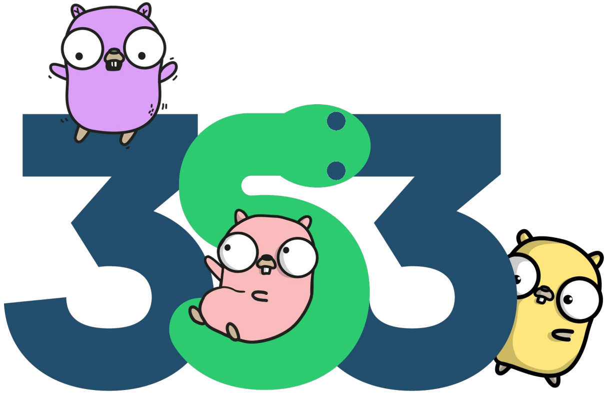
One Does Not Simply Iterate over Mordor

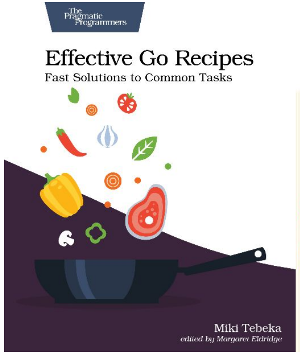
GopherCON Israel 2025

miki @tebeka

Ardan labs

CEO,
CTO,
UFO





The Pragmatic Programmers

Effective Go Recipes

Fast Solutions to Common Tasks

Miki Tebeka

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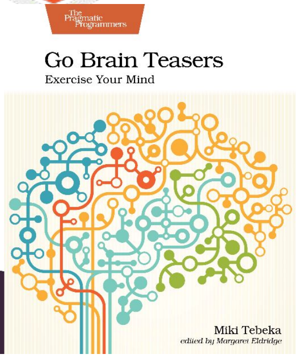

The Pragmatic Programmers

Go Brain Teasers

Exercise Your Mind

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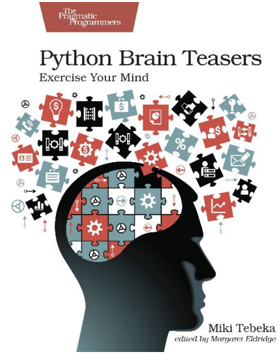

The Pragmatic Programmers

Python Brain Teasers

Exercise Your Mind

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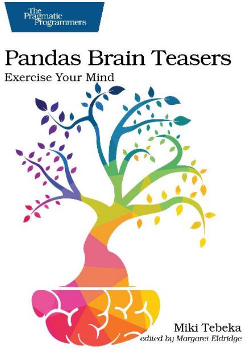

