

What The Digirati Know or How to Become a More Intuitive Tool User...



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People And Technology

- ❖ People innately are tool users.
 - ❑ We use tools all the time (e.g., using a brush to tidy our hair)
 - ❑ We invent tools all the time (e.g., using a shoe to hold open a door)
 - ❑ Simple and well-designed tools seem obvious to use (e.g., a cup seems naturally suited to scooping and holding liquid)

- ❖ Complicated tools may require training
 - ❑ We must be taught how to ride a bicycle, drive a car, ski, ...
 - ❑ Appliances and tools come with an owner's manual

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How Do We Learn Complicated Tools?

- ❖ People accumulate experience, develop intuitions, learn, and reason, so we can “figure out” how to use some tools without reading the owner’s manual (e.g. portable CD player)
- ❖ Product designers – including software designers -- try to make technology simple enough that members of a technological society can guess its operation using only their experience, intuition, prior knowledge, and reasoning
- ❖ Well-designed tools suggest their use and how to use them.

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What Makes Learning Software Intuitive?

- ❖ For someone to figure out software, the operation must be consistent with their experience and the task they wish to do
- ❖ Moreover, there are many things a software designer can do to make software more intuitive to use
- ❖ With well-designed software, you should be able to figure out a good deal about how the software works on your own

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A Mystery Machine???

- ❖ Most interactive software today uses a Graphic User Interface (GUI), pronounced GOO·ey
- ❖ Consider this GUI interface:





- ❖ Can you guess what this software does? And how to use it?

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Analyzing the CD Player Interface

- ❖ The visual analogy is obvious if you're already familiar with a physical CD player
 - ❑ "Metallic" buttons
 - ❑ CD "slot"
 - ❑ Slider for volume
- ❖ The icons (images) on the control buttons are familiar
- ❖ The names on the "mode" buttons are suggestive of the capabilities of an audio CD, and can be guessed
- ❖ As the slider moves up and down, the volume of sound provides immediate feedback
- ❖ The "single-pass"  icon changes to a continuous loop icon  when clicked, suggesting its meaning

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Criteria for Well-designed Interfaces ...

- + Familiarity: reflects relevant non-computer experience
- + Well-chosen metaphors and analogies: the metaphors and analogies make sense and suggest important relationships
- + Expected functionality: the software does the things one would expect given the task at hand
- + Consistency: the operations work together as whole

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More Criteria...

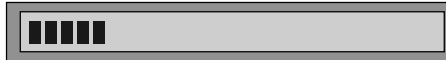
- + Simplicity: keep it simple; avoid too many features
- + Feedback: let the user know what the machine is doing
- + Transparency: using the tool should not take too much conscious attention, so the user can concentrate on the task at hand
- + Rational defaults: the defaults should reflect what a typical user would want to do

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Feedback

- ❖ How can you distinguish between a case when the computer is busy working on your task and the case when it is patiently idling, waiting for you to give it another command?



Well-designed computers will always give you feedback indicating their state of activity, the task they are performing, alternatives, spatial precision, etc.

- ❖ Watch for color or shadow change, icon change, title change, motion, etc.

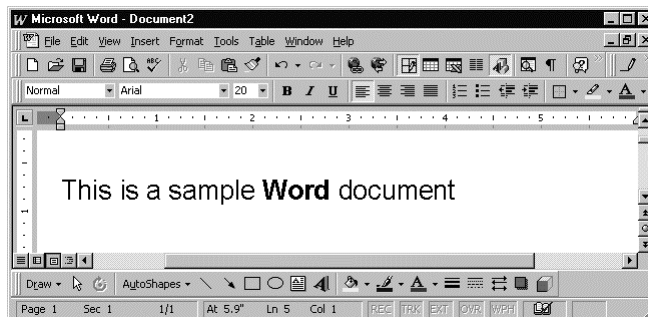
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Standardized Widgets

- ❖ Current GUIs are built using standard widgets
- ❖ MS Word illustrates many of these features

