

“8 Golden Rules of Interface Design”

Shneiderman – from text

- In general, sets of principles are in close agreement
 - E.g., Shneiderman, Nielsen, and Togazzini
- **Schneiderman’s 8 rules (principles):**
 1. Strive for consistency
 2. Cater to universal usability
 3. Offer informative feedback
 4. Design dialogs to yield closure
 5. Prevent errors
 6. Permit easy reversal of actions
 7. Support internal locus of control
 8. Reduce short term memory

Nielsen's Guidelines (better, Principles) for Usable Design - Overview

- **Meet expectations**
 - 1. Match between system and the real world
 - 2. Consistency and standards
 - 3. Help and documentation
- **User is the boss**
 - 4. User control and freedom
 - 5. Visibility of system status
 - 6. Flexibility and efficiency of use
- **Handle errors**
 - 7. Error prevention
 - 8. Recognition, rather than recall
 - 9. Help users recognize, diagnose, and recover from errors
- **Keep it simple**
 - 10. Aesthetic and minimalist design

1. Match the Real World

- The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
- Use common words, not “techie jargon”
 - Use domain-specific terms where appropriate
- Don't put limits on user-defined names
- Allow aliases/synonyms in command languages
- Metaphors are useful but may mislead



2. Consistency and Standards

- Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.
- **“Principle of Least Surprise”**
Similar things should look and act similar
Different things should look different
- **Other properties**
 - Size, location, color, wording, ordering, ...
- **Command/argument order**
 - Prefix vs. postfix
- **Follow platform standards**
- **Consistency**
 - Internal, external, metaphorical (or not)

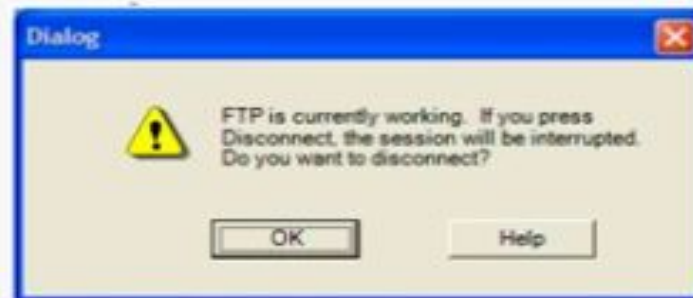


3. Help and Documentation

- Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.
 - Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.
- **Users don't read manuals**
 - Prefer to spend time working toward task goals, not learning about system
- **But manuals and online help are vital**
 - Usually when user is frustrated or in crisis
- **Help should be:**
 - Searchable
 - Context-sensitive
 - Task-oriented
 - Concrete
 - Short

4. User Control and Freedom

- Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.
- **Provide undo**
- **Long operations should be cancelable**
- **All dialogs should have a cancel button**
 - Users should be able to explore interface without fear of being trapped in a corner
 - Undo supports exploration



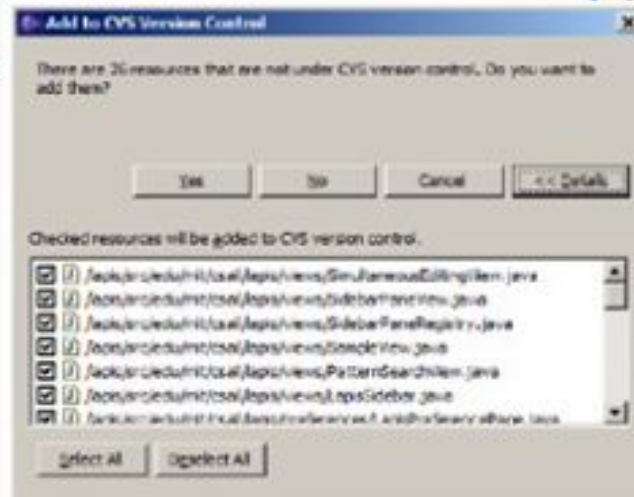
5. Visibility of System Status

- The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
- **Keep user informed of system state - Feedback**
 - Cursor change
 - Selection highlight
 - Status bar
 - Don't overdo it...
- **Response time**
 - < 0.1 s: seems instantaneous
 - 0.1-1 s: user notices, but no feedback needed
 - 1-5 s: display busy cursor
 - > 1-5 s: display progress bar