The Pragmatic Programmers

Pandas Brain Teasers

Exercise Your Mind

Miki Tebeka

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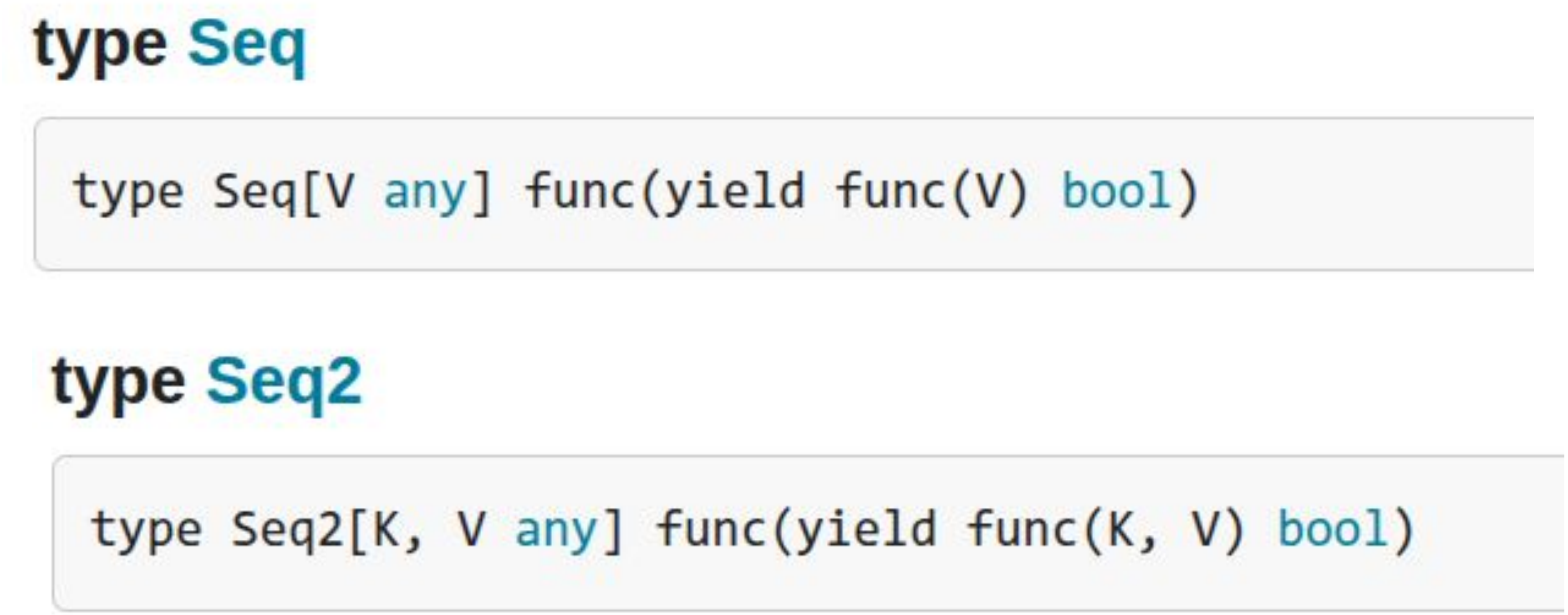
in Learning

