


One Does Not Simply Iterate over Mordor

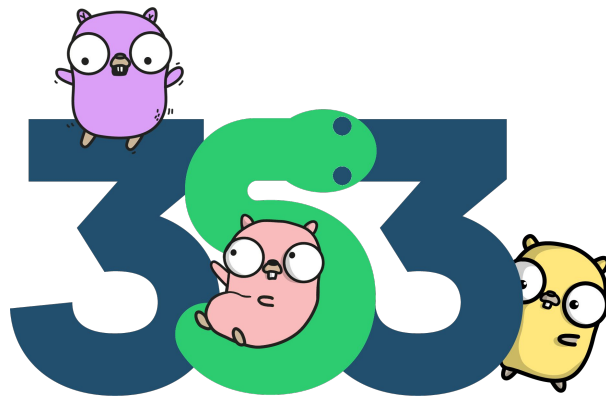
GopherCON  2014

Israel

miki @tebeka



CEO,
CTO,
UFO



Idiotic
Programmers

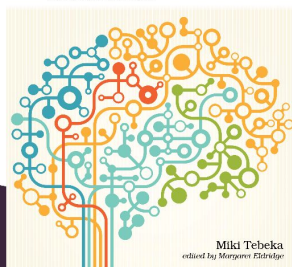
Effective Go Recipes
Fast Solutions to Common Tasks



Miki Tebeka
edited by Margaret Eide

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Go Brain Teasers
Exercise Your Mind



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Range Over Function

Go 1.23, August 2024

Generators

Python 2.3, July 2003



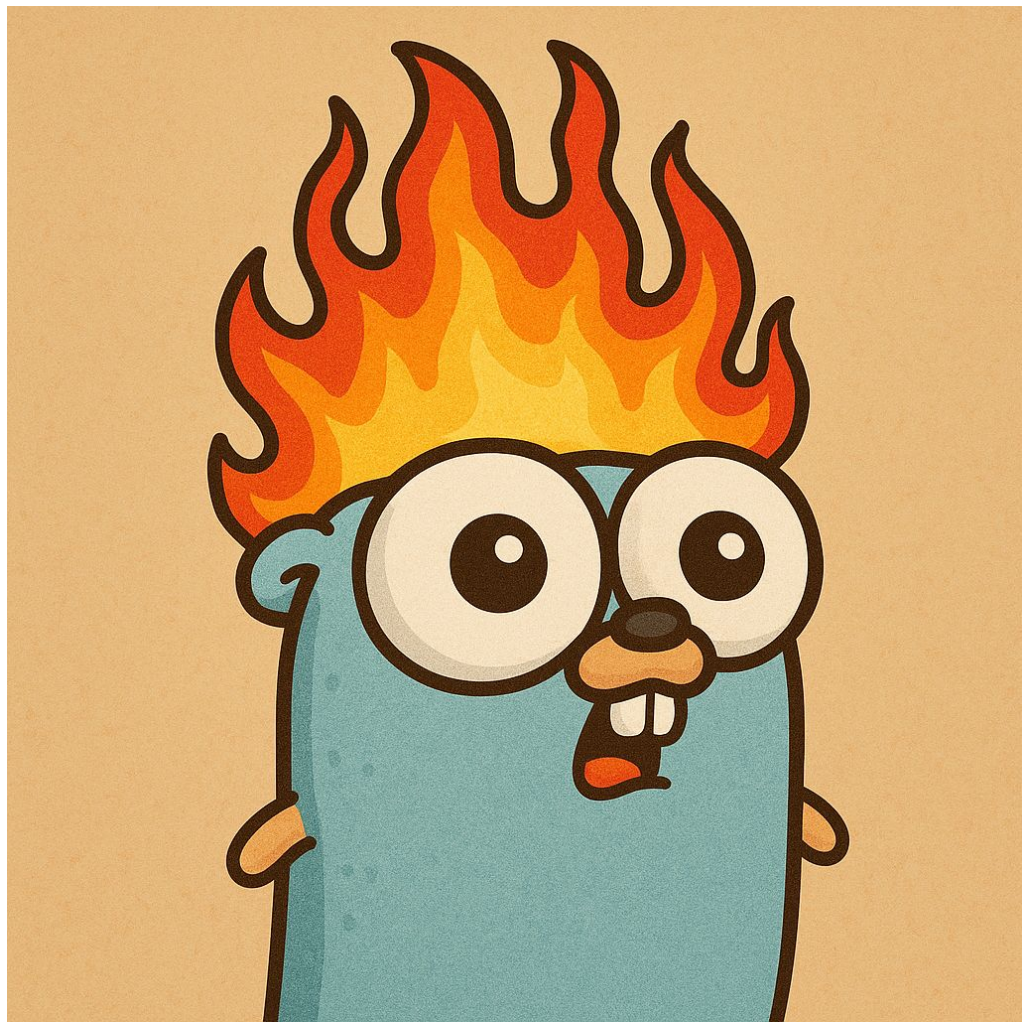
type Seq

```
type Seq[V any] func(yield func(V) bool)
```

