GO FOR PERL PROGRAMMERS

A 30 MINUTE TOUR

Sue Spence

Twitter/Github: virtualsue
Email: virtuallysue@gmail.com

WHAT IS GO?

High-level Facts & Trivia

- **Go is a general purpose language**

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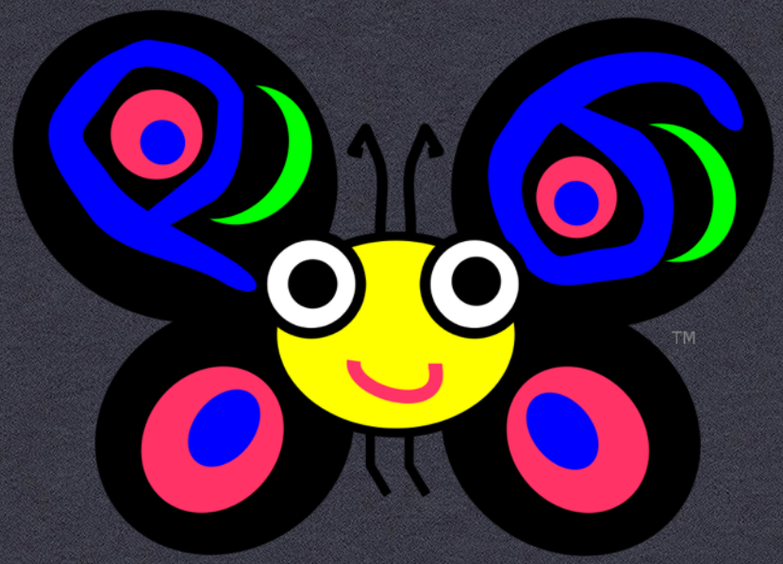
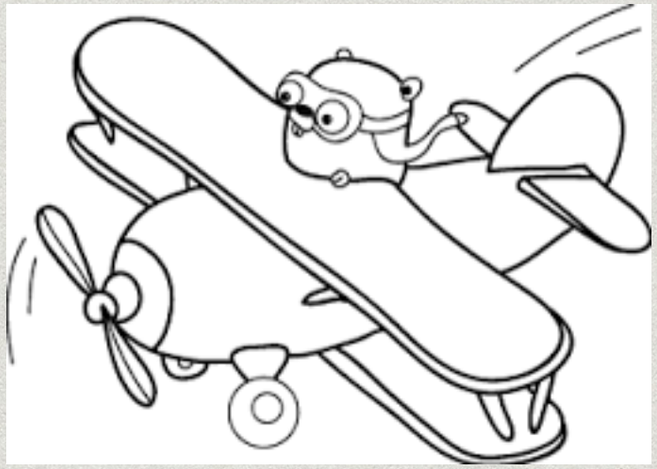
- **The team adopted a gopher mascot for 1.0**