Range Over Function

Go 1.23, August 2024

Generators

Python 2.3, July 2003



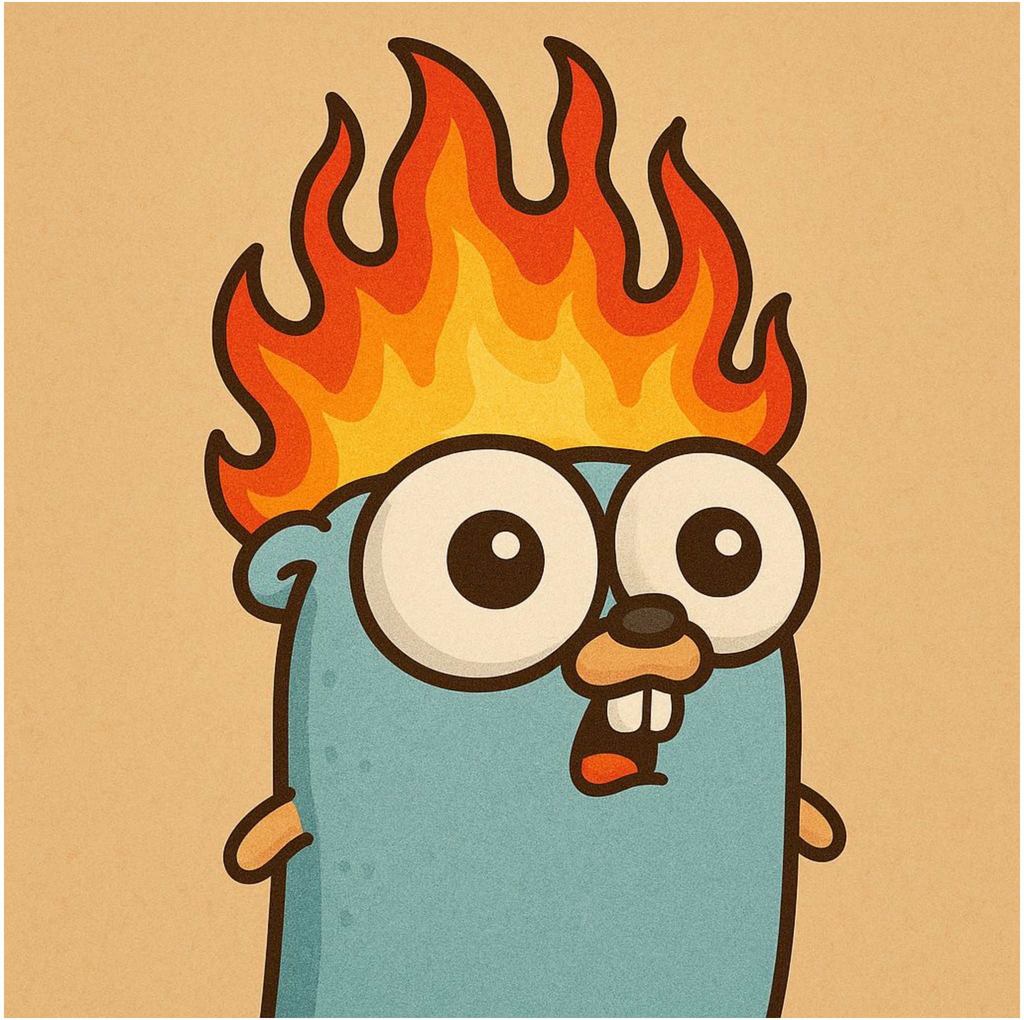
type Seq

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

type Seq2

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

pkg.go.dev/iter



CODE

`tick/tick.go`

