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.

________________________________________
Parents signature

________________________________________
Date
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.

__________________________
Parents signature

__________________________
Date
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.

[Signature]

Parents signature

Date

February 11, 2013
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.

______________________________
Parents signature  Date
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.

________________________________________________________________________

Parents signature Date
Parents:

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

Thank you!

I give permission for my child to go on the second grade "Sight and Feel" trip on Friday February 13th to the NastyCo Bear Dump. I understood that my child may encounter the usual risks of childhood play, including grazed knees, hurt feelings and exposure to toxic waste.

________________________________________
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.

Thank you!

I give permission for my child to go on the "Sight and Feel" trip on Friday February 13th to the Bear Dump. I understood that my child may encounter some risks of childhood play, including grazed knees and exposure to toxic waste.

Parents signature

Date
Parents:

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

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
i’m not alone

from http://amplicate.com
i’m not alone

from http://amplicate.com
i’m not alone

from http://amplicate.com
how to make an app usable?
simplify and humanize?
simplify and humanize?
not always welcome
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
James Gibson (1977): “action possibilities” latent in environment
affordances

James Gibson (1977): “action possibilities” latent in environment
Donald Norman (1988): action possibilities that are perceivable
THE DESIGN OF EVERYDAY THINGS

previously published as THE PSYCHOLOGY OF EVERYDAY THINGS

DONALD A. NORMAN

Donald Norman
a door with good affordances
a door with good affordances

“affords pushing”
a door with good affordances

“affords pushing”

“affords pulling”
unhappy doors
unhappy doors

push or pull?
unhappy doors

push or pull?

door with user manual
unhappy doors

push or pull?

door with user manual
unhappy doors

push or pull?

door with user manual
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.
New Alarm

Alarm Time: 6:00 AM

Alarm Date:
- One time alarm 4/16/2013
- Repeating alarm

Enable Alarm
Delete Cancel OK
Invalid alarm time
Please select a date and time in the future.

Alarm Date:

- One time alarm
  4/16/2013
- Repeating alarm

Enable Alarm
Delete
Cancel
OK
conceptual models
conceptual models

to use a complex application
we imagine what’s inside
we form structures in our mind
we connect actions to structural changes
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
cropping in adobe photoshop
cropping in adobe photoshop
(demo)

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
cropping in adobe lightroom
concepts
User’s model

Interface

code

interface

user’s model
code

interface

conceptual model

user's model
hypothesis
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
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?
what’s a concept?

a set or primitive representations
what’s a concept?

a set or primitive representations

Char
what's a concept?

a set or primitive representations

| Char | Date |
what’s a concept?

a set or primitive representations

Char Date Keyword
What's a concept?

A set or primitive representations

| Char | Date | Keyword | Tweet |
what's a concept?

a set or primitive representations

Char | Date | Keyword | Tweet | GPS Coord
what’s a concept?

a set or primitive representations

Char  Date  Keyword  Tweet  GPSCoord  URL
what's a concept?

a set or primitive representations

Char  Date  Keyword  Tweet  GPSCoord  URL

names referring to real world objects
what’s a concept?

a set or primitive representations
Char  Date  Keyword  Tweet  GPSCoord  URL

names referring to real world objects
SSN
what’s a concept?

a set or primitive representations

Char Date Keyword Tweet GPSCoord URL

names referring to real world objects

SSN ISBN
what’s a concept?

a set or primitive representations

Char | Date | Keyword | Tweet | GPSCoord | URL

names referring to real world objects

SSN | ISBN | CallNo
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
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
what’s a concept?

a set or primitive representations

Char | Date | Keyword | Tweet | GPS Coord | URL

names referring to real world objects

SSN | ISBN | CallNo | Address

a set of structures

Book <BOOK, isbn: BOOK -> ISBN, callno: BOOK -> CallNo>
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>
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>
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
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> |
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
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>
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
**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’ \textit{depends on} C iff
C’ cannot exist without C and explanation of C’ involves C
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
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

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

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

C' \textit{depends on} C iff
C' cannot exist without C and explanation of C' involves C
dependency

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

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

C' depends on C iff
C' cannot exist without C and explanation of C' involves C

may arise because:
ocurrence 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>
dependence

C' depends on C iff
C' cannot exist without C and explanation of C' involves C

may arise because:
ocurrence 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>
weak dependency

C’ weakly depends on C iff explanation of C’ involves C but C’ can exist without C
weak dependency

C' *weakly depends on* C iff 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
a feature is a set of concepts that
(a) has useful function
(b) is closed under dependence
a feature is a set of concepts that
(a) has useful function
(b) is closed under dependence
a feature is a set of concepts that
(a) has useful function
(b) is closed under dependence
a feature is a set of concepts that
(a) has useful function
(b) is closed under dependence
where do concepts come from?
**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>
where do concepts come from?

<table>
<thead>
<tr>
<th>domain concepts: exist in problem domain</th>
<th>analogic concepts: based on known notions</th>
</tr>
</thead>
<tbody>
<tr>
<td>photo, movie, song</td>
<td>blog post, email, tweet</td>
</tr>
<tr>
<td>direct flight, code share</td>
<td>desktop, folder, file</td>
</tr>
<tr>
<td>401k, CDO, commission</td>
<td>layer, mask, stacking</td>
</tr>
<tr>
<td>typeface, ligature</td>
<td>cart, order, item</td>
</tr>
</tbody>
</table>
where do concepts come from?

