



UPPSALA
UNIVERSITET

Interaction Design Guidelines and Rules

Design rules

- Heuristics, based on **research, experience** and **common sense**
 - Perception, cognition, HCI, engineering
- Advice for different kind of design problems
 - Low level: general advice
 - High level: mandatory and very specific
- Support for evaluation

How does one learn design?

- Can you read a book about it?
- Can this course teach you design?

- In groups of 2:
 - Discuss for 1 minute

Different types of rules

- General principles, guidelines
 - *“Strive for consistency” (J. Nielsen, B. Shneiderman)*
- International standards
 - *“Direct manipulation of output: if appropriate for the task the result of a direct manipulation should be displayed in such a way that it can be further modified by direct manipulation.” ISO/DIS 9241-16:1996(E)*
- Styleguide for a product
 - *“A standard window should have a close box. When the user clicks the close box, the window goes away.” The Windows Interface Guidelines for Software Design*
- Domain specific styleguide
 - *Windows Vista, Mac OS X, Volvo cars, company web, ATM, etc.*

General advice - simplicity

- Don't waste space on headers, unless really needed. For experienced users the content and position is enough.
- Don't emphasize the importance of details that are important for the first-time user. Most things are there to support experienced users.

Erik Borälv

661122 - 3344

Storgatan 88A

750 00 Uppsala

018 - 12 23 34 home

018 - 18 28 81 work

32 345

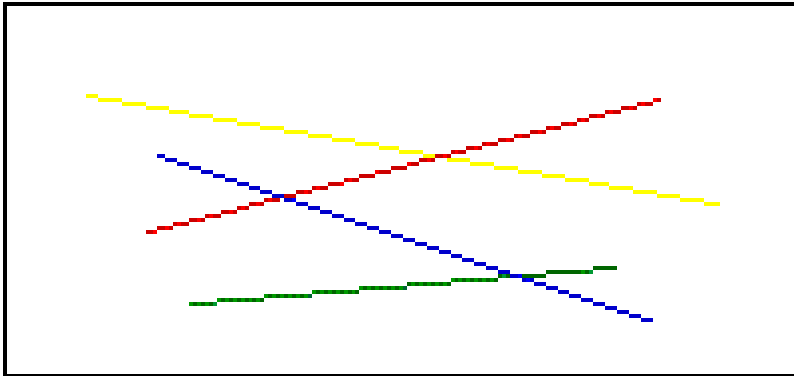
UU - IT - S

100 %from **02-04-01** Removed**B**

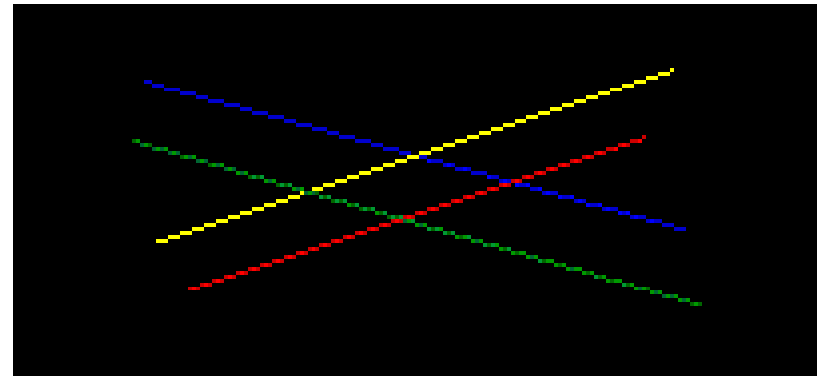
Temp

General advice - color

- Use dark colors on bright background



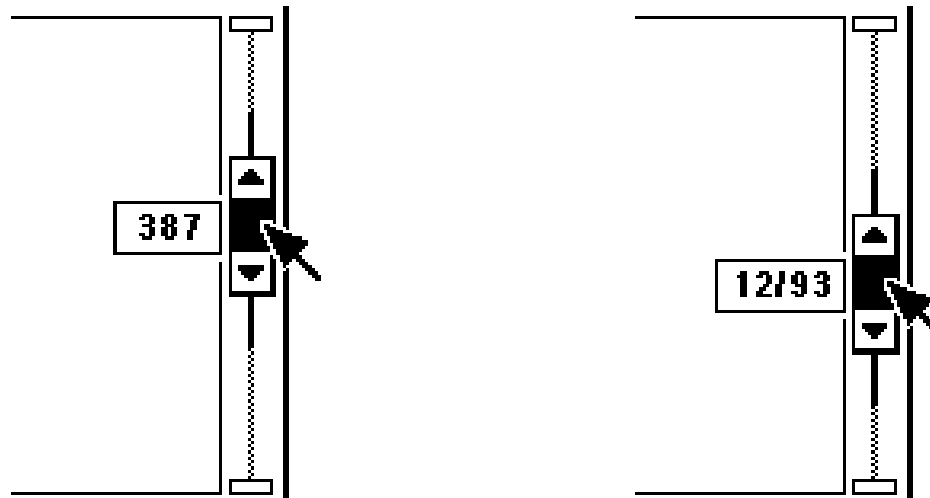
- Bright colors on dark background
 - Red and yellow visible
 - Green and blue not as good



(NASA/Goddard Code 520 human-computer interface guidelines)

Strategies for design problems

- Navigate in large sets of data
 - When the system has page-bound information, allow for navigation by pages



The *generative* enhancement of a design (Thimbleby, 1984)

Standards for design?

- Standards are guidelines that have formal status. They have been judged as important and are widely used