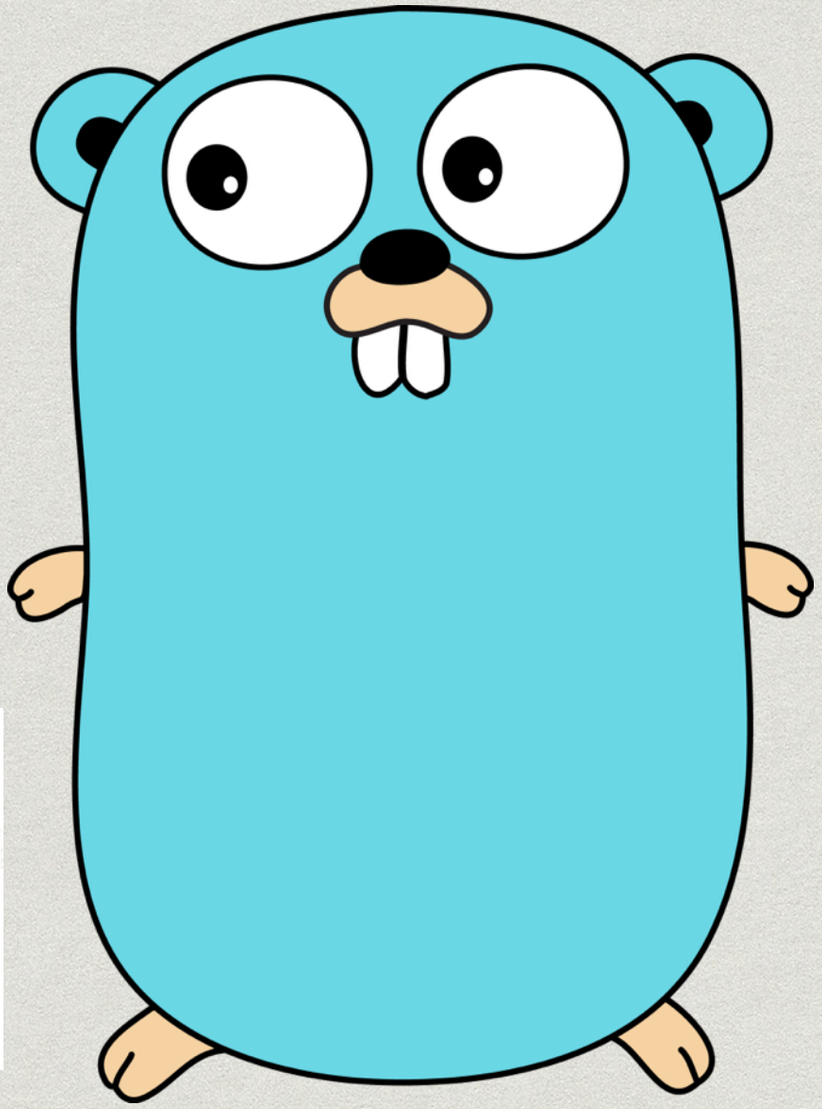
PERL IS MATURE AND HAS A VARIETY OF SYMBOLS

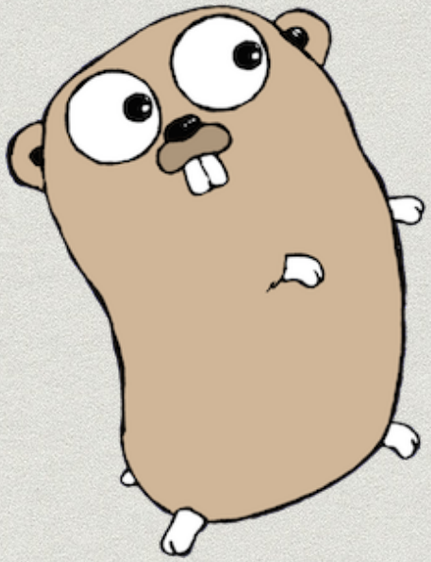


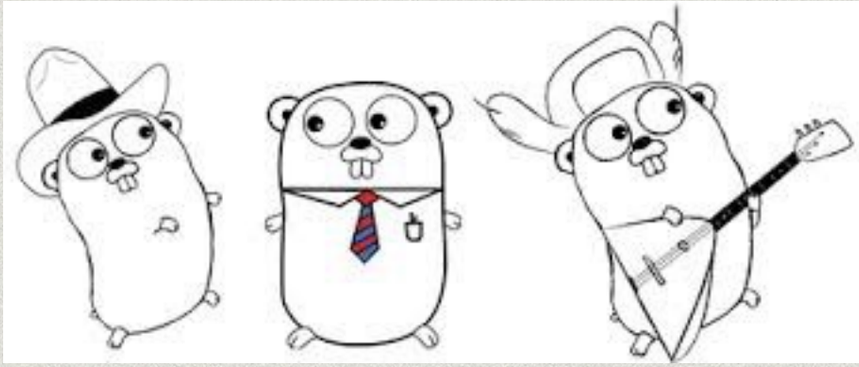
TRADEMARK O'REILLY, LARRY WALL AND THE PERL FOUNDATION CLOCKWISE FROM LEFT

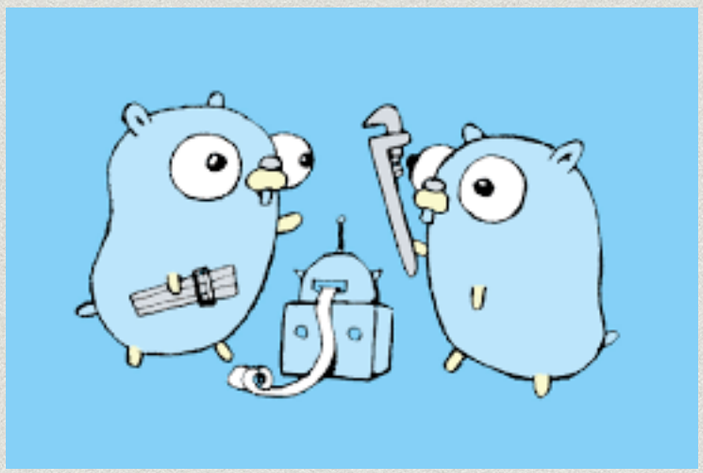
GO ONLY HAS ONE MASCOT







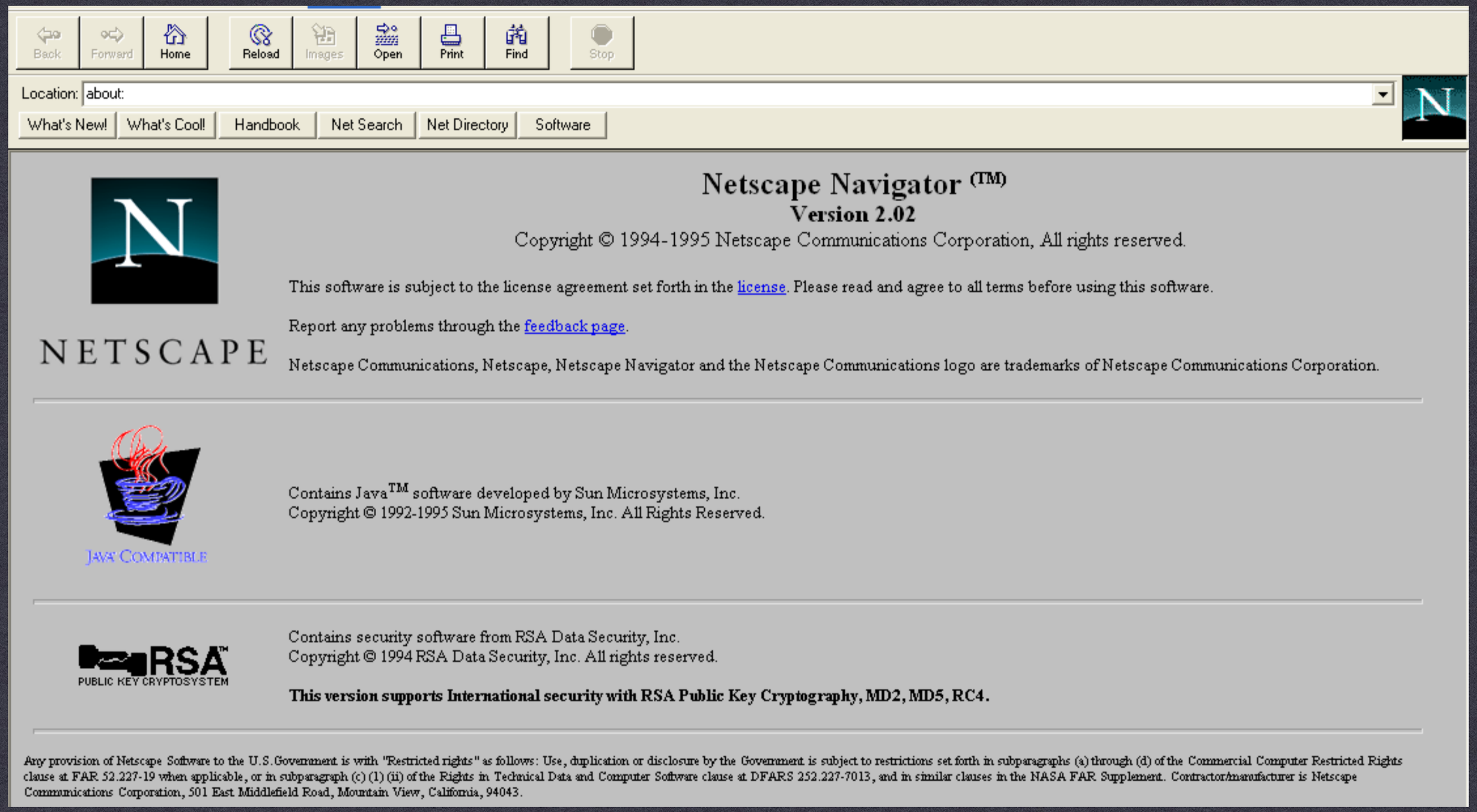




Courtesy Renée French

Crystal Meth Gopher

Courtesy BRADFITZ



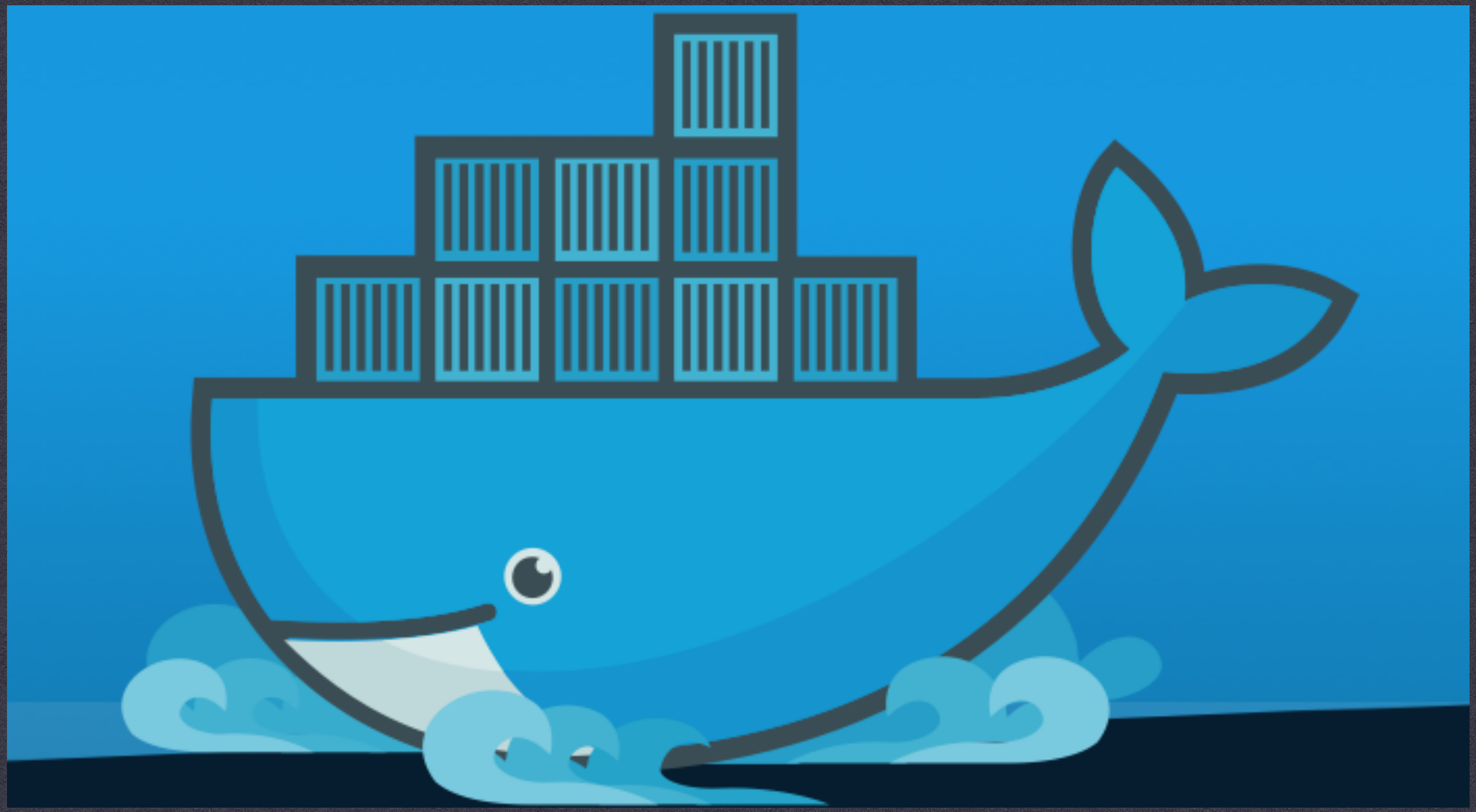
