

Interaction Design Basics



- design:
 - what it is, interventions, goals, constraints
- the design process
 - what happens when
- users
 - who they are, what they are like ...
 - using personas in design
- scenarios
 - rich stories of design
- navigation
 - finding your way around a system
- iteration and prototypes
 - never get it right first time!

what is design?



achieving goals within constraints

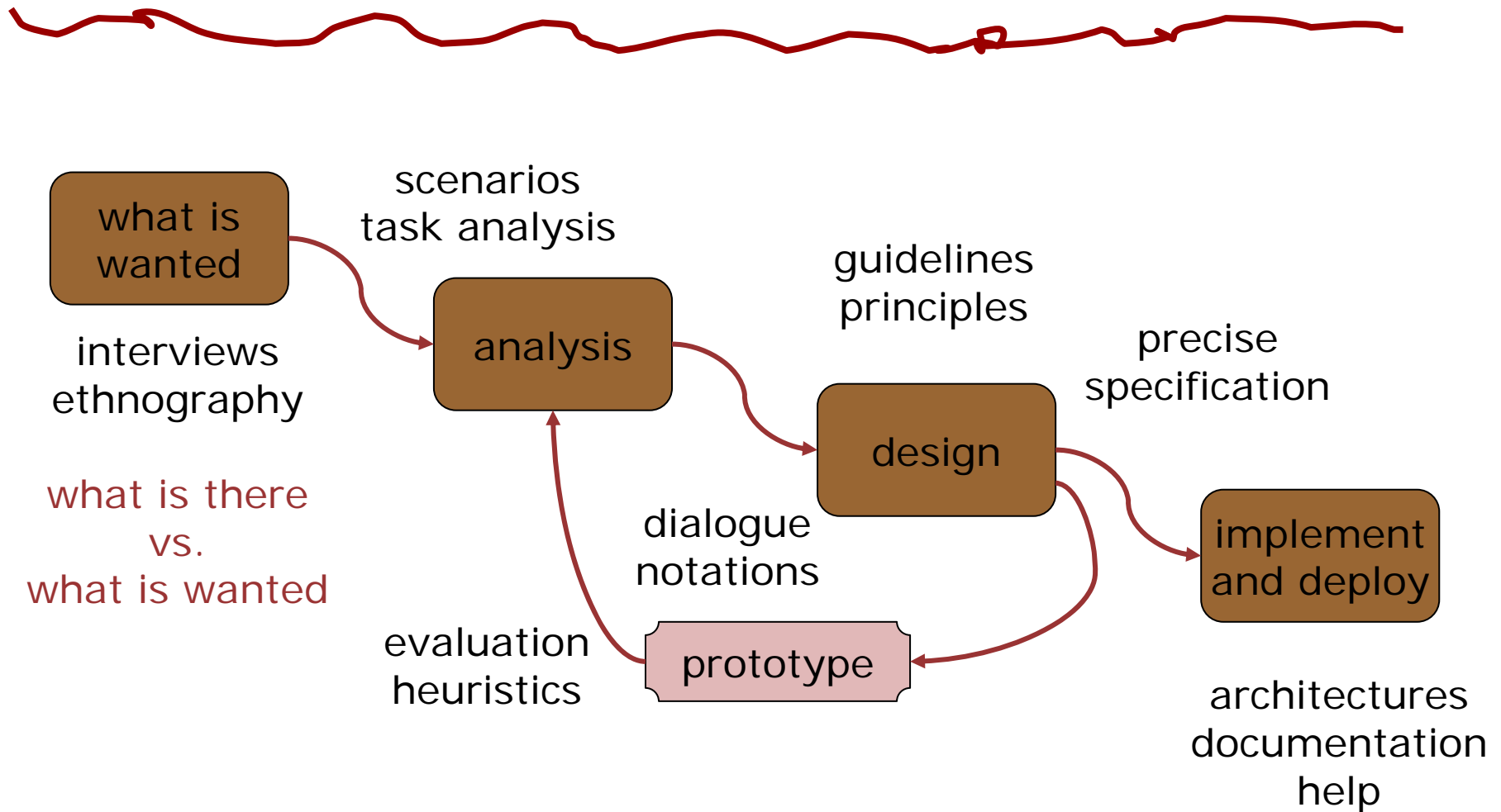
- goals - purpose
 - who is it for, why do they want it
- constraints
 - materials, platforms, cost
- trade-offs

To err is human





- accident reports ..
 - air crash, industrial accident, hospital mistake
 - enquiry ... blames ... 'human error'
- but ...
 - concrete lintel breaks because too much weight
 - blame 'lintel error' ?
 - ... no – design error
 - we know how concrete behaves under stress
- human 'error' is normal
 - we know how users behave under stress
 - so design for it!
- treat the user at least as well as physical materials!

