Professional Issues

The Computing Profession and the BCS

The Computing Profession

- "Programming today is a race between software engineers striving to build bigger and better idiot-proof programs, and the Universe trying to produce bigger and better idiots. So far, the Universe is winning." (Rich Cook, email signature, 1996)
- "A programmer is someone who fiddles with bits; engineers are concerned with solving problems" (Jan Pedersen, Norwegian Ind. Research Soc., 1975)

British Computer Society (BCS)

- Registered charity, established in 1957
- BCS was incorporated by Royal Charter in 1984.
- Principal professional UK body for those working in IT.
- Over 50,000 members in over 100 countries
- Promotes the study and practice of computing and to advance knowledge of and education in IT for the benefit of the public.
- Licensed by the Engineering Council to award Chartered Engineer (C.Eng.) and Incorporated Engineer status (I.Eng.);
- Qualifying body for Chartered IT Professionals (C.ITP).
- Licensed by the Science Council to award Chartered Scientist status (C.Sci.).

The British Computer Society

- Professional body for Information Systems Engineers
- Sets standards through its Codes of Conduct and Practice and the Industry Structure Model
- Represents the UK overseas (CEPIS, IFIP, etc)
- Advises Parliament & Government
- Accredits university courses & runs its own exams
- Offers a Career Development Framework

BCS Code of Conduct

- Sets out the professional standards required by the Society as a condition of membership
- Applies to members of all grades (including students)
- Short (*3pp.*), 17 points cover:
  - Public interest [1-6]
  - Duty to relevant authority [7-9]
  - Duty to the profession [10-13]
  - Professional competence and integrity [14-17]

BCS Code of Conduct

- 1. Work with care and diligence
- 2. Have regard to public health and safety
- 3,4. Observe legitimate rights and legislation
- 5. Avoid discrimination
- 7. Avoid conflicts of interest
- 8. Observe confidentiality
- 9,15. Don't misrepresent yourself or products
- 11. Act with integrity
- 12,15. Act within your area of competence

BCS Code of Conduct

- 14. Upgrade your knowledge and skill
- 10. Uphold the aims and reputation of the BCS; seek to improve standards
- 13. Tell the BCS if convicted or bankrupt etc.
- 6. Don't take bribes

Breakout

- You have recently taken over responsibility for the maintenance of your company's accounting suite. You realise that the software contains a systematic error that will lead to the company paying less tax than it should. You tell your manager who tells you to leave it as it is because the company wants it that way.
- What do you do based on the Code of Conduct?
  - *(From Bott)*

Breakout

- Your company is to deliver a chemical plant, a major contract with heavy penalties if late. You have been assigned to work on a component that performs real-time monitoring of chemicals and pollutants. You are an experienced programmer but not in real-time systems. Discuss what clauses of the Conduct apply and what you might do.
- *(Bott again)*

BCS Code of Good Practice

- Complements Code of Conduct
- Much longer document (*36 pp.*) "Describes standards of practice relating to contemporary multifaceted demands found in IT"
- Assumes familiarity with relevant laws
- Covers:
  - Practices common to all disciplines
  - Key IT practices
  - Practices specific to education and research functions
  - Practices specific to business functions

2 Practices common to all

- Maintain your technical competence
- Adhere to regulations
- Act professionally as a specialist
- Use appropriate methods and tools
- Manage your workload efficiently (!)
- Participate maturely
- Respect the interests of customers
- Promote good practice within the organisation
- Represent the profession to the public

3 Key IT Practices

- 3.1 Programme/project management
- 3.2 Relationship management
- 3.3 IT security
- 3.4 Safety engineering
- 3.5 Change management
- 3.6 Quality management

3.1 Programme/Project Management

- What to do when:
  - Managing a programme of work
  - Defining a new project
  - Planning
  - Managing project risks
  - Managing and deploying the project team
  - Closing a project

3.2 Relationship Management

- What to do when:
  - Seeking new customers
  - Selling to prospective customers
  - Negotiating contracts and service levels
  - Managing customer relationships
  - Managing supplier relationships

Security and Safety

- 3.3 IT Security
- What to do when:
  - Assessing risks
  - Implementing countermeasures
- 3.4 Safety Engineering
- What to do when:
  - Building a system
  - Assessing complexity

3.5 Change Management

- What to do when:
  - Advising on business change
  - Controlling changes

3.6 Quality Management

- What to do when:
  - Establishing a quality system
  - Constructing new quality standards
  - Managing a quality system
  - Performing a quality assurance function
  - Conducting quality audits

4 Practices Specific to Business or Education

- 4.1 Education
- 4.2 Research and development
- 4.3 System installation
- 4.4 Training
- 4.5 System operations
- 4.6 Support and maintenance

4.2 Research and Development

- What to do when:
  - Performing research
  - Conducting systems and business analysis
  - Designing new systems
  - Designing software
  - Designing web sites

4.2 Research and Development cont.

- What to do when:
  - Programming
  - Testing
  - Porting software
  - Integrating software
  - Writing technical documentation
  - Writing user documentation

What is an Engineer?
Engineering Council (UK)

- Sets Standards for Professional Engineering Competence
- (UK-SPEC - www.engc.org.uk/Standards)
- Maintains registers of:
  - Incorporated Engineers
  - Chartered Engineers

Incorporated Engineers

- Act as exponents of today's technology and, to this end, they maintain and manage applications of current and developing technology.
- Require a detailed understanding of a recognised field of technology so they can exercise independent professional technical judgement and management in that field.

Chartered Engineers

- Characterised by their ability to develop appropriate solutions to engineering problems, using new or existing technologies, through innovation, creativity and change.
- May develop and apply new technologies, promote advanced designs and design methods, introduce new and more efficient production techniques and marketing and construction concepts and pioneer new engineering services and management methods.

Registration is based on

- competence
  - to perform professional work
- commitment
  - to maintain competence
  - to work within professional codes
  - to participate actively within the profession

- Competence:
  - Knowledge, understanding and skills attained through a mixture of education (normally MEng or BEng), training and professional development

The British Computer Society

- Student Membership
  - for those taking an academic course leading to professional membership of the Society
  - Fee: £20.00 p.a./ £30.00 for course
- Membership (MBCS)
  - Fee: £88.00 p.a.
  - Transition from Student to Member
  - Fee: £44 (first year), £68 (second year)
  - http://www.bcs.org/BCS/Join/
- Fellow (FBCS) by nomination