Graphical User Interface

Chapter Four
GUI Standard

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Chapter Description

- Aims
  - To explore the GUI standards.
  - To understand the Schneiderman’s 8 Golden Rules of Interface Design

- Expected Outcomes
  - Able to understand the GUI standards.
  - Able to understand and use the Schneiderman’s 8 Golden Rules in GUI design.

- References

1. Wilbert O. Galitz, The Essential Guide to User Interface Design: An Introduction to GUI Design Principles and Techniques, John Wiley & Sons Inc, 2007.
2. Jenifer Tidwell, Designing Interfaces, O'Reilly, 2011
3. Jeff Johnson, Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules , Morgan Kaufman Publisher, 2010

Rethinking

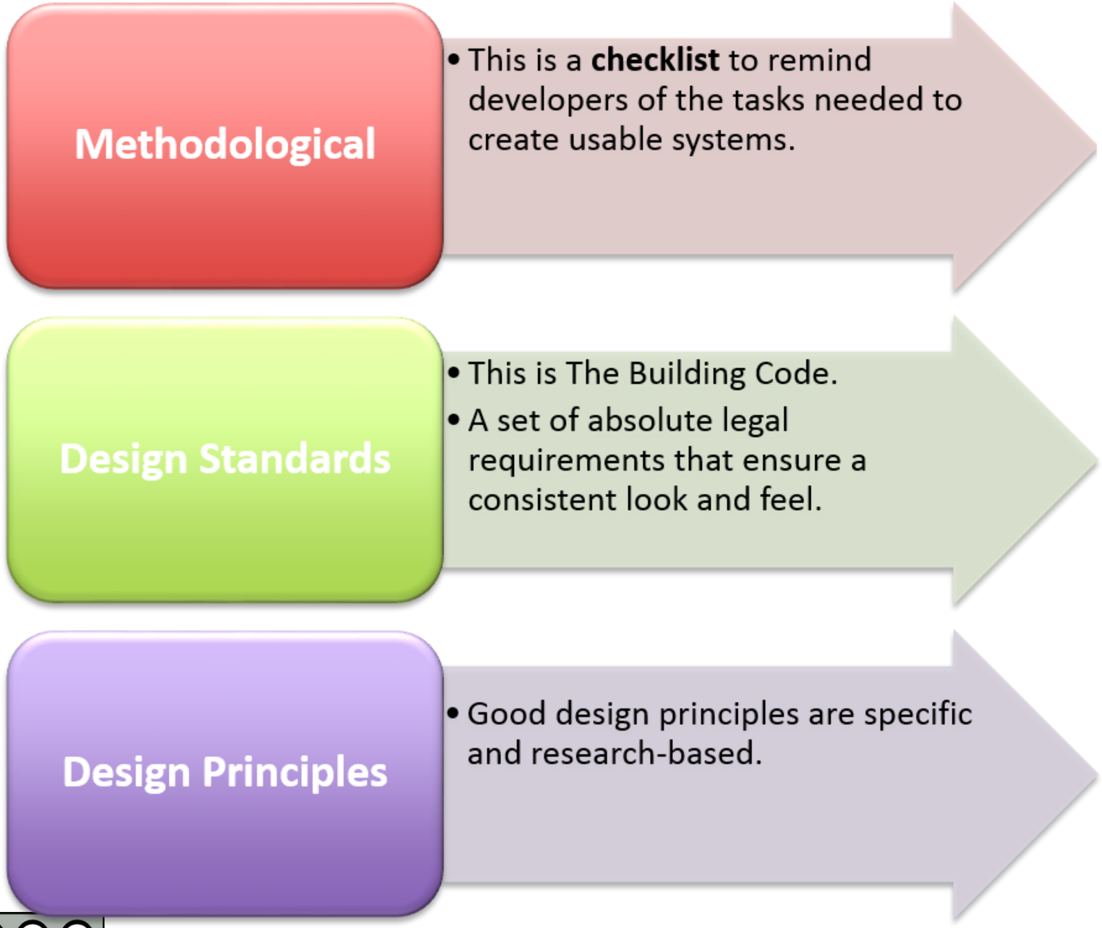
- “To design is much more than simply assemble, to order, or even to edit; it is to add value and meaning, to illuminate, to simplify, to clarify, to modify, to dignify (respect), to dramatize, to persuade (encourage, prompt) , and perhaps even to amuse.”

- Paul Rand, Artist and Architect

Something to provoke your mind…

- What is standard?
- Why standardize?

Type of standards [1]



Methodological

- This is a **checklist** to remind developers of the tasks needed to create usable systems.

Design Standards

- This is The Building Code.
- A set of absolute legal requirements that ensure a consistent look and feel.

Design Principles

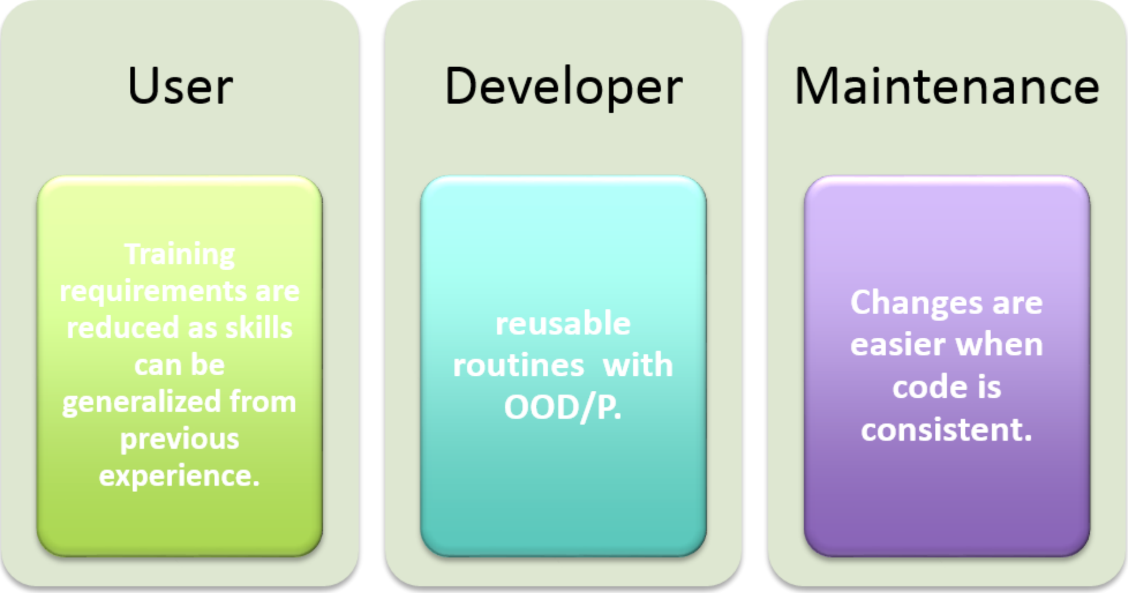
- Good design principles are specific and research-based.

User Interviews ......check
Task Analysis ....check
Task Design ....check
Conversion Plan.....oops!
I forgot.

Recall chapter 1!!!

Benefits of Standard

- Consistency
- Interoperability



User

Training requirements are reduced as skills can be generalized from previous experience.

Developer

reusable routines with OOD/P.

Maintenance

Changes are easier when code is consistent.

