

# Capítulo 3 del libro de Bowyer (bajado con permiso pues era el ofrecido por la editorial)

## Professional Codes of Ethics

Commitment to ethical professional conduct is expected of every voting, associate, and student member of the ACM.

— preamble to the *ACM Code of Ethics*.

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to conduct of the highest ethical and professional manner...

— preamble to the *IEEE Code of Ethics*

### 3.1 Introduction

Some students react with surprise when told that there is even one published code of ethics for the computing disciplines. In fact, almost every professional organization dealing with the field of computing has published its own code of ethics. For this text, I selected the codes published by the two most influential organizations for computer professionals: the Institute of Electrical and Electronics Engineers and the Association for Computing Machinery. I also selected a third code, from the National Society of Professional Engineers. A variety of other professional organizations have published computing codes, such as the Data Processing Management Association and the Institute for Certification of Computer Professionals [6], but I selected the NSPE code because it is still relevant to computing and contains some useful points of contrast to the IEEE and ACM codes.

As you study the three codes, it will become apparent that a code of ethics provides a vehicle for promoting a variety of purposes and goals. Luegenbiehl identifies 12 functions a professional code of ethics might have, [5] which I summarize here as

1. *Symbolize professionalism.* The fact that a group has its own code of ethics suggests that the group views itself as constituting a profession and that it wishes to be viewed in this way by the public. All three codes have some element of this purpose in them.
2. *Protect group interests.* A code of ethics can also act to promote the economic interests of the group. Among the three codes, the NSPE code perhaps contains the most obvious component of this nature.
3. *Specify membership etiquette.* A code of ethics may also specify some standards of professional courtesy, saying how members should treat each other. There is some small element of this in each of the three codes, but it does not seem to be a large factor.
4. *Inspire good conduct.* The code of ethics for a group may serve to inspire members toward high standards of conduct. There is certainly an element of this in each of the codes, as evidenced by mention of service to the public, responsibility to clients, and other such phrases.

5. *Educate members.* Each of the three codes serves some degree of an educational purpose just by its existence. The circulation of a code of ethics for a professional organization naturally serves to teach current members and students about the generally accepted practices and standards in the profession.

The ACM code has been published with a set of brief hypothetical case studies that help illustrate how to use the code in making decisions about specific situations. These case studies appear as a reprint at the end of this chapter. This sort of elaboration on the practical meaning of the code would seem to be very valuable and should possibly be done in a more comprehensive manner. For example, the American Psychological Association publishes case histories in which there were actual allegations of code violations [2], important facts determined by a subsequent investigation, and the conclusion reached.

Another aspect of the educational motivation is apparent where each code mentions efforts at continuing education to keep up with current technology.

6. *Discipline members.* A code of ethics can also be a basis for disciplinary mechanisms. Of the three codes, this purpose is most clear in the IEEE code. An element of this purpose is also evident in the ACM code.
7. *Foster external relations.* Each of the three codes offers some guidance on how member of the profession should relate to clients and others outside the profession.
8. *Enumerate principles.* Each of the three codes attempts to enumerate general moral principles that members should respect. For example, the admonition to "reject bribery in all of its forms" (item 4 of the IEEE code) is a statement of general moral principle.
9. *Express ideals.* Each of the three codes also has in it some element of expressing ideals that each member should aspire to. The distinction between a principle and an ideal can be a fine one. A principle is imagined to be something that you could in fact keep to. An ideal, on the other hand, is more of a goal that may not always be possible. The admonition "to avoid real or perceived conflicts of interest" sounds like a general moral principle, but it is not always possible to achieve it. A conflict may be missed because "perceived" depends in part on who is doing the perceiving. So this admonition is followed by the qualifier "whenever possible" in item 2 of the IEEE code.
10. *Put forth rules.* Rules are much the same as principles, but are meant to address more specific and concrete situations. If "reject bribery in all of its forms" is a general principle, then "when awarding a contract, you may accept no gifts with a total value of more than \$50 from any entity competing for the contract" would be a specific rule meant to clarify the meaning of the general principle as applied to a certain situation.
11. *Offer guidelines.* Guidelines are, practically speaking, much the same as rules. A set of "rules" may tend to imply that these are all the do's and don'ts that you need to worry about. On the other hand, labeling them as

guidelines may give more of the feeling that this is not an exhaustive list of do's and don'ts and that there may be gray areas that require careful interpretation.

