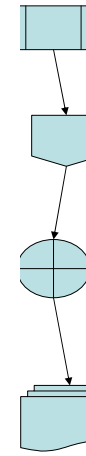


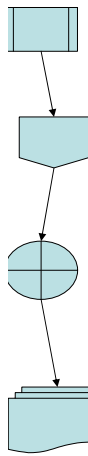
HCI in the software process

Chapter 6



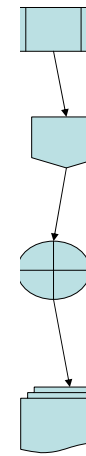
Agenda

- Software engineering and the design process for interactive systems
- Iterative design and prototyping
- When is each best?
- Self study – read and take your own notes
 - Usability engineering
 - Design rationale

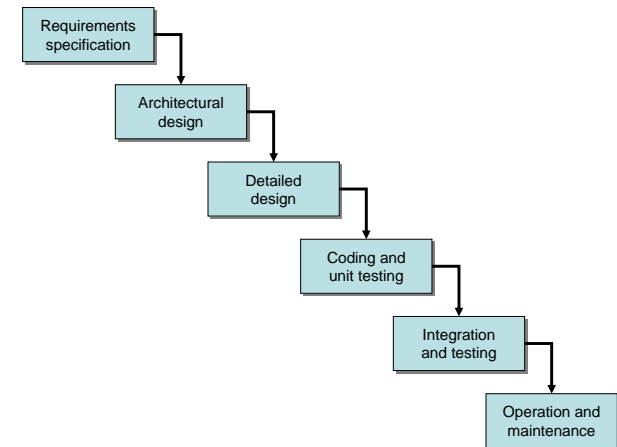


The software lifecycle

- Software engineering is the discipline for understanding the software design process, or life cycle
 - Designing for usability occurs at all stages of the life cycle, not as a single isolated activity
- There are many models of the software life cycle we will look at the 2 main ones
- Waterfall
 - Prototyping



The waterfall model



Activities in the life cycle

- Requirements specification
 - designer and customer try capture what the system is expected to provide can be expressed in natural language or more precise languages, such as a task analysis would provide
- Informal design and scenario based design will result in better requirements analysis



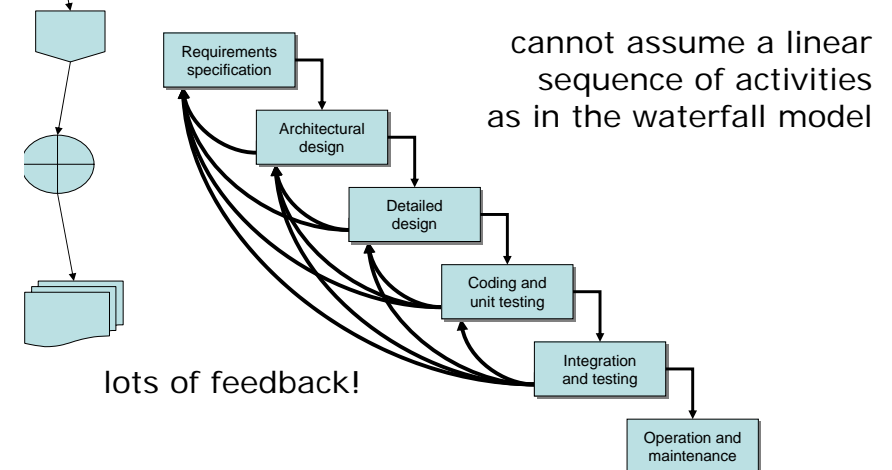
Detailed design

- Detailed design of the interface
- Move from informal to formal specification
- Separation of layers
 - A layered approach to software development will provide for more flexibility
 - Data
 - Logic
 - Interface

