



# Professional Development

## Topic 2: Right and Wrongs

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### Content

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- Codes
  - Conduct
  - Practice
- Standards
  - National
  - International
- The Law
  - Contracts
  - Intellectual Property
  - Data Protection
  - Computer Misuse
- Ethics



## BCS Code of Conduct

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<http://www.bcs.org/server.php?show=nav.6030>

“Professional Behaviour”

- Professional Conduct
- Professional Integrity
- Public Interest
- Fidelity
- Technical Competence
- Impartiality

NB: Limitations



## BCS Code of Good Practice

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<http://www.bcs.org/server.php?show=conWebDoc.1589>

“Professional Competence”

- Personal Requirements
- Organisation and Management
- Contracting
- Privacy, Security and Integrity
- Development
- Implementation
- Live Systems

## Standards

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### "Professional Guidelines"

- Quality
  - Quality Management and Quality Assurance (ISO 9000 family and TickIT)
- Safety
  - Functional Safety of Electronic Systems (IEC 61508)
- Security
  - Information Security Systems (ISO/IEC 27000 family)

## Computer law

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- Contracts, Torts, Restitution
- Intellectual Property Rights
- Data Protection
- Computer Misuse
- Computer Evidence

## Contracts



- Employees
  - Copyright for work undertaken in course of employment resides with employer
  - Copyright can extend to work NOT undertaken in course of employment
- Contractors
  - Package Licences
    - Limited rights passed to buyer
    - Producer retains copyright and liability
  - Bespoke Software
    - All rights passed to buyer
    - Buyer acquires copyright and liability
  - You CANNOT contract out of “reasonable” liabilities

## Duties



- Fidelity
  - Parties to a contract must deal honestly with each other
- Confidence
  - Confidential information must not be disclosed
  - An action for the tort of Breach of Confidence requires
    - The information to be confidential
    - The information to have been acquired in circumstances which give rise to an obligation of confidence
    - An actual or anticipated unauthorised disclosure
  - The owner of the information has considerable say in whether the requirements are present or not

## More Duties

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- Negligence
  - Negligence is a breach of
    - An obligation arising from a contract to take reasonable care
    - A common law duty to take reasonable care
  - Liability for defects lies with
    - The producer
    - Any person who has put his/her name to the product
    - Any person who has imported the product
  - Contracts may not
    - Exclude liability for death or personal injury
    - Exclude liability for other loss or damage except when it is reasonable
    - Indemnify ANY person in respect of liability for negligence or breach of contract

## Intellectual Property Rights

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- Moral Rights
  - Berne Union (over 80 members)
    - Right of Paternity
    - Right of Integrity
  - National legislation also often adds further rights
    - Right to object to false attribution
    - Right to privacy of certain photos and films
- The first two rights are invariably limited in the case of employees

## Copyright



- Can subsist in –
  - a) Original works
    - Literary (includes programs)
    - Dramatic
    - Musical
    - Artistic
  - b) Sound recordings
    - Films
    - Broadcasts
    - Cable programmes
  - c) The typographical arrangement of a publication
- Most products comprise a complex bundle of discrete copyright works

## Examples



- A Word-processing package
  - Program code ... literary work
  - Documentation ... literary work
  - Built-in dictionary ... literary work
  - Pictures on packaging ... artistic work
  - Graphics/photos ... artistic work
- A Video game might also contain
  - Sound track ... musical work
  - Sequence of images ... film
- A Database package
  - The Database ... literary work
  - Some items may be literary works
  - Broadcast over videotext, etc.



## Qualifying for Copyright

- There can be *no copyright* in a work *unless* and *until* it is *recorded in writing* or otherwise
- Writing covers storage in any form of machine readable media
- Only original works are covered
  - No definition of *original* is given in UK Law but there is plenty of case law to clarify it
- Complex qualifications must be met for copyright to subsist in a work but an author is always a qualifying person



## Copyright Ownership

- The *first owner of copyright* is usually the author no matter whose idea it was or who paid for it. Except ...
- The first owner of a work created during the course of employment is the employer
- Note:
  - Contract OF service – employment agreement
  - Contract FOR services – commissioned work
- Copyrights may be:
  - Given away
  - Bought and sold
  - Inherited

## Infringement

- Copyright normally lasts for a fixed period of time after the author's death (70 years in the UK)
- Computer-generated works are protected for a fixed period of time after they were made (50 years in the UK)
- Criminal sanctions can apply to two types of infringement
  - Primary
    - Copying
    - Adapting
    - Issuing
  - Secondary
    - Dealing
    - Aiding and abetting
    - Facilitating transmission
    - Circumventing protection

## "Copyleft"

- Gives permission to
  - Run
  - Copy
  - Modify
  - distribute modified versions of a program
- So source must be made available
- Does not allow
  - adding extra restrictions of your own
  - taking the program or modifications to it private
- So combination with non-copylefted works is non-trivial





## Designs

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- In the UK there is also a design right which normally lasts for 15 years.
- This covers such things as –
  - Circuit board layout
  - Chip manufacturing processes
  - Component designs
  - Designs for paper paths in laser writers !!



