Moral and Ethical Issues

Moral issue	It concerns our own individual behaviour and our own personal concept of right and wrong. We learn our moral values from other people such as our parents, teachers and peers, and we learn them for ourselves from experience
Ethical Issues	Factors that define the set of moral values by which society functions.

Moral and Social Issues

Unauthorised access	Hackers gain access to systems for different reasons. Hacking for the purposes of committing fraud is considered to be wrong by many people. However, there are groups of people called ethical hackers who claim that they hack in order to expose weaknesses in system security. They claim that their actions therefore are for the good of society.
Unauthorised use of software	Some people believe that software companies and programmers spend hours developing programs and should therefore be rewarded for their work. Some people believe that software is too expensive, requires too many updates and that software companies are exploitative. Therefore, downloading or copying software is morally defendable.
Inappropriate behaviour	There is evidence that people's behaviour changes when they are online. In the worst cases this can lead to online bullying, trolling and other forms of abuse that may then spread into the real world.

Moral and Social Issues (cont)

Inappropriate content	A lot of content on the Internet is what most people would consider to be inappropriate. This includes pornography, violence or sites promoting religious or ethnic hatred. These sites may not be illegal but there is concern about what effect they have on the society, particularly younger people.
Freedom of speech	Some people believe that you should be able to say whatever you like, even if that offends other people. The Internet gives almost everyone the ability to do that. It therefore raises the issue of whether there should be some code that all Internet users should adhere to when expressing their views.
Unemployment	A broader social issue relates to the impact that new technology has on people's working lives. For example, many businesses such as retail and banking may no longer need to employ as many people in their stores and branches. On the other hand, they may create more jobs in IT for employees working in their on line businesses.
Access to the Internet	It is difficult to know how many people have access to the Internet. Some estimates are that there are 2.5 billion Internet users. There are 7 billion people in the world, so that means only around 35% of the world's population have access to it. An estimated 15% of the UK population do not have Internet access. Are they disadvantaged by this?

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Legal Issues

Legal issues relate to those issues where a law has been passed by the government. There are very few Acts of Parliament that are specific to the world of computing. The two main ones are the Data Protection Act and the Computer Misuse Act.

Legal Issues Con

Geographical limitations	Most UK laws only apply in the UK With the global nature of the Internet it can be difficult to prove where a particular offence took place. Also, if the perpetrator breaks a UK law but they are based in another country, it can be difficult to prosecute them. Different countries have different laws and therefore there is no universal way of regulating the computer industry or the Internet.
Constant change	Many acts are introduced in response to current events. As technology develops so rapidly, laws often become out of date quite quickly. The Computer Misuse Act is a good example of this as it was introduced before the widespread adoption of the Internet.

Cultural Issues

Over-use of data	There are fears that we are becoming completely dependent on data. Data are being collected about us by every single organisation we deal with including government agencies and businesses. Many decisions about the way in which the country is run are based on data analysis.

Cultural Issues (cont)

Invasive technologies	A lot of data are collected without our consent. Satellite images and Google StreetView enable anyone to look at your house. Zoopla and other websites tell everyone how much you paid for it.
Over-reliance on computers	What happens when computer systems fail? At a simple level you might lose some data on your computer. At a more serious level people may be in physical danger or even die as a result of computer failure.
Over-reliance on technology companies	According to some sources, two-thirds of all Internet searches are done through Google. That is around 115 billion searches a month. Wikipedia often appears on the front page of search results. This gives these two organisations a massive influence over the information we access.
'Big brother' culture	The original meaning of 'big brother' is that the government is watching everything we do and that we have to modify our behaviour to meet expected behaviours. With the increasing use of CCTV, the desire for national identity cards and the monitoring of emails and mobile phone calls, some people believe that we heading in that direction.

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Cultural Issues (cont)

Global isation	As we become more connected to other cultures, we are more likely to be influenced by them. For example, many individuals and organisations use technology to try and influence the debate on religion and politics.

Code of Conduct

always operate in the public interest

have a duty to the organisation that they work for, or the college they attend

have a duty to the profession

maintain professional competence and integrity.

Data Protection Act

Fairly and lawfully processed

Processed for limited purposes

Adequate, relevant and not excessive

Accurate and up-to-date

Not kept longer than necessary

Processed in accordance with the data subject's rights • held securely

Data may not be transferred outside EU unless the country has adequate data-protection legislation.

Another feature of the Act is that data subjects have the right to know what data are stored about them by any particular individual or organisation. These are known as subject access rights. If this information is incorrect then the data subject has the right to have it corrected. The organisation must be given notice and may charge a small fee to the data subject

Freedom of Information Act

The Freedom of Information Act extends the subject access rights of the Data Protection Act and gives general rights of access to information held by public authorities such as hospitals, doctors, dentists, the police, schools and colleges. Both Acts are overseen by the Information Commissioner.
The Act gives individuals access to both personal and non-personal data held by public authorities. The idea behind the Act was to provide more openness between the public and government agencies. Therefore, the agencies are obliged to give the public access to information and to respond to individual requests for information. Much of this is done through websites and email communications.

Computer Misuse Act

Unauthorised access to computer programs or data	This includes some forms of hacking including breaking through password protection and firewalls, decrypting files and stealing another user's identity.
Unauthorised access with further criminal intent:	An extension of the first offence where there is a clear intention to carry out a further criminal act such as an act of fraud or a copyright breach.
Unauthorised modification of computer material	This includes falsifying bank details or exam grades, spreading viruses designed to corrupt data and programs and interfering with system files.

Regulation of Investigatory Powers (RIP) Act

Part 1	which relates to the interception of communications, including electronic data
Part 3	which covers the investigation of electronic data protected by encryption. In simple terms

They also have the right to decipher these data if they are encrypted even if this means that the user must tell the police how to decrypt the data.

It also allows employers to monitor the computer activity of their employees, for example, by monitoring their email traffic or tracking which websites they visit during work time. This raises a number of issues relating to civil liberties.

Copyright, Designs and Patents Act

This Act gives rights to the creators of certain kinds of material allowing them control over the way in which the material is used. The law covers the copying, adapting and renting of materials.
The law covers all types of materials but of particular relevance to computing are:
• original works including instruction manuals, computer programs and
• some types of databases
• web content
• original musical works
• sound recordings
• films and videos.

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Copyright, Designs and Patents Act (cont)

Copyright applies to all works regardless of the format. Consequently, work produced on the Internet is also covered by copyright. It is illegal to produce pirate copies of software or run more versions on a network than have been paid for. It is an offence to adapt existing versions of software without permission. It is also an offence to download music or films without the permission of the copyright holder.

In computing, two techniques are used to protect copyright:

• Digital Rights Management (DRM): This uses access control software to limit the way in which users can control, use, copy, print or edit digital content that they have bought.

• Licensing: Normally used for software, this provides users with a paper-based or digital proof that they have purchased software legally and details what they are allowed to do with the software.

Other Acts Relevant to Computer Science

The Official Secrets Act prevents the disclosure of government data relating to national security.

The Defamation Act prevents people from making untrue statements about others which will lead to their reputation being damaged.

The Obscene Publications Act and the Protection of Children Act prevent people from disseminating pornographic or violent images.

The Health and Safety (Display Screen Equipment) Regulations provides regulation on the correct use screens and is a specific addition to the Health and Safety at Work Act, which contains more general regulation on keeping employees safe.

The Equality Act makes it illegal to discriminate against anyone of the grounds of sex, sexual orientation, ethnicity, religion, disability or age. This includes the dissemination of derogatory material.

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