<table>
<thead>
<tr>
<th>domain concepts: exist in problem domain</th>
<th>analogic concepts: based on known notions</th>
<th>synthetic concepts: invented for software</th>
</tr>
</thead>
<tbody>
<tr>
<td>photo, movie, song</td>
<td>blog post, email, tweet</td>
<td>relative reference</td>
</tr>
<tr>
<td>direct flight, code share</td>
<td>desktop, folder, file</td>
<td>hypertext link</td>
</tr>
<tr>
<td>401k, CDO, commission</td>
<td>layer, mask, stacking</td>
<td>tag, keyword</td>
</tr>
<tr>
<td>typeface, ligature</td>
<td>cart, order, item</td>
<td>select, cut buffer</td>
</tr>
</tbody>
</table>
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
where do concepts come from?

<table>
<thead>
<tr>
<th>domain concepts: exist in problem domain</th>
<th>analogic concepts: based on known notions</th>
<th>synthetic concepts: invented for software</th>
</tr>
</thead>
<tbody>
<tr>
<td>photo, movie, song</td>
<td>blog post, email, tweet</td>
<td>relative reference</td>
</tr>
<tr>
<td>direct flight, code share</td>
<td>desktop, folder, file</td>
<td>hypertext link</td>
</tr>
<tr>
<td>401k, CDO, commission</td>
<td>layer, mask, stacking</td>
<td>tag, keyword</td>
</tr>
<tr>
<td>typeface, ligature</td>
<td>cart, order, item</td>
<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
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
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
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
orthogonality apple keynote

skip slide

make parent
orthogonality

apple keynote

skip slide

make parent

make parent and skip
orthogonality apple keynote
skip

Skipping

nest

Nesting

Slide

orthogonality apple keynote
orthogonality apple keynote

Skipping

Nesting

Slide

skip

nest

skipping

nesting

Slide

skip

nest

skipping

nesting

Slide
orthogonality faucets
orthogonality faucets
coupled
orthogonality faucets

coupled

uncoupled
orthogonality faucets

coupled

uncoupled

adjTemp

adjFlow

Temp

LeftTap

RightTap

Flow
orthogonality faucets

coupled

uncoupled
orthogonality apple mail

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

```
select          organize
|
|
Selection        Conversation

Msg
```
orthogonality HTTP methods
orthogonality HTTP methods

HTTP GET: no form data
orthogonality HTTP methods

HTTP GET: no form data

HTTP POST: form data
orthogonality HTTP methods
orthogonality HTTP methods
orthogonality HTTP methods

```
createRequest

setMethod
Method

setQS
QueryString

setBody
Body

HTTPRequest
```
orthogonality cropping in Ps and Lr
orthogonality cropping in Ps and Lr
orthogonality cropping in Ps and Lr
generality apple keynote
generality apple keynote
generality apple keynote
generality apple keynote
generality gmail
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!
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!
generality gmail

setCategory

viewByCategory

Category

setLabel

viewByLabel

Label

autoClassify

Message

setLabel

setCategory

-->

SystemLabel
generality apple mail
generality apple mail
generality programming languages
generality programming languages

JavaScript holes
undefined, null and ReferenceError
generality programming languages

JavaScript holes
undefined, null and ReferenceError

Java
primitive & boxed types
generality programming languages

JavaScript holes
undefined, null and ReferenceError

Java
primitive & boxed types

Ruby closures
lambda, proc and block
completeness apple OS X trash
trash is just like any other folder...
trash is just like any other folder...
if you delete an old file by mistake, how do you find it?
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 apple OS X trash
completeness apple OS X trash

delete

DelDate

FSObject

Dir

File

emptyTrash

Trash
completeness adobe indesign
completeness adobe indesign
completeness adobe indesign

so character style can only italicize some typefaces
adobe indesign: face & style

Character Style Options

Style Name: Emphasis

Basic Character Formats
- Font Family: Magma
- Font Style: LightItalic
- Size: [Slider]
- Leading: [Slider]
- Kerning: [Slider]
- Tracking: [Slider]
- Case: [Slider]

- Underline
- Ligatures
- No Break
- Strikethrough

Preview
Cancel  OK
completeness adobe indesign

CharStyle

FontMods
12pt, tracked

Font

Face
Magma

StyleTransform

FontStyle
Light

italics
apply italics

Light ↔ LightItalics
completeness adobe indesign
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
consistency apple preview
Private consultants warned of risks before HealthCare.gov’s Oct. 1 launch

By Juliet Eilperin and Sandhya Somashekhar, Published: November 18
Private consultants
warned of risks before
HealthCare.gov’s Oct. 1
launch

By Juliet Eilperin and Sandhya
Somashekar, Published: November 18
Private consultants warned of risks before HealthCare.gov’s Oct. 1 launch

By Juliet Eilperin and Sandhya Somashekhar, Published: November 18
Private consultants warned of risks before HealthCare.gov’s Oct. 1 launch

By Juliet Eilperin and Sandhya Somashekhar, Published: November 18
consistency fuji x100s

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 SETTING 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
completeness **fuji x100s**

**The Fn Button**

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

The **Fn** **BUTTON** menu can also be displayed by pressing and holding the **Fn** button.
completeness fuji x100s
FunctionButton

Function

SetParam

set ISO to 400

set ISO
completeness fuji x100s
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](https://try.github.io/).
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**.
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
```

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
#
```
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
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”
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
**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
postscript: acrobat
orthogonality acrobat
orthogonality acrobat
orthogonality  acrobat
completeness apple preview
completeness apple preview
completeness apple preview
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
related work

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