Developer vs User, who wins?

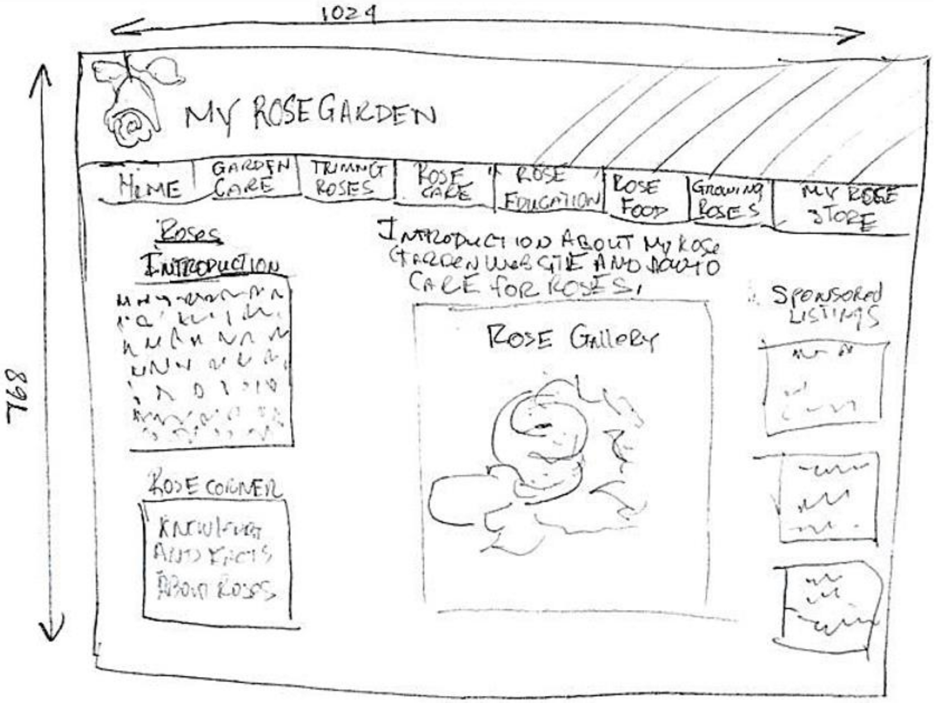
- What is software?
  - *From a technical perspective, a piece of software comprises forms for managing, collecting and transmitting data.*

- But that is not what a user thinks.
  - *From the user's perspective software is a computer tool for performing tasks quickly, efficiently, accurately and with a minimum amount of cognitive demand.*

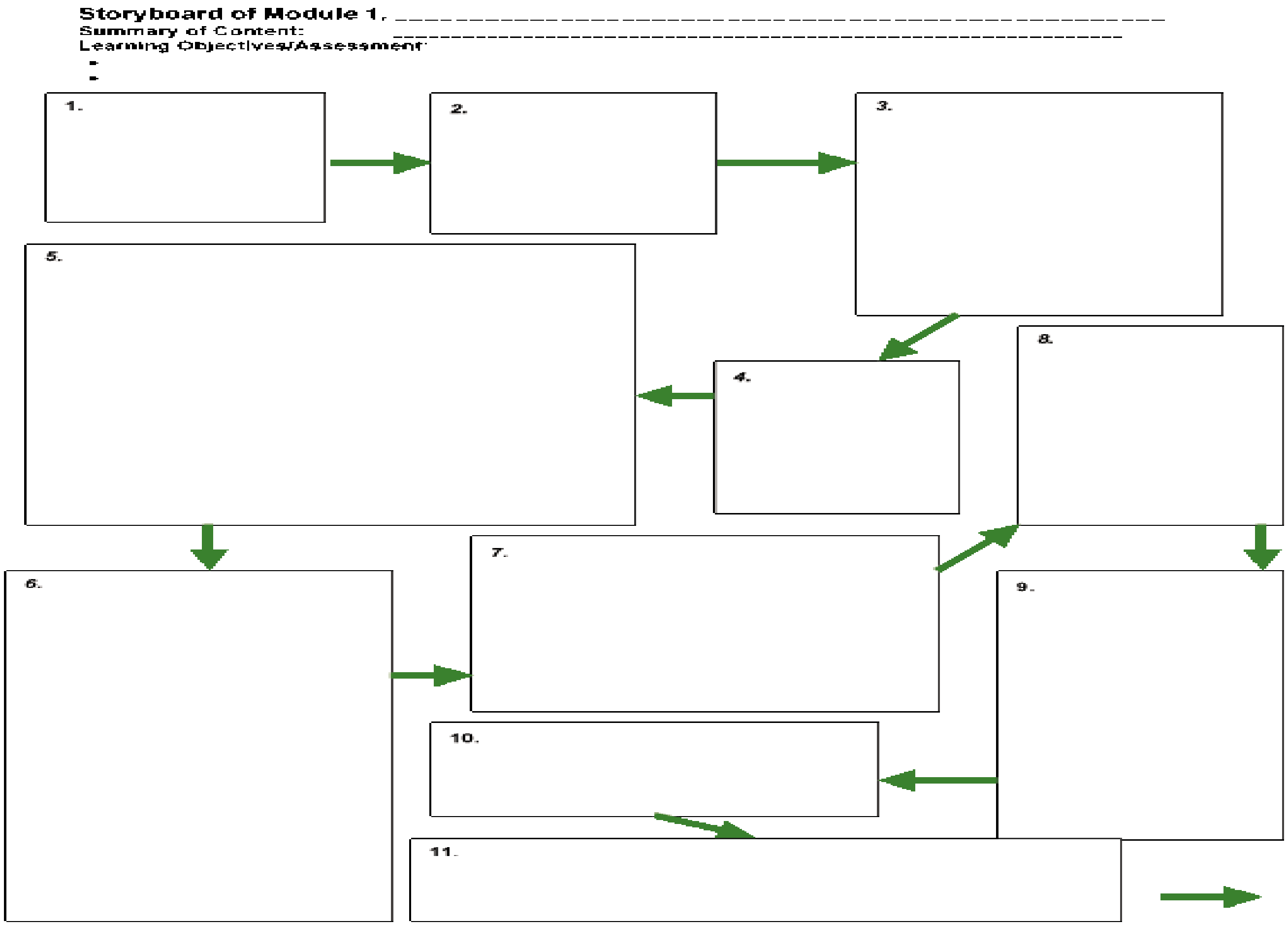
- Aim for the second one, there's a big difference.