6. Flexibility and Efficiency - Shortcuts

- Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions
- **Provide easily-learned shortcuts for frequent operations**
 - Keyboard accelerators
 - Command abbreviations
 - Styles
 - Bookmarks
 - History



7. Error Prevention

- Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.
- **Selection is less error-prone than typing**
 - But don't go overboard...



- Disable illegal commands
- **Error Types (3) follow (supplementary):**

8. Recognition, Not Recall

– Minimize Memory Load

- Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
- **Use menus, not command languages**
- **Use combo boxes, not textboxes**
- **Use generic commands where possible**
 - E.g., Open, Save, Copy, Paste
- **All needed information should be visible**

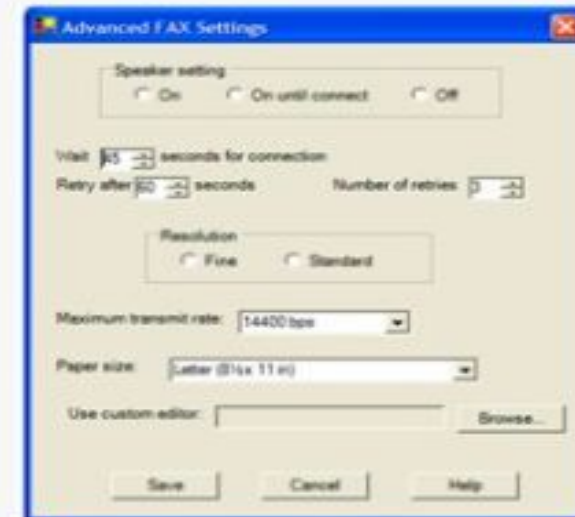


9. Help users recognize, diagnose, and recover from errors

- Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
- **Be precise - restate user's input**
 - Not “Cannot open file”, but “Cannot open file named paper.doc”
- **Give constructive help**
 - why error occurred and how to fix it
- **Message should be polite and nonblaming**
 - Not “fatal error”, not “illegal”
- **Hide technical details until requested**
 - E.g., “address referenced ...”

10. Aesthetic and Minimalist Design

- Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.
- **“Simplicity”** ..More later
- **“Less is More”**
 - Omit extraneous info, graphics, features
- **Good graphic design**
 - Few, well-chosen colors and fonts
 - Group with whitespace
 - Align controls sensibly
- **Use concise language**
 - Choose labels carefully





Account ▾

My Scratchpad 2 ▾

My Trips

Support ▾

Español

Home Bundle Deals Hotels Cars **Flights** Cruises Things to Do More ▾

Review your trip

✓ Nice Job! You picked one of our best value flights.
Book now so you don't miss out on this price!

Sat, Jul 11 Departure to Istanbul



Best Value

1:50pm
SFO



3:45pm
IST

15h 55m, 1 stop
AMS
Arrives Sun, Jul 12

Show flight details ▾ Satisfactory Flight (6.7 out of 10)

Fri, Aug 14 Return to San Francisco



Best Value

12:15pm
IST



10:03pm
SFO

19h 48m, 1 stop
JFK

Show flight details ▾ Good Flight (7.1 out of 10)

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Trip Summary

▲ Departure: Arrives on Jul 12, 2015

1 Ticket: Roundtrip

Traveler 1: Adult ✕	\$1,799.24
Flight	\$1,356.00
Taxes & Fees	\$443.24
Expedia Booking Fee	\$0.00

Trip Total: **\$1,799.24**
Only 2 tickets left at this price!

Rates are quoted in US dollars

✓ Best Price Guarantee ⓘ

Important Flight Information

- Tickets are **nonrefundable** 24 hours after booking and **nontransferable**. A fee of \$300.00 per ticket is charged for itinerary changes. Name changes are not allowed.
- Estimated fees for baggage and other optional services.