- Think about:
 - *Why standards for design?*
 - *1 minute*

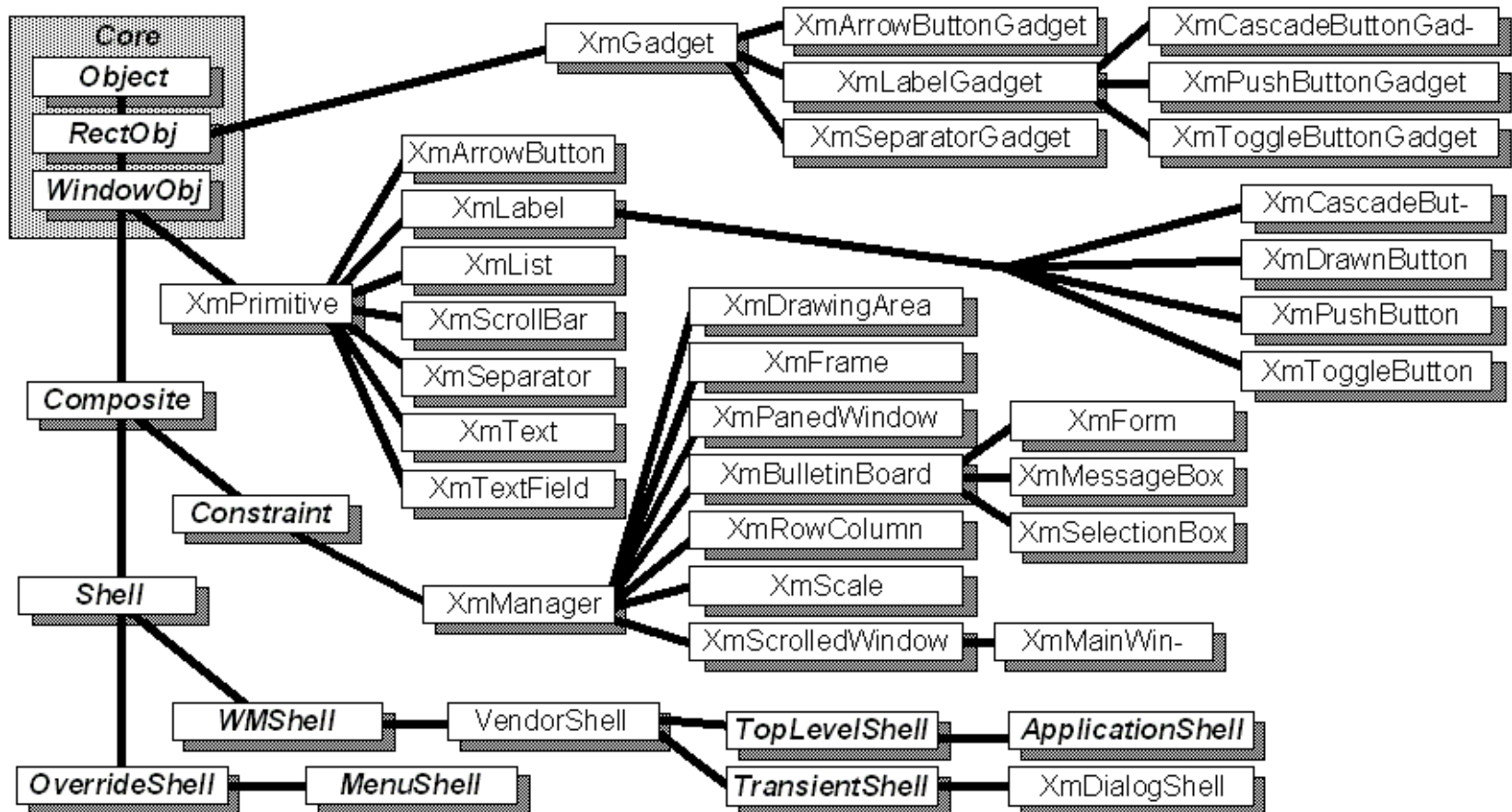
Reasons for standards in design

- Easier - education
- Safety - maintenance
- Cheaper – common technology
- Higher quality
- International

Standards

- ISO/IEC 11581 - **Icon** symbols and functions
- ISO/IEC 11741 - **Dialogue** interaction - cursor control
- ISO/IEC 14915 - **Multimedia** user interface design - ergonomics requirements for multimedia interfaces
- ISO 13407 - **Human centered design** process for interactive systems
- ISO 9241 - **Ergonomic requirements** for office work with visual display terminals, parts 1 - 17
 - Part 11: Guidance on usability
 - Part 12: Presentation of information
- Web Accessibility Initiative (WAI), <http://www.w3.org/WAI/>

Components in a GUI



Apple's style



