good apps & bad apps
Field Trip Permission Form

Dear Parents:

Ms. Frizzle will again be taking her second grade class on an exciting field trip. Please sign and return the permission slip below.

Thank you!

Yes, I give permission for my child to go on the second grade “Touch and Feel” trip on Friday February 13th to the NastyCo Nuclear Dump. I understood that my child may encounter the normal risks of childhood play, including grazed knees, hurt feelings and exposure to toxic waste.

Count Olaf

February 11, 2013

Parents signature

Date
Parents:

Frizzle will again be taking her second grade class on a field trip. Please sign and return the permission form below.

how to add a signature in acrobat
-- open document in acrobat
-- Tools–>Advanced Editing–>Touchup Object Tool
-- right click at desired point | Place Image...
then select jpg

how to add date
-- Tools–>Typewriter
i’m not alone

from http://amplicate.com
how to make an app usable?
simplify and humanize?
not always welcome

It looks like you’re writing a letter.
Would you like help?
- Get help with writing the letter
- Just type the letter without help
- Don’t show me this tip again

Clippy
2003-2008
RIP
affordances

James Gibson (1977): “action possibilities” latent in environment
Donald Norman (1988): action possibilities that are perceivable
Donald Norman

*The Design of Everyday Things*
a door with good affordances

“affords pushing”

“affords pulling”
unhappy doors

push or pull?

door with user manual
Simple Alarm Clock

The early bird (A) arrives and catches worm (B), pulling string (C) and shooting off pistol (D). Bullet (E) busts balloon (F), dropping brick (G) on bulb (H) of atomizer (I) and shooting perfume (J) on sponge (K) - As sponge gains in weight, it lowers itself and pulls string (L), raising end of board (M) - Cannon ball (N) drops on nose of sleeping gentleman - String tied to cannon ball releases cork (O) of vacuum bottle (P) and ice water falls on sleeper's face to assist the cannon ball in its good work.
conceptual models

to use a complex application
we imagine what’s inside
we form structures in our mind
we connect actions to structural changes

“abstract affordances”
an example
cropping in adobe photoshop
look at image size

crop entire image without aspect ratio

note effect on image size

repeat with aspect ratio

now enter resolution
cropping in adobe lightroom
concepts
hypothesis

the quality of the conceptual model is the key factor that determines how usable the app will be how easy it is to build and maintain how reliable it will be
Conceptual integrity is the most important consideration in system design.

—1975

I am more convinced than ever. Conceptual integrity is central to product quality.

—1995
what’s a concept?

a set or primitive representations
- Char
- Date
- Keyword
- Tweet
- GPSCoord
- URL

names referring to real world objects
- SSN
- ISBN
- CallNo
- Address

a set of structures
- Book: 
  `<BOOK, isbn: BOOK -> ISBN, callno: BOOK -> CallNo>
- Member: 
  `<MEMBER, ssn: MEMBER -> SSN, address: MEMBER -> Address>
- Inventory: 
  `<shelved: set BOOK, lent: MEMBER -> BOOK>

a set of events
- join: 
  `<JOIN, ssn: JOIN -> SSN, addr: JOIN -> Address>
- lend: 
  `<LEND, isbn: LEND -> ISBN, ssn: LEND -> SSN>`
subconcepts

C’ is a subconcept of C iff
fields(C’) ⊇ fields(C) and explanation of C’ involves C

Book <BOOK, isbn: BOOK -> ISBN, callno: BOOK -> CallNo>

ShortLoanBook <..., SHORT: set BOOK, maxloan: SHORT -> Period>

Book ←----- ShortLoanBook

may have no extra fields

Book ←----- NonCirculatingBook
dependency

C’ *depends on* C iff
C’ cannot exist without C and explanation of C’ involves C

may arise because:
elements of C’ refer to elements of C

<table>
<thead>
<tr>
<th>Book</th>
<th>&lt;BOOK, isbn: BOOK -&gt; ISBN, callno: BOOK -&gt; CallNo&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td>&lt;MEMBER, ssn: MEMBER -&gt; SSN, address: MEMBER -&gt; Address&gt;</td>
</tr>
<tr>
<td>Inventory</td>
<td>&lt;shelved: set BOOK, lent: MEMBER -&gt; BOOK&gt;</td>
</tr>
</tbody>
</table>
**dependency**

C’ *depends on* C iff
C’ cannot exist without C and explanation of C’ involves C
depends

may arise because:
occurrence of event in C’ affects or affected by state in C

- **lend** `<LEND, isbn: LEND -> ISBN, ssn: LEND -> SSN>`
- **Inventory** `<shelved: set BOOK, lent: MEMBER -> BOOK>`
A weak dependency is a relationship where C’ weakly depends on C iff an explanation of C’ involves C but C’ can exist without C.
A feature is a set of concepts that
(a) has useful function
(b) is closed under dependence
where do concepts come from?