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","reques
t":"GET /history/apollo/
HTTP/1.0","status":200,"bytes"
:6245}
```

CODE

`log/log.go`

CODE

`slice/slice.go`

CODE

`bench/main.go`

Map

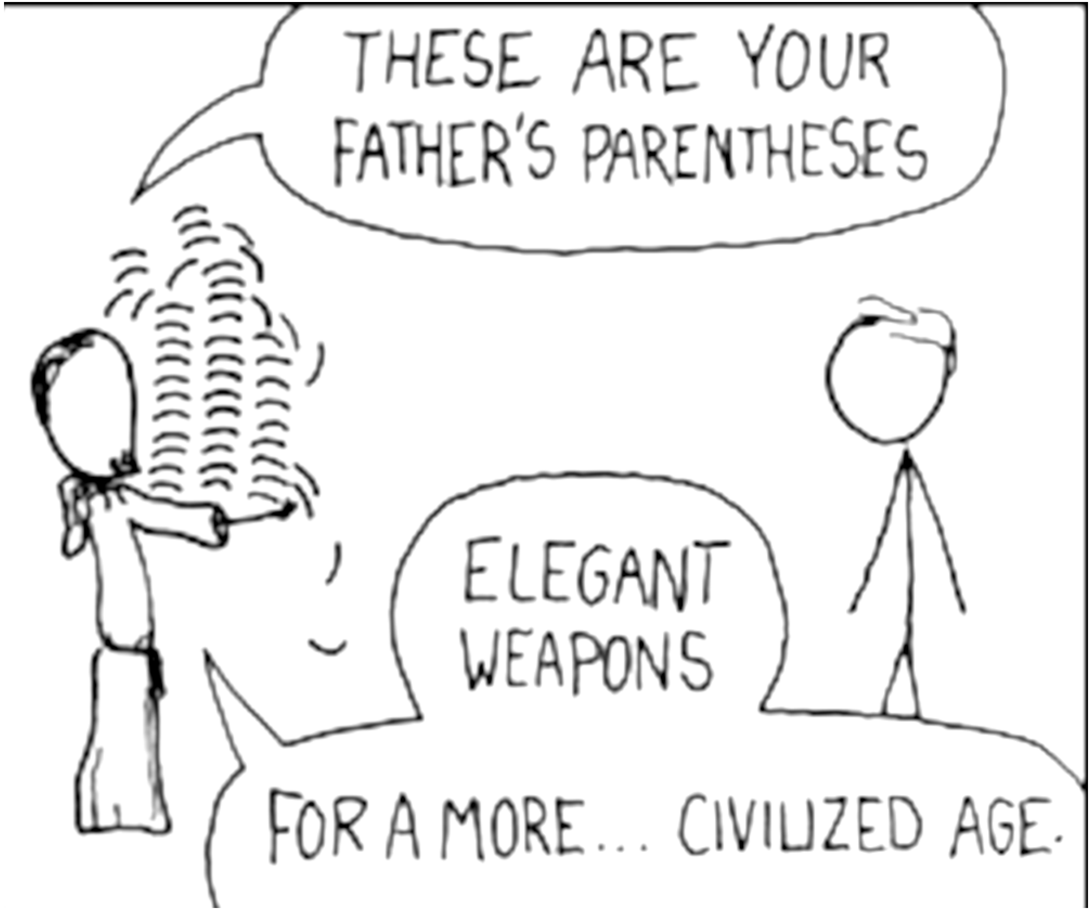
lower: ["Suite", "Up"] -> ["suite", "up"]