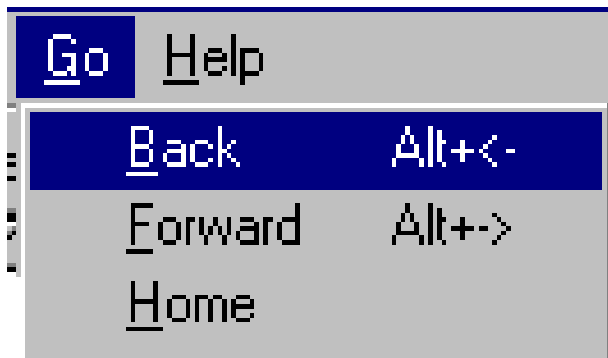
Guidelines don't work

- *Are only understood by those who don't need to read guidelines*
- Not suited for the context
- What guidelines to choose?
- What does the guideline mean? Sun's guidelines about the order in menus:
 - *Use a logical order (if one exists) to help guide users through the process*
 - *Put most important or most frequently used functions at the top of the menu*

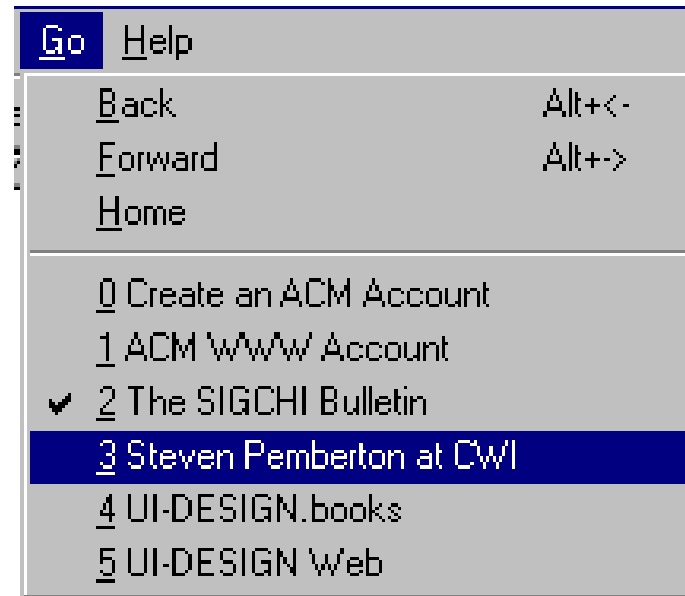
Guidelines support evaluation

- Evaluating a menu design in terms of a guideline
 - “Facilitate backwards navigation”

Before



After



General guidelines

- Make the system easy to use
- Do what the user expects
- Make the system consistent
- Design for efficiency
- Clear navigation, show where you are
- Always show what's going on
- Use icons with care

