



Social Issues

for DBs and Apps

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Databases and database applications can have wide implications for society at large; can you think of some ?




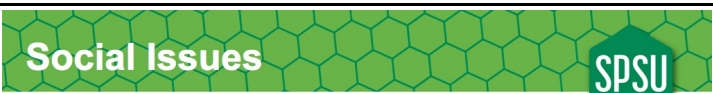
Social Issues

- Consequences of Databases

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Database applications can make many things easier, and so they have powerful consequences in society.

As we have automated many processes with database applications, we become more productive as a society; however, this has lead to job loss and social stratification; whereas before you'd have a warehouse full of paper, and 100 archivists handling that paper, now you only have one or two people, using a database application; much as the late stages of automation have meant fewer factory jobs, computer applications, which most of the time are database applications, mean fewer white collar or office jobs.



Social Issues

- Consequences of Databases
 - Automatization, job loss (white collar)
 - Bigger organizations
 - Loss of privacy
 - More productivity
- What happens with the data ?

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Database applications have also enabled bigger and more complex organizations; before computers, very few organizations could grow above a certain size, and their structure was highly hierarchical; computers and databases enable organizations to grow bigger without losing control of their employees or products.

Another consequence of databases is the loss of privacy for most individuals; data about you is probably available in dozens of databases, and, since it is electronic, it is easier to keep it around forever; if you use credit cards, your purchases are on record, and associated with you personally; we voluntarily enroll in many databases (facebook, amazon, ...) without much thinking about the consequences; posting a 'risque' or embarrassing picture to your facebook profile may seem like a good idea, but it may mean that you don't get a job a few years (or decades) later.

Of course, the most important consequence of database applications is increased productivity; if we couldn't work better (at least overall), companies wouldn't be creating database applications.

One important issue will be, what happens to the data stored in your applications ? What could it be used for in the future ? Will it be destroyed ? When ?


One of the coolest things about a career in computing, is that your job will probably have important consequences; the programs you write or keep running will probably be used to provide services to a large number of people; depending on your area, your programs may, for example, enable your company to make millions of dollars, or may make it easier for people to get needed government services.

But, this implies that your actions, good and bad, will have important consequences, good and bad; just as your program can mean an orphan kid gets put quickly in a good foster home, a failure of your program could mean that kid stays in a shelter for much longer than needed.

Your actions will have big consequences, so you're expected to behave both ethically and professionally; if you're a bad computer professional, that may sour somebody to computers in general, and damage not just your career, but the whole computing profession.

Although professionalism requires you put a (not so low) minimum of care in your work, you should be asking yourself, what happens if your system fails ? That can determine whether you need to put much more extra care; Also, as a human and a professional you should be asking yourself, with your actions, are you helping or hurting other people ? Are you helping or hurting the profession ?

Professional Responsibility



- Your conduct has consequences
- Need to behave ethically AND professionally
- What happens if your system fails ?
- Are you helping or hurting other people ?
- Are you helping or hurting the profession ?

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Ethics is the study of how people ought to behave.

In general, we can judge an act in any of three ways; by the act itself, by the intentions of the person doing the act, or by the consequences of the act; these three approaches have their applications and shortcomings; easy ethical situations have all three of these in agreements, whereas hard situations will judge the act differently depending on the criteria.

When talking about ethics, it is important to realize that your culture and upbringing, and the experiences you've had during your life, will heavily affect your viewpoints; for example, many people are vegetarian because they think that killing animals is wrong, others would see no problem with eating animals, but object to killing them for sport, whereas others don't particularly mind; how you were raised may heavily influence your attitude.

We should not confuse respect for others cultures with pure moral relativism; there may be gray areas, and many areas where we don't agree, but there are many issues where the ethical answer is obvious; for example, treating people badly because of their gender or race is wrong, regardless of how many years it has been a tradition in any particular culture.

An easy way to shortcut the ethical thinking process is the use of codes of ethics; many professional organizations create these codes, which, although still very general, provide more concrete guidance on what is acceptable or unacceptable professionally; it is a good idea for you to familiarize yourself with these, and to review them often.

Arguably the most respected computing professional society is the ACM, the association for computing machinery, so you should read their ethics code; depending on how you identify yourself, you may also want to check their code for software engineering, or the codes for AITP or other professional organizations.

Notice your ethical responsibility is *personal*, there have been many respected organizations that have advocated shameful things; so you still need to pass these codes of ethics through your own brain and make sure they are truly ethical; however, they are still a great starting point.

Basics of Ethics

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- Ethics - How you **should** behave
- Acts can be judged in 3 ways
 - By the act itself
 - By the agent's intentions
 - By its consequences
- Personal and cultural aspects
- There are gray areas, but there are also many right and wrong answers.

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Codes of Ethics

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- More specific rules for specific disciplines or members of organizations
- Still quite general
- Examples
 - ACM -
 - <http://www.acm.org/about/code-of-ethics/>
 - ACM for SoftEngs
 - <http://www.acm.org/about/se-code>
 - AITP
 - <http://www.aitp.org/organization/about/ethics/ethics.jsp>

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