12. *Codify rights.* A code of ethics may also serve to enumerate the rights of members as well as their responsibilities. Enumerating rights and responsibilities is a part of any of the three codes, although there is some element of this in the IEEE code.

As you read the abbreviated versions of the codes in the next three sections, keep in mind the 12 functions just described. Note things that the codes have in common, things that might represent a conflict among them, or things that seem somehow incomplete, incorrect, or just plain inappropriate.

## 3.2 The IEEE code of ethics

The *IEEE Code of Ethics* as set forth in the *IEEE Policy & Procedures Manual*, [4] consists of 10 points, with no amplification or supplemental guidelines. Appendix B contains other sections of the manual with additional information related to ethical issues and IEEE policies for those interested in examining the IEEE's position on these issues.

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to conduct of the highest ethical and professional manner and agree:

1. to accept responsibility in making engineering decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all of its forms;
5. to improve understanding of technology; its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;

7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

### **3.3 The ACM code of ethics**

In 1992, the Association for Computing Machinery adopted a new code of ethics and professional conduct with supplemental explanations and guidelines. Here we will look at an abbreviated version. Appendix B contains the complete code with explanations and guidelines.

The ACM code of ethics consists of eight general moral imperatives, eight specific professional responsibilities, six organizational leadership imperatives, and two elements for compliance.

1. General Moral Imperatives. As an ACM member I will...
  - 1.1 Contribute to society and human well-being.
  - 1.2 Avoid harm to others.
  - 1.3 Be honest and trustworthy.
  - 1.4 Be fair and take action not to discriminate.
  - 1.5 Honor property rights including copyrights and patents.
  - 1.6 Give proper credit for intellectual property.
  - 1.7 Respect the privacy of others.
  - 1.8 Honor confidentiality.
2. More Specific Professional Responsibilities. As an ACM computing professional I will...
  - 2.1 Strive to achieve the highest quality in both the process and products of professional work.
  - 2.2 Acquire and maintain professional competence.
  - 2.3 Know and respect existing laws pertaining to professional work.
  - 2.4 Accept and provide appropriate professional review.
  - 2.5 Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
  - 2.6 Honor contracts, agreements, and assigned responsibilities.
  - 2.7 Improve public understanding of computing and its consequences.
  - 2.8 Access computing and communication resources only when authorized to do so.
3. Organizational Leadership Imperatives. As an ACM member and an organizational leader, I will...
  - 3.1 Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.

3.2 Manage personnel and resources to design and build information systems that enhance the quality, effectiveness and dignity of working life.

3.3 Acknowledge and support proper and authorized uses of an organization's computing and communications resources.

3.4 Ensure that users and those who will be affected by a computing system have their needs clearly articulated during the assessment and design of requirements.

Later the system must be validated to meet requirements.

3.5 Articulate and support policies that protect the dignity of users and others affected by a computing system.

3.6 Create opportunities for members of the organization to learn the principles and limitations of computer systems.

4. Compliance with the Code. As an ACM member, I will...

4.1 Uphold and promote the principles of this code.

4.2 Treat violations of this code as inconsistent with membership in the ACM.

As you might expect, in comparison with the IEEE code, the ACM code has more specific references related to computer technology. An example of this is the last of the eight specific professional responsibilities: "access computing and communication resources only when authorized to do so." Thus, this code might tend to provide more specific guidance for conduct in particular situations that arise in the computer industry. In the excerpted article at the end of this chapter, the authors have developed nine brief hypothetical case studies to illustrate the ACM code's practical application .

Also, the ACM code, like the IEEE code, includes specific items related to maintaining professional competence through continued education (the second specific professional responsibility) and to providing and accepting peer review of technical material (the fourth specific professional responsibility). These are clearly two things that you should plan on being a regular part of your professional life.

