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Topic Title 10: Computer Systems and People

ICT170: Foundations of Computer Systems

Overview

- Ethics and ethical frameworks
- Ethics and IT
- The ACS Code of Ethics
- Privacy
- Job Roles in IT

Objectives

In order to achieve the unit learning objectives, on successful completion of this topic, you should be able to:

- Demonstrate an understanding of the major features of the Australian Computer Society (ACS) Codes of Ethics and Professional Conduct by applying those features to a given scenario
- Discuss the professional skills required in various IT and related employment in terms of the Skills Framework for the Information Age (SFIA) framework.

Reading

- ACS, (nd), *Australian Computer Society (ACS) Code of Ethics.* Retrieved from:

  https://www.acs.org.au/content/dam/acs/acs-documents/Code-of-Ethics.pdf

- ACS, (2014), *Australian Computer Society (ACS) Professional Standards Board: ACS Code of Professional Conduct.* Retrieved from: https://www.acs.org.au/content/dam/acs/acs-documents/ACS%20Code-of-Professional-Conduct_v2.1.pdf

- Skills Framework for the Information Age (SFIA), (2014), *SFIA Foundation*. Retrieved from: http://www.sfia-online.org/

- Rainer, R.K., Prince, B., and Cegielski, C.G., (2013), *Introduction to Information Systems*, 5th Ed., Wiley, Chapter 3, Ethics and Privacy

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Ethics and Ethical Frameworks

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Ethics and Ethical Frameworks

- "***Ethics*** *refers to the principles of right and wrong that individuals use to make choices that guide their behavior*" Rainier et. al. p.77
- Easy to define…
  - How confident are we of determining what is right or wrong?

  http://www.youtube.com/watch?v=1bxqt0siy34

Ethical Frameworks

- There are many ethical frameworks/codes etc
  - Ranier et al suggest four main approaches:
    - Utilitarian
    - Rights
    - Fairness
    - Common good

Utilitarian Approach to Ethics

- An ethical action is one that provides the most good or does the least harm
  - Relatively straightforward
    - Identify the various courses of action available
    - Determine the foreseeable benefits and harms that could arise from each of the various possible courses
    - Chose the course of action with the greatest degree of benefit
    - http://www.youtube.com/watch?v=rUCStCGMFOY

Issues with the Utilitarian approach

- Problematic to determine degree of benefit/harm
  - Financial outcomes vs. health and wellbeing?
- Justice?
  - Benefits for society, but injustice for the individual

  "*Imagine that the U.S. Central Intelligence Agency gets wind of a plot to set off a dirty bomb in a major American city. Agents capture a suspect who, they believe, has information about where the bomb is planted. Is it permissible for them to torture the suspect into revealing the bomb's whereabouts? Can the dignity of one individual be violated in order to save many others?*" - See more at: http://www.scu.edu/ethics/practicing/decision/calculating.html

The Rights Approach

- An ethical action is the one that best protects and respects the moral rights of the affected parties
  - Moral rights:
    - Right to make one's own decisions
    - To be told the truth
    - Not to be injured
    - To privacy
  - The debate is to which and how much of the above people are entitled to

Issues with the Rights Approach

- How to deal with conflicting or competing rights?
  - Need to make some decision as to which interest should take priority
  - E.g., right to free speech, but limitations as to what is considered to be free speech

The Fairness Approach

- Ethical actions treat all humans equally, or, if unequally, then fairly, based on some defensible standard
  - The example used in the Ranier reading suggest that it is fair to pay higher salaries on the basis of harder work or greater contribution
    - Though CEO salaries are often debated ☺

The Common Good Approach

- Respect and compassion for others is the basis for behaving in an ethical manner
  - It suggests that there are a number of common conditions that are important to the welfare of all members of a community
    - Incl: Laws, effective policing, healthcare, public education, recreation spaces
  - This requires the cooperative effort of the community
    - It is not always clear what the "common good" actually is, particularly when there are competing values
      - Is public education more important than access to recreational facilities?

A General Framework for Ethics/Ethical Decision Making

- Ranier suggests a five-step framework:
  - Recognise an ethical issue
  - Get the facts
  - Evaluate alternative actions
  - Make a decision and test it
  - Act and reflect on the outcome of the decision

Recognise an ethical issue

- Could this decision or situation damage someone or some group?
- Does this decision involve a choice between a “good” and a “bad” alternative?
- Does this issue involve more than legal considerations?
  - If so, in what way?

Get the facts

- What are the relevant facts of the situation?
- Do I have sufficient information to make a decision?
- What individuals and/or groups have an important stake in the outcome?
- Have I consulted all relevant persons and groups?

Evaluate alternative actions

- Which option will produce the most good and do the least harm? (the utilitarian approach)
- Which option best respects the rights of all stakeholders/ (the rights approach)
- Which option treats people equally or proportionately? (the fairness approach)
- Which option best serves the community as a whole, and not just some members? (the common good approach)

Make a decision and test it

- Considering all the approaches, which option best addresses the situation

Act and reflect on the outcome of the decision

- How can I implement my decision with the greatest care and attention to the concerns of the stakeholders?
- How did my decision turn out, and what did I learn from this specific situation?

