

**Chapter Questions for “Leonard’s Laptop” by Ben Shneiderman**

by

**Evan Golub**

**Department of Computer Science  
Human-Computer Interaction Lab**

**University of Maryland**

**([egolub@acm.org](mailto:egolub@acm.org))**

## **Chapter 1**

- (1) Discuss what you understand “the old computing” to be.
- (2) Discuss what you understand “the new computing” to be.
- (3) Similar to how Leonardo da Vinci foresaw inventions such as the plane and helicopter 500 years ago, it has been said that Vanaver Bush described the World Wide Web and digital cameras in his 1945 “The Atlantic Monthly” article, “As We May Think.”
  - a. Do you think that in the future Bush will be regarded in a manner similar to how we regard Da Vinci today?
  - b. Discuss the value or lack thereof that you place on the person who envisions an idea without implementing that idea.
- (4) Describe a scenario that you would like technology to be able to support in the future. Describe *what* you and it would do without worrying about whether we have the technology to do it as of yet.
- (5) A mere 72 pages of Leonardo’s writing fetched over \$30 million in 1994. It is estimated that he created over 13,000 pages of works over his lifetime (though fewer than 5,000 pages survive).
  - a. As more and more work is committed to electronic media, do you think electronic documents will exist in the future that will be so highly valued?
  - b. The fragile nature and uniqueness of paper could make the existence of around 35% of da Vinci’s work impressive. If he had the ability to store his works on computers, discuss whether you think the percentage of his writings available today would be higher or lower and explain your reasoning.
- (6) Discuss what you see as one of the greatest dangers of the direction technology’s infusion into society could hold. Do you think the potential benefits of technology warrant taking the risks of developing it?

## **Chapter 2**

- (1) What have been the five most frustrating experiences you have personally had using modern technology?
- (2) Keep a log for three days in which you make entries for frustrating experiences you have (a) with computers, (b) with other technologies, and (c) with traditional items such as paper. At the end of this period review your logs and discuss what changes (if any) you plan to make in your daily activities based upon these observations.
- (3) There exist forums for reporting problems of various sorts.
  - a. Describe a situation in which you would write to the Better Business Bureau about a store and what response you would hope for.
  - b. Describe a situation in which you would write to Underwriters Laboratory Inc. about a device and what response you would hope for.

- c. Describe a situation in which you would write to the as-of-yet non-existent Software Satisfaction Clearinghouse about a piece of software and the response you would hope for.
  - d. Discuss how you went about determining your answer for each of the above questions and whether you feel your threshold of tolerance should be higher or lower for each of the three.
- (4) There are times when an application crashes in Windows XP and you are presented with the opportunity to send an error report to Microsoft. If you have encountered these before, state what percentage of the time you estimate you click on the “Send Report” button. If you have not encountered these before, make an educated guess at what percentage of the time you think you would click on the “Send Report” button. On what factors do you or would you base your decision to submit this automated report?

### **Chapter 3**

- (1) How would you summarize the concept of “universal usability” to describe it to each of the following audiences:
  - a. Your younger sibling.
  - b. Your child.
  - c. Your parent.
- (2) Describe a situation in which you or someone you know was unable to take advantage of some resource due to what you would consider to have been a universal usability issue.
- (3) Describe what you would consider the minimum capabilities a computer must have in order for the person in possession of that machine to be on the “have” side of the “digital divide”.
- (4) Describe an information resource or online ability that you feel is the most important to make universally usable.
- (5) Which of the following user training theories would you most like to see used in software; (a) minimal manual, (b) constructivist, or (c) social construction? Explain what led to your decision and discuss its advantages over the other two
- (6) Give an example of the “lowest common denominator” controlling the development of something outside of the computer market.

### **Chapter 4**

- (1) Discuss how user needs assessment, usability testing, and customer feedback can each be used as tools to support the new computing. Select the one of these that you feel would be the most practical and useful and support your selection.
- (2) The sales of digital cameras have increased enormously, yet people do still buy “traditional” cameras and have darkrooms in their basements. How would you envision the environment of the photographic hobbyist 15 years from now?

- (3) It is said that Stanley Kubrick's original plan for "AI" was to delay creating the movie until actual robots and artificial actors could be used in the movie. Consider whether or not you think that making the movie before this goal could be achieved was a mistake, take one side of the argument and defend it.
- (4) Consider being asked to create an undergraduate course on software development that would be composed 50% of computer science and engineering majors, and 50% of behavioral and social science majors. Describe issues that you think might rise in terms of working together on class projects and homework.