## **3.4 The NSPE code of ethics**

Part I of the NSPE code consists of five fundamental canons, each of which is explained in more detail in Part II, rules of practice. It also contains eleven multipart professional obligations. The rules of practice and the professional obligations appear below. The complete text of the NSPE code appears in Appendix B.

### **NSPE Code of Ethics - Rules of Practice**

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees.

5. Engineers shall avoid deceptive acts in the solicitation of professional employment.

### **NSPE Code of Ethics - Professional Obligations**

1. Engineers shall be guided in all their professional relations by the highest standards of integrity.
2. Engineers shall at all times strive to serve the public interest.
3. Engineers shall avoid all conduct or practice which is likely to discredit the profession or deceive the public.
4. Engineers shall not disclose confidential information concerning the business affairs or technical processes of any present or former client or employer without his consent.
5. Engineers shall not be influenced in their professional duties by conflicting interests.
6. Engineers shall uphold the principle of appropriate and adequate compensation for those engaged in engineering work.
7. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.
8. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice or employment of other engineers, nor untruthfully criticize other engineers' work. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
9. Engineers shall accept responsibility for their professional activities; provided, however, that Engineers may seek indemnification for professional services arising out of their practice for other than gross negligence, where the Engineer's interests cannot otherwise be protected.
10. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.
11. Engineers shall cooperate in extending the effectiveness of the profession by interchanging information and experience with other engineers and students, and will endeavor to provide opportunity for the professional development and advancement of engineers under their supervision.

Like the ACM code, the NSPE code is elaborated in more detail than the IEEE code and so may provide more specific guidance for some situations. For example, consider part (a) of the explanation of the third professional obligation (see Appendix B). The admonition against attracting clients "by the use of showmanship, puffery, or self-laudation, including the use of slogans, jingles or sensational language" is quite specific and appears meant to keep engineering practices on a more objective plane than that of typical commercial business. The admonitions to include *all* relevant and pertinent information in public

statements, to acknowledge pay in paid-for statements and to not give gifts as part of a lobbying effort are all good examples of specific guidance. So also is the admonition, in part (b) of the explanation of the second professional obligation, that, when confronted with a client or employer who insists on an unethical act, one should "...notify the proper authorities and withdraw from further service..." However, the NSPE code also has some unusual and perhaps less worthy features. One item, in part (e) of the explanation of the first professional obligation- "engineers shall not actively participate in strikes, picket lines, or other collective coercive action" -seems clearly aimed at discouraging organized labor activity. Some engineers may find it hard to accept the presence of such an item in a code of ethics. And there is the feeling that, historically at least, considerations about ethical conduct have sometimes been confused with considerations about personal economics. (Refer to the statements concerning court decisions at the end of the complete NSPE code in appendix B.)

### 3.5 Points of contrast between codes

One way to gain perspective on the ACM, IEEE, and NSPE codes is to examine how they differ from codes in other professions. I selected two such codes from large and well-known professional organizations. The American Medical Association's *Principles of Medical Ethics* has a long history, originating in the time of Hippocrates, a Greek physician in 377 BC [1]. The current code consists of seven basic principles and another six fundamental elements of the patient-physician relationship. The American Psychological Association's *Ethical Principles of Psychologists* [2] consists of 10 multipart principles. The following five points are worth examining for contrasts between the AMA, APA, IEEE, ACM, and NPSE codes.

#### 1. **Implied limits to nondiscrimination.**

General moral imperative 4 of the ACM code states "be fair and take action not to discriminate" and amplifies this (see Appendix B) with "discrimination on the basis of race, sex, religion, age, disability, national origin, or other such factors is an explicit violation of ACM policy and will not be tolerated." Item 8 of the IEEE code states "to treat fairly all persons regardless of such factors as race, religion, gender, disability, age or national origin." Compare these with part b of principle 3 in the APA code of ethics - "As employees or employers, psychologists do not engage in or condone practices that are inhumane or that result in illegal or unjustifiable actions. Such practices include, but are not limited to, those based on considerations of race, handicap, age, gender, sexual preference, religion, or national origin in hiring, promotion or training." The difference in wording is small but clear. The APA wording includes the phrase "sexual preference." The ACM and IEEE codes do not include any explicit similar phrase. (It is not clear exactly what is meant in the ACM wording of "other such factors.") The NSPE code does not touch on the issue of discrimination at all.

