it later if I need to; it is expandable up to 8 GB. The hard drive is large enough, but I do have an external hard drive on my desktop at home that I can use if I need more room. In addition, this laptop also has an 8X CD/DVD burner drive. This laptop also comes with a wireless card, so I can connect to WiFi on campus and at my favorite coffee shop. I am going to add internal Bluetooth capability, which will cost \$20 extra. There is also high-definition audio capability, which I like because I can watch my favorite TV episodes on the laptop when I have the time. The monitor is a 15.6-inch LED, which is big enough for me. There are multiple ports, including an ExpressCard slot, 3 USB ports, an Ethernet port, a 7-in-1 media card reader, and a VGA out which I can use to look at my screen using my larger monitor at home,

As for the preloaded software, it comes with Microsoft Office Starter, but I need the full functionality of Microsoft Office. I can get the Student version for \$119 online, but it is only \$89 at the school bookstore. And, because I have a scholarship, I can get Office from the bookstore using money from the scholarship.

I will also need a few accessories. I'll get a surge protector, which is about \$25 at the store. My laptop will also need a sleeve, which I already have as I was given one when I participated in a charity event last year. I also need a printer. Dell has an all-in-one printer for \$64.99, which is a good price.

The total cost of the computer through Dell is \$654.98. The shipping is \$29 if I use the 7-day shipping option, and the taxes are \$45.85. The other expenses I have incurred amount to \$89, which will be paid with scholarship money, so my total system will cost me \$724.16. Because I only have \$700, I will forego adding the Bluetooth capability; it is not necessary. I would like a webcam, but I don't have the funds to get one at this time. With these changes the laptop will cost me \$708.43. I believe it is worth it because I will be able to use my laptop wherever I go. I know I could get more functionality from a desktop, but I need the mobility of a laptop.

Critical Thinking 1 Lastname_Firstname_ch02_Accessibility

My boss just hired a new real estate agent, Chris. Chris is blind, and my boss asked me to determine what assistance she will need in the office. Our office is set up with most of the employees being in cubicles. Management and brokers have their own offices. The cubicles are big enough to have a large desk, filing cabinet, and two chairs for clients. We would need to set up Chris' cubicle so that the cords from her computer, calculator, and phone run to the side of her desk opposite of the entry point to the cubicle. The filing cabinet could be placed on the same side as the cords so that she has a direct path to her desk.

As for electronics, Chris would need a way to “read” the MLS listings as well as the documents she creates. We would need to buy a speech synthesizer program to do that. Jaws 5.0 Professional is the most popular program on the market now, and it costs \$1,095. We would also need to get a scanner/reader to help with paper documents. I would suggest Cicero for this; it costs \$395. Another helpful item would be a talking calculator, which would run around \$14.95. If Chris reads Braille, we can get a refreshable Braille display to attach to her keyboard so she can read without disturbing others. These devices cost between \$5,000 and \$10,000. Earbuds would be helpful for the times when she wants to listen to her computer without bothering co-workers.

I also explored the built-in options available through Windows 7. There is an audible narrator that can be turned on. There is also an Audio Description tool available that explains what is happening in a video. It is also possible to require Windows not to automatically arrange windows on the screen, which would be helpful, as well as turn off unnecessary animations. The only hardware necessary to use these tools is speakers, which we have.

The Americans with Disabilities Act (ADA) was put into place to eliminate discrimination in the workplace for those with disabilities. The ADA requires our management, as an employer, to provide reasonable accommodations for Chris, to assist her so that she is able to perform her job to the best of her abilities. Although it would be helpful to have a refreshable Braille display, it is very costly and our office is small; it might not be financially feasible at this time. I will check to see if there are any tax incentives to help offset the cost of the display. The software we need is also quite expensive but more reasonable at this time. Perhaps Chris already has a Braille display that she can bring to work.

