

# A Rubyist's Journey to Go

Mike Gehard  
[@mikegehard](#)  
[mgehard@pivotal.io](mailto:mgehard@pivotal.io)

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.



[Explore](#) [Gist](#) [Blog](#) [Help](#)

# Cloud Foundry

San Francisco, CA

<http://www.cloudfoundry.com>

[vcap-dev@cloudfoundry.com](mailto:vcap-dev@cloudfoundry.com)

Filters ▾

[+ New repository](#)

## cf-mysql-release

Go ★ 13 ↗ 24

Cloud Foundry MySQL Release

Updated 9 hours ago

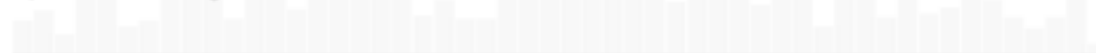


## cf-release

Shell ★ 262 ↗ 303

Cloud Foundry Release

Updated 12 hours ago



## datadog-config PRIVATE

Ruby ★ 0 ↗ 2

My journey...  
για Ιοσηφελ...

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.







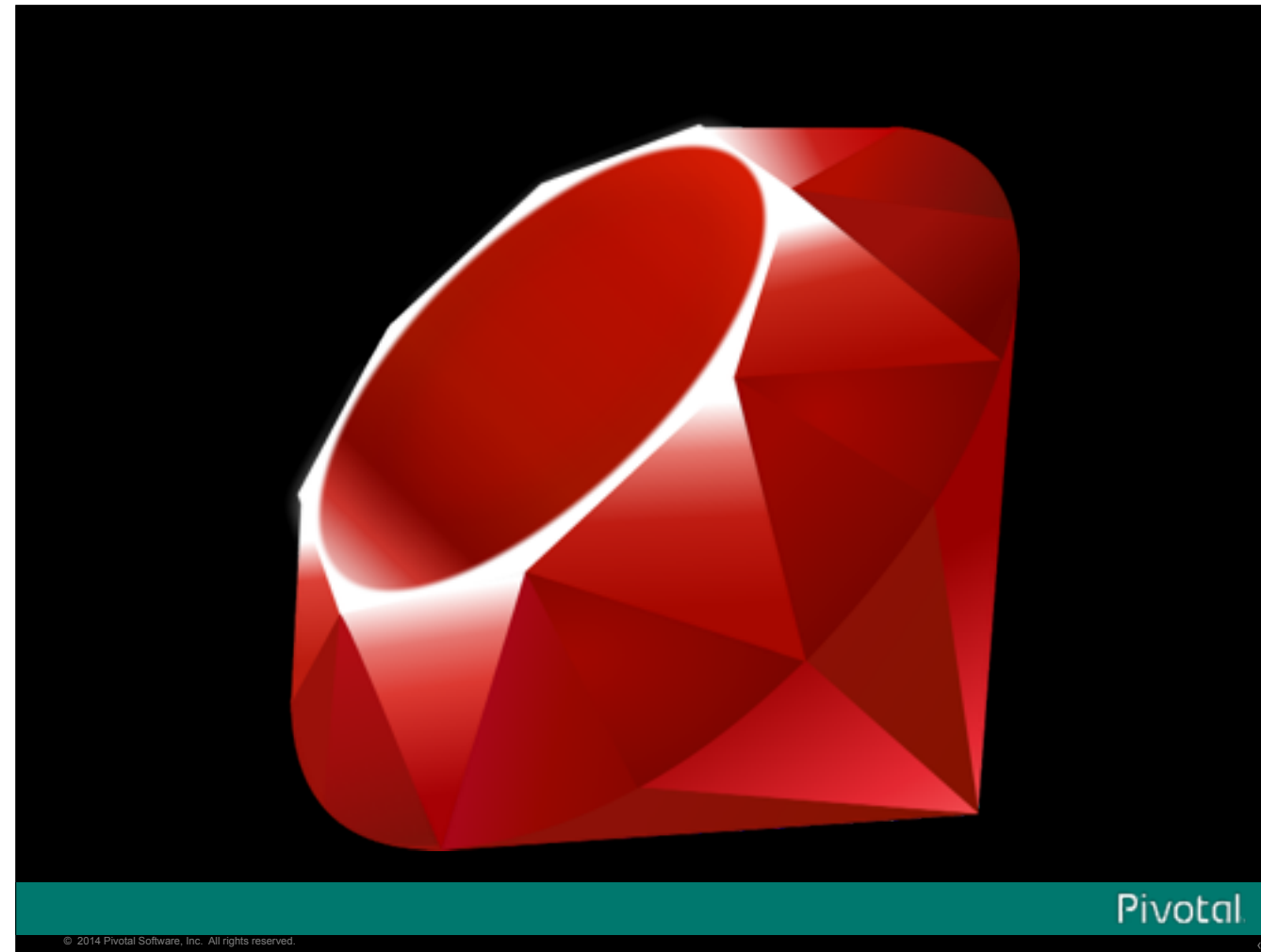
Java™

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.







Wrote and have even taught others to program ruby.

The list goes on...

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

of languages I've used in production.





Playing with Haskell now in my spare time.

Many of you probably have learned many new languages, both computer and spoken.

How did I get into Go?



This repository Search

Explore Gist Blog Help



cloudfoundry / cli

A CLI for Cloud Foundry written in Go — Edit

2,962 commits

40 branches

25 releases



branch: master

cli / +

Notify user manifest is not found on `cf push` ...



