



Getting started with Go

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Language invented by:

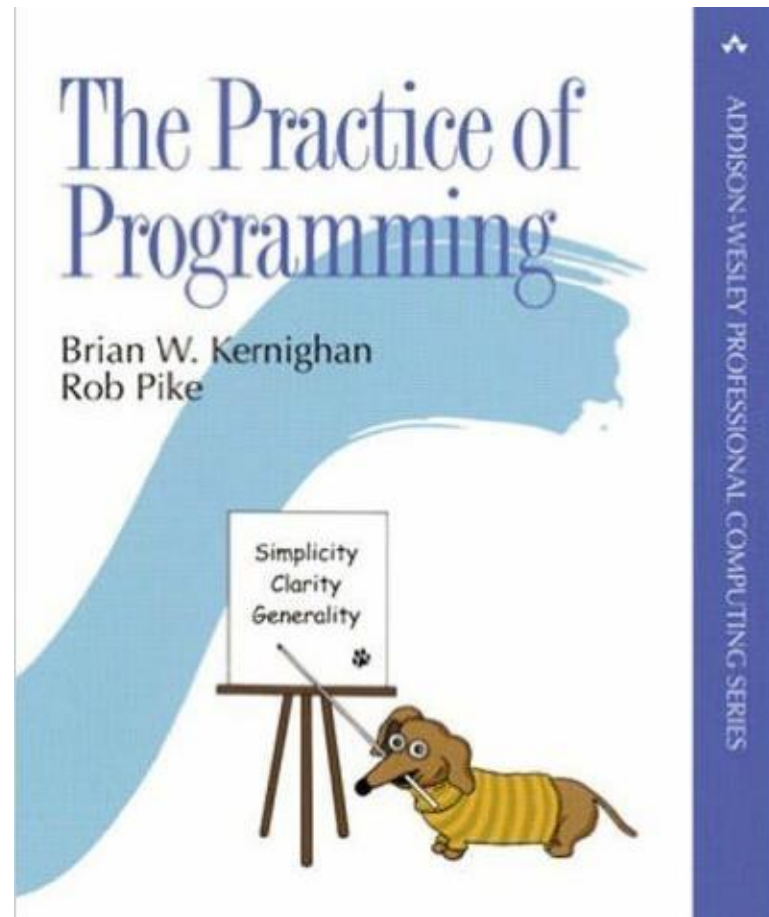
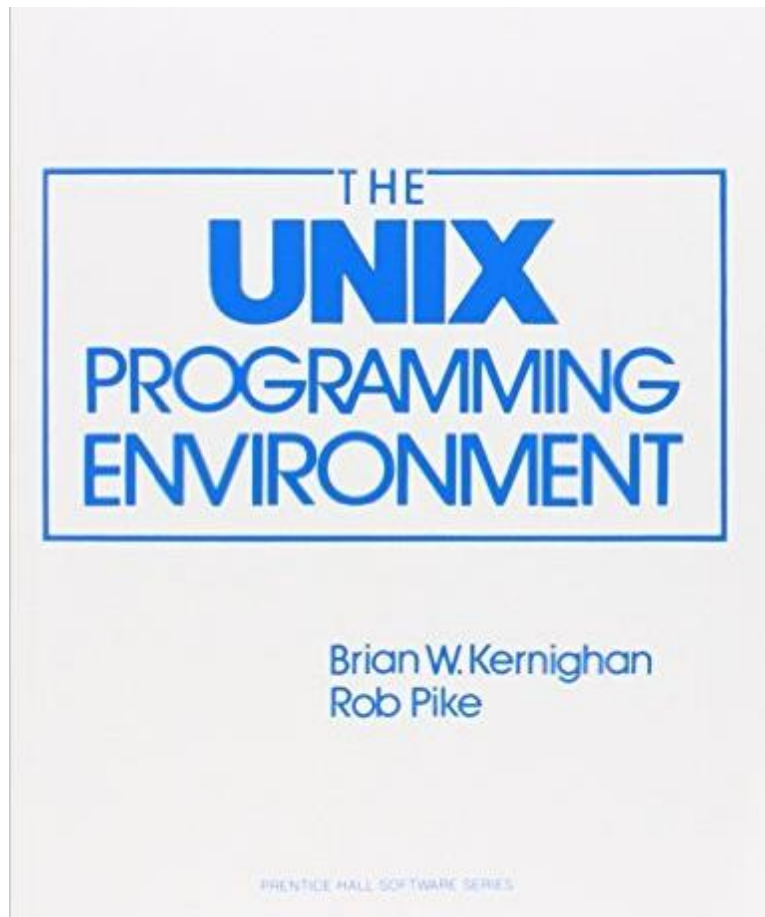


Rob Pike



Ken Thompson

Rob Pike wrote books like...



Ken Thompson wrote operating systems like...



All the cool new stuff is go...

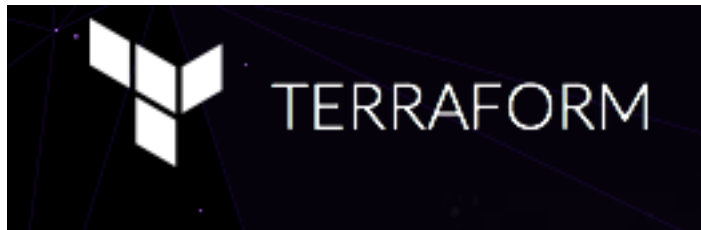
Flynn



DEIS



Cockroach
LABS



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

```
The Go Playground Run Format Imports Share  
1 package main  
2  
3 import "fmt"  
4 import "os"  
5  
6 func main() {  
7     fmt.Println("Hello, playground")  
8 }  
9  
10  
11  
--
```

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

Program exited.

```
The Go Playground Run Format Imports Share  
1 package main  
2  
3 import "fmt"  
4  
5 func main() {  
6     thing := "unused"  
7     fmt.Println("Hello, playground")  
8 }  
9  
10  
11  
12  
13
```

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 egroupeexpand.exe  
egroupeexpand.go
```

```
$ ls -l
```

```
total 19344
```

```
-rwxr-xr-x  1 ben  staff  5445348 Aug 27 10:33 egroupeexpand
```

```
-rwxr-xr-x  1 ben  staff  4449792 Sep 29 10:44  
egroupeexpand.exe
```

```
-rw-r--r--  1 ben  staff    3075 Aug 27 10:33  
egroupeexpand.go
```

```
D:\Profiles\bejones\Downloads>egroupeexpand.exe lightning-talks  
dimeglio slopiens
```

```
D:\Profiles\bejones\Downloads>
```

- 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
- <https://golang-for-python-programmers.readthedocs.org/en/latest/>
- <http://blog.golang.org/concurrency-is-not-parallelism>
- <http://www.youtube.com/watch?v=jgVhBThJdXc>
- <https://www.golang-book.com>