Notes on Control

GOTO Zurich 2013


ShiftSpace Log
An open source layer above any webpage
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ShiftSpace (pronounced: ⇧) is an open source browser plugin for collaboratively annotating, editing and shifting the web.
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Hack
Community
Contact
Latest Blog Posts
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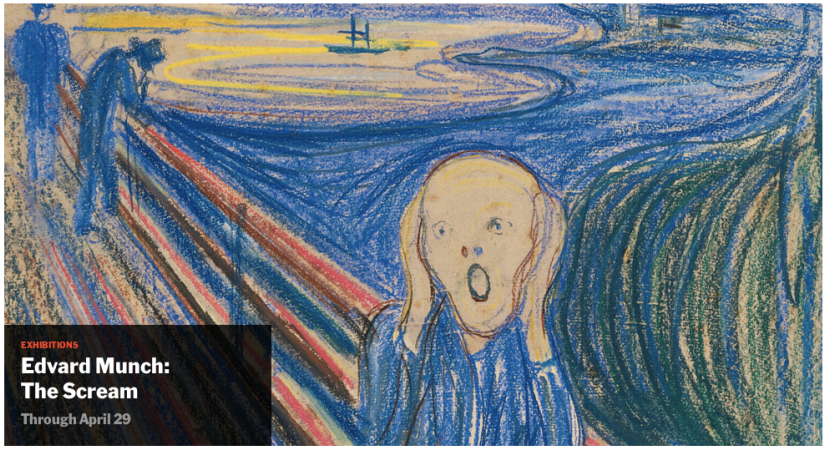
Search
Blog Posts Calendar
Create and Share 'Shifts'
Build New Metaverb 'Spaces'

Share Log in



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1:59 am **The Caucus Click: Obama Speaks in Chicago**

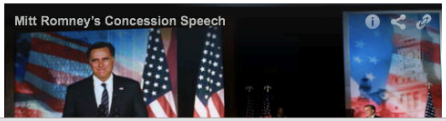
Doug Mills

Doug Mills/The New York Times

President Obama greeted the crowd at his election night rally in Chicago with his wife, Michelle, and their daughters, Malia and Sasha.

1:00 am **Romney Concedes**

Michael D. Shear

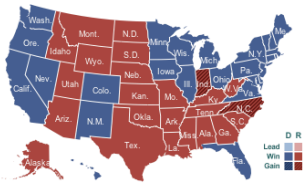


President » Updated Nov. 29

332 Obama ✓ **Romney 206**

270 to win

	Fla.	Ohio	N.C.	Va.	Wis.
Obama	✓ 50%	✓ 50%	48%	✓ 51%	✓ 53%
Romney	49%	48%	✓ 51%	48%	46%
Reporting	*100%*	*100%*	*100%*	*99%*	*99%*



Senate »

54 ✓ 1 IND. **45**

DEM. 50 REP.

Democrats gain 1 seat

Republicans need +4 for control

House »

201 ✓ **233**

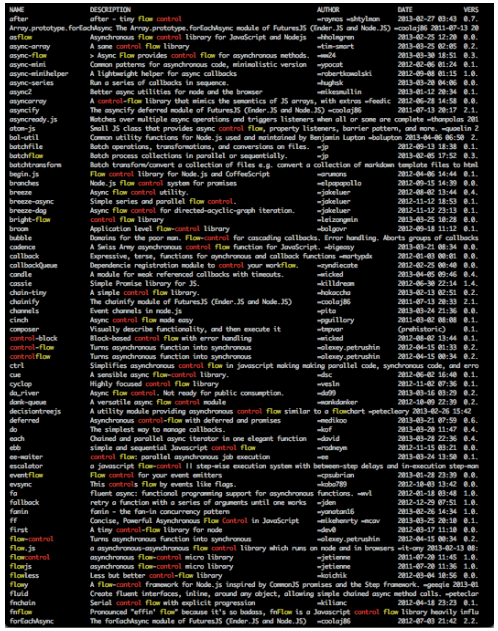
DEM. 218 REP.