type Seq2

```
type Seq2[K, V any] func(yield func(K, V) bool)
```

pkg.go.dev/iter



CODE

`tick/tick.go`

Range-Over Functions in Go ArdanLab Blog



Load logs from
compressed
JSON file.

```
$ zcat logs.json.gz | wc
```

```
5350200 16045852 770589508
```

```
$ zcat logs.json.gz | head -1
```

```
{"host": "199.72.81.55", "time":  
"1995-07-01T00:00:01Z", "request": "GET /history/apollo/  
HTTP/1.0", "status": 200, "bytes": 6245}
```

CODE

log/log.go

CODE

`slice/slice.go`

CODE

`bench/main.go`

Map

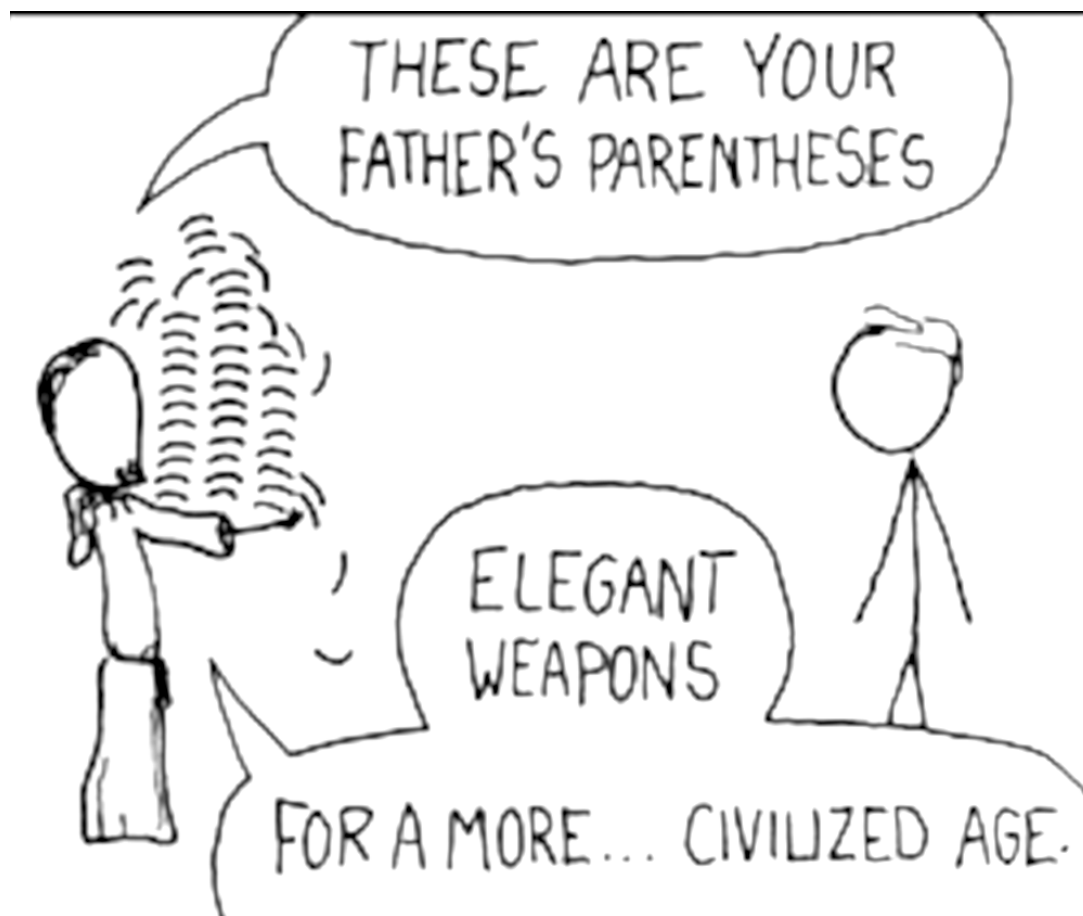
lower: ["Suite", "Up"] -> ["suite", "up"]

Filter

≥ 0 : [2, -1, 3, 4] -> [2, 3, 4]