PROJECT

PERL'S KILLER APPS

TEXT PROCESSING, THE WEB ET AL

DATE **1990'S - PRESENT**

CLIENT **EVERYONE**



PROJECT

GO'S FIRST KILLER APP

DOCKER

DATE JUNE 2014

CLIENT "THE CLOUD"

“Sorry, there are no magic beans for sale.”

-Me

Perl 5 is incredibly well-established

You seldom have to install it to try it

Go is fairly new and not in any base OS installation

Let's see what Google offers us.

Start at **https://golang.org/**

The Official Home of Go

The Go Programming Language

Documents | Packages | The Project | Help | Blog | Search

Try Go

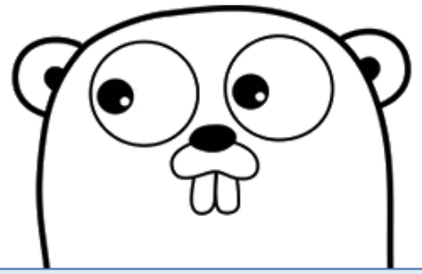
Pop-out

```
// You can edit this code!
// Click here and start typing.
package main

import "fmt"

func main() {
	fmt.Println("Hello, 世界")
}
```

Hello, World!

Run | Share | Tour

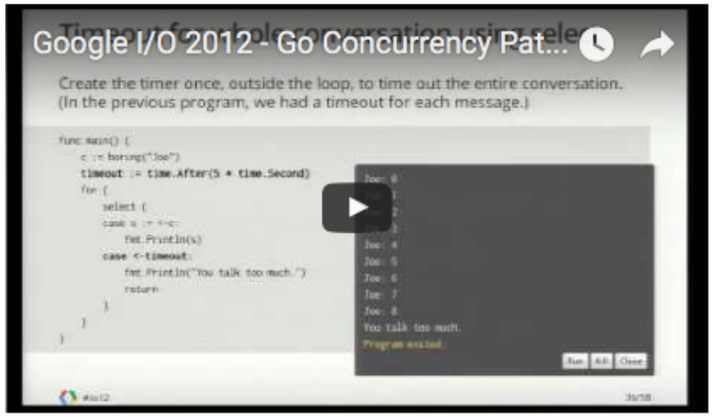
Go is an open source programming language that makes it easy to build simple, reliable, and efficient software.



Download Go

Binary distributions available for
Linux, Mac OS X, Windows, and more.

Featured video



Featured articles

Go 1.6 is released

Today we release Go version 1.6, the seventh major stable release of Go. You can grab it right now from the download page. Although the release of Go 1.5 six months ago contained dramatic implementation changes, this release is more incremental.

