

# COM6655 Professional Issues

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### Professional Ethics for Information and Computer Scientists

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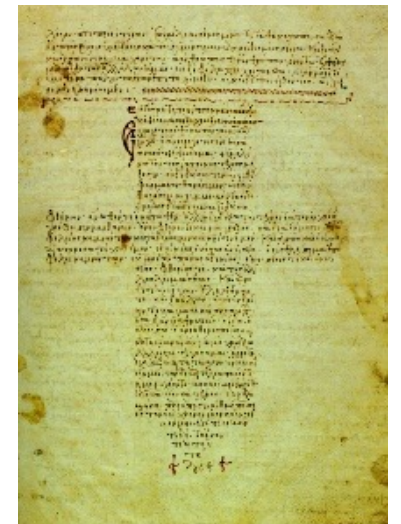
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## Introduction

## Introduction

- Computing is a (relatively) new field; the profession has had neither the time nor the organisational capability to establish a binding set of moral rules on its members.
- Older professions, such as medicine and law, have had centuries to establish their codes of moral conduct.
- Medics and lawyers can only practice if they belong to the General Medical Council (GMC) and Law Society respectively, and adhere to the ethical codes of these organisations.



Hippocratic Oath (12<sup>th</sup> century manuscript)

By manuscript:Unknown scan used in book: Foto de la Biblioteca Vaticana scan from book: User:Rmrfstar - page 27 of Surgery: An Illustrated History by Ira M. Rutkow, M.D. published in 1993: ISBN 0801660785., Public Domain, <https://commons.wikimedia.org/w/index.php?curid=1446714>

# What is a profession?

II. Senses relating to professional occupation.  
7.  
a. An occupation in which a professed knowledge of some subject, field, or science is applied; a vocation or career, especially one that involves prolonged training and a formal qualification. Also occasionally as mass noun: occupations of this kind.  
In early use applied spec. to the professions of law, the Church, and medicine, and sometimes extended also to the military profession.  
a1425 *Dialogue Reason & Adversity* (Cambr.) (1968) 25 (MED) Plato was taken of jefes, sold & so mad jral...for he was a philosophore, he was betere pan his bişere, A gentill professioni þat made þe seruauant more þenne his lord.  
71541 R. COPLAND *Galen's Fourth Bk. Therapeutike* sig. A1v, in *Guy de Chauliac's Questionary Currynges*. The parties of the art of Medycyne...can not be seperated one from the other without the damage and great detryment of all the medecynall professyon.  
1581 G. PETTIE tr. S. Guazzo *Civile Conversat.* (1586) l. A v b Such as I am, (whose profession should chiefelie bee armes).  
1605 F. BACON *Of Advancement. Learning* ii. sig. A83 Amongst so many great Foundations of Colledges in Europe, I finde strange that they are all dedicated to Professions, and none left free to Artes and Sciences at large. ☞  
1682 J. DEWEY *Religio Laici* Pref. sig. a2 Speculations, which belong to the Profession of Divinity.  
1711 J. ADDISON *Spectator* No. 21. ¶ The three great Professions of Divinity, Law, and Physick.  
1728 J. GAY *Beggar's Opera* i. viii. 10 The Captain looks upon himself in the Military Capacity, as a Gentleman by his Profession.  
1788 E. GIBSON *Decline & Fall* (1846) IV. xlv. 186 Arms, eloquence, and the study of the civil law, promoted a citizen to the honours of the Roman state; and the three

“An occupation in which a professed knowledge of some subject, field, or science is applied; a vocation or career, especially one that involves prolonged training and a formal qualification.”

"profession, n." *OED Online*. Oxford University Press, September 2019. Web. 19 November 2019.

# Functions of an ethical code – why have one?

## Functions of an ethical code

- Q. Why have an ethical code for a profession? What are the functions of it?

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- Q. Why have an ethical code for a profession? What are the functions of it?
  - Professionalism
  - Protection of group interests
  - Etiquette and inspiration
  - Education and enforcement
  - Lay out principles, ideals and rules
  - Inform members of their rights

## Professionalisation

- Occupational groups adopt ethical codes in order to demonstrate that they deserve to be called a profession.
- A code of ethics holds the profession **accountable** to the public.
- This tends to yield a payoff in terms of **public trust** and consequent **social and economic rewards**.



