
Fun times
with Go
(the programming language)

Hello!

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Overview

I. Brief history of Go
II. Go basics
III. Our mission
IV. Compiling and Deploying
V. Performance
VI. Questions

1.

A brief history of Go

How and why did Go come about?

Golang: A history

- Created by three software engineers at Google
- Open source project in 2009
- Go version 1 released in 2012
- Go is currently on version 1.9
- Statically typed language
- Uses type inference
- Fun like Python and JS but more reliable!

Reference:
https://golang.org/doc/faq#Origins

2.

Go basics

Let’s learn about strings and things!

Variables, Control Structures, and Maps Oh my!

```
// `var` declares 1 or more variables.
var a string = "initial"

// You can declare multiple variables at once.
var b, c int = 1, 2

// Go will infer the type of initialized variables.
var d = true

// Variables declared without a corresponding
// initialization are _zero-valued_. For example, the
// zero value for an `int` is `0`.
var e int

// The `:=` syntax is shorthand for declaring and
// initializing a variable, e.g. for
// `var f string = "short"` in this case.
f := "short"
```

Variables, Control Structures, and Maps Oh my!

```
// The most basic type, with a single condition.
i := 1
for i <= 3 {
    fmt.Println(i)
    i = i + 1
}

// A classic initial/condition/after `for` loop.
for j := 7; j <= 9; j++ {
    fmt.Println(j)
}

// `for` without a condition will loop repeatedly
// until you `break` out of the loop or `return` from
// the enclosing function.
for {
    fmt.Println("loop")
    break
}

// You can also `continue` to the next iteration of
// the loop.
for n := 0; n <= 5; n++ {
    if n%2 == 0 {
        continue
    }
    fmt.Println(n)
}
```

Variables, Control Structures, and Maps Oh my!

```
// To create an empty map, use the builtin `make`:
// `make(map[key-type]val-type)`.
m := make(map[string]int)

// Set key/value pairs using typical `name[key] = val`
// syntax.
m["k1"] = 7
m["k2"] = 13

// Printing a map with e.g. `Println` will show all of
// its key/value pairs.
fmt.Println("map:", m)

// Get a value for a key with `name[key]`.
v1 := m["k1"]
fmt.Println("v1: ", v1)

// The builtin `len` returns the number of key/value
// pairs when called on a map.
fmt.Println("len:", len(m))

// The builtin `delete` removes key/value pairs from
// a map.
delete(m, "k2")
fmt.Println("map:", m)
```

3.

Our mission

Should you choose to accept it

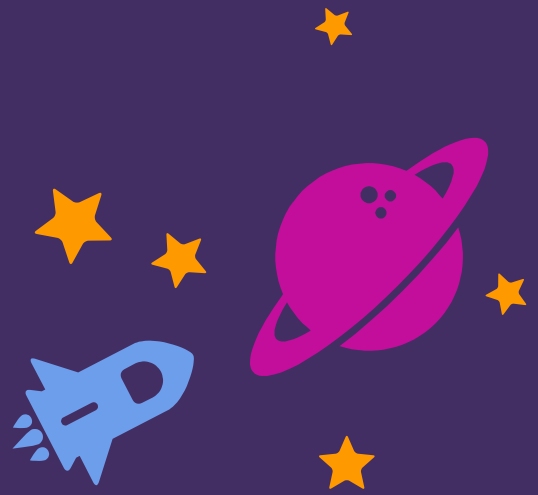
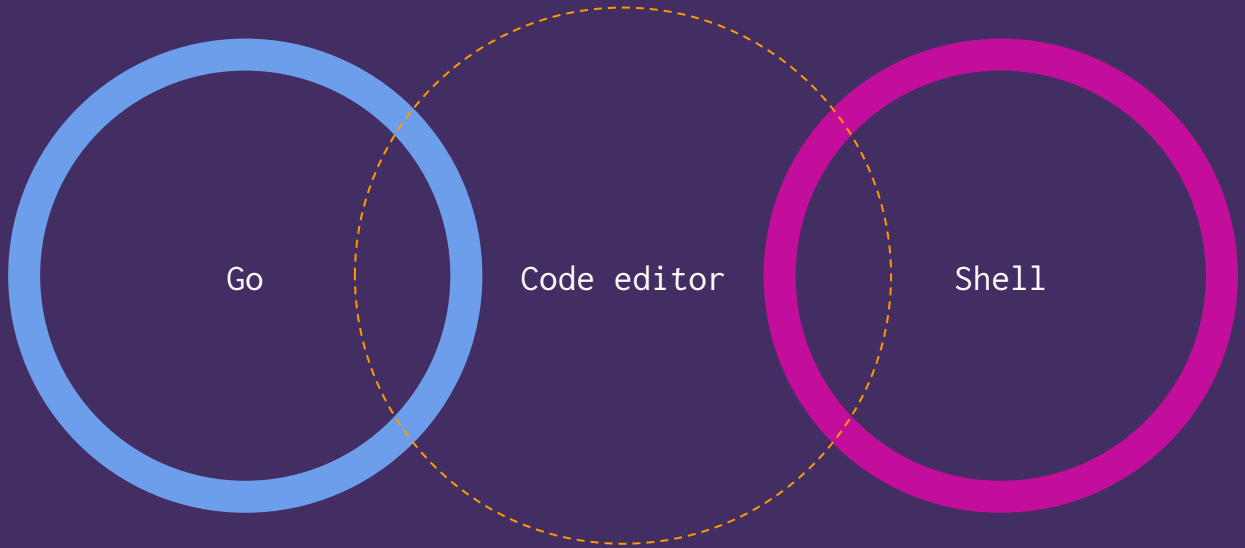


Image Manipulation

You're going to need



http://bit.ly/2DgcZdm

How can I tell if Go is installed?

```
go version
```

Something like “go version go1.8.3 darwin/amd64” should be returned

```
echo $GOPATH
```

This should return a location where you find go code

100%

You did it!

4.

Compiling

Easier than you think!

```
go build .
```

This will create an executable in the code directory

```
./go-workshop -<options>
```

Run the executable with the options that you want

100%

You did it!

Compile for another OS

```
GOOS=windows GOARCH= amd64 go build .
```

Go allows you to set variables that determine the OS and architecture for go build

GOOS -> android darwin dragonfly freebsd linux nacl netbsd openbsd plan9 solaris windows zos

GOARCH -> 386 amd64 amd64p32 arm armbe arm64 arm64be ppc64 ppc64le mips mipsle mips64 mips64le mips64p32 mips64p32le ppc s390 s390x sparc sparc64

Reference:
https://github.com/golang/go/blob/master/src/go/build/syslist.go

5.

Tinkering

You have the basics, but play around some!

Tinkering ideas

Add more filters!

Save the image to a file

Change/add command line options

6.

Questions!

Resources

Learn Go

https://gobyexample.com/

https://medium.freecodecamp.org/writing-command-line-applications-in-go-2bc8c0ace79d

https://tour.golang.org/welcome/1

Start a project

https://github.com/avelino/awesome-go