Democrats gain 8 seats

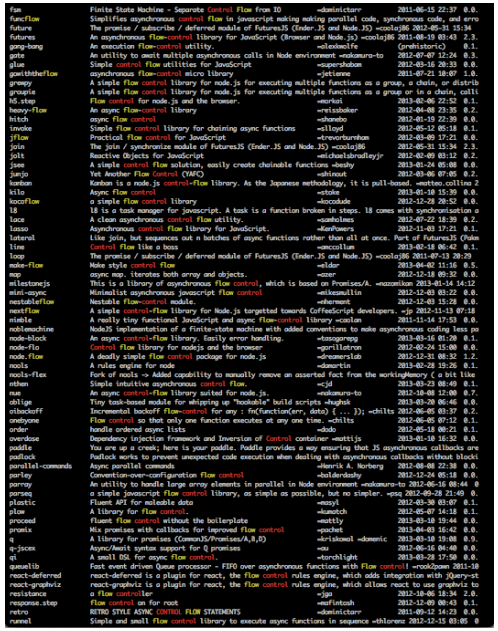
Democrats need +25 for control

```
fs.readdir(source, function(err, files) {
  if (err) {
    console.log('Error finding files: ' + err)
  } else {
    files.forEach(function(filename, fileIndex) {
      console.log(filename)
      gm(source + filename).size(function(err, values) {
        if (err) {
          console.log('Error identifying file size: ' + err)
        } else {
          console.log(filename + ' : ' + values)
          aspect = (values.width / values.height)
          widths.forEach(function(width, widthIndex) {
            height = Math.round(width / aspect)
            console.log('resizing ' + filename + 'to ' + height + 'x' + height)
            this
              .resize(width, height)
              .write(destination + 'w' + width + '_' + filename, function(err) {
              if (err) console.log('Error writing file: ' + err)
            })
          }.bind(this))
        }
      })
    })
  }
})
```