simonleung8 authored 3 days ago

→ jberkhahn committed 3 days ago



Godeps

Update ginkgo



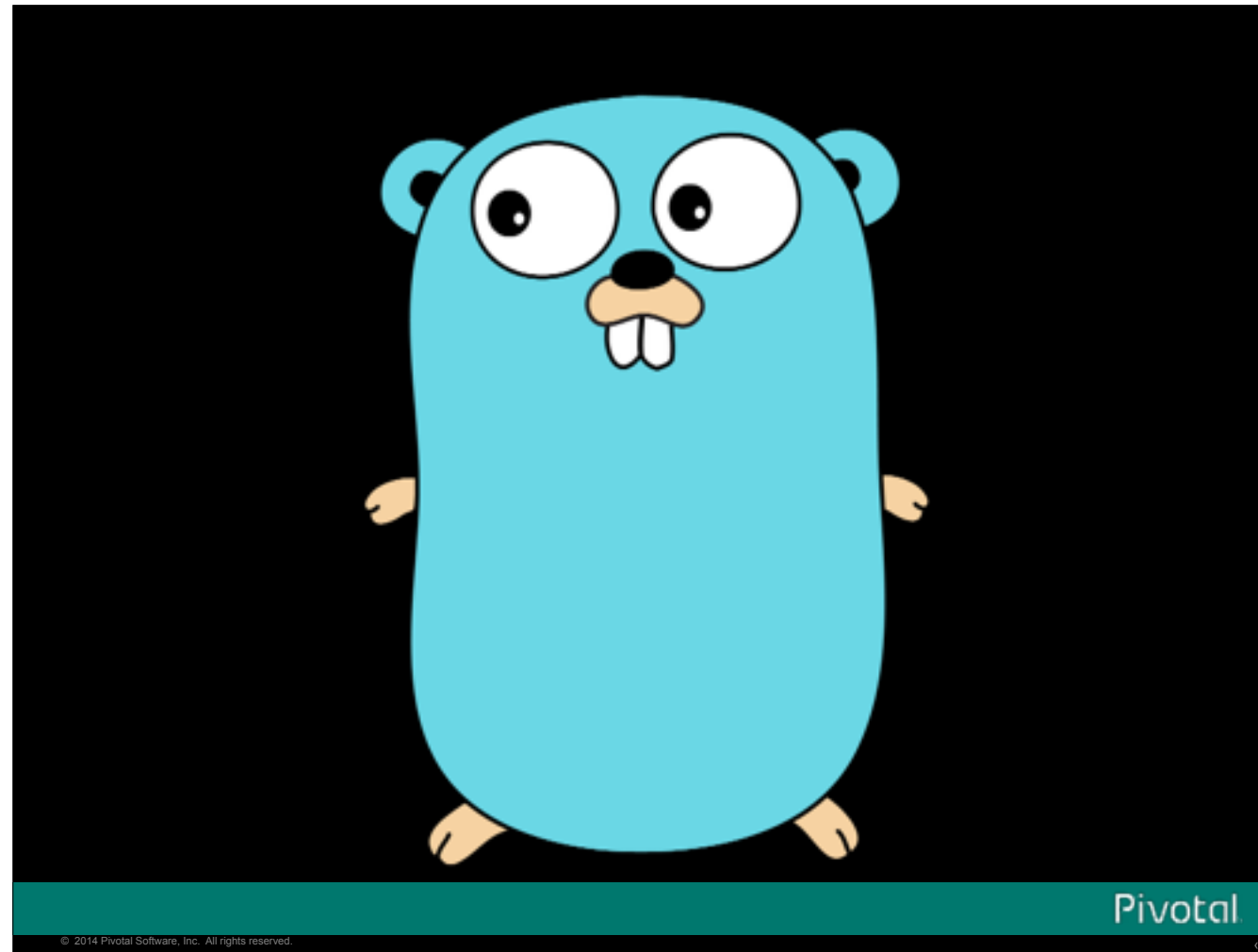
bin

fake out cf config for testing



cf

Notify user manifest is not found on `cf push`



I've never learned C and my C++ hasn't been used since 1998.

This was something newish for me.

Syntax is easy...  
Idioms are harder to learn.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

It take me a very short time to learn the syntax of a new language.  
How many people have seen Ruby written like Java?  
Here come some tips on what I think it important when learning Go.

# Learn the vocabulary

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

aka syntax

←

→

↻

tour.golang.org/welcome/1

Apps

Prismatic

ReCSS

Postman

Samyamatech

Clojure

CloudFoundry

A Tour of Go

hello.go

Syntax off

1

package main

2

3

import "fmt"