Storyboard

- A series of diagrams that show how a project will look when completed.
- A visual outline of
  page-layout plan



Simple Storyboard



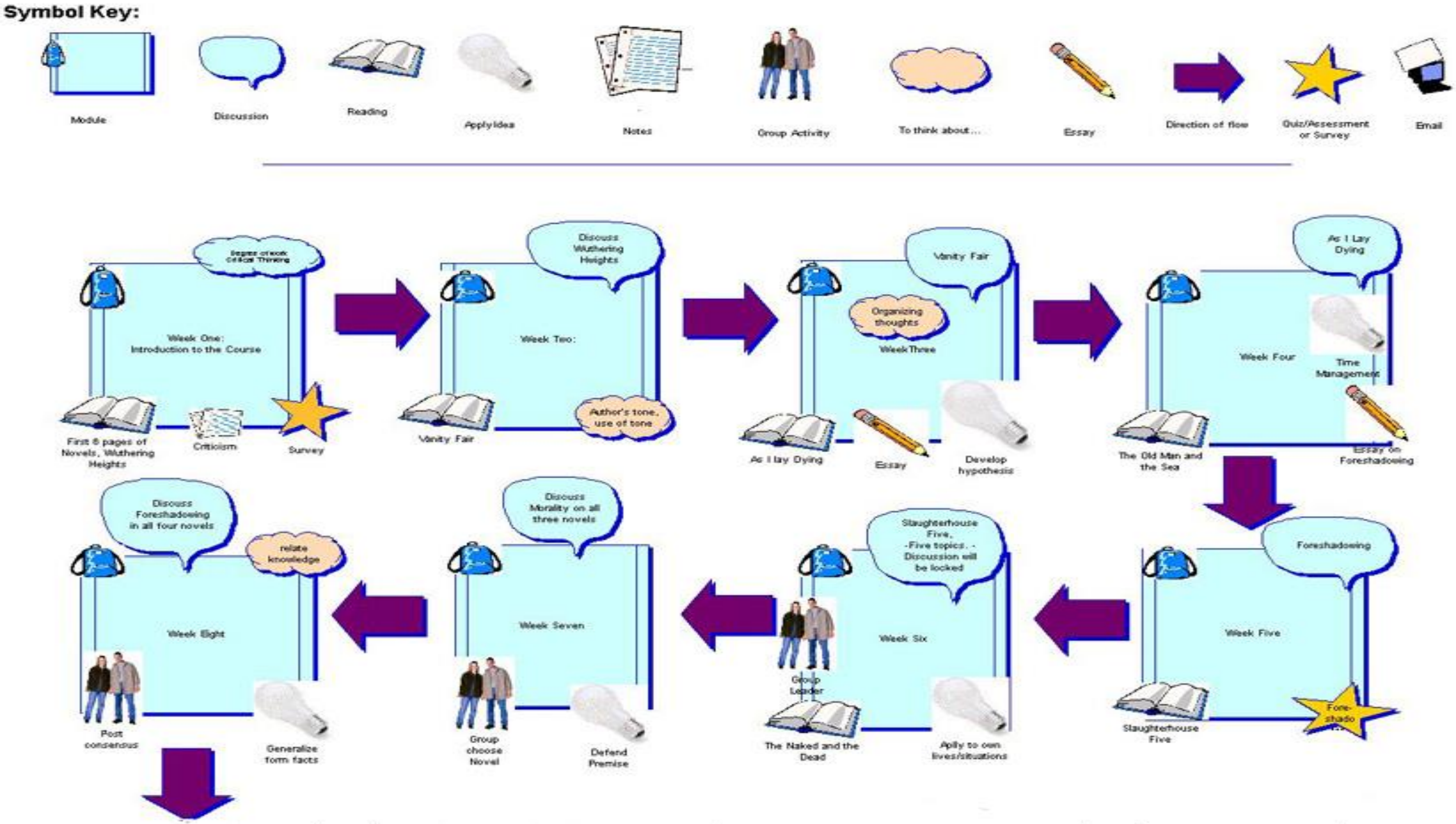
Storyboard of Module 1, ____

Summary of Content: ____

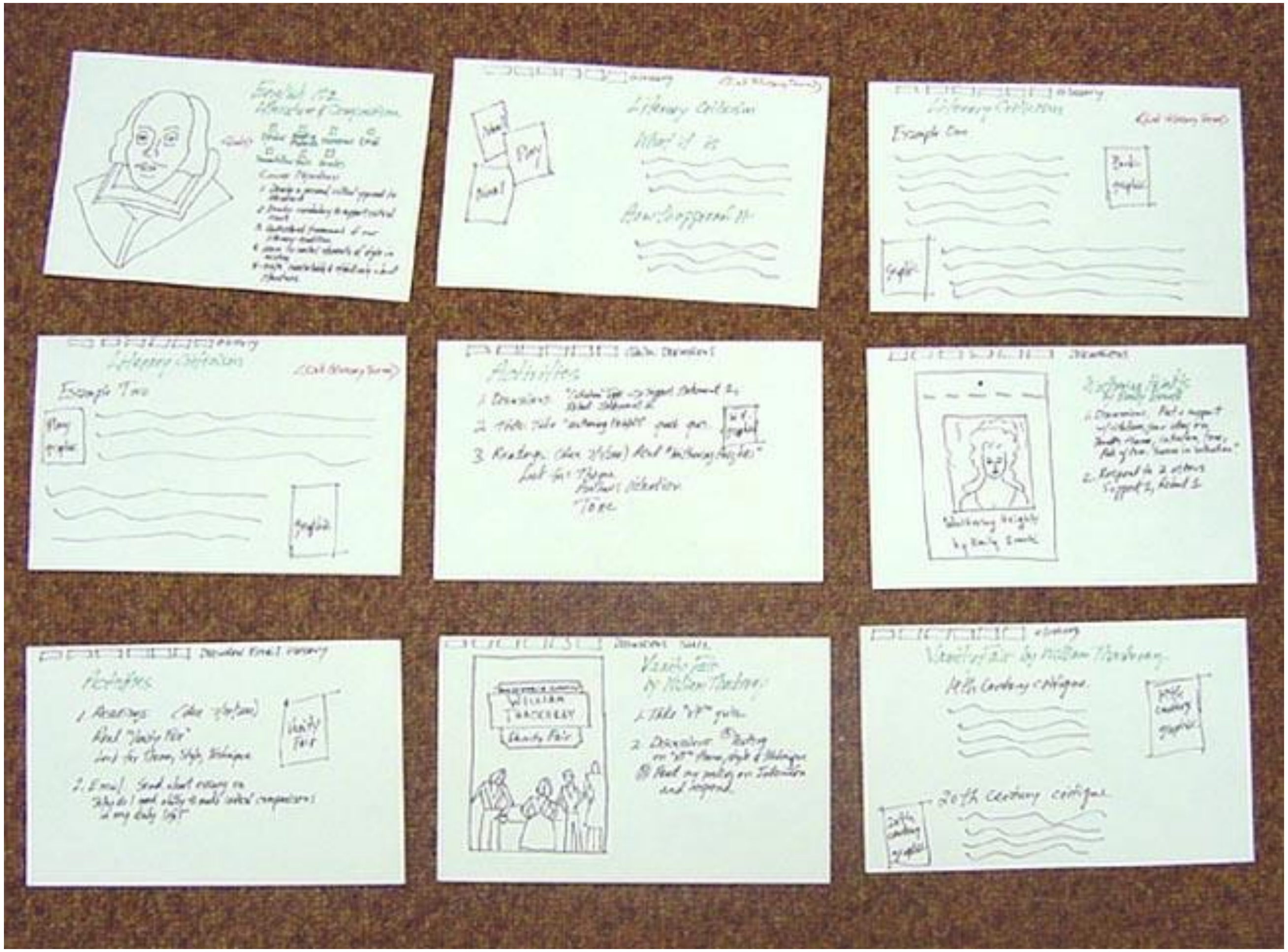
Learning Objectives/Assessment:

-
-

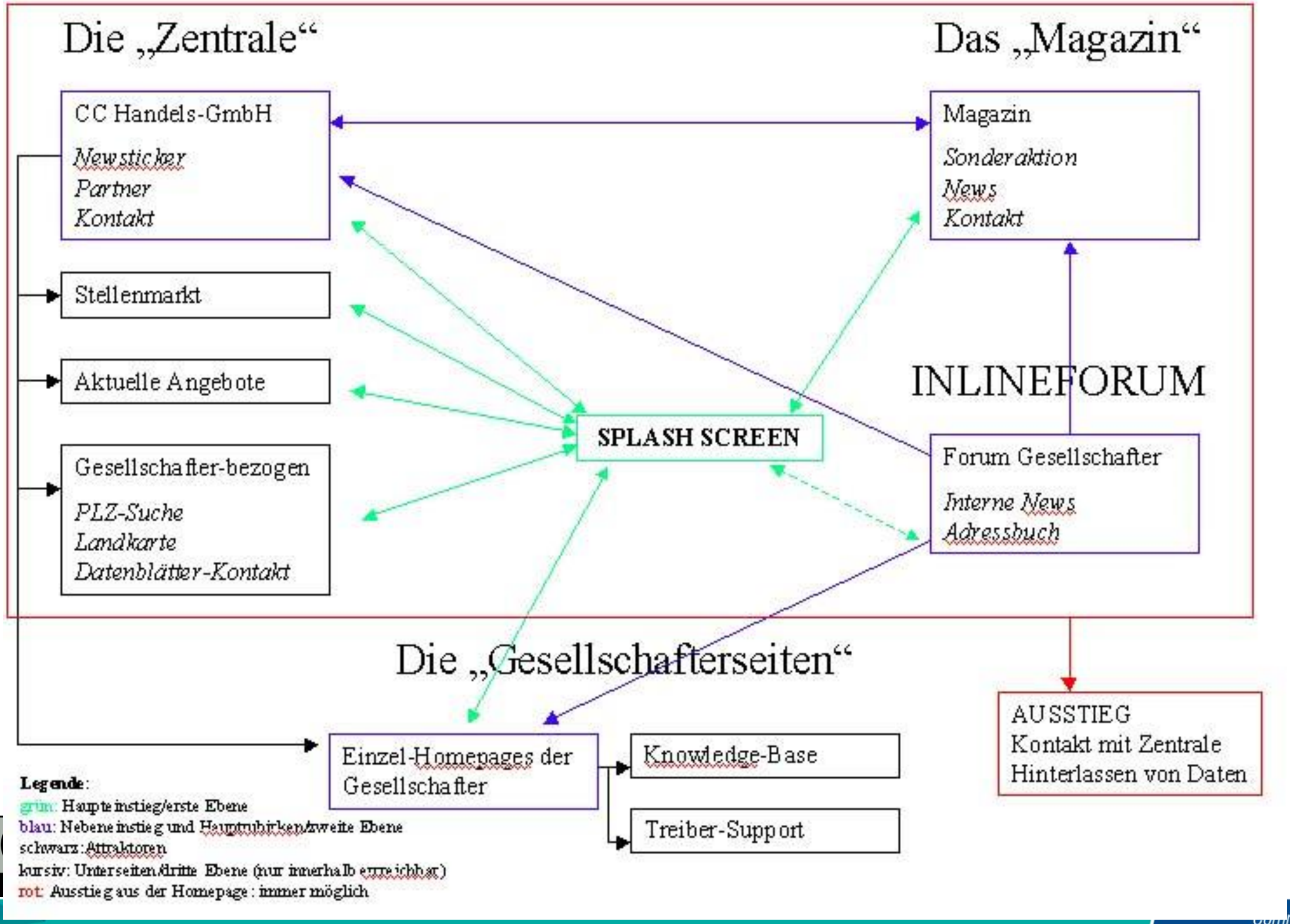
Graphical Storyboard



Hand Draw Storyboard



Example of Storyboard



Die „Zentrale“

Das „Magazin“

CC Handels-GmbH

Newsticker
Partner
Kontakt

Magazin

Sonderaktion
News
Kontakt

Stellenmarkt

Aktuelle Angebote

Gesellschafter-bezogen

PLZ-Suche
Landkarte
Datenblätter-Kontakt

SPLASH SCREEN

INLINEFORUM

Forum Gesellschafter

Interne News
Adressbuch

Die „Gesellschafterseiten“

Einzel-Homepages der Gesellschafter

Knowledge-Base

Treiber-Support

AUSSTIEG
Kontakt mit Zentrale
Hinterlassen von Daten

Legende:
grün: Haupteinstieg/erste Ebene
blau: Nebeneinstieg und Hauptrubirken/zweite Ebene
schwarz: Attraktoren
kursiv: Unterseiten/dritte Ebene (nur innerhalb erreichbar)
rot: Ausstieg aus der Homepage: immer möglich

Storyboard in General

Number

Layout / Sketch

Description:

____

____

____

____

____

____

____

Special Effect/ Audio/ Video/ Animation:

____

____

____

____

____

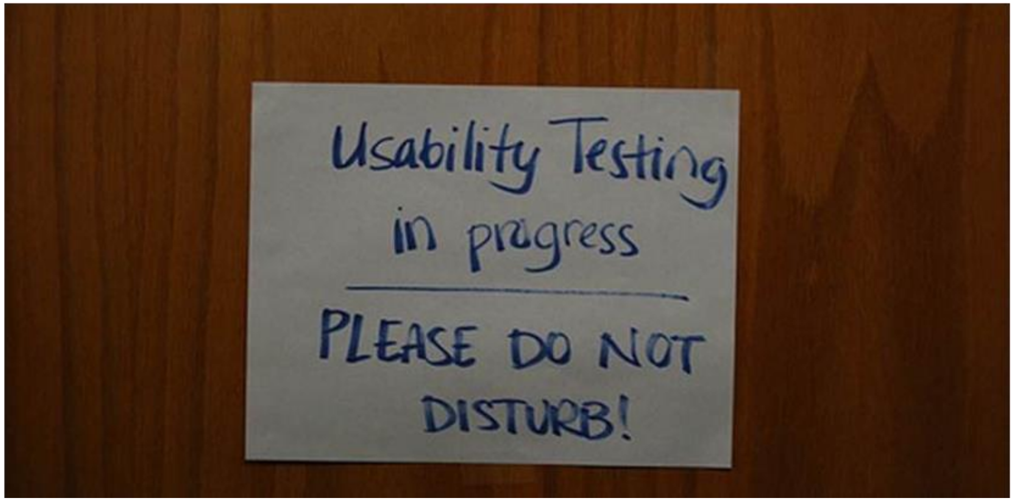
GUI rules?

- The whole point of a good GUI (Graphical User Interface) is being able to understand what is going on without reading every single detail.
- The corner stone of good user interface design is that if your users need instructions, you haven't done a good job.
- Of course with particularly complex applications there will be exceptions to this rue, but all developers should aim to make your designs as self evident as possible.

Superior Software for Windows (SSW) Rules to Better Interfaces

Do you know the importance of testing your interface?

You won’t know if your interface is any good until it’s actually tested! Test, test, test, nothing can possibly replace that first hand data.



Superior Software for Windows (SSW) Rules to Better Interfaces

Do you realize that a good interface should not require instructions?

