Getting started with Go

Ben Jones
Language invented by:

Rob Pike

Ken Thompson
Rob Pike wrote books like...
Ken Thompson wrote operating systems like...
All the cool new stuff is go...
golang features

• Keep most of expressiveness of dynamic languages, gain speed
• C-like, statically linked, garbage collected
• Fast compilation
• Nice build / compile tools
• A reaction to C++ but won converts from python/ruby devs
Nice dev environment

- go get libraries

```
$ go get github.com/mefellows/muxy
$ ls $GOPATH/src/github.com/mefellows/muxy
LICENSE  README.md  examples  main.go
muxy  scripts  version.go  Makefile
command  log  middleware  protocol
symptom  wercker.yml
```
No unused stuff

```
package main

import "fmt"
import "os"

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

```
package main

import "fmt"

func main() {
    thing := "unused"
    fmt.Println("Hello, playground")
}
```

prog.go:4: imported and not used: "os"

Program exited.

prog.go:6: thing declared and not used

Program exited.

http://tour.golang.org
http://play.golang.org
Run everywhere

• X-Compile is trivial

```
$ GOOS=windows GOARCH=386 go build -o egroupexpand.exe egroupexpand.go
$ ls -l
```

```
total 19344
-rwxr-xr-x 1 ben staff 5445348 Aug 27 10:33 egroupexpand
-rwxr-xr-x 1 ben staff 4449792 Sep 29 10:44 egroupexpand.exe
-rw-r--r-- 1 ben staff 3075 Aug 27 10:33 egroupexpand.go
```

• No worrying about dependency versions:

```
[bejones@aiadm060 ~]$ python -V
Python 2.6.6
```
OO without loads of cruft

- types and values instead of classes and objects
- methods on any user-defined type
- polymorphism with interfaces
- namespacing with exports
- no inheritance
  - can extend types by embedding
Concurrency

- concurrency not parallelism (though GOMAXPROCS can help with latter)
- “Do not communicate by sharing memory; instead share memory by communicating”
- Goroutines: function executing concurrently with other goroutines in same address space
  - created by prefixing func or method call with “go”
- Channels - pipes that connect goroutines
learning resources

- http://tour.golang.org
- https://golang.org/doc/effective_go.html
- http://blog.golang.org/concurrency-is-not-parallelism
- http://www.youtube.com/watch?v=jgVhBThJdXc
- https://www.golang-book.com