## Patents

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- Patents protect IDEAS which are NOVEL and NOT OBVIOUS
- Patents protect the FIRST-COMER to an invention - NOT the inventor
- Patents must demonstrate –
  - Novelty
  - An inventive step
  - Industrial application
- Excluded are –
  - Discoveries
  - Scientific theories
  - Mathematical methods



## Data Protection

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- In the UK this is administered by the Information Commissioner
- Any holder of personal data MUST register with the Commissioner
- The registration will indicate the nature of the data, why it is being held, and how long it will be held
- Failure to register or failure to operate within the terms provided on the registration form is a CRIMINAL OFFENCE



## UK Data Protection Principles

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1. Personal data shall be processed fairly and lawfully and, in particular, shall not be processed unless certain conditions are met.
2. Personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with those purposes.
3. Personal data shall be adequate, relevant and not excessive in relation to the purposes for which they are processed.

## UK Data Protection Principles



4. Personal data shall be accurate and, where necessary, kept up to date.
5. Personal data processed for any purpose shall not be kept for longer than is necessary.
6. Personal data shall be processed in accordance with the rights of data subjects under this Act.

*Guidance is offered on this principle - see later.*

## UK Data Protection Principles



7. Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or personal damage to, personal data.
8. Personal data shall not be transferred to a country or territory outside the European Economic Area, unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

## Principle 6 - Guidance



- A person will contravene Principle 6 if, but only if, they:
  - Fail to supply information pursuant to a subject access request;
  - Fail to comply with notices given under the following provisions of the Act:
    - Right to prevent processing likely to cause damage or distress;
    - Right to prevent processing for the purposes of direct marketing;
    - Rights in relation to automatic decision-taking;

## UK Computer Misuse Act 1990 Section 1



- **Unauthorised access to computer material**
  - Imprisonment for up to six months or a fine of up to £2,000 or both
- **Police and Justice Act 2006 amendment**
  - Raised maximum period of imprisonment to two years
  - Note that unauthorised access and unauthorised modification have been extended to *any unauthorised act in relation to a computer*
  - Also *making, supplying or obtaining articles for use in computer misuse offences* is now also an offence!

## UK Computer Misuse Act 1990 Section 2



- **Unauthorised access with intent to commit or facilitate the commission of further offences**
  - Imprisonment for up to five years or a fine or both
- **Police and Justice Act 2006 amendment**
  - No longer necessary to direct an *intent* against a *particular computer, program, piece of data or type of program* to be deemed guilty

## UK Computer Misuse Act 1990 Section 3



- **Unauthorised modification of computer material**
  - Imprisonment for up to five years or a fine or both
  - Plus further penalties associated with criminal acts which the modification was furthering
- **Police and Justice Act 2006 amendment**
  - Wording changed to remove dependence on *data modification* in order to cover denial of service attacks
  - New wording – *unauthorised acts with intent to impair operation of a computer ...*

## Jurisdiction under the 1990 UK Act

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- Section 4 subsection (2)
  - At least one **significant link with the domestic jurisdiction must exist for an** offence to be committed.
- Section 5 subsections (2) and (3)
  - In relation to an offence under Sections 1 or 3 a significant link will exist if  
**either**  
the accused was in the home country at the time when he did the act;  
**or**  
the target computer was in the home country at the time when the accused did the act.
- The home country is a UK jurisdiction
  - England and Wales
  - Scotland
  - Northern Ireland

## Computer Ethics

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- Rightness and Wrongness
- Moral Systems and Principles
- Stakeholders
- Ethical Decision Making

## Classical Ethics

- Objectivism - Plato (429-347 BC)
  - Only one "good" life
  - Actions right or wrong in themselves
- Cynicism - Diogenes (413-323 BC)
  - World fundamentally "evil"
  - Ascetic lifestyle ignoring all else
- Relativism - Aristotle (384-322 BC)
  - Many "good" and "bad" lives
  - Good = Happy + Moderation
- Hedonism - Epicurus (341-270 BC)
  - Pursuit of pleasure as sole goal of life
  - Highest pleasure is practising virtue
- Stoicism - Zeno (335-263 BC)  
Epictetus (55-135 AD)
  - No such things as "good" or "evil"
  - Fatalist acceptance of everything

## Rationalism & Empiricism

- Deontology (deon = duty)
  - Objectivism revived
    - Actions right or wrong in themselves
  - Kant (1724-1804)
    - Importance attached to motive of an action
    - The Categorical Imperative
      - Always act out of respect for the moral law
    - Principle of Consistency
      - Do only that which would remain sensible if everyone did it (cf. lying)
    - Principle of Respect
      - Treat people with dignity and as ends not means
- Teleology (telos = goal)
  - Egoism
    - Do that which will be most beneficial to me
  - Utilitarianism - Mill (1806-1873)
    - Act so as to bring about the greatest happiness of the greatest number of people



## Sophism

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- Ethical Relativism
  - No universal norms
    - Different societies at different times have different sets of moral values
  - *Therefore ...*
  - Rights and Wrongs are relative
    - This can be used to excuse any action one chooses



## Student Ethics

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Students regularly point to the following as incentives for acting ethically –

- Trust
  - Individuals who appear to have a code of ethics can be relied upon
- Security
  - Considering the consequences of one's actions can guard against unexpected outcomes
- Comfort
  - Peace of mind



## Stakeholders



- Any person, group or organisation that could be affected by the decision being taken is a stakeholder
- Stakeholders are not always easy to identify - some are affected very indirectly
- It can be helpful to tabulate the options and the stakeholders, noting the effect of each option on each stakeholder

## Some Useful Tests



The Golden Rule  
(Other Person's Shoes Test)

Legality Test

Smell Test

Parent Test

Media Test

Market Test



## Decision Making

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- Always distil the key facts from the situation - it can help to write them down
- We have seen that there are a number of ways of assessing whether an act is ethical
- You don't have to pick just one
  - you can assess an act against all of the yardsticks that you feel are relevant