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Ethics and IT

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Ethics and IT

- IT Professionals are in a special position in many workplaces
  - They have access to information about their co-workers, they have control over how people can do their work, they have the "power" to do favours for some, and not for others etc…
  - …and while most ethical decisions in the workplace will be similar, there are some areas which are specific to IT, in particular
    - Privacy
    - Accuracy
    - Property
    - Accessibility

Privacy

- Organisations collect, store and disseminate information about individuals, including
  - Customers/clients
  - Employees
  - Other organisations
  - …as does the Government:
    - http://www.huffingtonpost.com.au/2015/10/13/data-retention-scheme-gets-underway_n_8278472.html?utm_hp_ref=australia
- Ranier suggests the following ethical questions in this regard:
  - What information about oneself should an individual be required to reveal to others?
  - What kind of surveillance can an employer use on its employees?
  - What types of personal information can people keep to themselves and not be forced to reveal to others?
  - What information about individuals should be kept in databases, and how secure is the information there?

Accuracy

- Given the amount of information generated and kept by organisations, the authenticity, fidelity and correctness of the information is very important
  - Who is responsible for accuracy of the data?
  - How can we best ensure that the data will be processed properly and presented accurately to others?
  - How can we ensure that errors in data are accidental and not intentional?
  - Who is held to be accountable for errors in data, and how should the injured parties be compensated?

Property Issues

- Ownership and value of organisational data
  - Who owns the data?
  - What are the just and fair prices for its exchange?
  - How should we handle software piracy?
  - Under what circumstances can one use proprietary databases?
  - Can corporate computers be used for private purposes?
  - How should experts who contribute their knowledge to create expert systems

Accessibility Issues

- Who should have access to information and whether a fee should be paid for this access?
  - Who is allowed to access information?
  - How much should companies charge for permitting access to information?
  - How can access to computers be provided for employees with disabilities?
  - Who will be provided with equipment needed for accessing information?
  - What information does a person or organisation have a right or obtain, under what conditions

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The ACS Code of Ethics

Subtitle if required

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The ACS Code of Ethics

- Like most professional organisations/groupings, the Australian Computer Society (ACS) has a code of ethics that is there to assist professionals in understanding what ethical conduct means in the context of the profession.
- "*As a member of the ACS, you must uphold and advance the honour, dignity and effectiveness of being a professional. This entails, in addition to being a good citizen and acting within the law, your adherence to the Code of Professional Conduct.*"

ACS Code of Ethics

1. The Primacy of the Public Interest: You will place the interests of the public above those of personal, business or sectional interests.
2. The Enhancement of Quality of Life: You will strive to enhance the quality of life of those affected by your work.
3. Honesty: You will be honest in your representation of skills, knowledge, services and products.
4. Competence: You will work competently and diligently for your stakeholders.
5. Professional Development: You will enhance your own professional development, and that of your staff.
6. Professionalism: You will enhance the integrity of the ACS and the respect of its members for each other.

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Privacy

Subtitle if required

What is Privacy?

- Ranier says, "*The right to be left alone and to be free of unreasonable personal intrusion*".
  - More specifically, *information privacy* is the right to determine when, and to what extent, your data can be gathered and/or communicated to others
  - It is recognised in most jurisdictions as a right, **but…**
    - It is recognised that this right needs to be balanced with the needs of society

Profiling

- Aggregation of your digital data
  - Credit card and banking transactions
  - Google
  - Loyalty programmes
  - Telephone records
  - Publicly available data (e.g., electoral rolls, real-estate data etc)
  - Motor vehicle journeys

Electronic Surveillance

- What benefits might accrue to society from a high degree of electronic surveillance?
- Drones for shark spotting at the beach?

  http://www.youtube.com/watch?v=TNsZIr6tFfI

Privacy Policies

- Generic Guidelines would normally address:
  - Data Collection
  - Data Accuracy
  - Data Confidentiality

Data Collection

- Should be collected on individuals for the purposes of accomplishing a legitimate business objective
- Should be adequate, relevant, and not excessive in relation to the business objective
- Individuals should give their consent before data pertaining to them can be gathered

  This permission might be implicit

Data Accuracy

- Sensitive data gathered on individuals should be verified before they are entered into the database
- Data should be kept current, where and when necessary
- The file should be made available so that the individual can ensure that the data are correct
- In any disagreement about the accuracy of the data, the individual's version should be noted and included with any disclosure of the file

Data Confidentiality

- Security procedures should be implemented to ensure against unauthorised disclosure of the data. These procedures should include physical, technical and administrative security measures
- Third parties should not be given access to data without the individual's knowledge or permission, except as required by law
- Disclosure of data, other than the most routine, should be noted and maintained for as long as the data are maintained
- Data should not be disclosed for reasons incompatible with the business objective for which they are collected

Murdoch's Privacy Policy

- Guidelines for protecting privacy

  http://www.murdoch.edu.au/Privacy/

1. University Privacy Policy

This Notice should be read in conjunction with the University's Privacy Policy. Staff and students may also wish to refer to the Office of the Australian Information Commissioner (OAIC) for more details on privacy.