from http://callbackhell.com

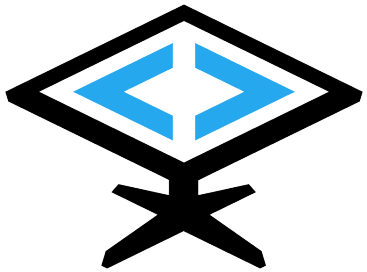


NAME	DESCRIPTION	AUTHOR	DATE	VERS
after	after - tiny flow control	=raynos =shtylman	2013-02-27 03:43	0.7.
Array.prototype.forEachAsync	The Array.prototype.forEachAsync module of FuturesJS (Ender.JS and Node.JS)	=coolaj86	2011-07-13 20	
asflow	Asynchronous flow control library for JavaScript and Nodejs	=shtylman	2013-02-25 12:28	0.0.
async-array	A sane control flow library	=tim-smart	2013-03-25 02:05	0.2.
async-flow	> Async Flow provides control flow for asynchronous methods.	=mm24	2013-03-30 18:51	0.3.
async-mini	Common patterns for asynchronous code, minimalistic version	=yyocat	2012-02-06 01:24	0.1.
async-minihelper	A lightweight helper for async callbacks	=robertkowalski	2012-09-08 01:15	1.0.
async-series	Run a series of callbacks in sequence.	=hughsk	2013-03-20 04:06	0.0.
async2	Better async utilities for node and the browser	=mikeaumiller	2013-01-12 20:34	0.1.
asyncarray	A control-flow library that mimics the semantics of JS arrays, with extras =feedic	2012-06-28 14:58	0.0.	
asyncify	The asyncify deferred module of FuturesJS (Ender.JS and Node.JS) =coolaj86	2011-07-13 20:17	2.1.	
asyncready.js	Watches over multiple async operations and triggers listeners when all or some are complete =thorpelaus	201		
atom-js	Small JS class that provides async control flow, property listeners, barrier pattern, and more. =qaaalin	2		
bal-util	Common utility functions for Node.js used and maintained by Benjamin Lupton =balupton 2013-04-06 06:50	2.		
batchfile	Batch operations, transformations, and conversions on files. =jp	2012-09-13 18:38	0.1.	
batchflow	Batch process collections in parallel or sequentially. =jp	2013-02-05 17:52	0.3.	
batchtransform	Batch transform/convert a collection of files e.g. convert a collection of markdown template files to html			
begin.js	Flow control library for Node.js and CoffeeScript =cmmons	2012-04-06 14:44	0.1.	
branches	Node.js flow control system for promises =elpoppapollo	2012-09-15 14:39	0.0.	
breeze	Async flow control utility. =jakeluer	2012-08-02 13:44	0.4.	
breeze-async	Simple series and parallel flow control. =jakeluer	2012-11-12 18:53	0.1.	
breeze-dag	Async flow control for directed-acyclic-graph iteration. =jakeluer	2012-11-12 23:13	0.1.	
bright-flow	control flow library =leizongmin	2013-03-25 18:28	0.0.	
broam	Application level flow-control library =bolgovr	2012-09-18 11:12	0.1.	
bubble	Domains for the poor man. Flow-control for cascading callbacks. Error handling. Aborts groups of callbacks			
cadence	A Swiss Army asynchronous control flow function for JavaScript. =shigeya	2013-03-21 08:34	0.0.	
callback	Expressive, terse, functions for synchronous and callback functions =martypdx	2012-01-03 08:01	0.0.	
callbackQueue	Dependencie registration module to control your workflow. =zyndiecate	2012-02-25 00:48	0.0.	
candle	A module for weak referenced callbacks with timeouts. =wicked	2013-04-05 09:46	0.4.	
cassie	Simple Promise library for JS. =killdream	2012-06-30 22:14	1.4.	
chain-tiny	A simple control flow library. =hokaccha	2013-02-13 02:51	0.2.	
chainify	The chainify module of FuturesJS (Ender.JS and Node.JS) =coolaj86	2011-07-13 20:33	2.1.	
channels	Event channels in node.js =pita	2013-03-24 21:36	0.0.	
cinch	Async control flow made easy =pguillory	2011-03-02 08:08	0.1.	
composer	Visually describe functionality, and then execute it =tmpvar (prehistoric)	0.1.		
control-block	Block-based control flow with error handling =wicked	2012-08-02 13:44	0.1.	
control-flow	Turns asynchronous function into synchronous =alexey.petrushin	2012-04-15 08:33	0.2.	
controlflow	Turns asynchronous function into synchronous =alexey.petrushin	2012-04-15 08:34	0.2.	
ctrl	Simplifies asynchronous control flow in javascript making making parallel code, synchronous code, and erro			
cue	A sensible async flow-control library. =doc	2012-06-02 16:48	0.1.	
cyclop	Highly focused control flow library =wesln	2012-11-02 07:36	0.1.	
da_river	Async flow control. Not ready for public consumption. =da99	2013-03-16 03:29	0.2.	
dank-queue	A versatile async flow control module =wankdanker	2012-10-09 22:39	0.2.	
decisiontreejs	A utility module providing asynchronous control flow similar to a flowchart =petecleary 2013-02-26 15:42			
deferred	Asynchronous control-flow with deferred and promises =medikoo	2013-03-21 07:59	0.6.	
do	The simplest way to manage callbacks. =kof	2013-03-20 11:47	0.4.	
each	Chained and parallel async iterator in one elegant function =david	2013-03-28 22:36	0.4.	
ebb	simple and sequential Javascript control flow =rodneyn	2012-11-15 03:21	0.0.	
ee-waiter	control flow: parallel asynchronous job execution =ee	2013-03-24 13:38	0.1.	
escalator	a javascript flow-control || step-wise execution system with between-step delays and in-execution step-man			
eventflow	Flow control for your event emitters =cgsubrian	2013-01-28 23:39	0.0.	
evsync	This controls flow by events like flags. =kubo780	2012-10-03 13:42	0.0.	