The issue of discrimination on the basis of sexual preference, or orientation, is currently a topic of heated debate in our society. (Accusations of "special rights for sodomites" and "genocide" are actually

some of the more polite things the two sides have said to one another.) It is clear from the voting results for laws and ordinances around the country that our society has not reached any consensus and that this debate will continue for some time.

A specific issue to consider here is that the APA code of ethics explicitly says it would be unethical for someone to be fired solely because that person's supervisor or colleagues do not approve of their sexual orientation. The ACM, IEEE, and NSPE codes do not. Which is the more appropriate moral stance? Does saying that someone can't be fired for something necessarily imply that society "approves of" the behavior? Should any behavior or belief that does not directly impact job performance be protected?

## **2. Duty to work to correct laws that are wrong.**

The APA and AMA codes suggest that at times people must work for change in the status quo of society. Part d of principle 3 of the APA code states, in part, that "both practitioners and researchers are concerned with the development of such legal and quasi-legal regulations as best serve the public interest, and they work toward changing existing regulations that are not beneficial to the public interest." Principle 3 of the AMA code states "a physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient." The ACM code touches on this topic in its explanation of professional responsibility 2.3 (see Appendix B), where it says "... compliance must be balanced with the recognition that sometimes existing laws and rules may be immoral or inappropriate and, therefore, must be challenged." The IEEE and NSPE codes are essentially silent on this issue.

Why do you think the codes differ this way? Can you think of laws dealing with privacy, communications, intellectual property, or other areas that computing professionals should have some special responsibility to work toward improving? If your answer is "no," hopefully it will be "yes" when you have finished this text.

## **3. Duty to be charitable.**

The AMA and APA codes appear to try to convey a greater sense of social and community responsibility than do the ACM, IEEE, and NSPE codes. Principle 7 of the AMA code states "a physician shall recognize a responsibility to participate in activities contributing to an improved community." Part d of principle 6 of the APA code states, in part, that psychologists "contribute a portion of their services to work for which they receive little or no financial return."

The ACM and IEEE codes are, of course, concerned with public safety, but they do not give any such specific direction to take actions that benefit those less fortunate and that improve the community as a whole. (However, item 3.1 of the ACM code might be interpreted as having some element of this direction.) In comparison, the NSPE is quite



explicit, under professional obligation 2a, in saying that "engineers shall seek opportunities to be of constructive service in civic affairs and work for the advancement of the safety, health and well-being of their community."

This omission in the ACM and IEEE codes seems rather unfortunate and perhaps gives the impression of too much self-interest. This is borne out in the salaries of graduates in the computing disciplines. Many will have a starting salary in their first professional job that is greater than the median family income in our country. Think about it - at the beginning of your career, you, one person, will likely have an income larger than that of half the families in the United States.

What do you think is the source of this difference among codes? Might things be different if computing professionals typically dealt with individuals, rather than companies, as clients? What kind of "activities contributing to an improved community" would be natural for computing professionals to participate in?

#### **4. Duty to police the profession for incompetence.**

The AMA code takes a strong position on policing incompetence in the profession. Principle 2 of the AMA code states, in part, that physicians should "...strive to expose those physicians deficient in character or competence, or who engage in fraud or deception." There is nothing that addresses a similar issue quite so strongly in the ACM or IEEE codes. Professional obligation 8 in the NSPE code does, however, take a clear position on this issue. It states, in part, "Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action."

Again, what do you think is the source of this difference between the codes? Is there any reason to think that incompetence, fraud or deception are any less of a problem in computing than they are in medicine? Should the ACM and IEEE codes be more vocal on this point? What exactly should it mean to "expose" those who are incompetent, fraudulent or deceptive?