Published 17 February 2016

Language and Locale Matching in Go

Consider an application, such as a web site, with support for multiple languages in its user interface. When a user arrives with a list of preferred languages, the application must decide which language it should use in its presentation to the user. This requires finding the best match between the languages the application supports and those the user

TRY BEFORE YOU BUY

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Run Share Tour

THE TOUR IS A PLEASANT TUTORIAL INTRODUCTION

PLEASE GOOGLE
I WANT SOME MORE
imgflip.com

OKAY

The Go Playground

The Go Playground Run Format Imports Share https://play.golang.org/p/Qmal0vMux About

```go
package main

import (
	"fmt"
)

func main() {

	var n = 100000
	var delta = 1.0 / float64(n)
	var sum float64
	var x float64

	for i := 1; i <= n; i++ {
		x = (float64(i) - 0.5) * delta
		sum += 1.0 / (1.0 + x*x)
	}
	var pi = 4.0 * delta * sum
	fmt.Println("Pi is approximately", pi, "after", n, "iterations.")
}
```

```
Pi is approximately 3.1415926535981615 after 100000 iterations.

Program exited.
```

The Go Playground

- Runnable pastebin

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- **Shareable URLs**

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- **Code / URLs saved "until further notice"**

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- Runnable pastebin
- Shareable URLs
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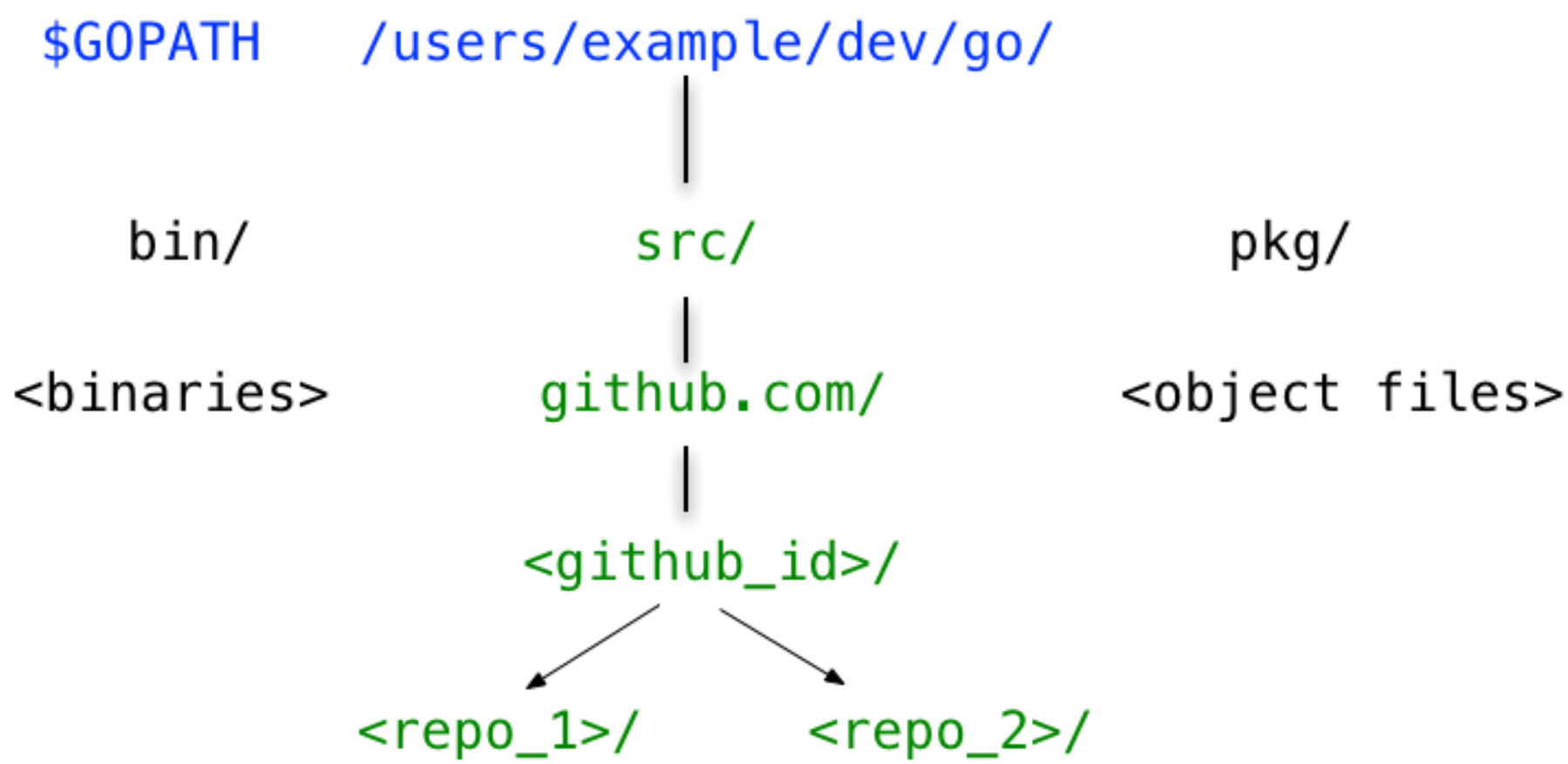
- **Third party open source alternative: glot.io**

