**Chapter 9: Professional Ethics and Responsibilities**

* 1. **What is Professional Ethics**

It can include social and political issues as the impact of computers on employment, the environmental impact of computers, and use of computers by military. It can include personal dilemmas about what to post on the Internet and what to download.

Professional ethics include relationships with and responsibilities toward customers, clients, coworkers, employees, employers, others who use one’s products and services.

Example, in journalism, we have journalists at prominent news organizations plagiarizing or inventing stories. In science, a famed and respected researcher published falsified stem cell research and claimed accomplishments.

Honesty is one of the most fundamental ethical values. We make hundreds of decisions all day long. We base decisions, on the information we have. We pick up bits and pieces of information from explicit research, from conversations, and from our surrounding. Of course, not all of it is accurate.

Falsifying research or other forms of work is an indirect form of theft of research funds and salary. It contributes to incorrect choices an decisions by people who depend on the work. The costs and indirect effects of lies can do much harm.

Example, suppose a private company asks your software company to develop a database of information obtained from governmental records, perhaps to generate lists of convicted shoplifters or child molesters or divorced parents with young children. The people who will be on the lists did not have a choice about whether the information would be open to the public. You could accept the grounds that the records are already public. You could refuse in opposition to secondary uses of information.

Therefore, the critical first step, however, is recognizing that you face an ethical issue.

* 1. **Ethical Guidelines for Computer Professionals**
		1. **Special Aspects of Professional Ethics**

Professional ethics have several characteristics different from general ethics. The role of the professional is special in several ways:

* The professional is an expert in a field. Most of the people affected by the device, system, of professionals do not understand how they work and cannot easily judge their quality and safety. Consumers rely on the knowledge, expertise, and honesty of the professional.
* The product of many professionals profoundly affects large number of people. A professional can cause great harm through dishonesty, carelessness, or incompetence. Often, the victims have little ability to protect themselves.

Therefore, professionals have special responsibilities not only to their customers but also to the general public. These responsibilities include thinking about potential risks to privacy and security of data, safety, and ease of use. Professional responsibility includes knowing or learning enough about the application field to do a good job. Responsibility for a non-computer professional using a sophisticated computer system includes knowing or learning enough about the system to understand potential problems.

* + 1. **Professional Codes of Ethics**

The code provides reminders about specific professional responsibilities. They provide guidance for new or young members of the profession who want to behave ethically but do not know what is expected of them. Some organizations that provide such guidance are the ACM and the IEEE Computer society. The codes emphasize the basic ethical values of honesty and fairness, such as, confidentiality, responsibility to respect privacy, and avoid harm to others.

* + 1. **Guidelines and Professional Responsibilities**

Principles for producing a good system:

* Understand what success means. The official defined the role of the airport system narrowly. Developers and institutional users of computer systems must view the system’s role and their responsibility in a wide enough context.
* Include users in the design and testing stages to provide safe and useful systems. There was numerous stories in which technical people developed systems without sufficient knowledge of what was important to users. For example, a system for a newborn nursery at a hospital rounded each baby’s weight to the nearest pound. For premature babies, the difference of a few ounces is crucial information.
* Do a thorough careful job when planning and scheduling a project and when writing bids or contracts. This includes allocating sufficient time and budget for testing and other important steps in the development process. Inadequate planning is likely to lead to pressure to cut corners later.
* Don’t assume existing software is safe and correct. If you use software from another application, verify its suitability for the current project like failure, quality and testing, and user interface.
* Be open and honest about capabilities, safety, and limitations of software. Hiding known, serious flows and lying to customers are on the wrong side of the line. Honesty includes taking responsibility for damaging or injuring others. Developers must explain the limitations and uncertainties to users.
* Require a convincing case of safety. One of the most difficult ethical problems that arise in safety-critical applications is deciding how much risk is acceptable. For the ethical decision maker, the policy should be to suspend or delay use of the system in the absence of convincing case of safety.
* Pay attention to defaults. Everything, it seems, is customizable: the level of encryption on a cell phone or wireless network. Many people do not know about the options they can control. They often do not take the time to change settings. System designers should give serious thought of default settings. Sometimes protection is the ethical priority, sometimes it is ease of use.
	1. **Scenarios**
		1. **Introduction and Methodology**

In any real case, there are many other relevant facts and details that affect the conclusion. There is not always one right answer to an ethical question. We often must use our knowledge of how people behave, what problems have occurred in the past, and so on, to decide what choices are reasonable. We, as responsible, ethical professionals, look for ways to reduce its negative consequences.

Criteria to analyze scenarios:

1. Brainstorming phase
	1. List all the people and organizations affected
	2. List risks, issues, problems, and consequences
	3. List possible actions
2. Analysis phase
	1. Identify responsibilities of the decision maker
	2. Identify rights of stakeholders; negative or positive rights
	3. Analyze consequences, risks, benefits, harms, costs for each action considered
	4. Find sections of the SE Code or the ACM Code that apply. Then, categorize each potential action or response as ethically obligatory, ethical prohibited, or ethical acceptable
	5. If there are several ethically acceptable options, select an option

The Brainstorming phase can generate wrong options. In the analysis phase, we might reject some options. The brainstorming effort was not wasted. It could bring out ethical ideas that one would not immediately think of.

* + 1. **Protecting Personal Data**
		2. **Designing an E-Mail System With Targeted Ads**
		3. **Specifications**