Image of Dr Nick (The Simpsons <sup>TM</sup> & © Twentieth Century Fox Film Corp. All Rights Reserved). Previously published at: <https://en.wikipedia.org/w/index.php?curid=5569581>.

## Protection of group interests

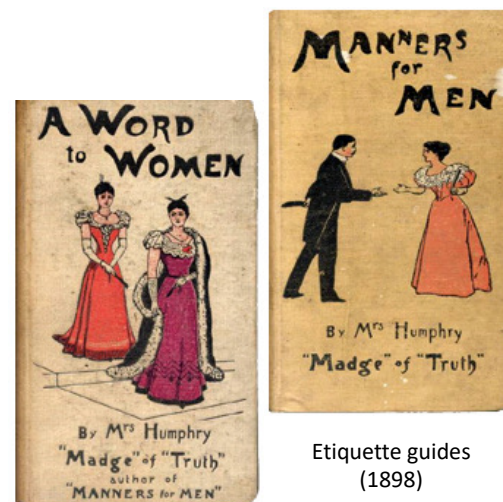
- Professions use codes of conduct to **restrict activities** of non-members, thereby **establishing a monopoly** for the profession's services.
- By demonstrating that they are able to control their membership, professions can convince the public that they deserve to be **self-regulating**.



Arthur (Weegee) Fellig  
cf. the press complaints commission  
[https://en.wikipedia.org/wiki/Press\\_Complaints\\_Commission](https://en.wikipedia.org/wiki/Press_Complaints_Commission)

## Etiquette and inspiration

- Codes of ethics outline standards of **courtesy and professional conduct** among members of a profession.
- An ethical code can be **used to inspire** members of the profession to act appropriately, often by instilling a sense of pride and self-importance.



Etiquette guides  
(1898)

## Education and Enforcement

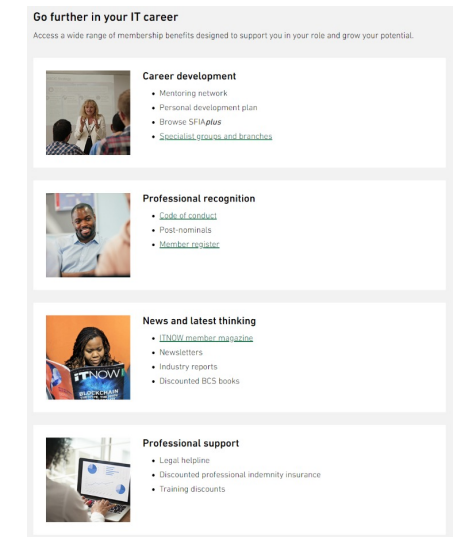
- **Education.** Codes of ethics explicitly state what behaviour is acceptable. As such, they act as an aid to individual decision making.
- **Enforcement.** An ethical code can also be used to discipline or deter.
- It may specify when the norms of a profession have been violated, and indicate that sanctions such as **suspension or expulsion** will be imposed.

## Principles, ideals and rules

- **Principles** - Ethical codes aim to lay out a set of principles which function as the basis for specific obligations.
- **Ideals** - Also, a code may express ideals, which will not always be strictly adhered to, i.e. members should do this rather than members shall do this.
- **Rules** - An ethical code may contain a specific set of rules which apply to concrete situations. However, attempts to specify exhaustive lists of do's and don'ts are often unsuccessful.

## Rights

- As well as stating the obligations and duties of the professional, the code may indicate **rights of members** and indicate the **obligations of the professional body to its members**.



<https://www.bcs.org/membership/become-a-member/>

## Ethics and computing professionals

## Old problems

- In some cases, computers have simply created new versions of age old moral issues, such as:
  - Right and wrong
  - Loyalty
  - Responsibility
  - Confidentiality
  - Fairness