The process of design



Steps ... but how can I do it all !!



- requirements
 - what is there and what is wanted
 - ...
- analysis
 - ordering and understanding
- design
 - what to do and how to decide
- iteration and prototyping
 - getting it right ... and finding what is really needed!
- implementation and deployment
 - making it and getting it out there
- limited time \Rightarrow design trade-off
- usability?
 - finding problems and fixing them? 
 - deciding what to fix? 
- a perfect system is badly designed
 - too good \Rightarrow too much effort in design

User Centred Design



know your user

- who are they?
- probably **not** like you!
- talk to them
- watch them
- use your imagination
- read about them – you may not be able to study them in depth, but someone else may have already done so

persona



- A precise descriptive model of the user, what he/she wishes to accomplish and why
 - They are composite archetypes
 - They must have motivations
 - They must have goals
- use as surrogate user
 - what would Betty think
- details matter
 - makes her 'real'

Creating a persona



- Give him/her a name
- And a *relevant* life
- Set him/her in an environment or context
- Set some motivations and goals

scenarios (story-board)



- stories for design
 - communicate with others
 - validate other models
 - understand dynamics
- linearity
 - time is linear - our lives are linear
 - but don't show alternatives

scenarios ...



- what will users want to do?
- step-by-step walkthrough
 - what can they see (sketches, screen shots, pictures)
 - what do they do (keyboard, mouse etc.)
 - what are they thinking?
- For mobile devices it is important to consider the context of use.
 - Am I using my phone in my private office or the lecture?
- use and reuse throughout design

also play act ...

- mock up device – the mock up works **best** if it is **not** too polished
- pretend you are doing it
- internet-connected swiss army knife ...



use toothpick as stylus 😊

but where is that thumb?



... explore the depths



- explore interaction
 - what happens when
- explore cognition
 - what are the users thinking
- explore architecture
 - what is happening inside

use personas and scenarios to ..



- communicate with others
 - designers, clients, users
- validate other models
 - 'play' it against other models
- express dynamics
 - screenshots – appearance
 - scenario – behaviour

linearity



Scenarios – one linear path through system

Pros:

- life and time are linear
- easy to understand (stories and narrative are natural)
- concrete (errors less likely)

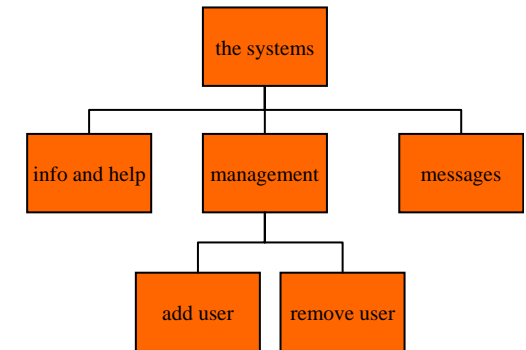
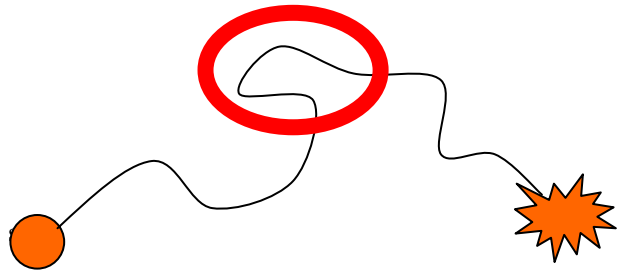
Cons:

- no choice, no branches, no special conditions
 - miss the unintended
-
- So:
 - use several scenarios
 - use several methods