Testing

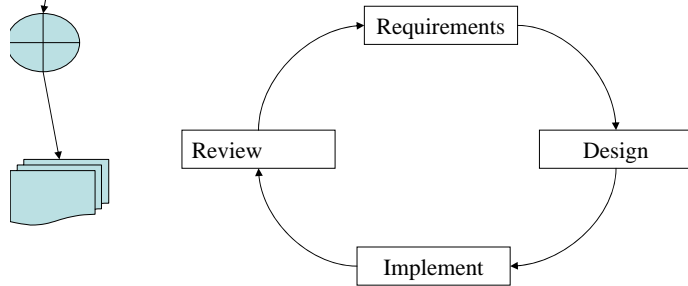
- Testing is not only about functionality of code
- Usability testing
 - There are some basics that are nearly always important
 - Layout
 - Language
 - Number of click/steps to perform task
 - Choose rather than remember
 - More detail in weeks 7 & 8

The life cycle for interactive systems



Iterative design and prototyping

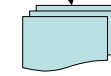
- Iterative design overcomes inherent problems of incomplete requirements



- Prototypes
 - simulate or animate some features of intended system
 - different types of prototypes
 - throw-away
 - incremental
 - evolutionary

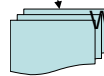
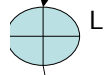
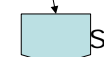


- Management issues
 - time
 - planning
 - non-functional features
 - contracts



Techniques for prototyping


- Storyboards
 - need not be computer-based
 - can be animated
- Limited functionality simulations
 - some part of system functionality provided by designers
 - tools like HyperCard are common for these
 - Wizard of Oz technique
- Warning about iterative design
 - design inertia – early bad decisions stay bad
 - diagnosing real usability problems in prototypes....
 - and not just the symptoms




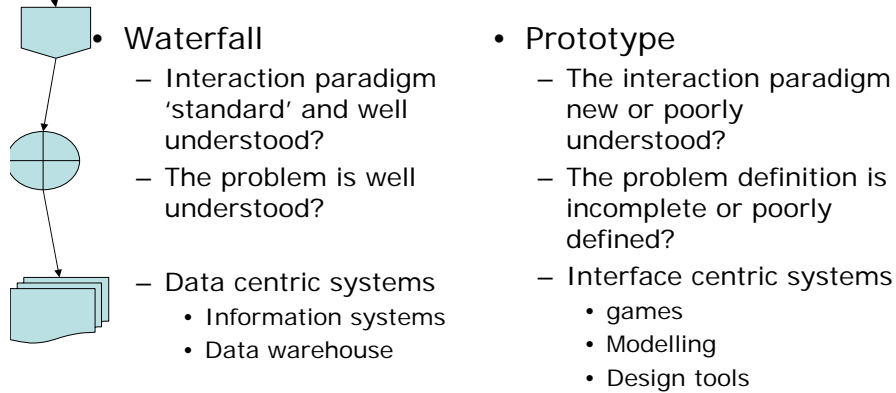
Research example

- We wanted to build a paperless assignment grading product with pen annotation of assignments
 - New paradigm
 - Few studies
 - Technical challenges
- Build a prototype

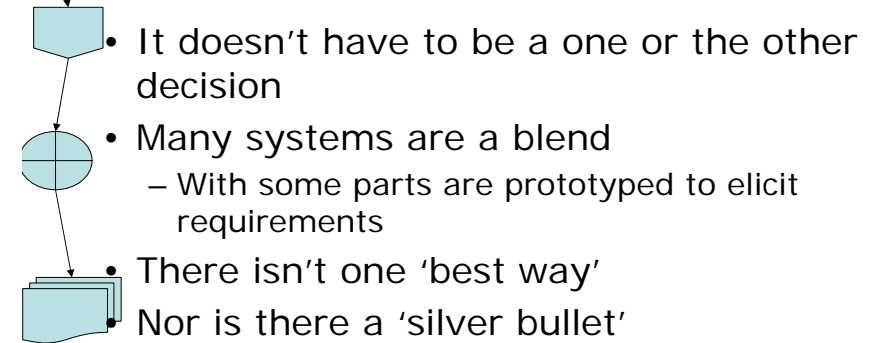




Waterfall or Prototype



Waterfall or prototype



Summary