fa	fluent async: functional programming support for asynchronous functions. =mvl	2012-01-18 03:48	1.0.	
fallback	retry a function with a series of arguments until one works =jden	2012-12-29 07:51	1.0.	
fanin	fanin - the fan-in concurrency pattern =yonatan16	2013-02-26 14:34	1.0.	
ff	Concise, Powerful Asynchronous Flow Control in JavaScript =mikeherty =ecov	2013-03-25 20:18	0.1.	
first	A tiny control-flow library for node =dev0	2012-03-17 11:18	0.0.	
flow-control	Turns asynchronous function into synchronous =alexey.petrushin	2012-04-15 08:34	0.2.	
flow.js	a asynchronous-asynchronous flow control library which runs on node and in browsers =it-cary 2013-02-13 08:			
flowcontrol	asynchronous flow-control micro library =jetienne	2011-07-20 11:45	1.0.	
flowjs	asynchronous flow-control micro library =jetienne	2011-07-20 11:36	1.0.	
flowless	Less but better control-flow library =koichik	2012-03-04 18:58	0.0.	
flowy	A flow-control framework for Node.js inspired by CommonJS promises and the Step framework. =gonzalo 2013-01			
fluid	Create fluent interfaces, inline, around any object, allowing simple chained async method calls. =petecler			
fnchain	Serial control flow with explicit progression =killianc	2012-04-18 23:23	0.1.	
foflow	Pronounced "effin' flow" because it's so badass, foflow is a Javascript control flow library heavily influ			
forEachAsync	The forEachAsync module of FuturesJS (Ender.JS and Node.JS) =coolaj86	2012-07-03 21:42	2.2.	



```
fsm                 Finite State Machine - Separate Control Flow from IO          =dominictarr          2011-06-15 22:37  0.0.
funcflow            Simplifies asynchronous control flow in javascript making making parallel code, synchronous code, and erro
future              The promise / subscribe / deferred module of Futures3S (Ender.JS and Node.JS) =coolaj86 2012-05-31 15:34
futures             An asynchronous flow-control library for JavaScript (browser and Node.js) =coolaj86 2011-08-19 03:43  2.3.
gang-bang           An execution flow-control utility.                            =alexkwolfe           (prehistoric)     0.1.
gate                An utility to await multiple asynchronous calls in Node environment =nakamura-to    2012-07-07 12:24  0.3.
glue                Simple control flow utilities for JavaScript                  =supershabon          2012-03-16 20:33  0.0.
goaltheflow         asynchronous flow-control micro library                       =jetienne             2011-07-21 18:07  1.0.
graspy              A simple flow control library for node.js for executing multiple functions as a group, a chain, or distrib
groupie             A simple flow control library for node.js for executing multiple functions as a group or in a chain, calli
h5.step             Flow control for node.js and the browser.                     =markwi               2013-02-06 22:52  0.1.
heavy-flow          An async flow-control library                                 =reisbaker            2012-04-08 23:35  0.2.
hitch               async flow control                                            =shanebo              2012-01-19 22:39  0.0.
invoke              Simple flow control library for chaining async functions      =slloyd               2012-05-12 05:18  0.1.
jflow               Practical flow control for JavaScript                         =trevorburnham        2012-03-09 17:21  0.0.
join                The join / synchronize module of Futures3S (Ender.JS and Node.JS) =coolaj86         2012-05-31 15:34  2.3.
jolt                Reactive Objects for JavaScript                               =michaelsbradleyjr    2012-02-09 03:12  0.2.
jsee                A simple control flow solution, easily create chainable functions =heshy            2013-01-24 05:08  0.0.
junjo               Yet Another Flow Control (YAFC)                               =shinout              2012-03-06 07:05  0.2.
kanban              Kanban is a node.js control-flow library. As the Japanese methodology, it is pull-based. =matteo.collina 2
kilo                Async flow control                                            =stoke                2013-01-10 15:39  0.0.
kocoflow            a simple flow control library                                 =kocodude             2012-12-28 20:52  0.0.
l8                  l8 is a task manager for javascript. A task is a function broken in steps. l8 comes with synchronisation a
lace                A clean asynchronous control flow utility.                    =sashalaines          2012-07-22 18:38  0.2.
lasso               Asynchronous control flow library for JavaScript.             =KenPowers            2012-11-03 17:21  0.1.
lateral             Like join, but sequences out n batches of async functions rather than all at once. Part of Futures3S (Pake
line                Control flow like a boss                                      =smcallum             2013-02-18 06:42  0.1.
loop                The promise / subscribe / deferred module of Futures3S (Ender.JS and Node.JS) =coolaj86 2011-07-13 20:29