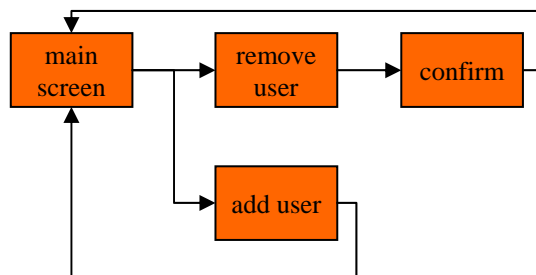
navigation design



navigation design



local structure – single screen
global structure – whole site

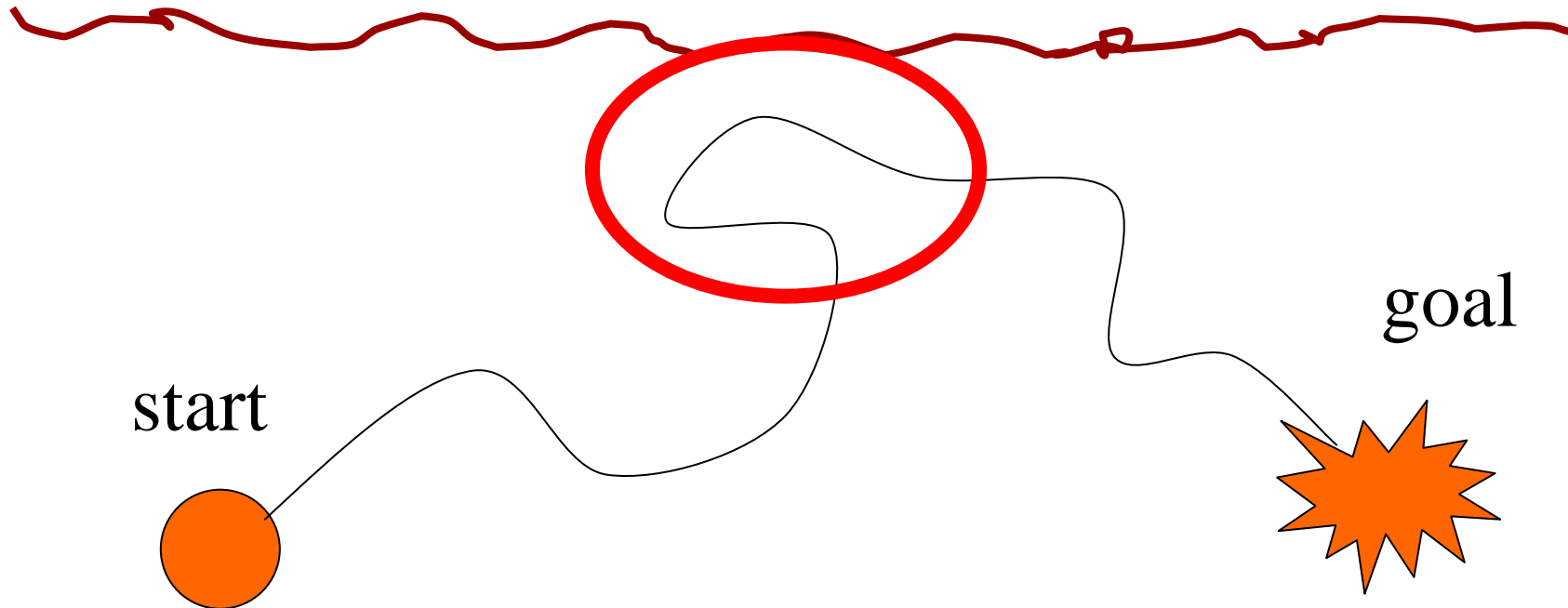


think about structure



- within a screen
 - later ...
- local
 - looking from this screen out
- global
 - structure of site, movement between screens
- wider still
 - relationship with other applications

goal seeking



... try to avoid these bits!