Installing Go is easy

- Binaries available for Apple, Linux, BSD, Microsoft
- Source for All The Special Snowflakes
- Set **GOROOT** if you install outside the default location
- Make sure GOROOT/default location is in your environment
- **DONE**

THE GO WORKSPACE

GO WORKSPACE



THE GO TOOLCHAIN

JUST USE GO

perl program.pl

vs

go run pi.go

cpanm <module>

vs

go get <package>

- go build - create an executable
- go install - create executable in $GOPATH/bin
- go version
- go fmt foo.go - this is Go's perltidy

In the Perl world, "toolchain" refers to "How to Install Modules"

With Go this means "How to create an executable program”

Go programs are compiled into static binaries

GO CODE WILL GENERALLY
JUST WORK WHEN DELIVERED

THE ONUS IS SQUARELY ON DEVELOPERS TO MAINTAIN DEPENDENCIES

WITH PERL, PRODUCERS AND CONSUMERS TEND TO SHARE THIS PAIN

Go Facts

- The language is deliberately minimal

There are 25 Go Keywords

break	default	func	interface
case	defer	go	map
struct	chan	else	goto
package	switch	const	fallthrough
if	range	type	continue
for	import	return	var
select			

There are 37 Predeclared Names

CONSTANTS	true	false	iota	nil
TYPES	int	int8/16/32/64	uint	uint8/16/32/64
	uintptr	float32/64	complex64/128	bool
	byte	rune	string	error
FUNCTIONS	make	len	cap	new
	append	copy	complex	real
	imag	panic	recover	

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- The language is deliberately minimal
- It has a strong standard library
- Strongly typed à la C/C++, but sugar provided
- Natively UTF-8 (Pike & Thompson invented it)
- Memory is automatically garbage collected
- Lightweight object orientation with no inheritance

More Go Facts

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- Maps and Slices aren't quite what you're used to
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- Concurrent Programming Support
- It's NOT Object Oriented

GO HAS NO OBJECTS OR CLASSES

IT HAS NO INHERITANCE

METHODS ARE DEFINED ON TYPES

Time for some code

The Go Playground

Run Format Imports Share

```go
package main

import (
	"fmt"
)

func main() {
	fmt.Println("Hello, world 🌍")
}
```

HELLO WORLD UTF-8 STYLE

FIRST THINGS FIRST

Package Statement

- All Go code starts with a package statement
- Perl modules do this as well
- `package main` means a standalone program
- `package foo` means package in namespace foo

Import Statement

- Import is like Perl 'use <module>'
- This statement must be after 'package'
- Pernickety Go programmers insist that import lists be alphabetical
- The Go format command ('go fmt foo.go') does this automatically

SIMPLE BENCHMARKING

“I call that a Go script.”

–Me again

CALCULATING PI WITH PERL AND GO

NODDY CONCURRENCY DEMOS

https://nathany.com/why-go/

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