

CHAPTER 7: ETHICS AND OWNERSHIP

7.1 ETHICS AND OWNERSHIP

7.1.1 Ethics

Definition: A system of moral principles that guide behaviour based on philosophical views.

Computer Ethics:

- Regulates how computing professionals should make decisions
- Professional and social conduct

Professional Bodies:

- BCS (British Computer Society)
- IEEE (Institute of Electrical and Electronic Engineers)
- Provide codes of conduct for members

7.1.2 Ownership

Data Ownership:

- Legal rights and complete control over data
- Can determine who accesses, modifies, shares

Copyright:

- Gives creators rights to control use and distribution
- Protects intellectual property

Need for Legislation:

- Competitors can steal programming ideas
- Software can be easily copied

- Bootlegging (illegal selling)

7.1.3 Software Licensing

| Type | Description |
|---------------------------------|---|
| Free Software Foundation | Users have freedom to run, copy, distribute, study, change, improve; copyleft (modified versions must also be free) |
| Open Source Initiative | Source code available; users can review and redistribute |
| Shareware | Free trial period; payment expected after evaluation |
| Commercial | Requires payment; includes all features |

7.1.4 Artificial Intelligence (AI)

Definition: The ability of computer to perform tasks conventionally associated with human intelligence.

AI Capabilities:

- Learn from past mistakes
- Adapt to prevent problems recurring
- Predict what might happen and raise alerts
- Learn to work more efficiently

AI Applications:

- Autonomous vehicles
- Machine learning through data sets
- Natural language processing
- Robotics

AI Impacts:

| Area | Impact |
|------|--------|
|------|--------|

| | |
|----------------------|--|
| Social | Replacement of manual labour; unemployment; increased leisure time |
| Economic | Lower manufacturing costs; increased innovation |
| Environmental | Detrimental impact; robot manufacture; waste disposal |

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