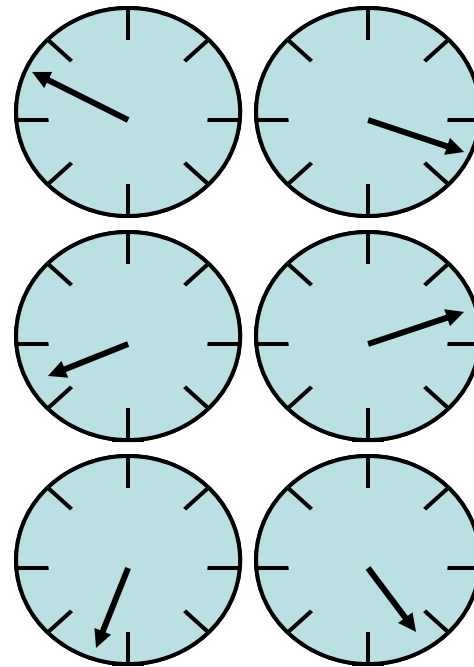
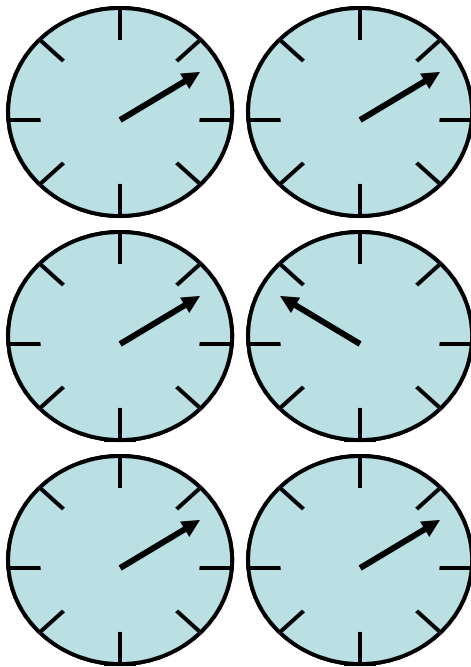
Consistent

- *"Moreover, consistency in itself doesn't ensure usability. It is a mistake to think that consistency in the surface properties of the interface will lead to good design." (Microsoft)*
- <http://msdn.microsoft.com/en-us/library/ms997578.aspx>

An example of design






- One task, one work area
- The interface should be ready to use immediately
- Details and overview at the same time
- Simple navigation
- Pattern recognition





Patterns










Simplicity

- Do not waste space on things that are not needed. For experienced users content and position is enough.(Schneiderman)





Today


Frank Ludolph

March 1997

	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28	
9 am						9 am
10 am	1:1 w/ Harry	HI meeting Awakenings				10 am
11 am	1:1 w/ Fowler	Drawer I-Team Bldg: CUP01 2n		Milind's staff Blues Brothers		11 am
12 pm		Switcher w/ Hinkm				12 pm
1 pm				JavaONE pre-sho Blue Moon, Lunch		1 pm
2 pm				Plan Away Awakening	JavaHI Staff Blue Jeans	2 pm
3 pm		IC Staff Bldg: CUP01 2n Room: Blue Sue				3 pm
4 pm	Java Couchfest Blue Moon Cafe	Binder - Sara		Speech Coach Annie Hall		4 pm
5 pm						5 pm
					Music lesson	