Buttons
Sliders
Arrows
Icons
Close

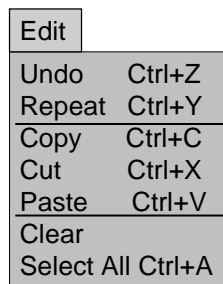
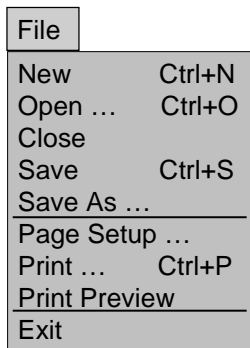


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More Standardized Widgets...

- ❖ Menus present the functionality of an application
- ❖ There are pull-down menus and pop-up menus
- ❖ There are standard operations that should always be applicable in an information processing activity



Notice the ellipsis (...) and the shortcut (Ctrl+X)

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“Clicking Around”

- ❖ When starting to use a new piece of software, take a moment to look at each menu and icon
- ▷ With the expectation that much of the application can be scoped out, “Click Around” to discover what’s there



Ironically, though most beginners think they should read the manual, it's most useful to an expert

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- ❖ Fundamental Rule of IT: Nothing Will Break
- ❖ The way to learn the operation of an application is to try it out, so blaze away
- ❖ Though nothing will break, things can get into a horrendous mess -- beginners and experts alike can really mess up software
- ❖ There is no value in the mess, so it doesn't have to be undone ... Throw the mess away
- ❖ Be prepared to throw work out
 - + Work on copies
 - + Set up limited, controlled situations
 - + Go out, and come back in

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100****Two Provocative Questions...**

- ❖ Are intuitive tools always better?
- ❖ Are standardized tools always better?

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Are Intuitive Tools Always Better?

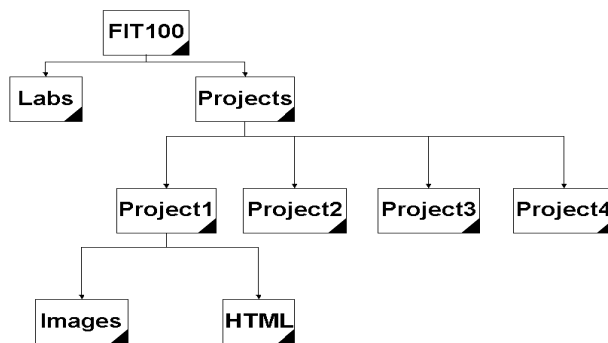
- ❖ Consider GUIs vs. Command Line interfaces (e.g., WS-FTP vs. command line ftp)
- ❖ On the surface, the GUI looks more intuitive than command line interface
 - ❑ Visual
 - ❑ Spatial
 - ❑ Less to remember

- ❖ But, it depends on what you mean by better...

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GUI vs. Command Line Interface?



With a GUI, how many mouse clicks?

With a command line interface, how many commands?

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Which Interface is More Efficient?

- ❖ GUI: 4 clicks
 - ❑ Click FIT100
 - ❑ Click Projects
 - ❑ Click Project1
 - ❑ Click HTML
- ❖ Command line interface: 1 command
 - ❑ ftp: cd FIT100/Projects/Project1/HTML

- ❖ If you do this same action again and again and again, which interface would you rather use? Why?

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Is Standardization Always Good?

- ❖ After all, with standardization of software:
 - ❑ You know what to expect
 - ❑ Easy to learn
 - ❑ More intuitive
 - ❑ You'll find the same software where ever you go

- ❖ But what about personalization?
 - ❑ Individual differences
 - ❑ Learning styles
 - ❑ Working styles
 - ❑ Taste
 - ❑ Autonomy

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Standardization vs. Personalization?

- ❖ There's an inherent tension between standardization and personalization.
- ❖ With total standardization, we'd feel oppressed
- ❖ With rampant personalization the effort to learn each new tool would be staggering...
- ❖ The bottom line: We need to be aware of the trade-offs and strike a meaningful balance