<table>
<thead>
<tr>
<th>domain concepts: exist in problem domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>photo, movie, song</td>
</tr>
<tr>
<td>direct flight, code share</td>
</tr>
<tr>
<td>401k, CDO, commission</td>
</tr>
<tr>
<td>typeface, ligature</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>analogic concepts: based on known notions</th>
</tr>
</thead>
<tbody>
<tr>
<td>blog post, email, tweet</td>
</tr>
<tr>
<td>desktop, folder, file</td>
</tr>
<tr>
<td>layer, mask, stacking</td>
</tr>
<tr>
<td>cart, order, item</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>synthetic concepts: invented for software</th>
</tr>
</thead>
<tbody>
<tr>
<td>relative reference</td>
</tr>
<tr>
<td>hypertext link</td>
</tr>
<tr>
<td>tag, keyword</td>
</tr>
<tr>
<td>select, cut buffer</td>
</tr>
</tbody>
</table>

confused concepts: a big problem!
direct flights, CSS pixel dimensions

some concepts are key enablers
relative references, paragraph styles
design criteria
orthogonality
› concepts are independent
› concepts are coupled in overlapping features

generality
› concepts are rich enough to support distinct features
› extra concepts added instead of generalizing existing ones

completeness
› enough concepts to support existing features
› crucial concepts are missing, features don’t fully work

consistency
› subconcepts are treated uniformly
› subconcepts have unexpectedly different features
orthogonality apple keynote

skip slide
make parent
make parent and skip
orthogonality apple keynote

skip

nest

Skipping

Nesting

skip

nest

Skipping

Nesting

skip

nest

 Skipping

Nesting

skip

nest

 Skipping

Nesting
orthogonality faucets

coupled

uncoupled
selecting a message outside the conversation causes all messages in the conversation to be selected
orthogonality

HTTP methods

HTTP GET: no form data

HTTP POST: form data
orthogonality HTTP methods
orthogonality cropping in Ps and Lr
generality apple keynote
generality gmail

Mon, 07/29/2013 - 12:17 | Chuck Gray
in LibraryPoint Blog Tech Tutorials Teen Blog Tech Answers Science and Technology Self-Help and Instructional

Are you a Gmail user? Did you wake up a week or two ago to find that your new messages were now being automatically organized by Gmail into tabs of different, pre-determined categories? And, did you think, like me, that they were really ugly, stupid, and unnecessary? Here’s a quick tip on how to rid yourself of them!

Everything You Need to Know About Gmail's New, Super-Confusing Layout
generality apple mail
generality

apple mail

Rule

Constraint

Metadata

SearchCriterion

SearchableConstraint

Msg
generality programming languages

JavaScript holes
undefined, null and ReferenceError

Java
primitive & boxed types

Ruby closures
lambda, proc and block
trash is just like any other folder...
if you delete an old file by mistake, how do you find it?
can’t search by deletion date
completeness apple OS X trash
completeness adobe indesign

so character style can only italicize some typefaces
completeness (a note)

completeness means
existing features must have enough concepts

completeness does not mean
enough concepts for additional features

examples
Git has no concept of directory
Keynote and Powerpoint have no styles
Private consultants warned of risks before HealthCare.gov’s Oct. 1 launch

By Juliet Eilperin and Sandhya Somashekhar, Published: November 18
2 Highlight a custom settings bank and press **MENU/OK** to select. Adjust the following as desired and press **DISP/BACK** when adjustments are complete: ISO, DYNAMIC RANGE, FILM SIMULATION, WB WHITE BALANCE, COLOR, SHARPNESS, HIGHLIGHT TONE, SHADOW TONE, NOISE REDUCTION, and **RESET**.