make-flow           Make style control flow                                       =eldar                2013-04-02 11:16  0.5.
map                 async map. iterates both array and objects.                   =user                 2012-12-18 09:32  0.0.
milestonejs         This is a library of asynchronous flow control, which is based on Promises/A. =mazamican 2013-01-14 14:12
mini-async          Minimalist asynchronous javascript flow control               =mikesmullin          2012-12-03 03:22  0.0.
nestableflow        Nestable flow-control module.                                 =ehermant             2012-12-03 15:28  0.0.
nextFlow            A simple control-flow library for Node.js targetted towards CoffeeScript developers. =jp 2012-11-13 07:18
niable              A really tiny functional JavaScript and async flow-control library =caolan            2011-11-14 17:53  0.0.
nobleMachine        NodeJS implementation of a finite-state machine with added conventions to make asynchronous coding less pa
node-block          An async control-flow library. Easily error handling.         =tasogarego           2013-03-16 01:20  0.1.
node-flo            Control flow library for nodejs and the browser               =gorillatron          2012-02-24 15:08  0.0.
node.flow           A deadly simple flow control package for node.js              =dreamerslab          2012-12-31 08:32  1.2.
nools               A rules engine for node                                       =damortin             2013-02-28 15:26  0.1.
nools-flex          Fork of nools -> Added capability to manually remove an asserted fact from the workingMemory ( a bit like
nthen               Simple intuitive asynchronous control flow.                   =cjd                  2013-03-23 08:40  0.1.
nue                 An async control-flow library suited for node.js.             =nakamura-to          2012-10-08 12:08  0.7.
oblige              Tiny task-based module for whipping up "hackable" build scripts =hughsk             2013-03-20 06:46  0.0.
obackoff            Incremental backoff flow-control for any : fn(function(err, data) { ... }); =chilts 2012-06-05 03:37  0.2.
onebyone            Flow control so that only one function executes at any one time. =chilts              2012-06-05 07:12  0.1.
order               handle ordered async lists                                    =dodo                 2012-05-16 08:21  0.1.
overdose            Dependency injection framework and Inversion of Control container =mattijs            2013-01-10 16:32  0.0.
paddle              You are up a creek; here is your paddle. Paddle provides a way ensuring that JS asynchronous callbacks are
padlock             Padlock works to prevent unexpected code execution when dealing with asynchronous callbacks without blocki
parallel-commands   Async parallel commands                                       =Henrik A. Norberg    2012-08-08 22:38  0.0.
parley              Convention-over-configuration flow control                    =balderdashy          2012-12-24 05:15  0.0.
parray              An utility to handle large array elements in parallel in Node environment =nakamura-to 2012-06-10 08:44  0
parseq              a simple javascript flow control library, as simple as possible, but no simpler. =psq 2012-09-28 21:49  0.
plastic             Fluent API for noteable data                                  =mosyl                2012-03-30 03:07  0.1.
plow                A library for flow control.                                   =kumatch              2012-05-07 14:18  0.1.
proceed             fluent flow control without the boilerplate                   =mattly               2013-03-18 19:44  0.0.
promix              Mix promises with callbacks for improved flow control         =pochat               2013-04-03 16:42  0.0.
q                   A library for promises (CommonJS/Promises/A,B,D)              =kriskowal =domenic   2013-03-18 19:08  0.9.
q-jscex             Async/Await syntax support for Q promises                     =su                   2012-06-16 04:48  0.0.
qi                  A small DSL for async flow control.                           =torchlight           2013-03-29 17:58  0.0.
queuelib            Fast event driven Queue processor - FIFO over asynchronous functions with Flow control =rook2pawn 2011-10
react-deferred      react-deferred is a plugin for react, the flow control rules engine, which adds integration with jQuery-st
react-graphviz      react-graphviz is a plugin for react, the flow control rules engine, which allows react to use graphviz to
resistance          a flow controller                                             =jgo                  2012-10-06 18:34  2.0.
response.step       flow control on for root                                      =mofintosh            2012-12-09 00:43  0.1.
retro               RETRO STYLE ASYNC CONTROL FLOW STATEMENTS                     =dominictarr          2011-09-12 14:23  0.0.
runnel              Simple and small flow control library to execute async functions in sequence =thlorenz 2012-12-15 03:05  0
```


