

Professional Issues

Ethical Issues

- In this session we will discuss a number of ethical issues relevant to the use of computing technologies
- Please form yourselves into groups of 4
- Agree who is the spokesperson
- Discuss your response(s) as a group, write it/them down and then indicate that you are ready to answer

Questions

- Question 1: Has the electronic calculator destroyed people's ability to do mental arithmetic? Does this matter? (cf. "Nine Tomorrows" - Asimov)
- Question 2: Many games that children used to play on boards with dice, cards and plastic pieces are now available as computer games. Does this matter?

Taken from "A Gift of Fire" by Sara Baase

Question 3

- Many people fear that the development of intelligent robots could have devastating consequences for the human race. Is it ethical to do research in AI?
- (c.f. Sun Microsystems cofounder Bill Joy's paper "Why the future doesn't need us")

Taken from "A Gift of Fire" by Sara Baase

Question 4

The Copyright (Computer Programs) Regulations allow a user of a program to alter it to correct errors. Does this permitted act have any value when suppliers do not normally supply source code? Is this an area where the law could reasonably be changed, for example to oblige software vendors to supply source code?

Taken from "The Essence of Professional Issues in Computing", by Robert Ayres

Question 5

- What is privacy? Is it important and, if so, why? Would you consider your privacy to be compromised if:
- One of your neighbours kept a log of all the times you came home and went out?
- Details of everything you bought from the shops were to be made publicly available, e.g. on the Internet?

- You received direct mail from a supermarket where you shop saying that it had analyzed your purchases and that you appeared to have an unhealthy diet, consequently it was advising you to eat more fruit and vegetables?

Taken from "The Essence of Professional Issues in Computing", by Robert Ayres

Question 6

- People can now do much of their shopping on-line and have the goods delivered to their homes, so they never need to leave home to go shopping. Might this have consequences for society?

Scenario

- A university student used the campus computer time-sharing service as an authorized user. The service director announced that students would receive public recognition if they successfully compromised the computer systems from their terminals. Students were urged to report the weaknesses they found. This created an atmosphere of casual game playing and one-upmanship in attacking the system.

- The student found a way to compromise the system and reported it to the director. However, nothing was done to correct the vulnerability and the student continued to use her advantage to obtain more computer time than she was otherwise allowed. She used this time to play games and to continue her attacks to find more vulnerabilities.

Taken from "Ethical Conflicts in Information and Computer Science, Technology and Business" by D.B. Parker et al.

- Question 7: Was the Service Director behaving unethically by encouraging students to compromise the system?
- Question 8: Was the student behaving unethically by taking advantage of the vulnerability?
- Question 9: Was the Service Director behaving unethically by not correcting the vulnerability?

Scenario

- Company XYZ had developed the software for a computerized voting machine. Company ABC, which manufactures the machine, has persuaded several cities and states (in the USA) to purchase it; on the strength of these orders, ABC is planning a major purchase from XYZ.

- XYZ software engineer Smith is visiting ABC one day and learns that problems in the construction of the machine mean that one in ten is likely to miscount soon after installation. Smith reports this to her superior, who informs her that that is ABC's problem. Smith does nothing further.

Question 10

- Question 10: Should Smith's superior have told her to ignore the malfunction?
- Question 11: Should Smith have gone beyond her immediate superior?
- *Taken from "Ethical Conflicts in Information and Computer Science, Technology and Business" by D.B. Parker et al.*

Scenario

A simulation has been created to demonstrate the stresses that a particular product can endure. Some of the products later fail under the stresses that the simulation purported to simulate.

Question 12

Does the creator of the simulation share responsibility for the product being fraudulently advertised?

Adapted from "Pictures, Poseurs and Posers" by Sylvie J. Rueff, Computer Graphics, Vol 26, 1992.

Scenario

- A denial-of-service attack shuts down dozens of major Web sites, including retailers, stock brokerages and large entertainment and information sites for several hours. The attack is traced to one of several suspects.
- Question 13: Should the penalties imposed be different according to the type of perpetrator?

Adapted from "A Gift of Fire" by Sara Baase

- A foreign terrorist intending to damage the national economy
- An organisation publicising opposition to commercialisation of the Web and corporate manipulation of consumers
- A teenager using hacking tools he found on a website
- A hacker group showing off to another group about how many sites it could shut down in one day

Scenario

Many losses of skills are unintended side effects of computers but Microsoft made a conscious decision that has the effect of diminishing vocabulary and the richness and humour of language. The thesaurus in Microsoft Word 2000 lists "trick" as the only synonym for "fool". It omits "clown", "blockhead", "idiot", "ninny", "dunderhead", "ignoramus" and others, all present in earlier versions.

Taken from "A Gift of Fire" by Sara Baase

- Because of the popularity of Word and the ease of using its reference utilities, fewer people will consult standard references such as dictionaries and Roget's Thesaurus (which also contains "dupe" and "simpleton", for example).
- Microsoft said that it eliminated words "that may have offensive uses".

- Question 14: Was this a dunderhead decision that dulls the language and reduces literacy?
- Question 15: Do producers of widely used reference works have an ethical responsibility to report the substance of their field accurately, or a social responsibility to remove potentially offensive words from the language?

- Question 16: Should software engineers concern themselves with ethical issues any more than other individuals in society?
- Question 17: Do computers and computer-related technology really raise new ethical problems or do they just present old issues in a new form?
- *Taken from "The Essence of Professional Issues in Computing", by Robert Ayres*