

Designing the User-Interface

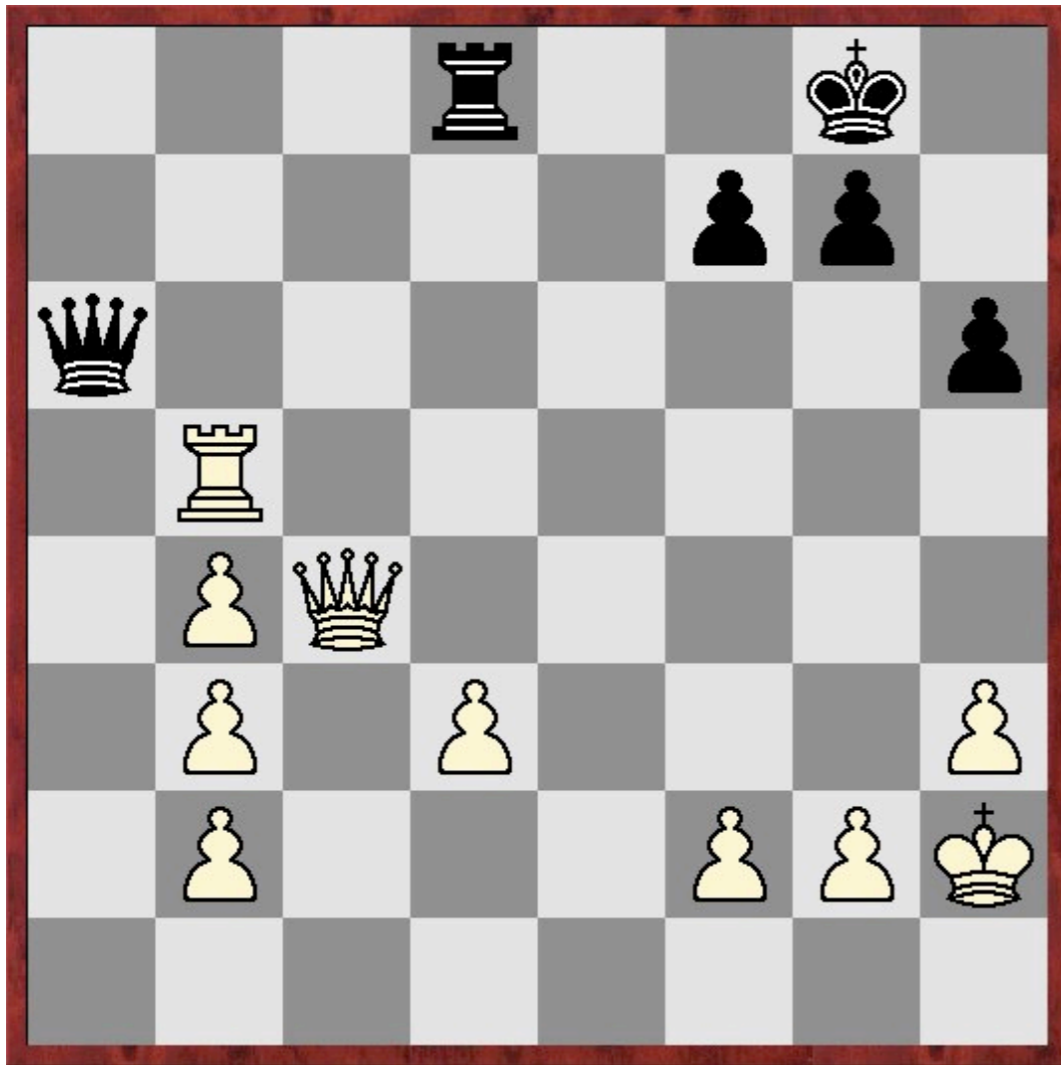
Based on Chapter 13 of Liu: Smalltalk, Objects & Design

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User Interfaces (UIs)

- To the user: the UI is the application
- Users build a mental model of what the application does based on what they see in the UI
 - ▶ How realistic is that model?
 - ▶ How hard does the user have to work to build it?
- The answers distinguish good software from bad

Chess Program



∨ Q-c7

∨ Q x R

∨ Q x R!

The game is the same — or is it?

Adventure game



There is a wall in front of you with a door in it. What do you want to do?