ryu A simple control-flow library. =dnpetgg 2012-09-24 12:11 0.2.
scasp Just another control-flow library which is a little bit different. =cinca.brokhane 2012-09-07 08:18 0.0.
sebastian A flow-control library aimed at encouraging organized, testable code. =mandarind 2013-04-05 07:54 0.2.
seq Chainable asynchronous flow control with sequential and parallel primitives and pipeline-style error handl
sequence The sequence module of FuturesJS (Ender.JS and Node.JS) =caolaj86 2012-05-31 14:08 2.2.
sequent JavaScript async flow control =tizukanao 2012-04-30 21:38 0.1.
serial-commands Async serial commands =Henrik A. Norberg 2012-08-08 22:39 0.0.
serialflow This is lightweight library for serial execution of functions. The main goal of this create engine of midd
sexy Sequential Proxy for writing Asynchronous with ECMAScript 5 Proxies =crabdude 2011-01-20 22:03 0.0.
sidestep A simple control-flow library for node.JS that makes parallel execution, serial execution, and error handl
slide A flow control lib small enough to fit on in a slide presentation. Derived live at Oak.JS =isaacs 2012-01-
spate Utility methods to reduce the weight of JavaScript control flow logic. =mevir 2012-01-19 03:42 0.1.
stak =rayneo 2012-02-08 18:08 0.1.
start-then-go simple, declarative flow control =bbqsimlan 2012-12-30 05:05 0.0.
step A simple control-flow library for node.JS that makes parallel execution, serial execution, and error handl
step-error Just like Creationix's flow control library (step), except with global error handling =bminer 2013-03-04 1
step-object More Object based creation of 'step' functions =lights-of-apollo 2012-04-05 21:39 0.2.
stepc A CoffeeScript-safe version of creationix' step =akidee 2011-06-25 20:54 0.0.
stepdown A simple control-flow library for Node that makes parallel execution, serial execution, and error handling
stepup A simple control-flow library for Node that makes parallel execution, serial execution, and error handling
stewardess serial async flow control =regality 2013-02-01 18:58 0.1.
Supersonic A small and supersonic flow-control library =orian 2012-04-26 00:59 0.0.
switchboard Event listener for the browser and node.js for composite events (i.e., will not trigger until several spec
synchronize Turns asynchronous function into synchronous =alexey.petrushin 2013-01-30 22:22 0.5.
task-flow A library for task future =e090385 2013-02-18 20:39 0.0.
taskgroup Group together synchronous and asynchronous tasks and execute them with support for concurrency, naming, a
tasq yet another javascript library to manage control flow =huangk7 2013-02-25 05:55 0.7.
thunky delay the evaluation of a parameless async function and cache the result =mafintosh 2013-03-06 18:38 0.1.
timetrickle A time-based execution limiter =maxkueng 2012-11-05 08:11 0.0.
tiptoe Yet another node async control flow library for handling callbacks. Very similar to step. =sambiance 2013-
toss short groups of callbacks =substack 2012-01-14 11:08 0.0.
two-step TwoStep is the spiritual successor of Step with better error handling and finer flow control =xavi 2013-01
twostep A simple control-flow library for node.JS that makes parallel execution, serial execution, and error handl
uflow Very small and unfancy control flow function =mmalobbn 2012-05-10 23:32 0.2.
underscore.deferred jQuery style Deferreds =mookiehangover 2012-11-26 02:44 0.4.
underscore.Deferred jQuery style Deferreds =mookiehangover 2012-07-09 05:37 0.1.
valve Super-simple control flow =TrevorBurnham =trevorburnham 2012-03-09 16:
valvestream control data flow of a stream at a single point =dodo 2012-02-03 17:59 0.0.
vasync utilities for observable asynchronous control flow =dap 2013-01-07 18:18 1.3.
waiter A simple way to wait for multiple asynchronous calls to return =marcello 2011-04-13 01:31 0.1.
waitress Simple flow control for multiple parallel async calls. =regality 2013-03-29 20:15 0.1.
wind Wind.js is an advanced library which enable us to control flow with plain JavaScript for asynchronous prog
workflow.js Zero-code workflows engine for Node, PhoneGap and browser. =gala 2012-03-20 09:03 0.0.
wrapas Continuation passing style helper utility. =alk 2013-02-17 21:15 0.1.
zoidberg Flow control? Why not zoidberg? =ri 2013-01-18 19:16 0.0.
npm http GET https://registry.npmjs.org/-/all/since?stale=update_after&startkey=1365346606126
npm http 200 https://registry.npmjs.org/-/all/since?stale=update_after&startkey=1365346606126
~ $