Filter

≥ 0: [2, -1, 3, 4] -> [2, 3, 4]

Reduce

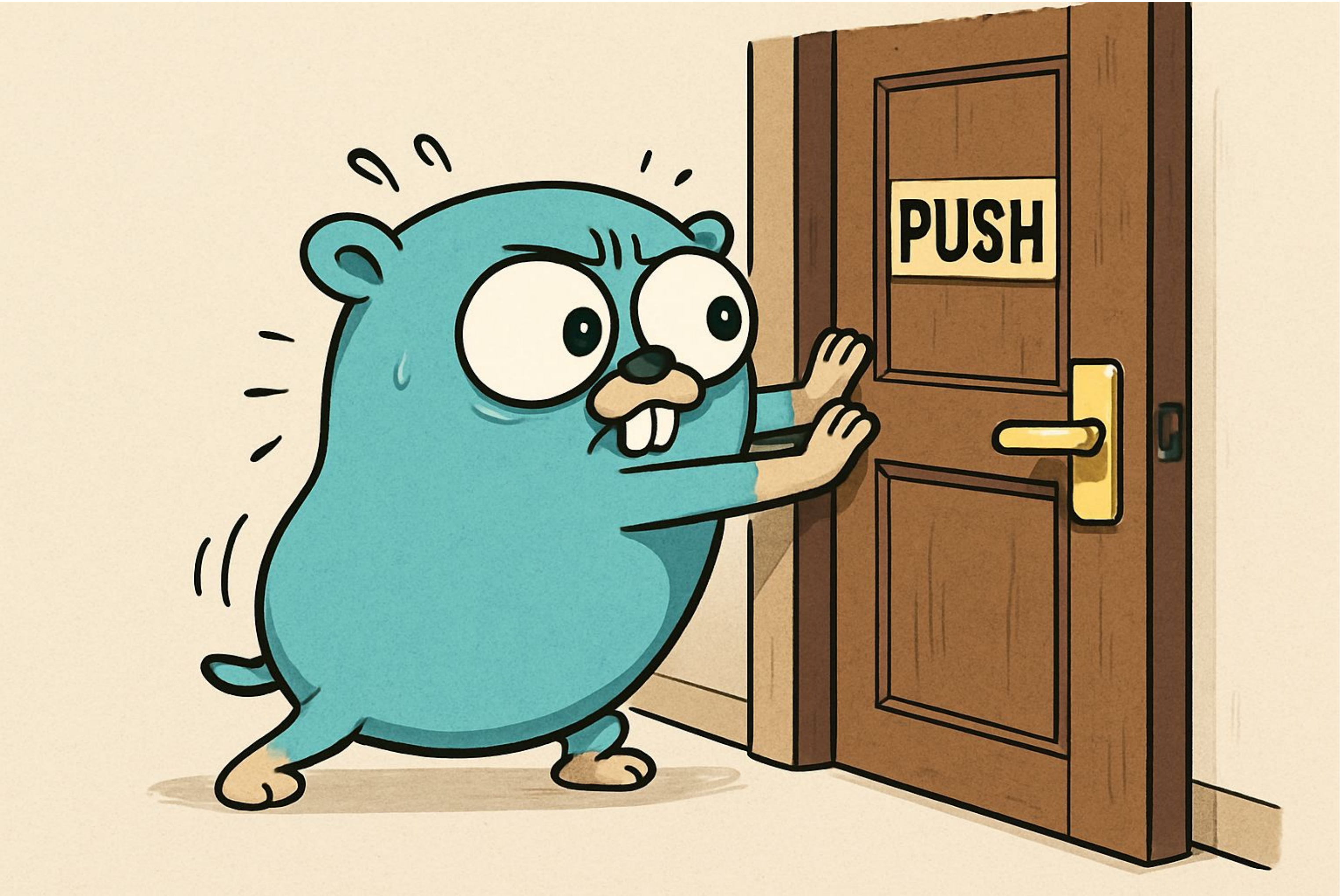
sum: [1, 2, 3, 4] ⇒ 10


THESE ARE YOUR FATHER'S PARENTHESES
ELEGANT WEAPONS
FOR A MORE... CIVILIZED AGE.

https://xkcd.com/297/

CODE

`lazy/lazy.go`


PUSH

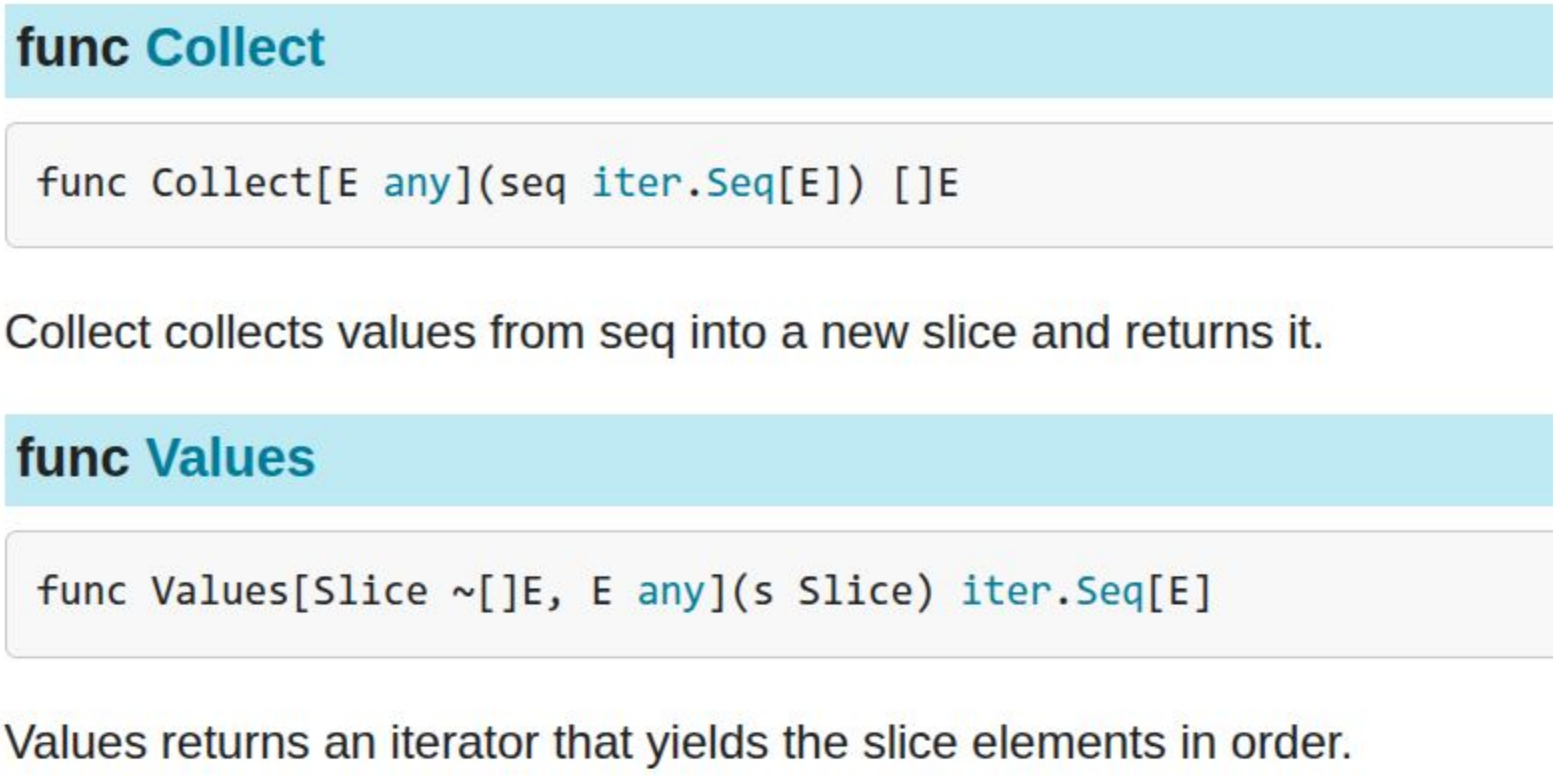
