Understand your Users

- “Know thy user” — W. Hansen (1971)
- User profiling
  - Interviews, instrumented UIs
- Persona
  - Model of a representative member of one important class of system users
- Levels of knowledge/experience can be addressed by level-structured/layered approach
  - Levels of training/documentation
  - Levels of UI functionality
  - Levels of feedback
Levels of Training/Documentation

Google past (2006)

Simple search

Opportunistic suggestion to use advanced feature

Documentation of advanced feature

Levels of Training/Documentation

Google 2014

Search help and advanced search are in pull-down menu

Search help: Several levels of indirection are needed to learn about “OR”

Advanced search: Documentation of “OR”
Levels of Training/Documentation

Search help and advanced search are in pull-down menu

Search help: Several levels of indirection are needed to learn about “OR”

Advanced search: Documentation of “OR”!

Levels of Training/Documentation

Search help and advanced search are in pull-down menu

Search help: Several levels of indirection are needed to learn about “OR”

Advanced search: No documentation of “OR”!
Levels of UI Functionality

Selective enabling of operations

Levels of UI Functionality

Simple vs. advanced UI

Wizard vs. regular UI
**Identify the Tasks**

- “Common tasks should be easy. Uncommon tasks should be possible.” — ?

- Determine mapping to lexical level based on frequency of use:
  - Special keys
  - Modifier key combinations
  - Top-level menu item/icon
  - Menu navigation/form fill-in
  - Most frequent
  - Least frequent

  What’s wrong with this approach?

**Determine the Interaction Styles**

- Command language
- Form fill-in
- Menu selection
- Direct manipulation
- “Natural” interaction
  - Speech
  - Touch, Gesture: 2D, 3D, multitouch,…
  - Body sensing
Determine the Interaction Styles

An example of progression toward more direct manipulation: less recall/more recognition, fewer keystrokes/fewer clicks, less capability to make errors, and more visible context.

- Command line

- Form fill-in to reduce typing

- Improved form fill-in to clarify and reduce errors

- Pull-down menus offer meaningful names and eliminate invalid values

- 2-D menus to provide context, show valid dates, and enable rapid single selection

Box 3.2: Spectrum of directness, Shneiderman et al., DTUI