A good UI is:

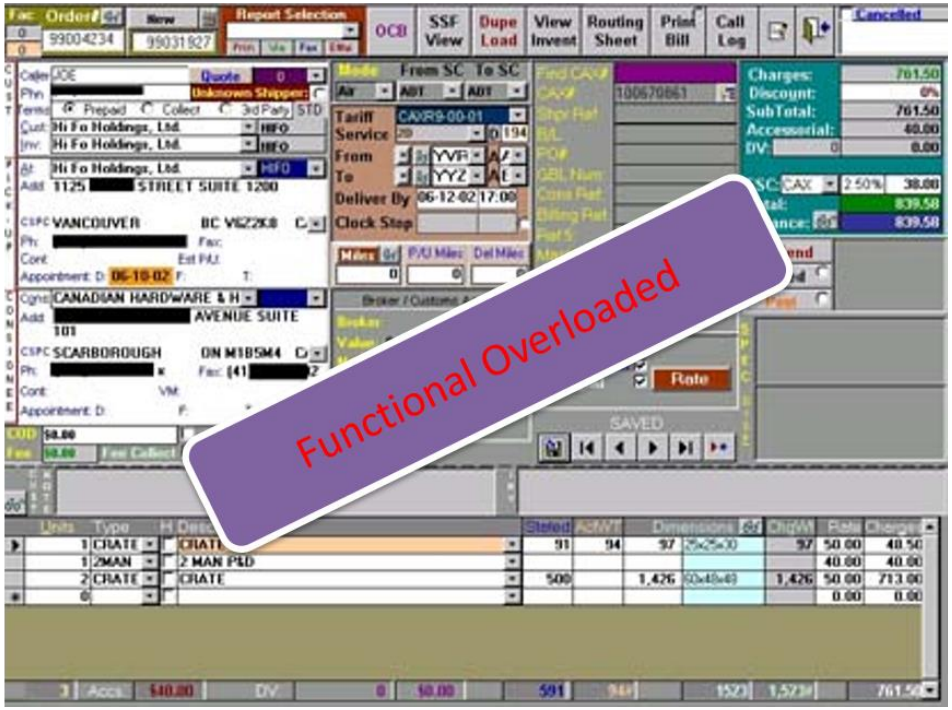
- Intuitive
- Feels fast
- Consistent
- Minimal popups
- No clutter (confusing/disorder)
- Good error handling
- Easy to customize (platform)
- Gamification (eg. Badges)

There are no surprises
There is no need to use help

Rules to Better Interfaces

- **Do you realize that when it comes to interface design 'less is more'?** (simplicity and clarity lead to good design)

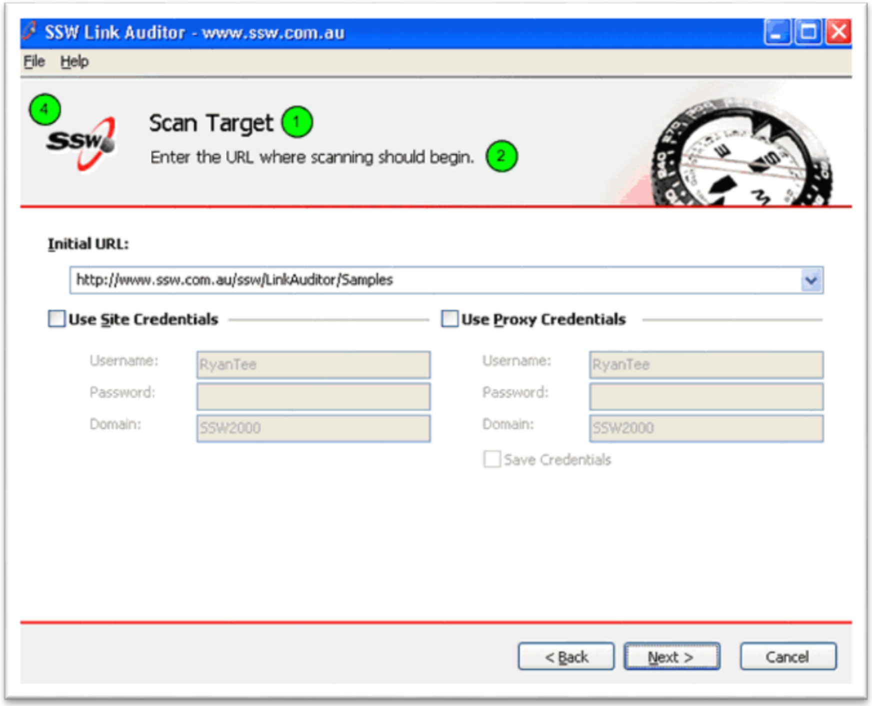
GOOD or BAD design?



Functional Overloaded

Rules to Better Interfaces

- **Do you use a Wizard to help a user through a complicated set of steps?**
- To ensure a consistent user experience, make sure to include these visual elements:
  - Page Name
  - Page Description
  - Instructions
  - Company Logo



Scan Target

Enter the URL where scanning should begin.

Initial URL: http://www.ssw.com.au/ssw/LinkAuditor/Samples

☐ Use Site Credentials

Username: RyanTee

Password:

Domain: SSW2000

☐ Use Proxy Credentials

Username: RyanTee

Password:

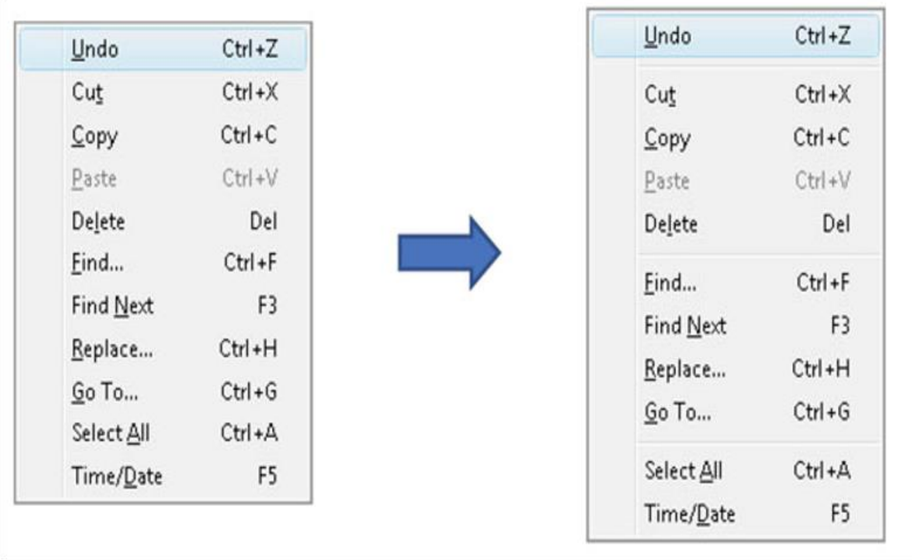
Domain: SSW2000

☐ Save Credentials

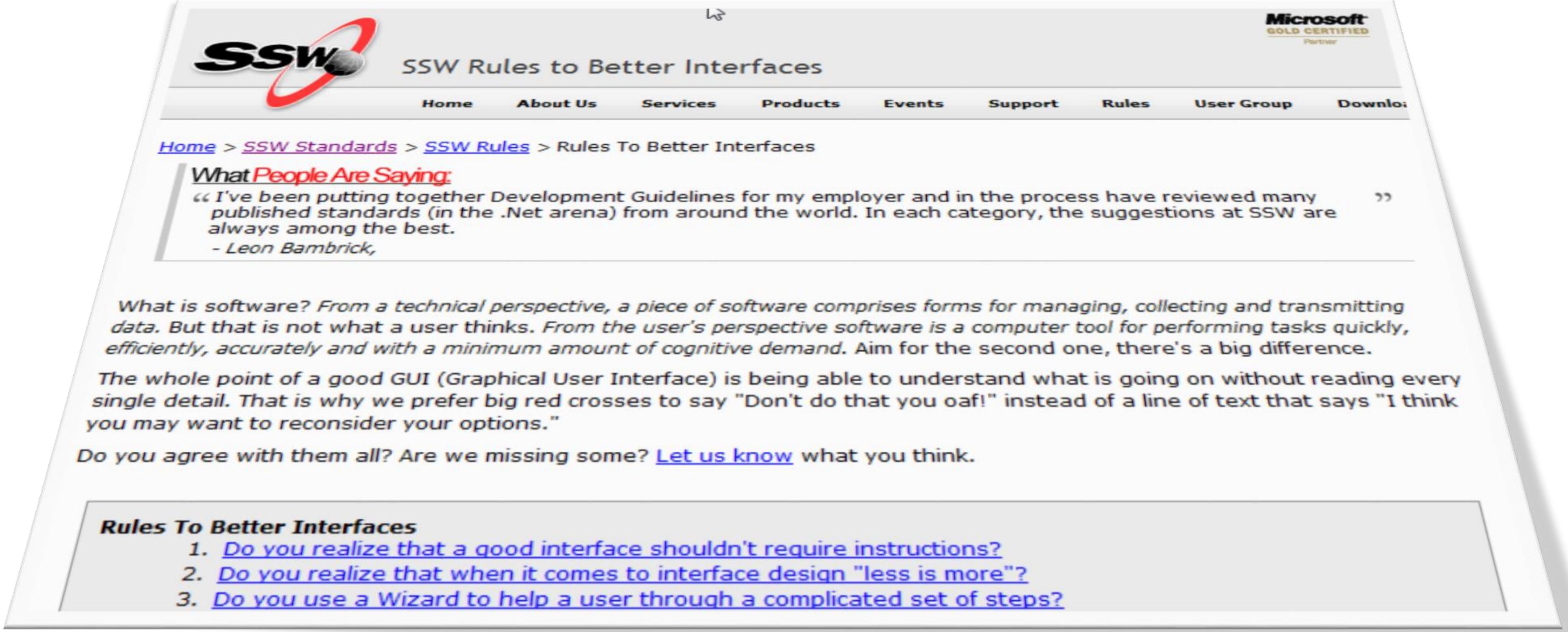
Rules to Better Interfaces

- **Less is More - Do you always try to reduce complexity?**

The human brain:
1.Never searches for OR compares all options
2.Prefers smaller sets of options (4 or less)
3.Picks the first option that looks good enough
4.Prefers a shorter option to a longer one
5.Makes a compromise between speed and accuracy



Find out more on SSW website



SSW Rules to Better Interfaces

Home > SSW Standards > SSW Rules > Rules To Better Interfaces

What People Are Saying:

> “ I've been putting together Development Guidelines for my employer and in the process have reviewed many published standards (in the .Net arena) from around the world. In each category, the suggestions at SSW are always among the best. ”
> - Leon Bambrick,

What is software? *From a technical perspective, a piece of software comprises forms for managing, collecting and transmitting data.* But that is not what a user thinks. *From the user's perspective software is a computer tool for performing tasks quickly, efficiently, accurately and with a minimum amount of cognitive demand.* Aim for the second one, there's a big difference.

The whole point of a good GUI (Graphical User Interface) is being able to understand what is going on without reading every single detail. That is why we prefer big red crosses to say "Don't do that you oaf!" instead of a line of text that says "I think you may want to reconsider your options."

Do you agree with them all? Are we missing some? Let us know what you think.

Rules To Better Interfaces

1. Do you realize that a good interface shouldn't require instructions?
2. Do you realize that when it comes to interface design "less is more"?
3. Do you use a Wizard to help a user through a complicated set of steps?

http://www.ssw.com.au

Schneiderman’s 8 Golden Rules of Interface Design

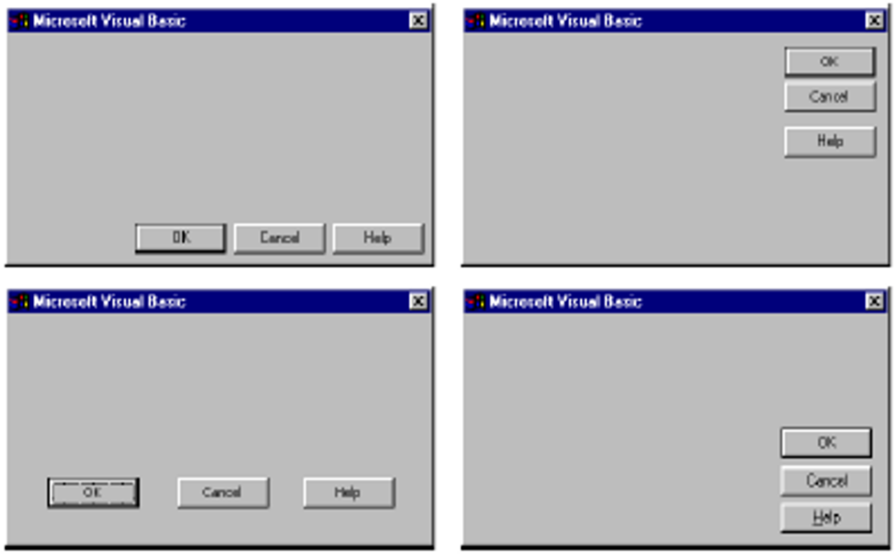
1. Strive for consistency
2. Enable frequent users to use shortcuts.
3. Offer informative feedback
4. Design dialogs to yield closure .
5. Offer error prevention and simple error handling.
6. Permit easy reversal of actions.
7. Support internal locus of control.
8. Reduce short-term memory load.

1. Consistency

Strive for consistency

- This is a rule that is often hard to follow, because it is a rather elusive rule. There are many levels of consistency, including terminology, menus, fonts, color, and layout. Consistency applied at three levels: presentation, behavior and interaction techniques.