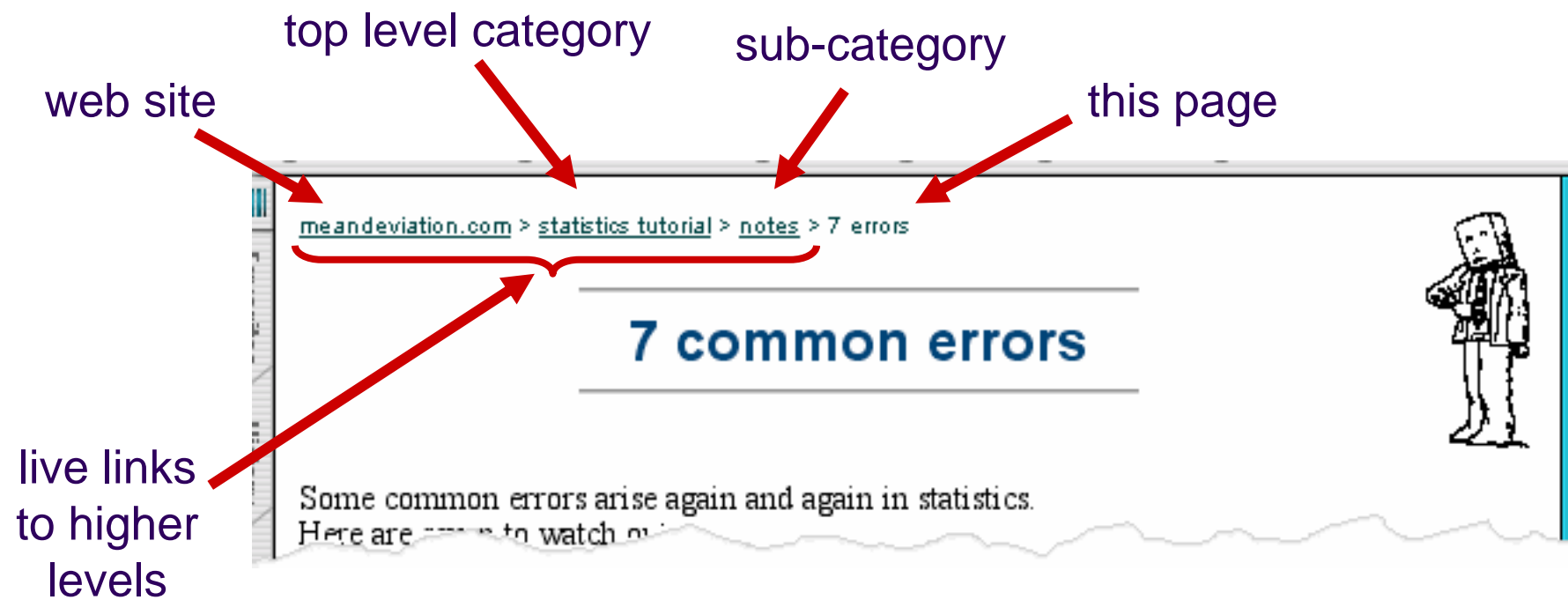
four golden rules



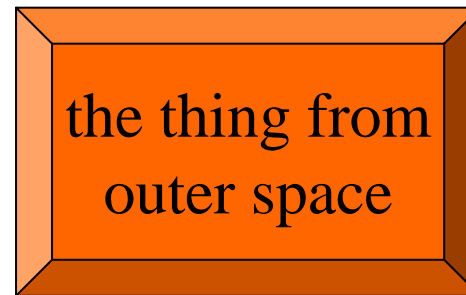
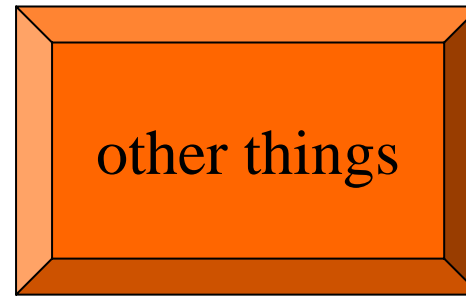
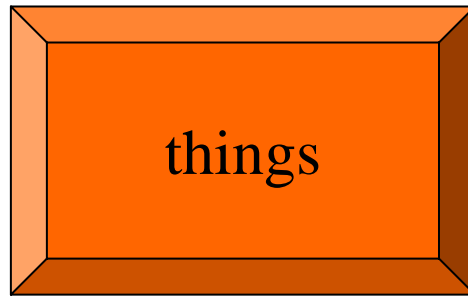
- knowing where you are
 - knowing what you can do
 - knowing where you are going
 - or what will happen
 - knowing where you've been
 - or what you've done
-
- How often do you get lost on a web page or spend time looking for something in an application menu?