## **Chapter 5**

- (1) What do you see as positive outcomes of e-mail and instant messaging? What do you see as negative outcomes of these two technologies? Consider whether you feel the positive aspects outweigh the negative aspects, take one side of the argument and defend it.
- (2) Create a 4x4 ART for yourself and add entries to the appropriate cells for your daily activities over the course of one full week.
  - a. Which are the three cells that are mostly highly populated?
  - b. What activities did you have difficulty classifying?
  - c. If you were asked to redesign the ART, what additional rows or columns (if any) would you add, and why?
- (3) There are questions such as "What was that movie with the girl and the dog and the evil witch and something about red slippers?", or "Who is that singer I always confuse with Michelle Branch", or "Who is that artist who kept painting ballerinas" that are often easier to answer by asking a person than "asking" a computer.
  - a. Come up with three examples of questions of this nature that you think would be easier for a person to answer than a computer.
  - b. Attempt to find your answer by asking people. Attempt to find your answer by using computer resources. Time each attempt. Which was faster? Were there any unexpected advantages to either? If so, what were they?
  - c. Do you think that the ability for a computer-based system to answer this type of question is a worthwhile goal? If so, why? If not, why?
- (4) In 1998, the iButton was introduced as a way to place data and applications in items such as rings (most notably the JavaRing) and key chains. We have yet to see this item catch on in the public eye. More recently, USB-accessible flash memory has been built into items such as key chains, necklaces and watches and does appear to be catching on.
  - a. Go online, investigate the iButton and the ThumbDrive, and describe the similarities and differences of these two technologies.
  - b. Explain why you think USB memory devices are succeeding whereas the iButton did not.

- (5) Consider places you have been in the past year. If given the opportunity to select one and only one of these places in which to implement a WebBush, which would it be and why? What type of information or abilities would you require to be made available? Is there any information or ability that you would explicitly request not be made available?

## **Chapter 6**

- (1) Think back to your educational experiences to date.
- What was one of the most rewarding educational experiences?
  - Was technology involved? If so, how?
  - Can you imagine some way in which technology could have made this experience better, or enable this experience to be applied to other less rewarding educational experiences? If so, how?
  - How would you describe your ideal learning environment using your understanding of the new computing?
- (2) Create a 4×4 education-oriented ART for yourself and add entries to the appropriate cells for your academic activities over the course of one full week.
- Which are the three cells that are mostly highly populated?
  - What activities did you have difficulty classifying?
  - Select three empty or under-populated cells and for each describe an activity for one of your classes in which you would like to be able to participate that would be placed into that cell in the table.

## **Chapter 7**

- (1) A popular online auction site is eBay. Have you ever purchased an item on eBay? If so, how did you research your purchase? If you have not, in what situation could you envision your self purchasing an item on eBay? What research would you do for this purchase?
- (2) Circuit City has a relatively new service by which you can order an item via their web site, and then pick it up at your local store. What advantages do you think this service provides? What disadvantages do you think this service provides?
- (3) If you received an e-mail message from a company directing you to a web page to deal with a problem with an order you placed, what steps (if any) would you take to verify that this was a legitimate e-mail message? Is there information you would be unwilling to provide on the web page to which you were directed?
- (4) When the online store Pets.com went out of business, their two largest assets appeared to be their domain name (which they sold to PETSMART) and their mascot, the Sock Puppet (who authored an autobiography in 2000). Why do you think this online-only store was unable to survive?
- (5) We are often unsatisfied with products.
- Under what situations would you go online to a store's web site submit a complaint about the store?

- b. Under what situations would you go to a web site such as eComplaints.com (if it still existed) to submit a complaint about a store?
  - c. Under what situations would you send e-mail to a store's manager or corporate headquarters to file a complaint?
  - d. Under what situations would you send a physical letter to a store's manager or corporate headquarters to file a complaint?
  - e. Do you think that complaints via all of these information conduits should warrant equivalent levels of responsiveness? If not, explain which you feel should receive the highest level of responsiveness, and why.
- (6) You can visit sites such as Froogle.com or C|NET's shopper.com to search for the best price for an item. Under what circumstances would you purchase a new item from a vendor other than the one with the lowest price?
- (7) Do you think that search sites such as Google, AltaVista, and Yahoo should return "sponsored links" as part of their results? If the elimination of these sponsored links meant there would be a monthly charge to use the search engine, what monthly fee would you be willing to pay?