Critical Thinking 2 Lastname_Firstname_ch02_750

	Gateway	Dell	HP
Model	DX4320-09	Inspiron 580	Pavilion Elite HPE-410t
Processor	AMD Athlon II X4 Quad- Core 2.9 GHz	IntelCore i3-550 3.20 GHz	Intel® quad-core processor, 2.8 GHz
Operating system	Windows 7 Home Premium	Windows 7 Home Premium	Windows 7 Home Premium
Network card	Int. 10/100/1000 Gigabit Ethernet	Int. 10/100/1000 Gigabit Ethernet	Integrated Ethernet
Monitor	None	23.0" full HD monitor	None
Memory	4 GB DDR3 dual channel	4 GB DDR3 SDRAM	6 GB DDR3
Hard drive	1 TB SATA	500 GB, 16 MB Cache	750 GB (free upgrade)
Video card		Int. Intel® Graphics Media Accelerator HD	512 MB ATI Radeon HD 5450
Optical drive	Blu-ray disk 4X BD-ROM and 16X DVD+/- R/RW	16X DVD+/-RW	16X max. DVD+/-R/RW SuperMulti
Sound	HD Audio; 5.1-channel surround support	Int. 7.1 channel audio	Integrated sound
Speakers	None	None	None
Service plan	1 year parts and labor, limited	1 year basic	1 year limited hardware
Productivity software	None	Microsoft® Office Starter 2010	None
Security software	Norton™ Internet	McAfee Security Center,	Norton Internet

	Security 2009, 60-day trial	30-day trial	Security
Other software	None	Adobe Reader 9.0	Roxio PhotoSuite 9 Deluxe
Other service	None	Dell Online Backup 2 GB for 1 year	None
Price	\$749.99	\$728.99	\$729.99

In helping my friend Michael find a computer, I found it difficult to find one to meet his needs under \$750. Michael needs a computer to use for school work, using Microsoft Office 2010, as well as one he can use for his favorite hobby, gaming. Almost any computer on the market today can accommodate Office 2010, so I used his gaming needs to help me choose the right computer. A gaming computer needs a fast processor, a great deal of disk space, a lot of memory, and excellent video and audio capabilities.

I looked at several computer ads and narrowed the choices down to a Gateway, Dell, and HP. In my opinion the best choice of these was the Gateway because it has superior audio and the largest hard drive. The problem is that it does not include a monitor, which would be an additional \$150, at least. Because of this, the Gateway is not the best recommendation. The HP does not include a monitor either, thus the Dell computer is the best choice. It comes with a 23" HD monitor, which will be great for gaming. It has the fastest processor speed of the three models, and although the memory included is average in today's computer it can be upgraded to 8 GB. Included with the computer is Microsoft Office Starter 2010. I think Michael can do his school work on this program with no problem. If it becomes necessary to upgrade it, he can buy it for around \$200. One great thing about the Dell is the online backup. Michael can back up all his files online for safekeeping.

Michael will need to buy the gaming accessories he needs such as controllers, and he will also need a printer. He can get an inexpensive printer just for standard printing for around \$20. In addition, he'll need to get a surge protector to guard against electrical surges.

Do It Yourself 1 Lastname_Firstname_ch02_ClearType

ClearType is a technology for displaying computer fonts so that they appear clear and smooth. ClearType makes on-screen text more detailed and, therefore, easier to read over long periods of time without experiencing eye strain or mental fatigue. It works especially well with LCD devices, including flat-panel monitors, laptops, and smaller hand-held devices.

To understand how ClearType works, you should first understand a little bit about on-screen graphics. Screen displays consist of pixels. Pixels also make up the different letter styles in each font. Every pixel has three parts: Red, blue, and green.

ClearType improves resolution by turning on and off each of the colors in the pixel. Before ClearType, the entire pixel was turned on and off. This tighter control over the red, blue, and green parts of a pixel can increase the clarity on an LCD monitor by up to 300 percent.

You'll get the most benefit from an LCD monitor because ClearType was made to work with LCD technology, which keeps specific pixels in specific places. ClearType takes advantage of pixels being in a fixed place by turning fractions of the pixel on and off. A CRT monitor doesn't work in the same way with ClearType because it uses an electron beam to excite, or move around, pixels, instead of keeping them stationary.