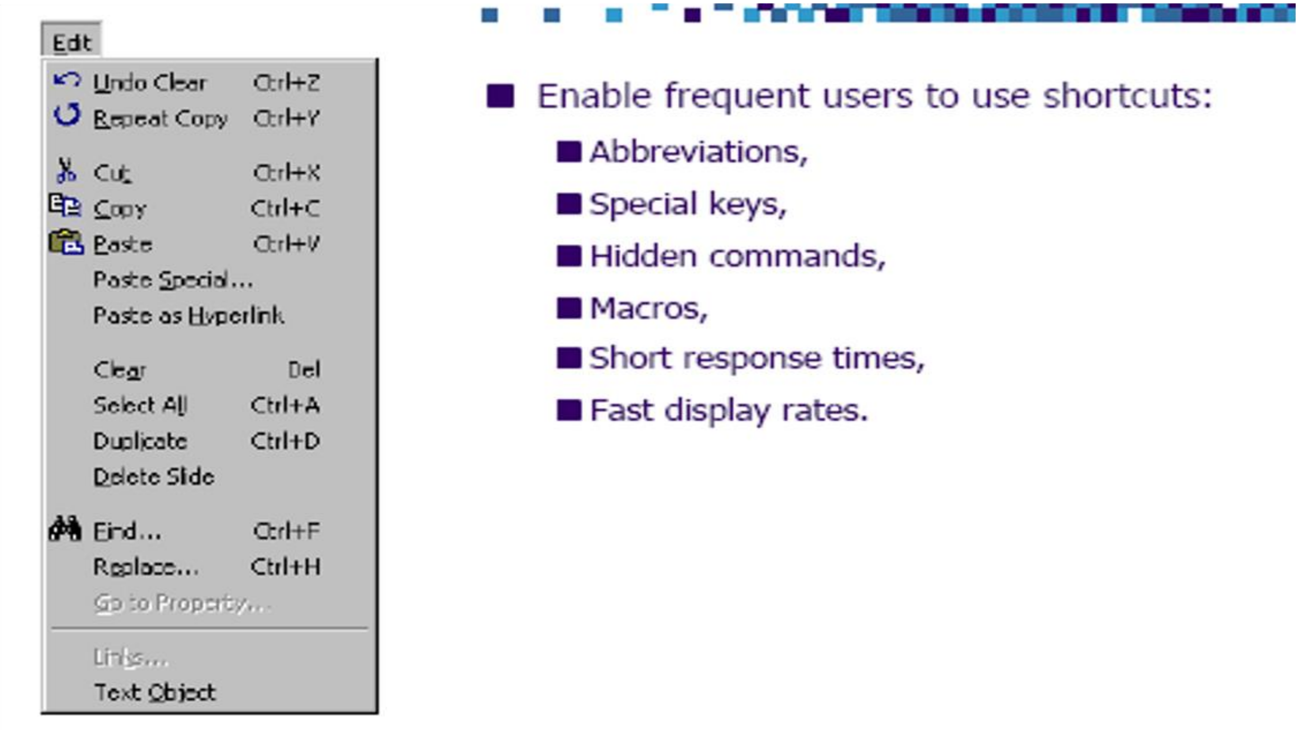
"consistency makes the interface familiar and predictable",
The Windows User Interface Guidelines for Software Design, Microsoft Press



2. Shortcuts

Enable frequent users to use shortcuts.

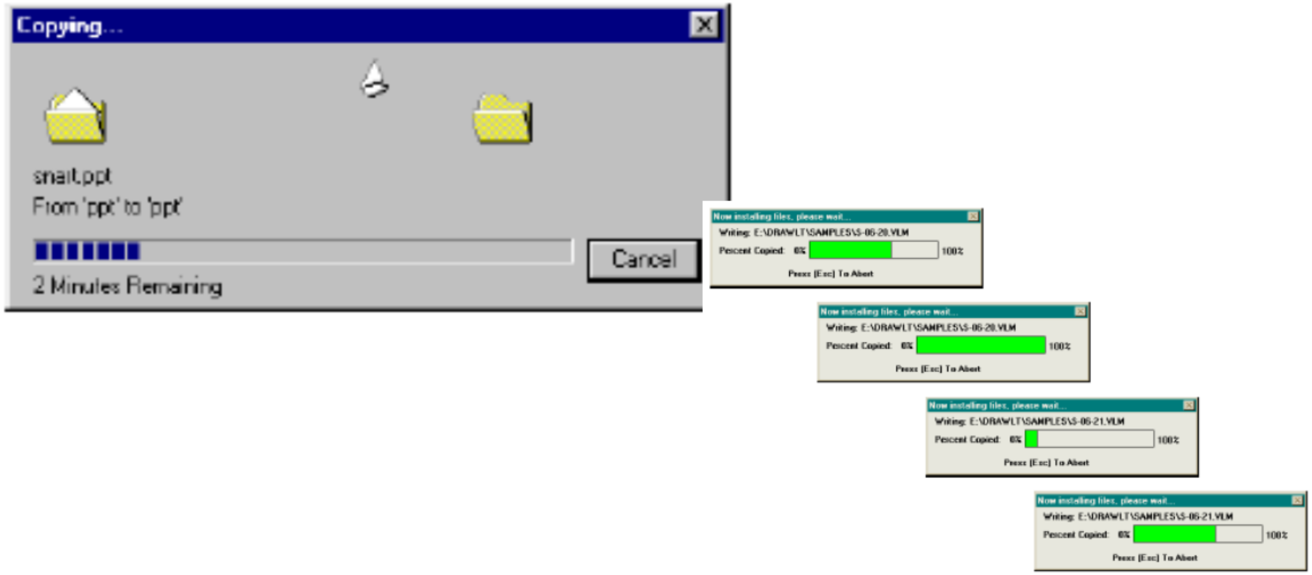
- ❖ Interface design should include a way for experienced users to reduce the amount of time interacting with the program.



- Enable frequent users to use shortcuts:
  - Abbreviations,
  - Special keys,
  - Hidden commands,
  - Macros,
  - Short response times,
  - Fast display rates.

3.Feedback

- Offer informative feedback:
  - For every user action, there should be system feedback.
  - For frequent and minor actions the response can be modest.
  - For infrequent and major actions the response should be more substantial.
  - Show changes on the visual represetation of the objects of interest.



Copying...

snail.ppt

From 'ppt' to 'ppt'

2 Minutes Remaining

Now installing files, please wait...

Writing: E:\DRAWLT\SAMPLES\S-06-20.VLM

Percent Copied: 0% 100%

Press [Esc] To Abort

Now installing files, please wait...

Writing: E:\DRAWLT\SAMPLES\S-06-20.VLM

Percent Copied: 0% 100%

Press [Esc] To Abort

Now installing files, please wait...

Writing: E:\DRAWLT\SAMPLES\S-06-21.VLM

Percent Copied: 0% 100%

Press [Esc] To Abort

Now installing files, please wait...

Writing: E:\DRAWLT\SAMPLES\S-06-21.VLM

Percent Copied: 0% 100%

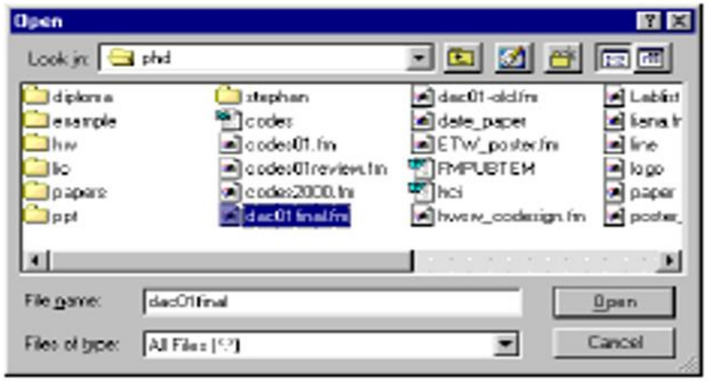
Press [Esc] To Abort

4. Dialogs

Design dialogs to yield closure

- ❖ Actions should have a beginning, middle, and end.