4

5

func main() {

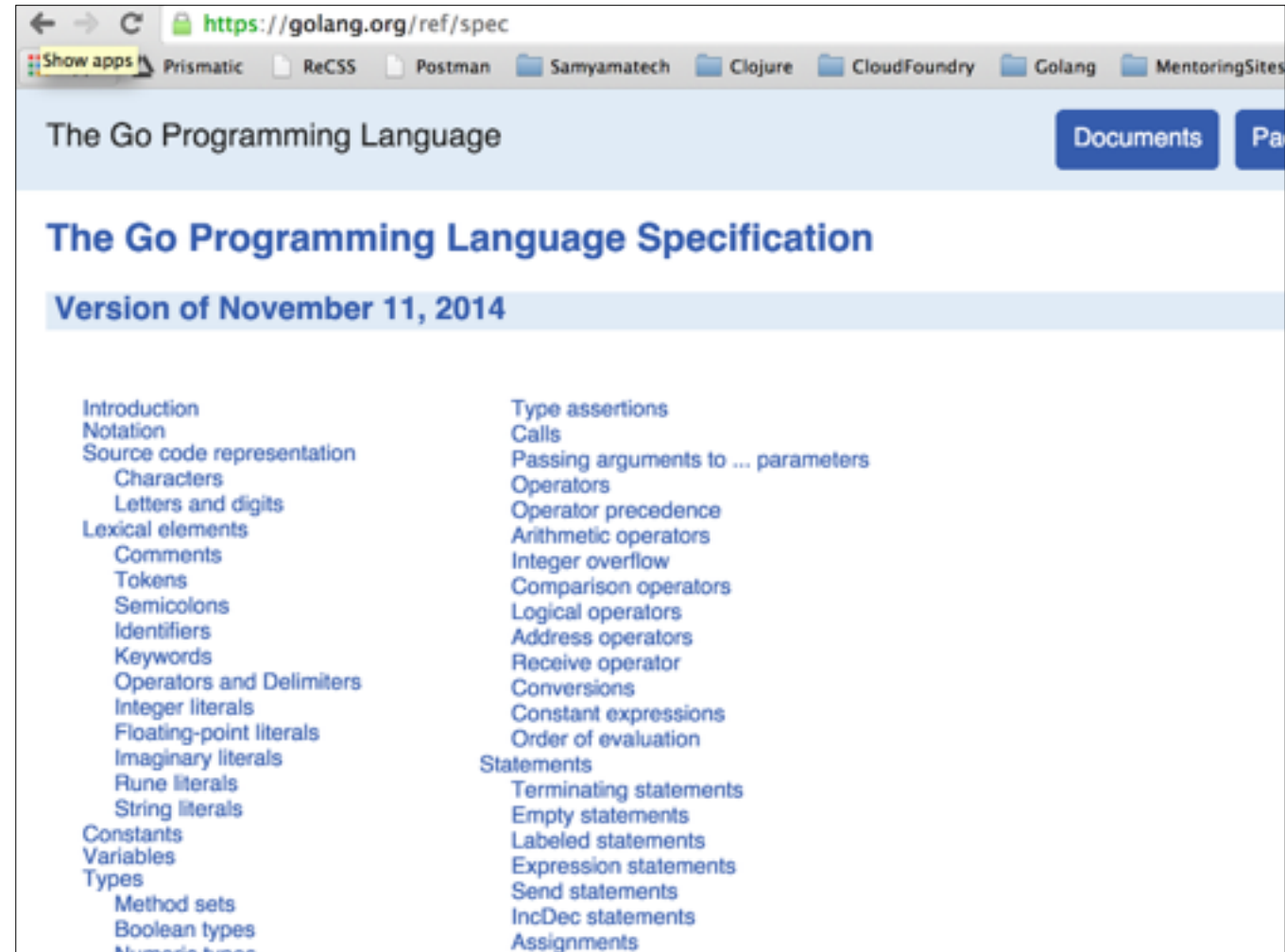
6

fmt.Println("Hello, 世界")

7

}

8



Now you know how to say “house” and “yellow”.

# Consumption vs Production

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

This allows you to consume other people's work.

I can read Spanish much easier than I can speak Spanish.



Idiom  
special feature  
special phrasing  
a peculiarity

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Idioms are present in our spoken languages as well as our programming languages.

# English: Subject, Verb, Object VS. Hindi: Subject, Object, Verb

Source: Wikipedia

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Here is an example.

English - SVO - I love her.

Hindi - SOV - I her love.

Hypothesis:  
Writing idiomatic code makes  
using the language easier.

It also allows others to more easily  
understand your code.