LESSONS IN THE FUNDAMENTALS OF GO

TOSHIRO KAGEYAMA 7-DAN

KISEIDO PUBLISHING COMPANY

CONTROL STRUCTURES
FOR PROGRAMMING LANGUAGES

by

David A. Fisher

Computer Science Department
Carnegie-Mellon University
Pittsburgh, Pennsylvania
May 1970

"...the use of appropriate control structures can produce clarity of expression..."

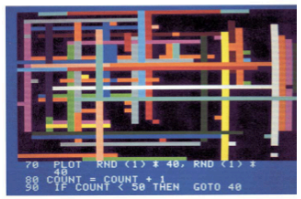
David A. Fisher,

Control Structures for Programming Languages (1970)

- sequential execution
- goto
- recursion
- coroutines
- parallel processing
- synchronization
- nondeterminism

Back to the BASICs

Apple II A Touch of Applesoft BASIC



Session 5 **Loops and Conditions 35**
Loops 36
GOTO 36
Conditional branching with IF...THEN 37
Building on the model 38
Relational operators 38
Use REM for remarks 41
Practice time 41
Summary and review 42

```
if(true) {
  return 1;
} else {
  diverge();
}
```

```
_if(true, 1, diverge());
```

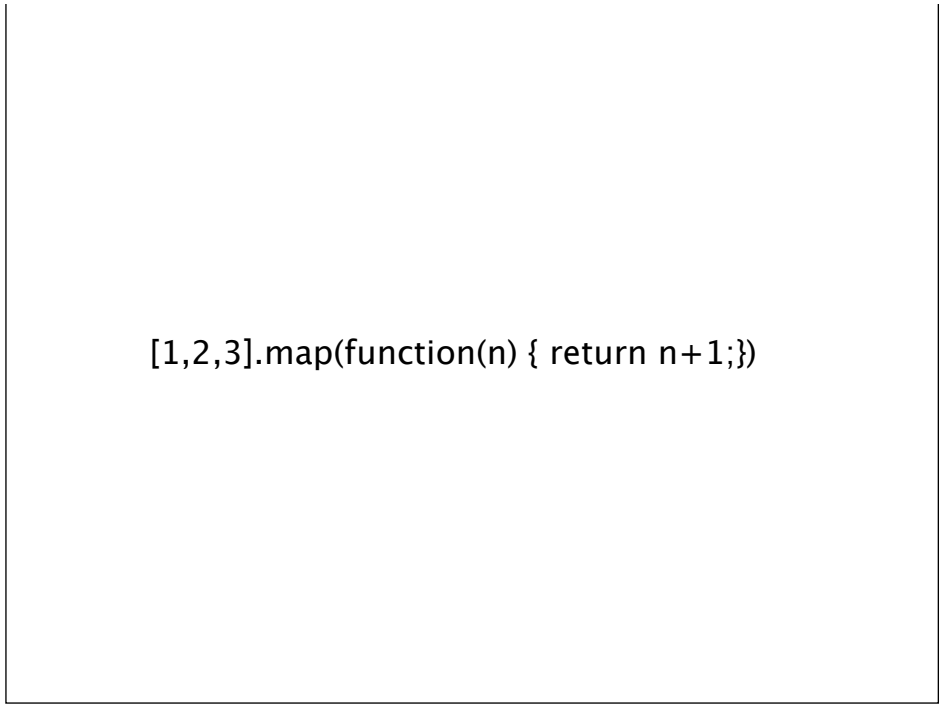
```
_if(true,
    function() {
      return 1;
    },
    function() {
      return diverge();
    });
```

```
1 < 2
  ifTrue: [^'1 is less than 2']
  ifFalse: [^'2 is less than 1']
```

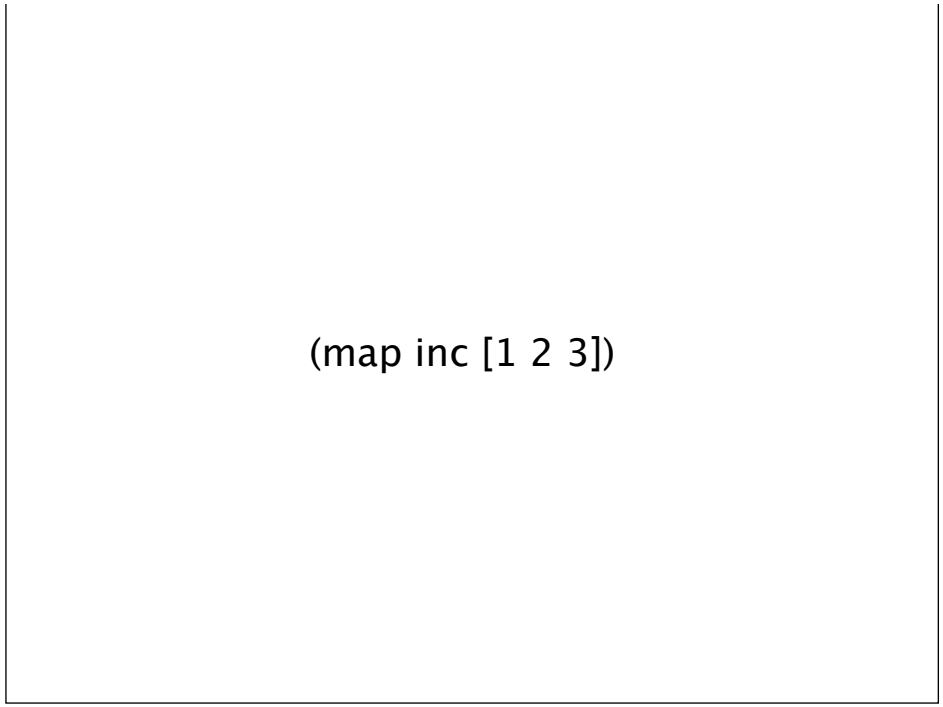
```
true
  ifTrue: [^'1 is less than 2']
  ifFalse: [^'2 is less than 1']
```

```
1 to: self size do:
  [:index | aBlock value: (self at: index)]
```

```
for(var i = 0; i < this.length; i++) {
  f(this[i]);
}
```


[1,2,3].map(function(n) { return n+1;})

```
(map #(+ % 1) [1 2 3])
```


(map inc [1 2 3])

list-ref
vector-ref
hash-ref
dict-ref
...

```
(define ref
  (lambda (x)
    (cond
      [(list? x) ...]
      [(hash? x) ...]
      [(dict? x) ...]
      [(vector? x) ...]
      ...)))
```

```
void bar(IRef x) {
  // ...
  x.ref(...);
  // ...
}
```

```
class Eq a where
  (==), (/=) :: a -> a -> Bool
  x /= y = not (x == y)
  x == y = not (x /= y)
```