Date: Mar 28, 1997

Start: 1:00 pm

End: 2:30 pm

JavaHI Staff
Blue Jeans

Occurs: Weekly Forever

Others see: Time & Text

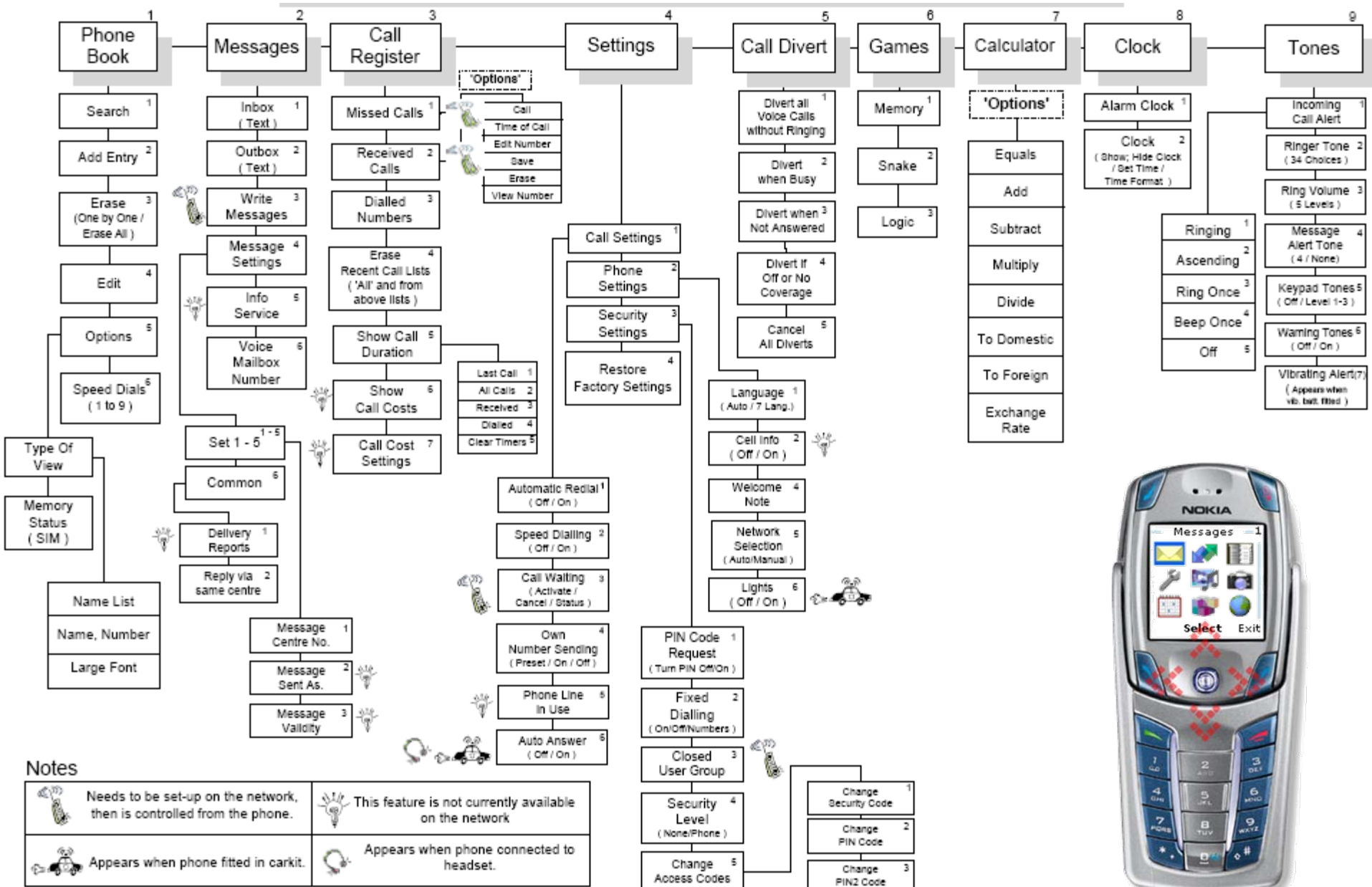
☐ **Reminder:** 5 minutes before

Clear context

- Give users information about structure and context
 - Only a small part of a web site is visible at a time



(Yale C/AIM Web Style Guide)



Today

Frank Ludolph

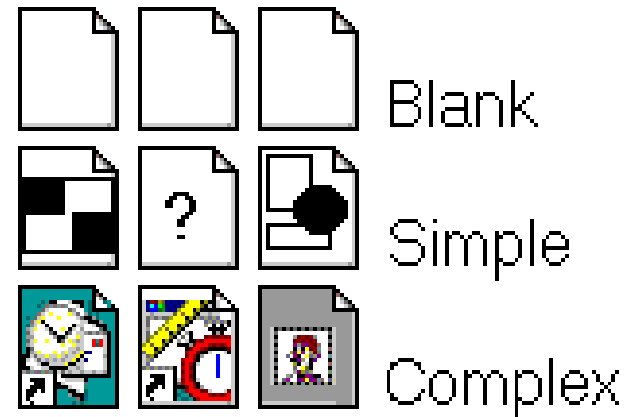
March 1997




	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28
9 am	1:1 w/ Harry	HI meeting Awakenings			
10 am	1:1 w/ Fowler	Drawer I-Team Bldg: CUP01 2n		Milind's staff Blues Brothers	
11 am		Switcher w/ Hinkm			
12 pm				JavaONE pre-sho Blue Moon, Lunch	
1 pm				Plan Away Awakening	JavaHI Staff Blue Jeans
2 pm		IC Staff Bldg: CUP01 2n Room: Blue Sue			
3 pm		Binder - Sara	Speech Coach Annie Hall		
4 pm	Java Couchfest Blue Moon Cafe				
5 pm					Music lesson