- Dialogs should have:
  - beginning, select "File->Open"
  - middle, complete the dialog
  - end. press "Open"



Look in: phd

File name: dac01final

Files of type: All Files (*.*)

- The informative feedback at the competition of a group of actions:
  - gives operators the satisfaction of accomplishment,
  - a sense of relief,
  - the signal to drop contingency plans and options from their minds,
  - an indication that they can prepare for the next group of actions.

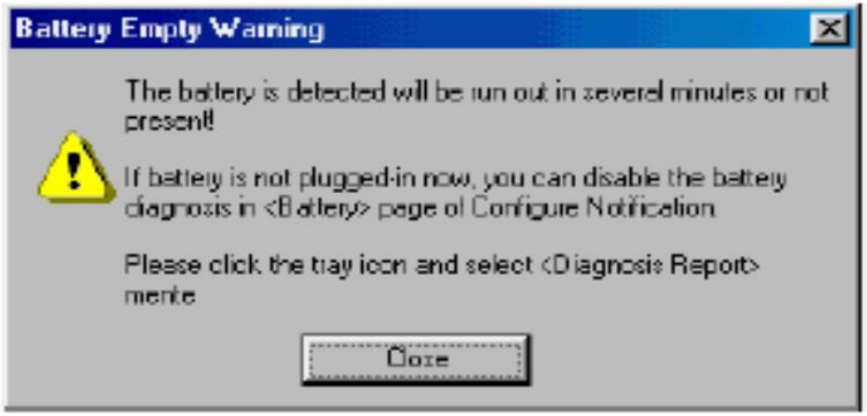
5. Error

Offer error prevention and simple error handling.

- The goal should be to design a system where users cannot make serious errors. Errors should be detected by the system and the user should be given instructions for recovery.

MTC Diag, a power management application

- What happened?
- Why did it happened?
- How serious is it?
- How can it be fixed?



The battery is detected will be run out in several minutes or not present!

If battery is not plugged-in now, you can disable the battery diagnosis in <Battery> page of Configure Notification

Please click the tray icon and select <Diagnosis Report> menu

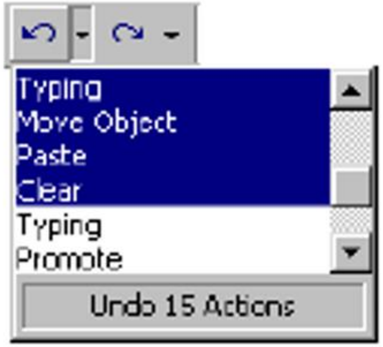
6. Easy Reversal

Permit easy reversal of actions.

❖ Users should be able to reverse actions (if possible within the context).

- Actions should be reversible:
  - Relieves anxiety.
  - Encourages exploration of unfamiliar options.

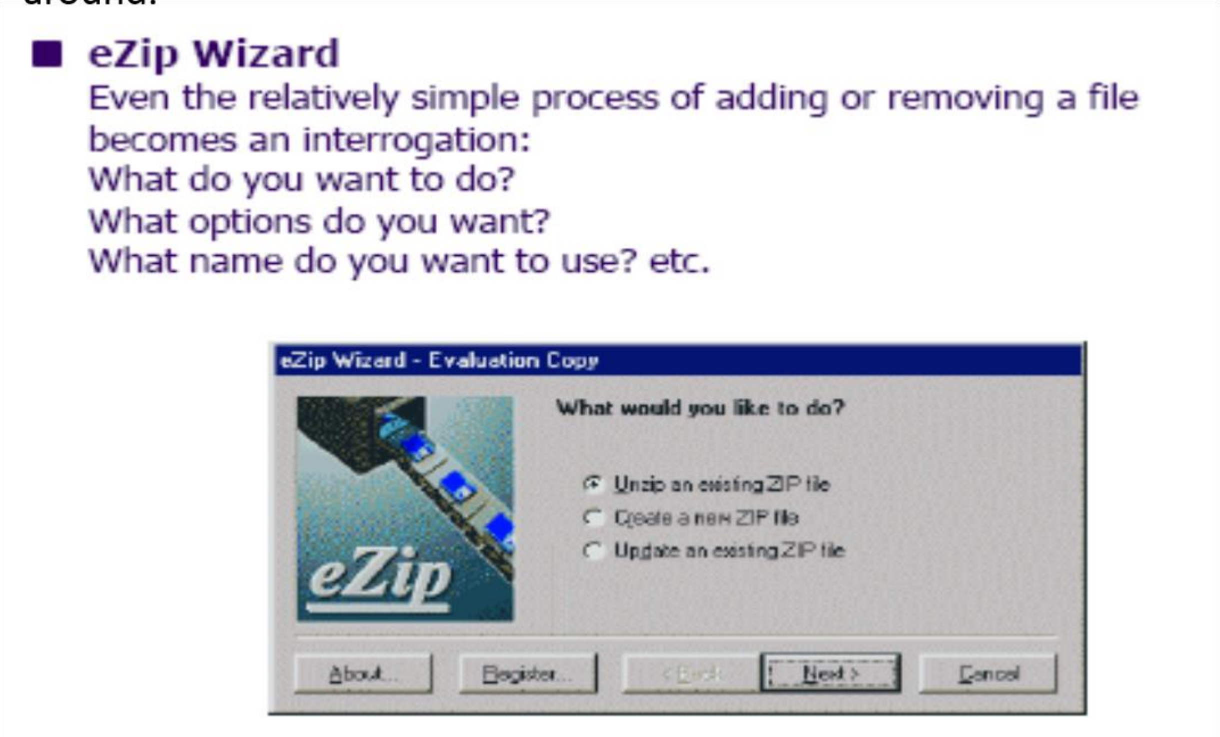
- Undo/Redo:
  - a single action,
  - a data-entry task,
  - complete group of actions, etc.



7. User Control

Support internal locus of control.

- Users should feel as if they are in control of the software, not the other way around.



- **eZip Wizard**
  Even the relatively simple process of adding or removing a file becomes an interrogation:
  What do you want to do?
  What options do you want?
  What name do you want to use? etc.

eZip Wizard - Evaluation Copy

What would you like to do?

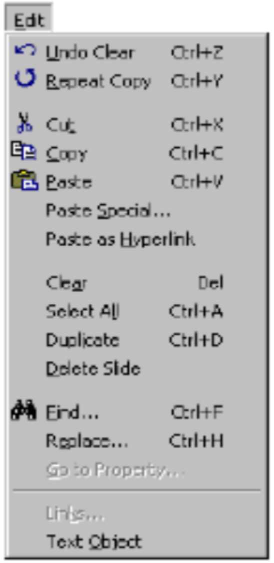
● Unzip an existing ZIP file
○ Create a new ZIP file
○ Update an existing ZIP file

8. Short Term Memory

Reduce short-term memory load.

- The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions

- Example : shortcut key sequences reduce users’ memory load and quickly become automatic.



- Enable frequent users to use shortcuts:
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  - Hidden commands,
  - Macros,
  - Short response times,
  - Fast display rates.

Further readings:

[1] http://www.humanfactors.com/downloads/guistandards.pdf

[2] http://www.ssw.com.au/ssw/Standards/Rules/RulesToBetterInterfaces.aspx