# Forget old idioms.

Pivotal

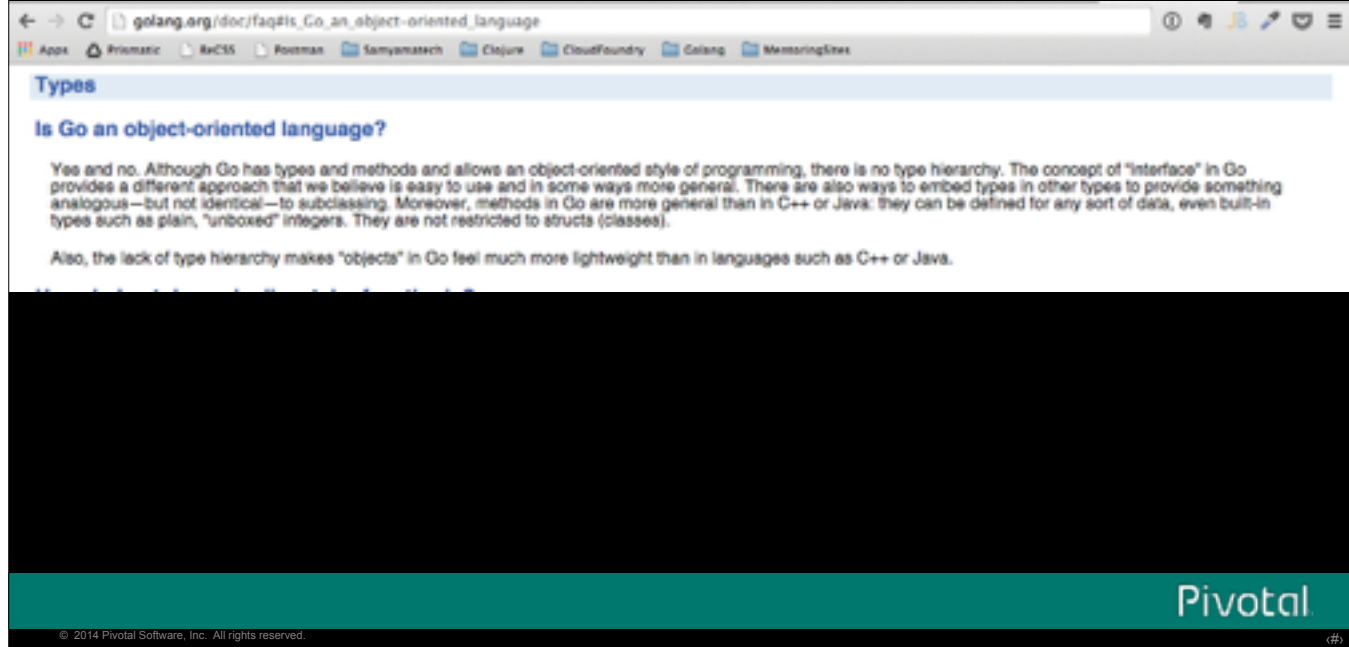
© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Like learning functional programming if you are coming from an OO language.

If you are coming from Ruby (OO), Go is a different way of thinking.

I learned this one the hard way in my first Go project.



Go object orientation is  
different that Ruby's.

<http://nathany.com/good/>

Thanks Nathan Youngman (@nathany)

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

# Composition over inheritance.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Small boxes

This one took me a while to really understand and utilize.

## type Reader

```
type Reader interface {  
    Read(p []byte) (n int, err error)  
}
```

## type Closer

```
type Closer interface {  
    Close() error  
}
```



## type ReadCloser

```
type ReadCloser interface {  
    Reader  
    Closer  
}
```

```
type Part struct {  
    Name      string  
    Description string  
    NeedsSpare bool  
}
```

```
type Parts []Part
```

```
type Bicycle struct {  
    Size string  
    Parts  
}
```

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(#)

One way to materialize this is via struct embedding.

# Experiment: Use “objects” sparingly Favor functions that act on structs.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

You can write OO Go but it will not serve you well. We found out the hard way.

This is a cool experiment to try.

Start with functions that act on data and then figure out if you need to attach those functions to structs.

# Embrace the interface.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Ruby doesn't give us the opportunity to practice this.

This is one of the powerful things about Go's type system.

And the hardest for a Rubyist to get sometimes.

# Define your own types

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.



This one

Go Playground

RunFormatImportsShare

<https://play.golang.org/p/XjVi4ytJgA>

```
1 package main
2
3 import "fmt"
4
5 type Name string
6 type Age int
7
8 func main() {
9     introduceMyself("Mike", 42)
10 }
11
12 func introduceMyself(name Name, age Age) {
13     fmt.Printf("My name is %s and I am %d years old.", name, age)
14 }
15
```

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

Extra documentation for your code.