## **Chapter 8**

- (1) Under what situations would you visit a web page for medical advice? How would you go about deciding what site(s) to visit? How would you go about deciding whether to follow the advice given on the site(s)?
- (2) There currently exists the technology to implant a small device about the size of a large grain of rice in (for example) your arm that would contain your medical information. This could theoretically be instantly read upon entering a doctor's office or hospital.
- a. What are some of the potential positive effects of this technology?
  - b. What are some of the potential negative effects of this technology?
  - c. If made available to you with no more discomfort than receiving an inoculation, would you have one of these devices placed in your arm? Explain the reasoning behind your answer.
- (3) Consider the Therac-25 as discussed in Chapter 2. What sort of assurances would you expect there to be in place as "the new medicine" grows?
- (4) Under what situations do you think you would participate in an online community formed around a health issue? What type of information do you think you would be willing to share with the community?

## **Chapter 9**

- (1) In the "olden days" of newspapers, there were physical manifestations of history present challenges in the modification of such history. In the world of the electronic newspaper, no such physical manifestations really exist; if a newspaper decides that it would like to alter its past, it can simply update the appropriate files on its web server (and this has occurred). Within the scope of this issue and your

- understanding of the World Wide Web as a whole, address the following do you think this represents a serious issue? If so, how do you think it can be addressed? If not, explain why you feel that it is not.
- (2) There are often things about our government or society that we would like to see changed.
    - a. Under what situations would you go online to your Congressman's web site to submit a complaint or concern?
    - b. Under what situations would you go to a web site sponsored by an activist group to submit a complaint or concern?
    - c. Under what situations would you send e-mail directly to your Congressman to file a complaint or raise a concern?
    - d. Under what situations would you send a physical letter to your Congressman to file a complaint or raise a concern?
    - e. Do you think that complaints via all of these information conduits should warrant equivalent levels of responsiveness? If not, explain which you feel should receive the highest level of responsiveness, and why
  - (3) Do you feel you would be more involved in local politics if there were online forums through which you could communicate with community leaders? What about at the state level? What about at the nation level? What about at the international level?
  - (4) If you were serving as a political leader, what single ability would you choose to make readily available to your constituency?
  - (5) Given the choice between participating in a live forum on a subject of interest to you and only being able to ask one question and provide three response, versus participating in an online forum on the same subject where you could ask and answer without a preset limit, which would you prefer and why?
  - (6) Discuss what you see as the most significant advantage to eVoting as well as what you see as the most significant disadvantage of eVoting. On the whole, do you feel that the advantages outweigh the disadvantages?

## **Chapter 10**

- (1) Consider an experience in your life that you feel was creative. Was technology involved in this experience? If it was, discuss whether or not you feel the technology supported your creativity. If technology was not involved, discuss whether you think that technology could have enhanced your creativity or the outcome of your creativity.
- (2) Assume you have both a pad of paper PostIt notes, and a PDA with an ePostIt application installed, both readily available for use. Discuss situations in which you think you would prefer the pad and why. Discuss situations in which you think you would prefer the PDA and why.
- (3) Two heads are better than one, yet too many chefs spoil the broth. Discuss some of the issues that you could foresee with collaborative projects supported by technology and international networking.

- (4) Imagine you could submit your own musings on a topic to a central forum, through which others could contact you. Discuss your thoughts as to whether or not you would do so. If you feel you would, briefly describe these topics.

## **Chapter 11**

- (1) Consider the microwave oven that can turn itself off when the food is ready, or the PDA that takes seemingly gibberish stylus strokes and converts them to words, or a web site that successfully recommends products to you.
  - a. Discuss whether you think that scientists from 100 years ago would consider the description of these products to be examples of artificial intelligence.
  - b. Do you think any of these products represent artificial intelligence?
  - c. Are there applications of artificial intelligence that you imagine should be a part of our future?
- (2) There are things from our past that we consider “ancient” or “quaint” such as manually copying books, washing clothing on stones in the river, or getting up from the couch to change the channel on the television. What commonplace activities of today do you think citizens of the year 2200 will view in a similar light?
- (3) If you were able to rid the world of one problem through the use of technology and the new computing, which would it be? How do you think technology and the mindset of the new computing could be utilized to accomplish this goal?
- (4) What is one aspect of your life that you would not want to see infiltrated by computers and technology? Do you think this aspect of life will stay free of such penetration?