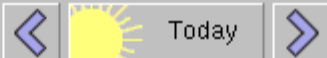
Date: Mar 28, 1997
Start: 1:00 pm
End: 2:30 pm
Occurs: Weekly
Others see: Time & Text
Reminder: 5 minutes before

Interaction styles

- Direct manipulation is (usually) simple
 - Simple icons and images are better than complex or blank (Byrne, 1993)
 - Use few colors
 - Test icons with users
 - Sorting cards in piles





Today

Frank Ludolph

March 1997

	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28
9 am					
10 am	1:1 w/ Harry	HI meeting Awakenings			
11 am	1:1 w/ Fowler	Drawer I-Team Bldg: CUP01 2n		Milind's staff Blues Brothers	
12 pm		Switcher w/ Hinkm			
1 pm				JavaONE pre-sho Blue Moon, Lunch	
2 pm				Plan Away Awakening	JavaHI Staff Blue Jeans
3 pm		IC Staff Bldg: CUP01 2n Room: Blue Sue			
4 pm	Java Couchfest Blue Moon Cafe	Binder - Sara	Speech Coach Annie Hall		
5 pm					Music lesson

9 am

10 am

11 am

12 pm


1 pm

2 pm

3 pm

4 pm

5 pm



Date: Mar 28, 1997
Start: 1:00 pm
End: 2:30 pm

JavaHI Staff
Blue Jeans

Occurs: Weekly
Others see: Time & Text
☐ **Reminder:** 5 minutes before

Forever

Grid design

	<p>This brings us back to type and newspapers. What might look quite obvious and normal to you when you read your daily paper is the result of careful planning and applied craft. Even newspapers with pages that look messy are laid out following complex grids and strict hierarchies.</p>	<p>Just as the newspaper on the opposite page is laid out according to an underlying structure of some intricacy, this book is designed within its own constraints.</p>
	<p>The artistry comes in offering the information in such a way that the reader doesn't get sidetracked into thinking about the fact that someone had to carefully prepare every line, paragraph, and column into structured pages. Design – in this case at least – has to be invisible. Typefaces used for these hardwork-</p>	<p>The page is divided into equal parts, each of which has the same proportion as the whole page, i.e., 2:3. The page is made up of 144 rectangles, each one measuring 12 by 18 millimeters, 12 rectangles across and 12 down. This makes the page 144 by 216 millimeters, or roughly 5 1/4 by 8 1/2 inches. The columns are multiples of the 12-millimeter unit. Because there has to be some distance between columns, 3 mm (or more for wider columns) have to be subtracted from these multiples of 12 to arrive at the proper column width.</p>
<p><i>The Guardian</i>, one of Britain's leading newspapers, is designed to a grid.</p>	<p>ing tasks are therefore by definition "invisible." They have to look so normal that you don't even notice you're reading them. And this is exactly why</p>	
	<p>designing type is such an unknown profession; who thinks about people who produce invisible things? Nevertheless, every walk of life is defined by, expressed with, and indeed, dependent on type and typography.</p>	<p>The distance between lines of type (still archaically referred to as <i>leading</i> [more about that later in the book]) is measured in multiples of 1.5 mm. All typographic elements are positioned on this baseline grid of 1.5 mm, which is fine enough to be all but invisible to the reader, but which helps layout and production. The discipline offered by a fine grid like this one gives the same sort of coherence to a page as bricks do to a building. They are small enough to allow for all styles of architecture, while serving as the common denominator for all other proportions.</p>