## New problems

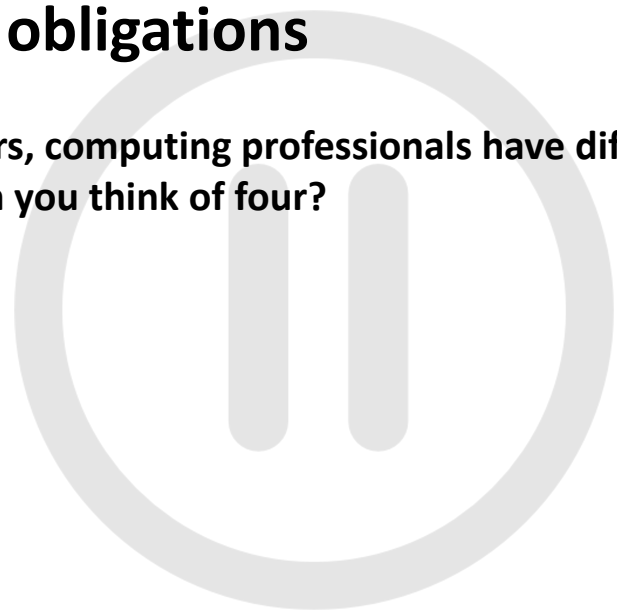
- However, the existence of computers has also created a whole **new** range of social problems. These include:
  - Software theft
  - Computer misuse and computer crime
  - Responsibility for computer errors
- Many of these dilemmas (such as copying software) are 'grey areas' for which there are few social conventions.
- Should computer professionals be bound by an ethical code of conduct? If so, what should it include?

## Existing ethical codes for computing professionals

- A number of professional computer organisations have attempted to devise an ethical code for their members:
  - The Association for Computing Machinery (ACM)
  - Institute of Electrical and Electronics Engineers (IEEE)
  - Data Processing Management Association (DPMA)
  - International Federation for Information Processing (IFIP)
  - British Computer Society (BCS)
  - Australian Computer Society (ACS)

## Conflicting obligations

- **Q. Like engineers, computing professionals have different kinds of obligations. Can you think of four?**



## Conflicting obligations

- **Q. Like engineers, computing professionals have different kinds of obligations. Can you think of four?**
  - Obligations to society
  - Obligations to their employers
  - Obligations to their clients
  - Obligations to other professionals and professional organisations

## How do ethical problems arise?

- **Computers alter relationships between people**
  - Data communications take place without physical contact of the people involved, so the visual and aural senses cannot always help to convey meaning.
  - Electronic communication occurs so quickly that one may not have time to consider the implications of the information before it has been sent and received.

## How do ethical problems arise? (continued)

- **Computer professionals have power**
  - Technology puts power in the hands of computer professionals through access to financial, medical and military information. This power can be abused.
- **The nature of electronic information**
  - Computers allow rapid processing, communication, copying and printing of intellectual property. This introduces new ethical issues of copyright, plagiarism, piracy, eavesdropping and invasion of privacy.

## How do ethical problems arise? (continued)

- **Society is vulnerable to the actions of computer professionals**
  - The general public do not understand the dangers of projects under the control of computer professionals.
- **Clients at the mercy of computer professionals**
  - Many clients have no understanding of how their computer systems work. The process of costing software projects is poorly understood.

## Codes of conduct

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## Codes of Conduct

- Three professional computing bodies that have developed ethical codes for their members are:
  - **ACM**: Association for Computing Machinery
  - **BCS**: British Computer Society
  - **IEEE**: Institute of Electrical and Electronics Engineers

## British Computer Society

- British Computing Society (BCS) is the organisation that accredits our degree programmes
  - Founded in 1957
  - 82,000 members in 151 countries
  - Defined purpose '*making IT good for society*'
  - Responsible for the regulation of ICT and computer science in the UK
  - Incorporated by "Royal Charter" in 1984



BCS Coat of Arms.  
By Source, Fair use,  
<https://en.wikipedia.org/w/index.php?curid=20632715>

## BCS Code of Conduct

- BCS code of conduct: rules covering four main areas:
  - Public interest
  - Professional competence and integrity
  - Duty to relevant authority
  - Duty to the profession

## BCS Code: Definitions

- **Legislation** - The term "Legislation" means any applicable laws, statutes and regulations.
- **Third Parties** - The term 'Third Parties' includes any person or organisation that might be affected by your activities in your professional capacity, irrespective of whether they are directly aware or involved in those activities.
- **Relevant Authority** - The term "Relevant Authority" in this document is used to identify the person(s) or organisation(s) which has / have authority over the activity of individuals in their professional capacity. For practising BCS members this is normally an employer or client. For student members, this is normally an academic institution.

## BCS Code: Public interest

- You shall:
  - a. have due regard for public health, privacy, security and wellbeing of others and the environment.
  - b. have due regard for the legitimate rights of Third Parties.
  - c. conduct your professional activities without discrimination on the grounds of sex, sexual orientation, marital status, nationality, colour, race, ethnic origin, religion, age or disability, or of any other condition or requirement
  - d. promote equal access to the benefits of IT and seek to promote the inclusion of all sectors in society wherever opportunities arise.