# Study Go concurrency patterns

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

This is not your languages concurrency model.

This can be a huge benefit or a huge detriment.

With great power comes great responsibility.

Another one that can be tricky to get the first time.

← → ↻ talks.golang.org/2012/concurrency.slide#1

Apps Prismatic ReCSS Postman Samyamatech Clojure CloudFoundry Golang Mentori

# Go Concurrency Patterns

Rob Pike  
Google

<https://www.youtube.com/watch?v=f6kdp27TYZs>



← → ↻

blog.golang.org/advanced-go-concurrency-patterns

🔍 ☆

Apps Prismatic ReCSS Postman Samyamatech Clojure CloudFoundry Golang MentoringSites

The Go Programming Language Documents Packages The P

The Go Blog

Advanced Go Concurrency Patterns

23 May 2013

At Google I/O a year ago Rob Pike presented *Go Concurrency Patterns*, an introduction to Go's concurrency model. Last week, at I/O 2013, Go team member Sameer Ajmani continued the story with *Advanced Go Concurrency Patterns*, an in-depth look at a real concurrent programming problem. The talk shows how to detect and avoid deadlocks and race conditions, and demonstrates the implementation of deadlines, cancellation, and more. For those who want to take their Go programming to the next level, this is a must-see.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved. (P)

Have fun and makes lots  
of mistakes!

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.



← → ↻

https://play.golang.org

Apps

Prismatic

ReCSS

Postman

Samyamatech

Clojure

CloudFoundry

Golang

MentoringSites

Go Playground

Run

Format

☐ Imports

Share

1 package main

2

3 import "fmt"

4

5 func main() {

6 fmt.Println("Hello, playground")