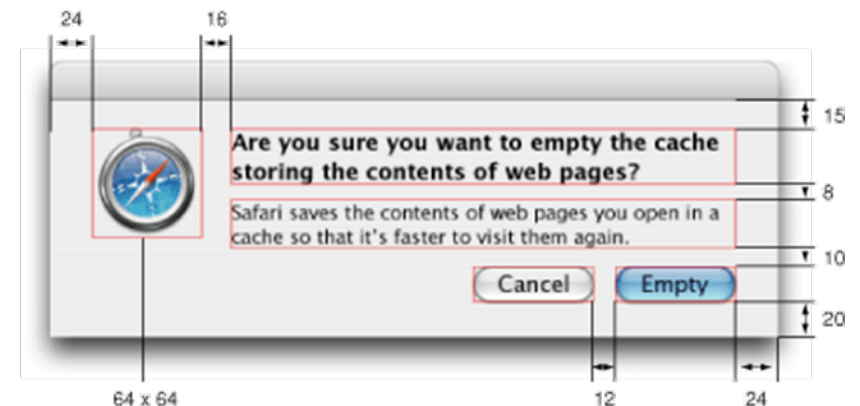
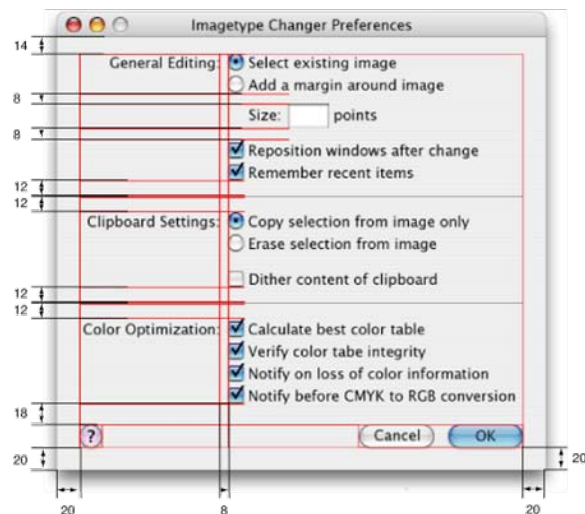
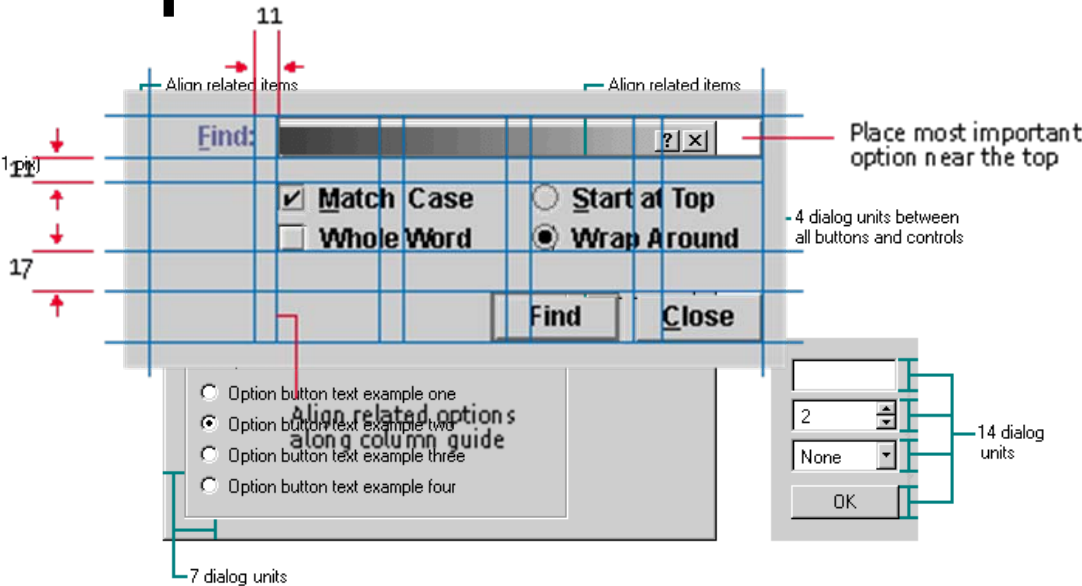
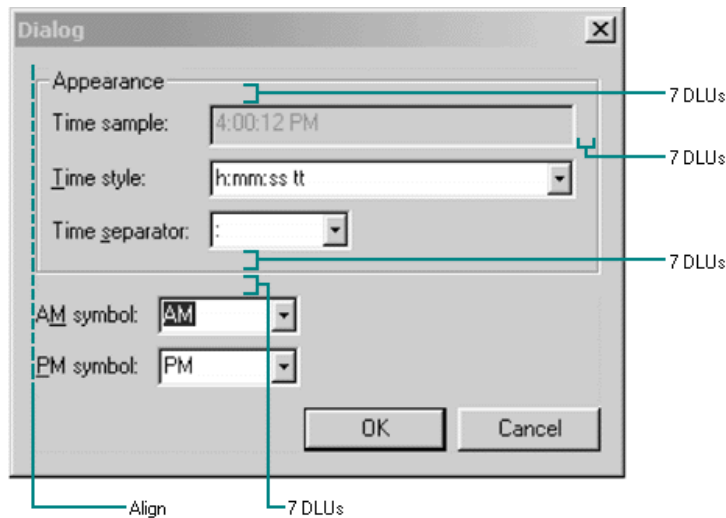
Alignment