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as a statement credit on your purchase of \$100 or more with the NEW Expedia[®]+ Voyager Card from Citi



Example

Shopping Cart Contents



Welcome, Ben Bitdiddle.

You have 2 item(s) in your shopping cart.

To remove an item, check "Remove" box & click "Recalculate".
Shipping Calculator below.

There is a problem with your order.

Product	Description	Quantity	UnitPrice	ExtPrice
	323022 Pinnacle Clean Plus Version 4.0 Retail *** (Free 2nd Day)*** <input type="checkbox"/> Remove	<input type="text" value="1"/>	\$61.00	\$61.00
	80098-21 Corsair VS1GBKIT400 1GB Kit DDR400 PC3200 Value Select Memory Retail (out of stock) <input type="button" value="Remove Hardware"/>	<input type="text" value="1"/>	\$179.00	\$179.00

Subtotal: \$240.00

For more information about tax, please [click here](#).

Shipping Promotion details. Please read.

Note: Discount will be applied during check out

Coupon Code:

Ship to Zip Code:

Have not made up your mind? Save all the items in your shopping cart!

Cart Title:

Return to old shopping cart:

Cart Name:

Example

Shopping Cart Contents

Welcome, Ben Biddle.

You have 2 item(s) in your shopping cart.
To remove an item, check "Remove" box & click "Recalculate".
Shipping Calculator below.

There is a problem with your order.

Product	Description	Quantity	UnitPrice	ExtPrice
	323022 Pinnacle Clean Plus Version 4.0 Retail *** (Free 2nd Day)*** <input type="checkbox"/> Remove	<input type="text"/>	\$61.00	\$61.00
	80098-21 Corsair V51GBx4 1GB Kit DDR400 PC3200 Value Select Memory Retail (out of stock) <input type="checkbox"/> Remove Hardware	<input type="text"/>	\$179.00	\$179.00

Subtotal: \$240.00

For more information about tax, please [click here](#).

[Shipping Promotion details](#). Please read.

Note: Discount will be applied during check out

Coupon Code:

Ship to Zip Code:

Have not made up your mind? Save all the items in your shopping cart

Cart Title:

Return to old shopping cart

Cart Name:

- Shopping cart icon not balanced with its background whitespace (Aesthetic & minimalist design)
- Good: user is greeted by name (Visibility of system status)
- Red is used both for help messages and for error messages (Consistency, Match real world)
- "There is a problem with your order", but no explanation or suggestions for resolution (Error reporting)
- ExtPrice and UnitPrice are strange labels (Match real world)
- Remove Hardware button inconsistent with Remove checkbox (Consistency)

Example

Shopping Cart Contents

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You have 2 item(s) in your shopping cart.
To remove an item, check "Remove" box & click "Recalculate".
Shipping Calculator below.

There is a problem with your order.

Product	Description	Quantity	Unit Price	Ext Price
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	80058-21 Corsair VS1GBKIT400 1GB kit DDR400 PC3200 Value Select Memory Retail (out of stock) <input type="checkbox"/> Remove Hardware	<input type="text" value="1"/>	\$179.00	\$179.00

Subtotal: \$240.00

For more information about tax, please [click here](#).

Shipping Promotion details. Please read.

Note: Discount will be applied during check out

Coupon Code:

Ship to Zip Code:

Have not made up your mind? Save all the items in your shopping cart

Cart Title:

Return to old shopping cart

Cart Name:

- "Click here" is unnecessary (Aesthetic & minimalist design)
- No "Continue shopping" button (User control & freedom)
- Recalculate is very close to Clear Cart (Error prevention)
- "Check Out" button doesn't look like other buttons (Consistency, both internal & external)
- Uses "Cart Title" and "Cart Name" for the same concept (Consistency)
- Must recall and type in cart title to load (Recognition not recall, Error prevention, Flexibility & efficiency)