> Go through the door

Metaphor

- The UI for a game should be a metaphor for the game
 - ▶ Designing it is usually easy! No other interface makes sense.
 - ▶ Game involves chess pieces:
 - interface represents chess pieces
 - ▶ Game involves wizards and spells:
 - interface represents wizards and spells
- Game elements are tangible, recognizable objects
 - ▶ Users won't settle for less

Metaphor

- The UI for *any application* should be a metaphor for the application
- Problem: it's hard to come up with one!
- Most applications deal with intangible, uncommon entities.
 - ▶ e.g., word processor deals with words, headings and paragraphs, but also style sheets, font families, tables, frames, footnotes

Games vs. Applications

- Most games have well-defined rules and actions
 - Usually a small set of UI actions
- Applications have an alarmingly large set of features, and what most of them do is far from clear.
 - Microsoft word 2007 had about 1200 different features

No simple underlying model

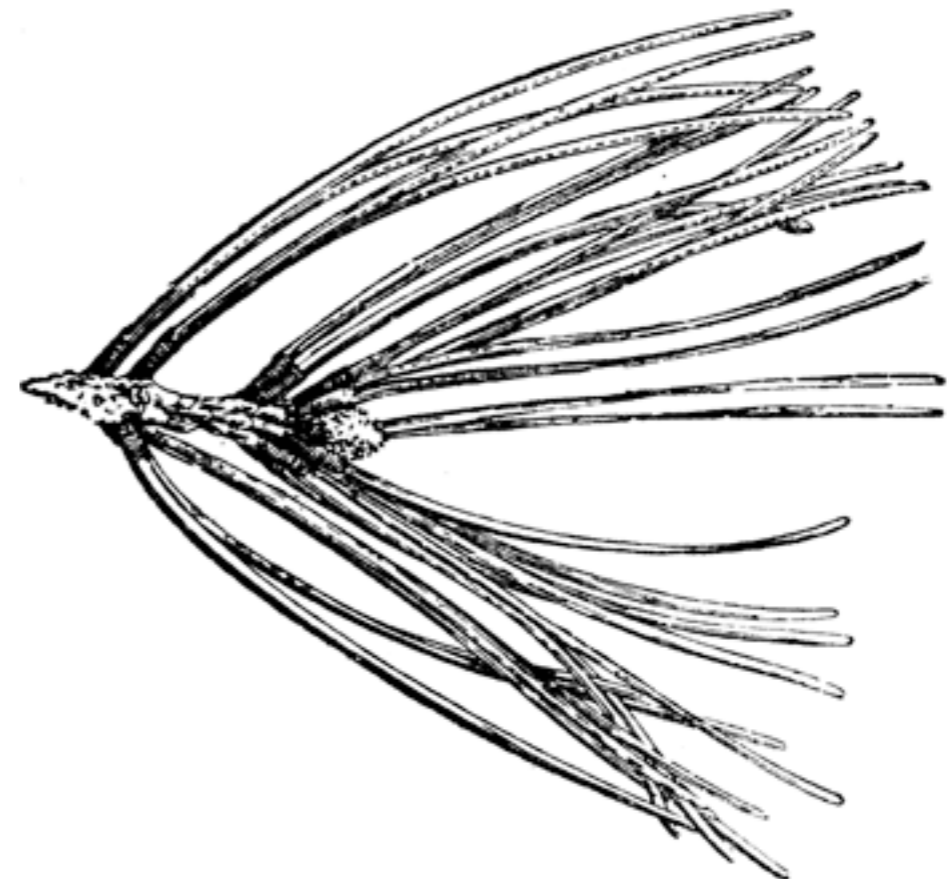
- If there were one, the UI design task would be easy
- Without a simple model, where does the UI designer go for guidance?
- Can you create a simple conceptual model of your application?

Conceptual Models

- Conceptual Model: words, pictures, rules, metaphors that you use to explain how something works, responds or fits together.
- A good conceptual model sharpens your understanding

Pine Tree

- Poor conceptual model: a tree with needles
- Better conceptual model: a tree with needles bundled in a sheath at their base



Printer Driver

- Software that connects my computer to the printer
 - So what's a FAX driver, a PDF driver, etc?

New conceptual model

- Software that handles an application's print commands

Coherent Conceptual Model

- If the UI designer doesn't have a conceptual model, the user will never make sense of the UI
- An *incoherent* conceptual model is not much better: it will consistently baffle the user.

Aza Raskin Talk



<http://www.youtube.com/watch?v=q8ZP23QsRd0&feature=gv>