- Careful alignment makes it possible to scan and read faster
(Java Look and Feel Design Guidelines)
- Alignment can make the GUI look neat and well-balanced





Ärendet: 01	Ank.dat	980806
	Beslut/Förslagsdat	
<input type="checkbox"/> Överklagat	Sista svarsdatum	980816
<input type="checkbox"/> Förslag	Sista bet.dat	980830




Ärendet: 01	Ank.dat	980806
<input type="checkbox"/> Överklagat	Beslut/Förslagsdat	
Beslutsid	Sista svarsdatum	980816
<input type="checkbox"/> Förslag	Sista bet.dat	980830





Examples







Today


Frank Ludolph
-

March 1997

	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28	
9 am						9 am
	1:1 w/ Harry	HI meeting Awakenings				
10 am	1:1 w/ Fowler	Drawer I-Team Bldg: CUP01 2n		Milind's staff Blues Brothers		10 am
11 am		Switcher w/ Hinkm				11 am
12 pm						12 pm
1 pm				JavaONE pre-sho Blue Moon, Lunch		1 pm
2 pm				Plan Away Awakening	JavaHI Staff Blue Jeans	2 pm
3 pm		IC Staff Bldg: CUP01 2n Room: Blue Sue				3 pm
4 pm	Java Couchfest Blue Moon Cafe	Binder - Sara	Speech Coach Annie Hall			4 pm
5 pm						5 pm
					Music lesson	

Date: Mar 28, 1997

Start: 1:00 pm

End: 2:30 pm

JavaHI Staff
Blue Jeans

Occurs: Weekly Forever

Others see: Time & Text

☐ **Reminder:** 15 minutes before

Grouping

5100 Sladdlös Borr/skruvdr Ferm 960K 12 10mm	449,00
5110 Sladdlös Borr/skruvdr Ferm FDK1200K 12 10mm	579,00
5120 Slagborrmaskin Ferm KB 10/500 500 10mm	289,00
5130 Slagborrmaskin Ferm PD 13/650 650 13mm	389,00
5017 Slagborrmaskin Eltos B2-160E 650 13mm	665,00

Art	Bormaskin	Modell	Volt/W	Chuck	Pris kr
5100	Sladdlös/skruvdr	Ferm 960K	12	10	449
5110	Sladdlös/skruvdr	Ferm FDK1200K	12	10	579
5120	Slagborr	Ferm KB 10/500	500	10	289
5130	Slagborr	Ferm PD 13/650	650	13	389
5017	Slagborr	Eltos B2-160E	650	13	665

Frank Ludolph

March 1997

	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28
9 am	1:1 w/ Harry	HI meeting Awakenings			
10 am	1:1 w/ Fowler	Drawer I-Team Bldg: CUP01 2n		Milind's staff Blues Brothers	
11 am		Switcher w/ Hinkm			
12 pm				JavaONE pre-sho Blue Moon, Lunch	
1 pm				Plan Away Awakening	JavaHI Staff Blue Jeans
2 pm		IC Staff Bldg: CUP01 2n Room: Blue Sue			
3 pm		Binder - Sara	Speech Coach Annie Hall		
4 pm	Java Couchfest Blue Moon Cafe				
5 pm					Music lesson

Date: Mar 28, 1997

Start: 1:00 pm

End: 2:30 pm

Occurs: Weekly

Others see: Time & Text

☐ **Reminder:** 5 minutes before

**JavaHI Staff
Blue Jeans**