1.) The X100's Custom Settings memories are useless. Unlike **Canon's brilliant C1, C2 and C3 Total Recall modes**, the X100's EDIT/SAVE CUSTOM SETTINGS function only stores and recalls a few of the image parameters like sharpness and white balance, but not Auto ISO, image size, AF mode, flash or anything else. For these to be useful, they need to save **everything**, as Canon does. Even the LCD brightness needs to be saved and recalled, for instance, on my Canons, I use different presets for shooting outdoors or indoors.
consistency fuji x100s
The Fn Button

The role played by the \textbf{Fn} button can be selected using the \textbf{Fn \ F}n \textbf{BUTTON} option in the shooting menu (\textit{\textbf{F}n 74}). The options available include multiple exposure (\textit{\textbf{F}n 57}), depth-of-field preview (\textit{\textbf{F}n 38}), sensitivity (\textit{\textbf{F}n 44}), the self-timer (\textit{\textbf{F}n 53}), image size (\textit{\textbf{F}n 72}), image quality (\textit{\textbf{F}n 73}), dynamic range (\textit{\textbf{F}n 73}), film simulation (\textit{\textbf{F}n 55}), ND filter (\textit{\textbf{F}n 65}), AF mode (\textit{\textbf{F}n 77}), custom settings (\textit{\textbf{F}n 70}), movie recording (\textit{\textbf{F}n 32}), advanced filter (\textit{\textbf{F}n 77}), RAW/JPEG toggle (\textit{\textbf{F}n 63}), and wide conversion lens (\textit{\textbf{F}n 108}).

\ding{53} The \textbf{Fn \ F}n \textbf{BUTTON} menu can also be displayed by pressing and holding the \textbf{Fn} button.
completeness fuji x100s

FunctionButton
  ↓
  Function
    ↓
  SetParam
      ↓
      set ISO to 400

FunctionButton
  ↓
  Function
    ↓
  FunctionGroup
    ↓
  FunctionItem
    ↓
    set ISO to 400
analyzing git
with Santiago Perez De Rosso
Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.

Learn Git in your browser for free with **Try Git**.
tracking & untracking

2.2.2 Tracking New Files

In order to begin tracking a new file, you use the command `git add`. To begin tracking the README file, you can run this:

```
$ git add README
```

If you run your status command again, you can see that your README file is now tracked and staged:

```
$ git status
# On branch master
# Changes to be committed:
#   (use "git reset HEAD <file>..." to unstage)
#
# new file:   README
#
```

but if file is committed, reset will NOT untrack it to untrack in that case, update-index to make it “assumed unchanged” after that, reset will TRACK the file
untracking in git

- reset
- add
- commit
- Tracked
- WorkingDir
- Index
- LocalRepo
- File
- Path
- Content
Gitless: a version control system

About Gitless

Gitless is an experimental version control system built on top of Git. We are exploring what conceptual integrity means with the goal of building a rigorous foundation for concept design. We encourage you to try out the current version of Gitless and send feedback. Keep in mind that Gitless might change in non-retrocompatible ways (so don't script around it just yet) as we seek to answer the fundamental question that drives this software project: if we were to challenge the very core concepts in version control systems, what would version control look like?

In its current state, Gitless is a distributed version control system that supports all of the most commonly used Git features. We are missing some things like submodules and cherry-picking but these are coming soon (maybe; only if we don't find a superior, more robust way of achieving the same goal). Either way, since Gitless is implemented on top of Git (could be considered what Git pros call a 'porcelain' of Git) you can always fallback to the 'git' command to finish a task.

Install

You need to have Python 2.7 and Git 1.7.12+. The easiest way to install Gitless is through the Python Package Index (pip):

pip install gitless

For more detailed instructions see the README file.
untracking in gitless

- untrack
- track
- commit

- Tracked
- WorkingDir
- LocalRepo

- File
- Path
- Content
postscript: acrobat
orthogonality

Adobe Acrobat

Sign Document

Certify
With Visible Signature
Without Visible Signature

Save as Certified Document

You are about to create a certified document. By certifying a document, you vouch for its contents and enable recipients to verify that the document came from you. Certifying a document also adds tamper-resistance to detect and prevent unwanted changes.

To certify a document, you need to have a digital ID. If you intend to distribute this document to a large audience, it is suggested that you use a digital ID from one of Adobe's partners. This will allow any recipient with Acrobat or Adobe Reader to automatically verify the certification.

Get Digital ID from Adobe Partner...

Don't show again
Help
Cancel
OK
completeness apple preview
conclusion
idioms concept state structure

idea: classify idioms; invariants expose tricky design problems

all s: Style, p: Property | some s.rules | r.prop = p
next steps

analyzing diagrams
› do graph properties (eg cycles) have design implications?

new case studies
› Gmail, CSS and DropBox underway

evaluation
› is Gitless easy to use?

concept to code dependences
› does a concept dependence imply a code dependence?
related work

on concept description
› *Analysis Patterns* (Fowler, 1997)
› *Data Model Patterns* (Hay, 2011)
› *Conceptual Models* (Henderson & Johnson, 2011)

on conceptual integrity
› “orthogonality, propriety & generality” (Brooks, 1997)

on dependences
› the uses relation (Parnas, 1978)
› Design Rules (Baldwin & Clark, 2000)