Design Rules and Principles

3 Types:

- Design standards
- Design principles
  - Universal/heuristic
  - Specific

1 Standards

"Rules" - with high authority. Specific to a particular type of design

Set by national or international bodies to ensure compliance by a large community of designers

Hardware standards more common than software

Standards have high authority and a great amount of detail. In some domains (e.g. safety critical design) failure to apply standards can lead to disaster (or a legal case)

2 Principles

- Over the years many principles of good interactive system design have been developed
- Design principles can be very broad such as "make things visible"
- They can be more specific such as "provide clearly marked exits"
- There are also good design principles that derive from psychology such as "minimise memory load"
- General, high level, design knowledge
- Principles are based on knowledge from many fields, particularly psychology, graphic design, cultural studies
- Abstract guidelines (universal principles) applicable during early design activities
- Detailed guidelines (specific principles) applicable during later design activities

3 Principles and patterns

The application of design principles has lead to established patterns of interaction in certain circumstances

Design principles can

- Guide the designer during the design process
- Can be used to evaluate and critique prototype design ideas

4 Twelve principles for good human-centred interactive systems design

Learnability - A system should not be difficult to learn how to use

- Visibility
  - Try to ensure that things are visible so that people can see what functions are available and what the system is currently doing
- Consistency
  - Be consistent in the use of design features
  - Be consistent with similar systems and standard ways of working
  - This involves being consistent both internally to the system and externally as the system relates to things outside of it
- Familiarity
  - Use language and symbols that the intended audience will be familiar with
  - Where this is not possible because the concepts are quite different from those people know about, use a metaphor
- Affordance
  - Design things so it is clear what they are for
  - Affordance refers to the properties that things have and how these relate to how things could be used
  - Affordances are culturally determined

Ease of use

- Navigation
  - Provide support to enable people to move around parts of the system
- Control
  - Make it clear who or what is in control and allow people to take control
  - Control is enhanced if there is a clear, logical mapping between controls and the effect they have
- Feedback
  - Rapidly feed back information from the system to people so that they know what affect their actions had

Robustness

- Recovery
  - Enable recovery from actions, particularly mistakes and errors, quickly and effectively
- Constraints
  - Provide constraints so that people do not try to do things that are inappropriate

Accommodation

- Flexibility
  - Allow multiple ways of doing things to accommodate users with different levels of experience and interest in the systems
  - Provide people with the opportunity to change the way things look or behave
- Style
  - Designs should be stylish and attractive
- Conviviality
  - Interactive systems should be polite, friendly and generally pleasant