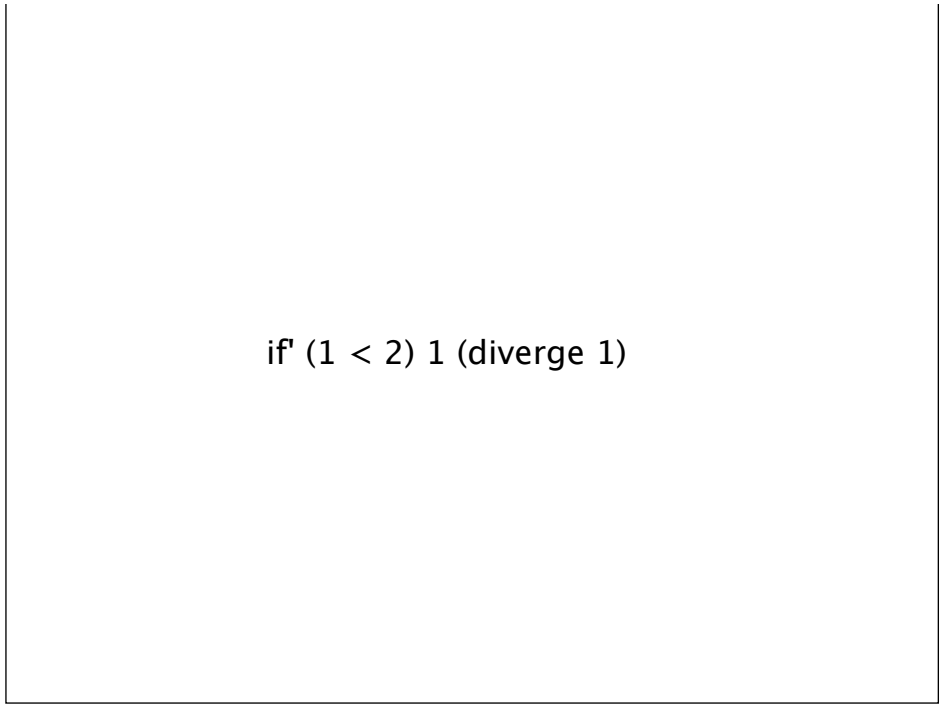
Giving up control

“We intend our definition of control structure to include not only sequencing, but the lack of sequencing rules or even the indeterminancy of the desired sequencing.”

Haskell

```
diverge :: Int -> Int
diverge n = diverge n
```

```
if' :: Bool -> a -> a -> a
if' True x _ = x
if' False _ y = y
```


if' (1 < 2) 1 (diverge 1)

Control.Monad

The `Functor`, `Monad` and `MonadPlus` classes, with some useful operations on monads.

Functor and monad classes

```
class Functor f where
```

The `Functor` class is used for types that can be mapped over. Instances of `Functor` should satisfy the following laws:

```
fmap id  ==  id
fmap (f . g)  ==  fmap f . fmap g
```

The instances of `Functor` for lists, `Maybe` and `IO` satisfy these laws.

Methods

```
fmap :: (a -> b) -> f a -> f b
```

Instances

```
Functor []
Functor IO
Functor Maybe
Functor ReadP
Functor ReadPrec
Functor STM
Functor Handler
Functor ZipList
Functor ((->) r)
Functor (Either a)
Functor ((,) a)
```

Giving up more control

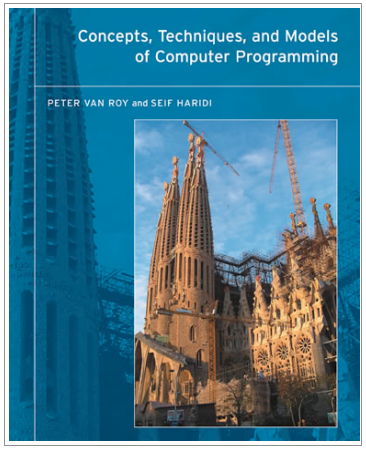
PROLOG

```
member(X,[X|_]).
member(X,[_|T]) :-
member(X,T).
```

```
?- member(dog,[cat,dog,bird]).
true.
```

```
?- member(X,[cat,dog,bird]).
X = cat ;
X = dog ;
X = bird ;
false.
```

```
?- member(dog,X).
X = [dog|_G650] ;
X = [_G649, dog|_G653] ;
X = [_G649, _G652, dog|_G656] ;
X = [_G649, _G652, _G655, dog|_G659] ;
X = [_G649, _G652, _G655, _G658, dog|_G662] ;
X = [_G649, _G652, _G655, _G658, _G661, dog|
_G665] .
```


Concepts, Techniques, and Models
of Computer Programming
PETER VAN ROY and SEIF HARIDI

“The rewards from using more complex or other control structures are largely in clarity and conciseness of expression and in programming ease, which are difficult to quantify.”

Questions?