2. Information collected

Information Automatically Logged
The University may make a record of your visit to a Web site and use a Web Server to log any of the following information:

- the user's Server address
- domain name (eg. .edu, .gov, .com, .au, .uk, etc)
- IP address
- the date and time of the visit to a site
- the pages accessed and documents downloaded
- the previous site visited
- the type of Web browser used

The data collected is used for the following purposes:

- Web Server and system administration, including monitoring to prevent security breaches
- revision of Web site Content to better meet users' information needs
- usage statistics for particular Web sites
- capacity planning

Access to Web Server logs is restricted to authorised system administrators.

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Job Roles in IT

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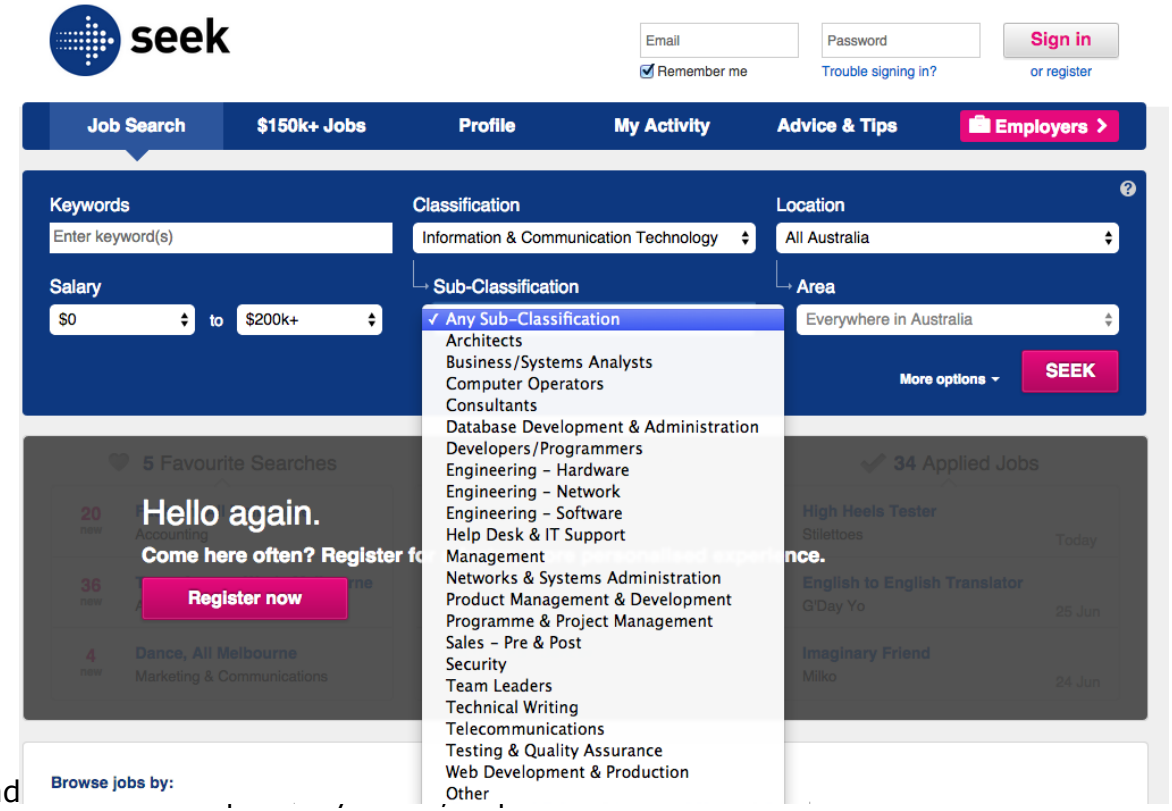
Jobs in IT

- It's never too early to think about what you intend to do when you graduate



Jobs in IT

- Graduate Jobs in IT: http://www.youtube.com/watch?v=QYDuS6y04CA
- Your Imagination, Our Future: http://www.youtube.com/watch?v=otpJWRIynzs
- Understanding SFIAplus: http://www.youtube.com/watch?v=AjpHmdNzUjc
- Getting to know SFIA (about 11 minutes, you should watch this prior to the practical/self learning): http://www.youtube.com/watch?v=ZltcOAuAZik

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Summary

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Summary

- IT as a profession has a number of ethical challenges
  - Many of these challenges don't have "correct" solutions
  - It is important therefore to have a framework we can use in order to evaluate these challenges
- There are many roles in IT
  - It is important to think about what skills are required for some roles and how to prepare for these roles

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