ETHICS & PROFESSIONAL RESPONSIBILTIY IN COMPUTING

Self-Introduction:

ABDUL RAFEH student of Sindh Madressatul Islam University from Karachi, Pakistan. Bachelors in computer science in progress. Research interest is ethics & professional responsibility in computing.

Abstract: Computing professionals have ethical obligations to clients, employers, other professionals, and the public in fulfilling their professional responsibilities. These obligations are expressed in codes of ethics, which can be used to make decisions about ethical problems.

Introduction: Computing professionals perform a variety of tasks: They write specifications for new computer systems, they design instruction pipelines for superscalar processors, they diagnose timing anomalies in embedded systems, they test and validate software systems, they restructure the back-end databases of inventory systems, they analyze packet traffic in local area networks, and they recommend security policies for medical information systems. Computing professionals are obligated to perform these tasks conscientiously because their decisions affect the performance and functionality of computer

systems, which in turn affect the welfare of the systems' users directly and that of other people less directly. For example, the software that controls the automatic transmission of an automobile should minimize gasoline consumption and, more important, ensure the safety of the driver, any passengers, other drivers, and pedestrians. The ethical obligations of computing professionals go beyond complying with laws or regulations; laws often lag behind advances in technology. For example, before the passage of the Electronic Communications Privacy Act of 1986 in the United States, government officials did not require a search warrant to collect personal information transmitted over computer communication networks. Nevertheless, even in the absence of a privacy law before 1986, computing professionals should have been aware of the obligation to protect the privacy of personal information.

WHAT IS A PROFESSION?

Computing professionals include hardware designers, software engineers, database administrators, system analysts, and computer scientists. In what ways do these occupations resemble recognized professions such as medicine, law, engineering, counseling, and accounting In what ways do computing professions resemble occupations that are not thought of traditionally as professions, such as plumbers, fashion models, and sales clerks Professions that exhibit certain characteristics are called strongty differentiated professions. These professions include physicians and lawyers, who have special rights and responsibilities. The defining characteristics of a strongly differentiated profession are specialized knowledge and skills,

systematic research, professional autonomy, a robust professional association, and a well-defined social good associated with the profession.

WHAT IS MORAL RESPONSIBILITY IN COMPUTING?

In the early 1980s Atomic Energy of Canada Limited (AECL) manufactured and sold a cancer radiation treatment machine called the Therac 25, which relied on computer software to control its operation. Between 1985 and 1987, the Therac-25 caused the deaths of three patients and serious injuries to three others. Who was responsible for the accidents? The operator who administered the massive radiation overdoses, which produced severe burns the software developers who wrote and tested the control software, which contained several serious errors? The system engineers who neglected to install the backup hardware safety mechanisms that had been used in previous versions of the machine the manufacturer, AECL Government agencies We can use the Therac-25 case to distinguish among four different kinds of responsibility.

WHAT ARE THE RESPONSIBILITIES OF COMPUTING PROFESSIONALS?

Responsibilities to Clients and Users Whether a computing professional works as a consultant to an individual or as an employee in a large organization, the professional is obligated to perform assigned tasks competently, according to professional standards. These professional standards include not only attention to technical excellence but also concern for the social effects of computers on operators, users, and the public. When

assessing the capabilities and risks of computer systems, the professional must be candid: The professional must report all relevant findings honestly and accurately. When designing a new computer system, the professional must consider not only the specifications of the client but also how the system might affect the quality of life of users and others. For example, a computing professional who designs an information system for a hospital and should allow speedy access by physicians and nurses and yet protect patients' medical records from unauthorized access; the technical requirement to provide fast access may conflict with the social obligation to ensure patients' privacy.

ETHICAL DECISION MAKING FOR COMPUTING PROFESSIONALS:

Every user of e-mail has received unsolicited bulk commercial e-mail messages, known in a general way as spam. (A precise definition of "spam" has proven elusive and is controversial; most people know spam when they see it, but legally and ethically a universally accepted definition has not yet emerged.) A single spam broadcast can initiate millions of messages. Senders of spam claim that they are exercising their free speech rights, and few laws have been attempted to restrict it. In the United States, no federal law prohibited spamming before the CAN-SPAM Act of 2003. Even now, the CAN-SPAM law does not apply to spam messages that originate in other countries. Although some prosecutions have occurred using the CAN-SPAM Act, most people still receive many e-mail messages that they consider spam.

CODES OF ETHICS:

For each profession, the professional's obligations to clients, employers, other professionals, and the public are stated explicitly in the profession's code of ethics or code of professional conduct. For computing professionals, such codes have been developed by ACM, the British Computer Society (BCS), the, IEEE-CS, the AITP, the Hong Kong Computer Society, the Systems Administrators Special Interest Group of USENEX (SAGE), and other associations. Two of these codes will be described briefly here: the ACM code and the Software Engineering Code jointly approved by the IEEE-CS and the ACM.

Reference:

https://www.ideals.illinois.edu/bitstream/handle/2142/12247/ecse909.pdf?sequence=2&isAllowed=y