where you are - breadcrumbs

shows path through web site hierarchy

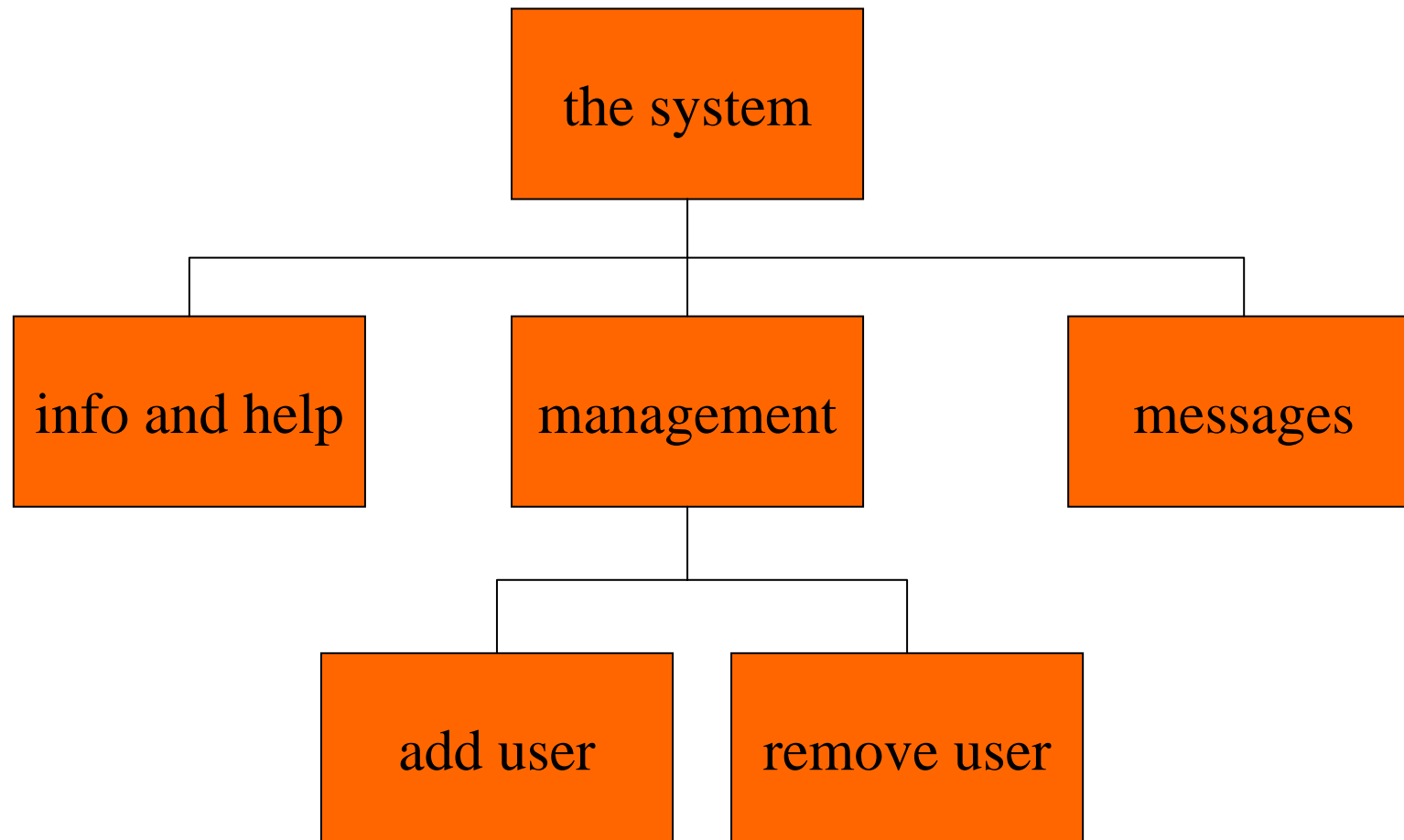


beware the big button trap



- where do they go?
 - lots of room for extra text!

hierarchical diagrams



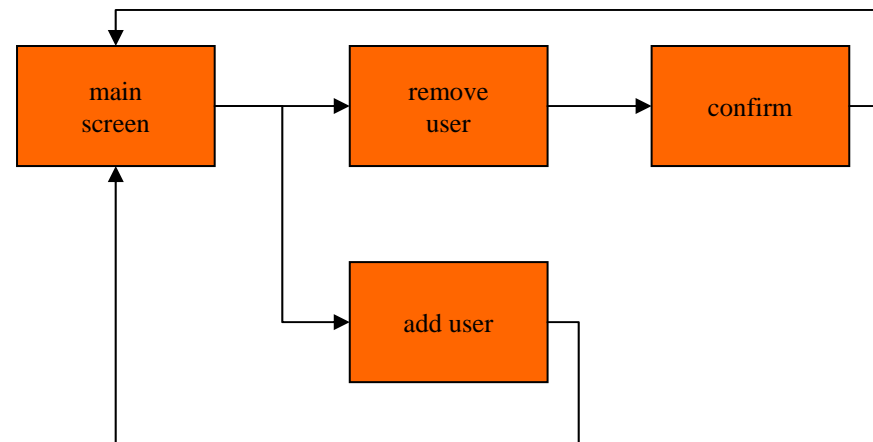
navigating hierarchies



- deep is difficult!
- misuse of Miller's 7 ± 2
 - short term memory, not menu size
- optimal?
 - many items on each screen
 - but structured within screen

network diagrams

- show different paths through the system
- what leads to what
- what happens when
- including branches
- more task oriented than hierarchy
- Do 'average' people understand branches?



Reading



- Read “Applying User-Centered Design to Mobile Application Development”
 - Great ‘war stories’ of UI design
- Review the Picture Scenario
 - Rich storyboard of the interaction context
 - (one group made a video scenario a couple of years ago for their assignment 1)