#### **5. Duty not to lend credence to misinformation.**

The APA code takes a strong position in this area. Part a of principle 1 states, in part, that psychologists should "...plan their research in ways to minimize the possibility that their findings will be misleading...." Part d states that "psychologists have the responsibility to attempt to prevent distortion, misuse, or suppression of psychological findings by the institution or agency of which they are employees." Relevant analogies to these points could be made in the computing profession. Certainly statistical and simulation results of "computer studies that show that X will happen" are often misused or interpreted in incorrect or misleading ways.

Why do the codes dealing with the computing profession not deal directly with this issue? How much responsibility should computing professionals have to prevent misuse of their work?

### **3.6 Problems with codes of ethics**

We have seen why we cannot count on the legal system to be a complete and correct guide to moral behavior, either for us as individuals in society or as members of a profession. Nor can we expect the professional codes of ethics to be complete, consistent and correct for all situations. Moreover, the codes of ethics included here are mostly voluntary, in the sense that there is no formal monitoring for compliance and little penalty that can be assessed against violators.

In other words, a person can examine the code and, finding that a certain behavior is not explicitly prohibited, rationalize that the behavior is okay. In addition, a person will eventually encounter situations for which the code makes no explicit recommendations. Even worse, the recommendations of the code may turn out to be inconsistent and conflicting, leaving you to agonize over having no good option.

Codes of ethics suffer the same fundamental problem as ethical theories: Goodness cannot be defined through a legalistic enumeration of dos and don'ts. Thus, you must be able to use your internal sense of ethics to fill the holes and resolve the conflicts that inevitably occur as you try to follow any code of ethics. It is my hope that the material in this text will help you develop, refine, and elaborate that internal sense.

### **3.7 Case study**

The description of this incident is drawn from news accounts [7, 10, 11]. The dominant theme in this incident is conflict of interest. Related secondary themes are greed, plagiarism, bribes, fraud, and whistle blowing. There is also perhaps a less obvious element of poor management oversight. There is not enough space here to reprint the specific codes of ethics for all of the participants in the incident (government employees, university professors and so on), but try to identify the elements of the ACM and IEEE codes that would apply to the actions of the people involved.

#### **The cast of characters.**

The University of Tennessee Space Institute is located in Tullahoma, Tennessee. It is a state-supported university that specializes in graduate instruction and research.

The US Army Missile and Space Intelligence Center is located in Huntsville, Alabama. Employees at MSIC are able to enroll in graduate programs at UTSI.

The NASA Marshall Space Flight Center is also located in Huntsville, Alabama. Employees at Marshall are also able to enroll in graduate programs at UTSI.

FWG Associates was a private, for-profit company located in Tullahoma. FWG would receive contracts from a variety of government agencies, including MSIC and Marshall.

Walter Frost was a professor at UTSI. One role of a professor is to supervise and mentor graduate students. Another is to bring in contracts and grants that can help support graduate students and research activities. Separate from his job as a professor, Frost founded FWG Associates. FWG made money, so Frost made money by receiving contracts in the same technical area that he worked in as a professor at UTSI.

Dennis Faulkner is a civilian employee at MSIC. One element of his job was to participate in the awarding of contracts to people doing work for the US Army. Earning a graduate degree in a technical area related to his job could be an important element of career advancement for Faulkner.

Peggy Potter is a civilian employee at Marshall. Similar to Faulkner, an element of her job was to participate in the awarding of contracts to people doing work for NASA. Also like Faulkner, she would like to earn a graduate degree to boost her career.

The anonymous whistle-blower is a former student at UTSI who was also an employee at FWG.

### **The sequence of events.**

Walter Frost began work at UTSI in the 1970s. He was apparently quite good at his specialty and developed into something of a star in his field. He supervised a large number of graduate students at UTSI. He was also the principal investigator for a number of grants and contracts awarded to UTSI from various agencies. Somewhere along the way he started his own private, for-profit company. FWG Associates then began to receive contracts from agencies for the same type of work that previously might have been done under a contract to UTSI.