## BCS Code: Professional competence and integrity

- You shall:
  - a. only undertake to do work or provide a service that is within your professional competence.
  - b. **NOT** claim any level of competence that you do not possess.
  - c. develop your professional knowledge, skills and competence on a continuing basis, maintaining awareness of technological developments, procedures, and standards that are relevant to your field.
  - d. ensure that you have the knowledge and understanding of Legislation and that you comply with such Legislation, in carrying out your professional responsibilities.
  - e. respect and value alternative viewpoints and, seek, accept and offer honest criticisms of work.
  - f. avoid injuring others, their property, reputation, or employment by false or malicious or negligent action or inaction.
  - g. reject and will not make any offer of bribery or unethical inducement.

## BCS Code: Duty to relevant authority

- You shall
  - a. carry out your professional responsibilities with due care and diligence in accordance with the Relevant Authority's requirements whilst exercising your professional judgement at all times.
  - b. seek to avoid any situation that may give rise to a conflict of interest between you and your Relevant Authority.
  - c. accept professional responsibility for your work and for the work of colleagues who are defined in a given context as working under your supervision.
  - d. **NOT** disclose or authorise to be disclosed, or use for personal gain or to benefit a third party, confidential information except with the permission of your Relevant Authority, or as required by Legislation.
  - e. **NOT** misrepresent or withhold information on the performance of products, systems or services (unless lawfully bound by a duty of confidentiality not to disclose such information), or take advantage of the lack of relevant knowledge or inexperience of others.

## BCS Code: Duty to the profession

- You shall:
  - a. accept your personal duty to uphold the reputation of the profession and not take any action which could bring the profession into disrepute.
  - b. seek to improve professional standards through participation in their development, use and enforcement.
  - c. uphold the reputation and good standing of BCS, the Chartered Institute for IT.
  - d. act with integrity and respect in your professional relationships with all members of BCS and with members of other professions with whom you work in a professional capacity.
  - e. encourage and support fellow members in their professional development.



# Others are similar

<https://www.acm.org/binaries/content/assets/about/acm-code-of-ethics-booklet.pdf>

General ethics principles

- 1. Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing
- 2. Avoid harm
- 3. Be honest and trustworthy
- 4. Be fair and take action not to discriminate
- 5. Respect the work required to produce new ideas, inventions, creative works, and computing artifacts.
- 6. Respect privacy
- 7. Honor confidentiality

Professional responsibilities

- 1. Strive to achieve high quality in both the processes and products of professional work
- 2. Maintain high standards of professional competence, conduct, and ethical practice.
- 3. Know and respect existing rules pertaining to professional work.
- 4. Accept and provide appropriate professional review
- 5. Perform work only in areas of competence
- 6. Foster public awareness and understanding of computing, related technologies, and their consequences.
- 7. Access computing and communication resources only when authorized or when compelled by the public good.
- 8. Design and implement systems that are robustly and usably secure.

Professional leadership principles [...]

Compliance with the code [...]

# Others are similar

<http://www.ieee.org/about/corporate/governance/p7-8.html>

- I. To uphold the highest standards of integrity, responsible behavior, and ethical conduct in professional activities.
  - 1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, to protect the privacy of others, and to disclose promptly factors that might endanger the public or the environment;
  - 2. to improve the understanding by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;
  - 3. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
  - 4. to avoid unlawful conduct in professional activities, and to reject bribery in all its forms;
  - 5. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, to be honest and realistic in stating claims or estimates based on available data, and to credit properly the contributions of others;
  - 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;
- II. To treat all persons fairly and with respect, to not engage in harassment or discrimination, and to avoid injuring others.
  - 7. to treat all persons fairly and with respect, and to not engage in discrimination based on characteristics such as race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
  - 8. to not engage in harassment of any kind, including sexual harassment or bullying behavior;
  - 9. to avoid injuring others, their property, reputation, or employment by false or malicious actions, rumors or any other verbal or physical abuses;
- III. To strive to ensure this code is upheld by colleagues and co-workers.
  - 10. to support colleagues and co-workers in following this code of ethics, to strive to ensure the code is upheld, and to not retaliate against individuals reporting a violation.