Still, you might experience some improvement in clarity when you use ClearType on a CRT monitor because ClearType smooths jagged font edges. This is called antialiasing.

I made only two changes and after turning on ClearType, I can see only minimal difference—the text appears a bit darker. My laptop is nearly five years old, so possibly it has little capability of changing the resolution enough to make significant change noticeable.

Do It Yourself 2 Lastname_Firstname_ch02_Power

My laptop is using Balanced plan as opposed to the Power Saver plan. I think the Power Saver plan is a better choice, and I made this change.

Sleep mode is a power-saving state that “allows a computer to quickly resume full power” when you are once again ready to work.

Ethical Dilemma Lastname_Firstname_ch02_RFID

1. YouTube videos describe Chris Paget as an “ethical hacker,” but Paget simply describes himself as a “hacker.” His purpose appears to be to expose the drawbacks, concerns, and grave flaws of the RFID system. I question if the end justifies the means because that appears to be an easy “out” or excuse for nearly any action. His findings, however, should be taken into account by privacy advocacy organizations, for example.

2. The RFID passport likely provides the government, not to mention hackers, with more information than the user probably ever expected. The ease of use of the RFID passport does not justify the vast amount of information a user might be providing free of charge. If the government was truly concerned about citizen privacy (which, I believe, is rather the opposite—the government prefers to have more

information, not less), they would scrap the program. While the government is not likely to scrap the program, if American citizens were aware of the grave concerns and spoke out, the government might listen.

3. Wired online magazine (<http://www.wired.com/wired/archive/15.01/start.html?pg=9>) mentions a punishment of up to 25 years in prison for intentionally destroying your RFID chip, but offers the hammer as a viable solution. ThinkGeek (<http://www.thinkgeek.com/interests/dads/910f/>) offers a legal solution, the Blocking Passport Billfold for just \$17.99.

On the Web 1 Lastname_Firstname_cho02_Epeat

EPEAT

Product types in the EPEAT search registry include desktops, integrated desktop computers, thin clients, workstation notebooks, displays, notebooks, and workstation desktops. Manufacturers submit their product to the registry by declaring that the product meets criteria. Manufacturers are then responsible to produce the required supporting evidence that the product meets specifications only if requested by EPEAT. Evidence might include production reports, lab analysis, or product submission to EPEAT. The product must conform to 23 required environmental criteria and can conform to an additional 28 optional criteria. Products can achieve one of three different levels: bronze, silver, or gold. This self-declaration process is somewhat suspect, to me.

The criteria fall into eight categories:

Reduction or elimination of environmentally sensitive materials

Materials selection

Design for end of life

Product longevity and life cycle extension

Energy conservation

End of life management

Corporate performance

Packaging

Important manufacturers that participate include Apple, Inc.; Dell; Hewlett-Packard; Lenovo (a division of IBM); and Sony Electronics, Inc. EPEAT is a 501(c)(3) not-for-profit organization located in Portland, Oregon. The U.S. Environmental Protection Agency funded the development process of EPEAT for \$375,000 over 3 years. By the end of the 3 years, EPEAT will charge fees paid by the manufacturers based on their relative size in the market. This means, to me, that to survive as an organization, EPEAT will need to add products to their registry to generate income. That seems like a conflict of interest.

On the Web 2 Lastname_Firstname_cho02_Upgrade

Adding 1 GB of RAM to the Dell Inspiron 530 will cost \$28.04 and a 750 GB (a 500 GB hard drive did not appear available as compatible with the model mentioned) hard drive costs \$97.99. With free shipping, both components come to \$126.03. This purchase is warranted as long as everything else about the laptop is in great condition. My current laptop has lasted me almost five years; a maxed RAM, a new hard drive, and two new keyboards were a considerable savings over a new laptop. Plus, knowing I'm not throwing another technical device in the landfill or just jumping to the latest model just for the heck of it is also of value to me. I think the \$126.03 is a good value.