Dennis Faulkner enrolled in the graduate program at UTSI. Frost became the faculty supervisor for Faulkner's Ph.D. Faulkner participated in the awarding of a contract to FWG Associates. Frost provided Faulkner with a technical report that was already completed and allowed or encouraged Faulkner to use the technical report as the basis for Faulkner's doctoral dissertation. Faulkner received his PhD from UTSI in 1990.

Peggy Potter enrolled in the graduate program at UTSI. Frost became the faculty supervisor for Potter's MS. Potter participated in the awarding of a contract to FWG Associates. Frost provided Potter with a technical report and allowed or encouraged Potter to use the technical report as the basis for her research report for her master's thesis. Potter received an MS from UTSI.

[More people may have played roles essentially identical to those of Faulkner and Potter, but a complete listing of them is not essential to the story.]

At some point, a former student at UTSI and an employee at FWG became aware of the similarity between a technical report prepared by Frost and the master's

thesis of one of Frost's students. The UTSI administration was notified. An investigation ensued.

Walter Frost took early retirement from UTSI in February 1991. Various contracts to Frost's firm were canceled and others reviewed. NASA demoted Peggy Potter, cut her \$55,000 salary by \$18,000, and had her pay back the money that NASA had spent for her course work. UTSI took back the degrees of both Faulkner and Potter. Faulkner's appeal process is still in the courts, but has so far been unsuccessful and appears unlikely to succeed. The incident caused NASA to subpoena documents on 80 students who had Frost as their research adviser. Criminal indictments were made against Frost and another faculty member, and against Potter, Faulkner, and two other students.

### **Conclusions and questions.**

The most obvious "bad guy" in the story would appear to be Walter Frost. Founding a for-profit company to accept contracts in the same technical area as his research work for UTSI guaranteed conflicts of interest.

It is perhaps true that this sort of conflict-of-interest situation "happens all the time." If the people involved have strong moral convictions and the institutions involved have clear and well-enforced guidelines, then such situations might operate without the people involved straying outside the boundaries of ethical behavior. That is, people might handle each of their multiple roles in an ethical fashion. But this is asking human beings to be essentially perfect in resisting temptation. In this instance, the people and institutions involved obviously did not handle the conflicts of interest well. It was clearly unethical for Frost to provide students with already completed research reports to reuse and submit as their own. This, by itself, was "only" an incident of conspiring in an act of plagiarism. However, that it was done with people who were in the position of influencing awards to his company has at least the appearance of bribery. Knowing that plagiarism was involved in the acquisition of a degree also becomes a sort of fraud on UTSI and the agencies for which the students worked.

All the blame cannot be placed on Frost alone, however. Faulkner and Potter were capable professionals. Having a major professor at the university whose contracts might pass through their hands at the office clearly had potential for conflict of interest. Faulkner and Potter certainly must have known that copying an existing technical report and presenting it as their research was wrong. They apparently rationalized it as being okay because Frost approved of it, but their clear motive was to get a degree. It is less clear if they sought Frost as an adviser because such an arrangement would then have been possible.

The problems at UTSI and the government agencies are perhaps less obvious, but still should be considered. The potential conflicts of interest involved with Frost's company should have caused administrators on all sides to exercise extra care in avoiding exactly the problems that arose. UTSI, like all universities, should have a policy against professors supervising the work of students with whom they have a business relationship. Marshall and MSIC should have similar policies from their side.

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## **Points To Remember**

**Each of the major professional organizations in computing (in particular, the ACM and IEEE) has its own published code of ethics.**

**While the professional codes of ethics have slight differences in emphasis, they are in agreement on general principles.**

**The general principles underlying most of the ethical dilemmas you will confront in your career are addressed in the professional codes of ethics.**

**Professional codes of ethics cannot be counted on for detailed guidance in all possible situations. You must have your own strong inner sense of what is moral to be able to apply the general principles in specific situations.**