7 }

8

9

10

11

12

13

14

15

16

17

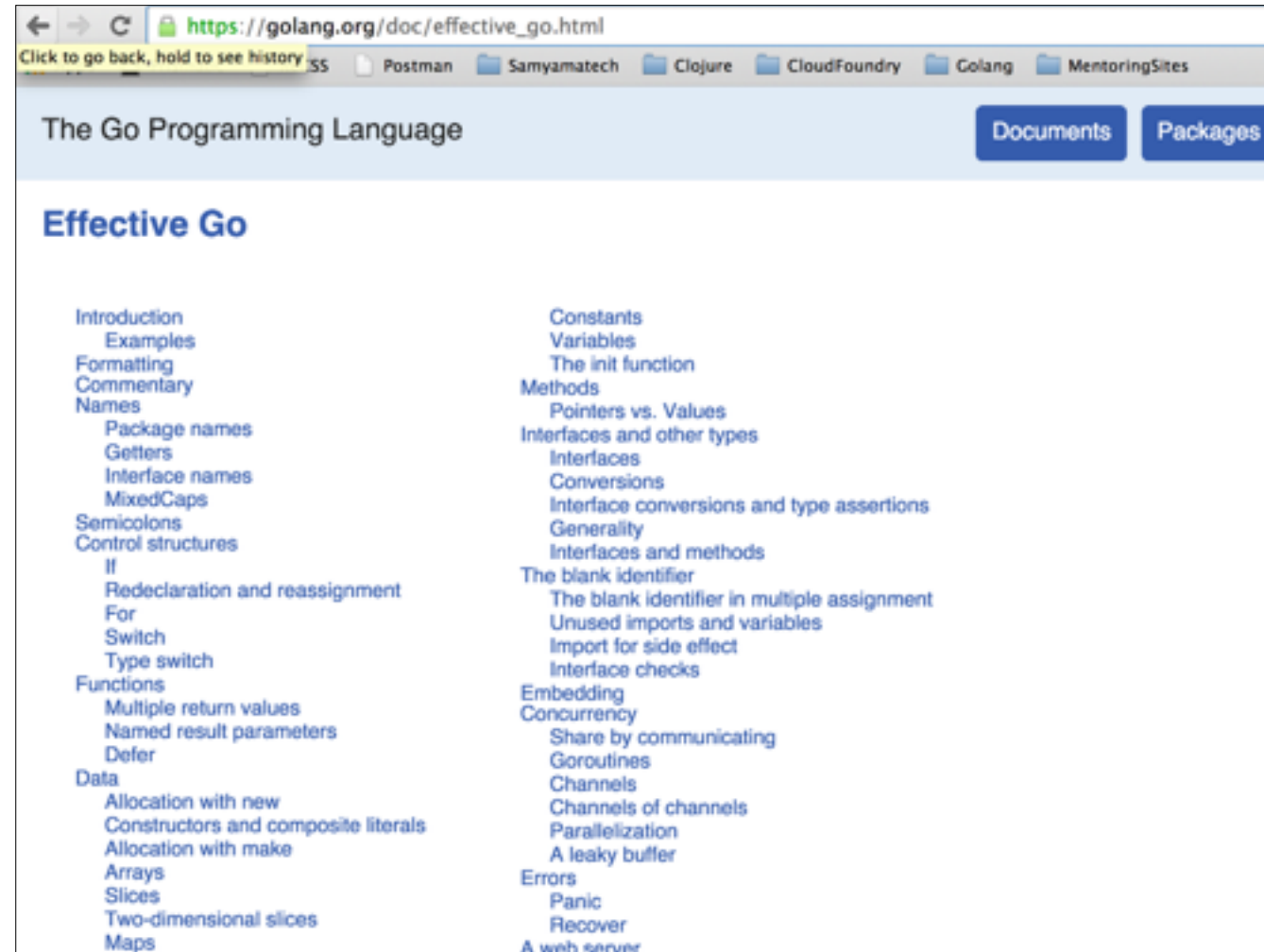
18

19


20

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.





Effective Go was a great way for me to learn what Go idioms were.

 **golang / go**

Watch 568

branch: master go / src / net / http / server.go

 **bradfitz** on Dec 29, 2014 net/http: support for setting trailers from a server Handler

3 contributors 

2154 lines (1921 sloc) 63.158 kb Raw Blame

```
1 // Copyright 2009 The Go Authors. All rights reserved.
2 // Use of this source code is governed by a BSD-style
3 // license that can be found in the LICENSE file.
4
5 // HTTP server. See RFC 2616.
6
7 package http
8
9 import (
10     "bufio"
11     "crypto/tls"
12     "errors"
13     "fmt"
14     "io"
15     "io/ioutil"
16     "log"
17     "net"
18     "net/textproto"
```

Read the source. This will help you get into the minds of the authors.

# Twelve Go Best Practices

Francesc Campoy Flores  
Gopher at Google

# Learning Go

- Learn the vocabulary
- Forget old idioms
- Go's object orientation is different than Ruby's
- Composition over inheritance
- Try using functions/structs instead of “objects”
- Create your own types
- Embrace the interface
- Study Go's concurrency model
- Have fun and make lots of mistakes!

Many others...  
just Google it.

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.





# Questions from Twitter

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.



# Is Go indeed a good fit for building web apps or just APIs?

Ujjwal Thaakar

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(#)

I'm not a fan of writing web sites in Go. Ruby/Rails is better on the server side.

Great for writing API's consumed by JS client.

Just because you can doesn't mean you shouldn't.

# Is performance the only factor in a cost benefit analysis?

Ujjwal Thaakar

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

(P)

Performance of Go is head and shoulders above Ruby/Python.

Depending on who you talk to, not as good as Java.

Lightweight type system is a big plus as well.

# Dhan'yavāda

Other questions?

Pivotal

© 2014 Pivotal Software, Inc. All rights reserved.