Reduce

sum: [1, 2, 3, 4] \Rightarrow 10



<https://xkcd.com/297/>

CODE

`lazy/lazy.go`

CODE

push / push . go

CODE

`pull/pull.go`



func Collect

```
func Collect[E any](seq iter.Seq[E]) []E
```

Collect collects values from seq into a new slice and returns it.

func Values

```
func Values[Slice ~[]E, E any](s Slice) iter.Seq[E]
```

Values returns an iterator that yields the slice elements in order.

pkg.go.dev/slices

func Values

```
func Values[Map ~map[K]V, K comparable, V any](m Map) iter.Seq[V]
```

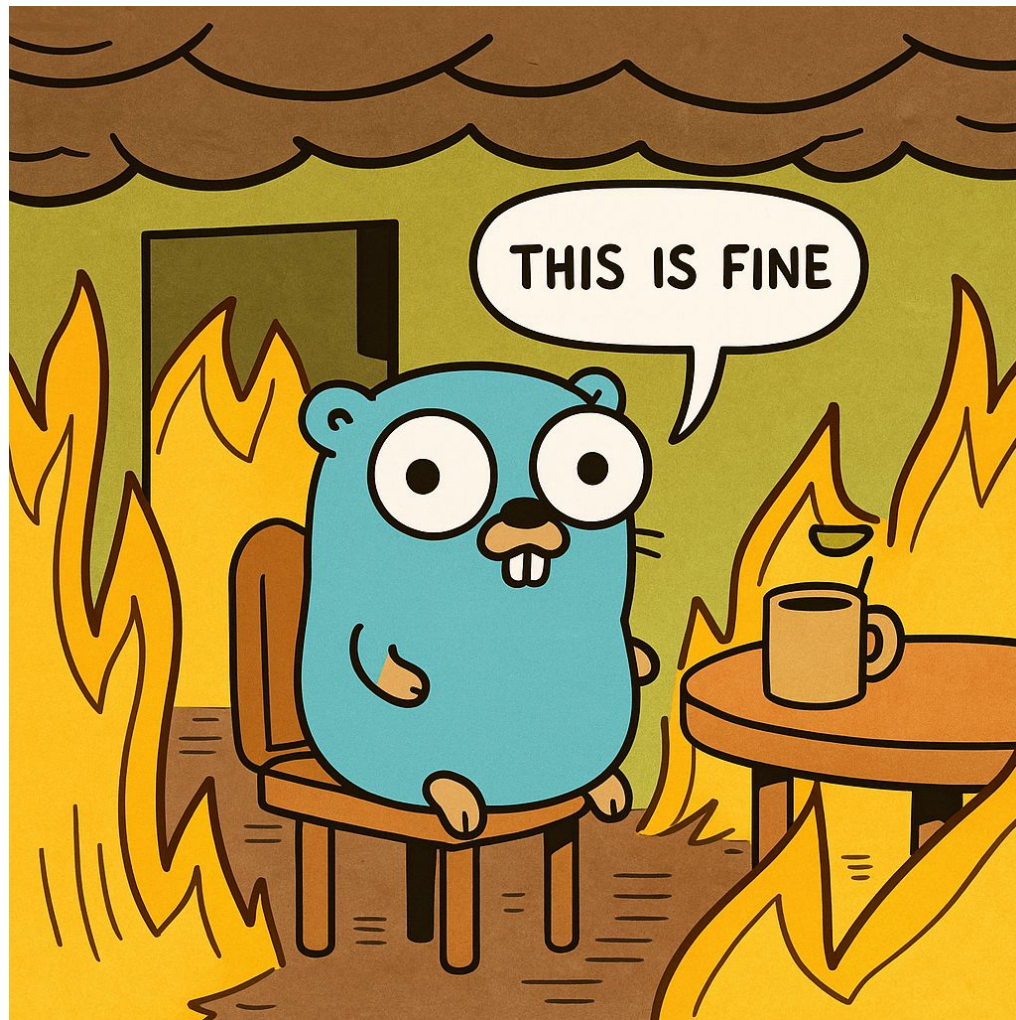
Values returns an iterator over values in m. The iteration order is not specific

func All

```
func All[Map ~map[K]V, K comparable, V any](m Map) iter.Seq2[K, V]
```

All returns an iterator over key-value pairs from m. The iteration order is not

pkg.go.dev/maps



TINSTAAFL

- Performance (*)
- Harder to debug
- Error handling
- Resource management

CODE

`order/order.go`

CODE

`leak/leak.go`



Questions?



github.com/tebeka/talks/tree/main/gcil-2025