CODE

push/push.go

CODE

`pull/pull.go`

QUIET



func Collect

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

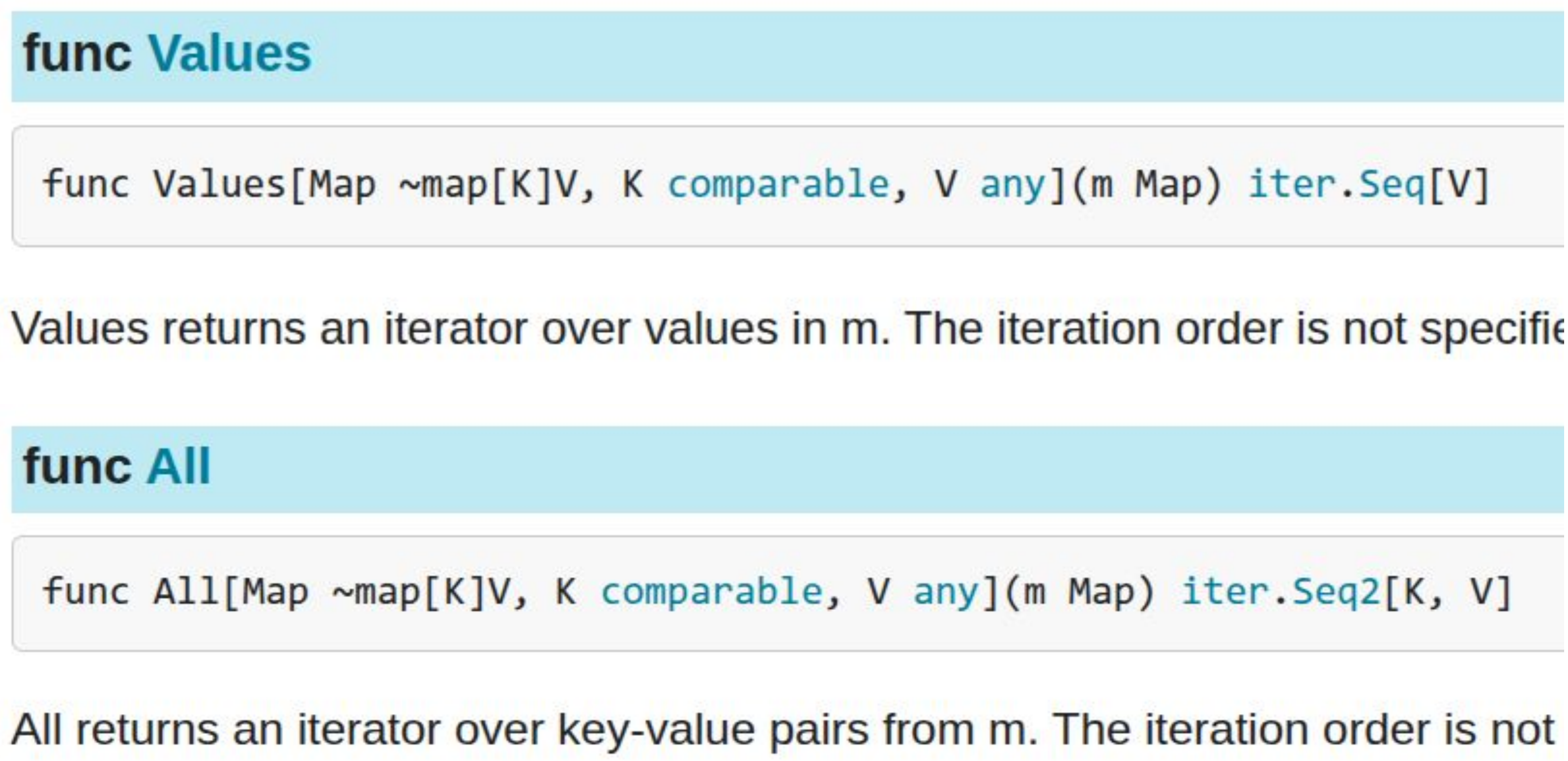
Collect collects values from seq into a new slice and returns it.

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]
```

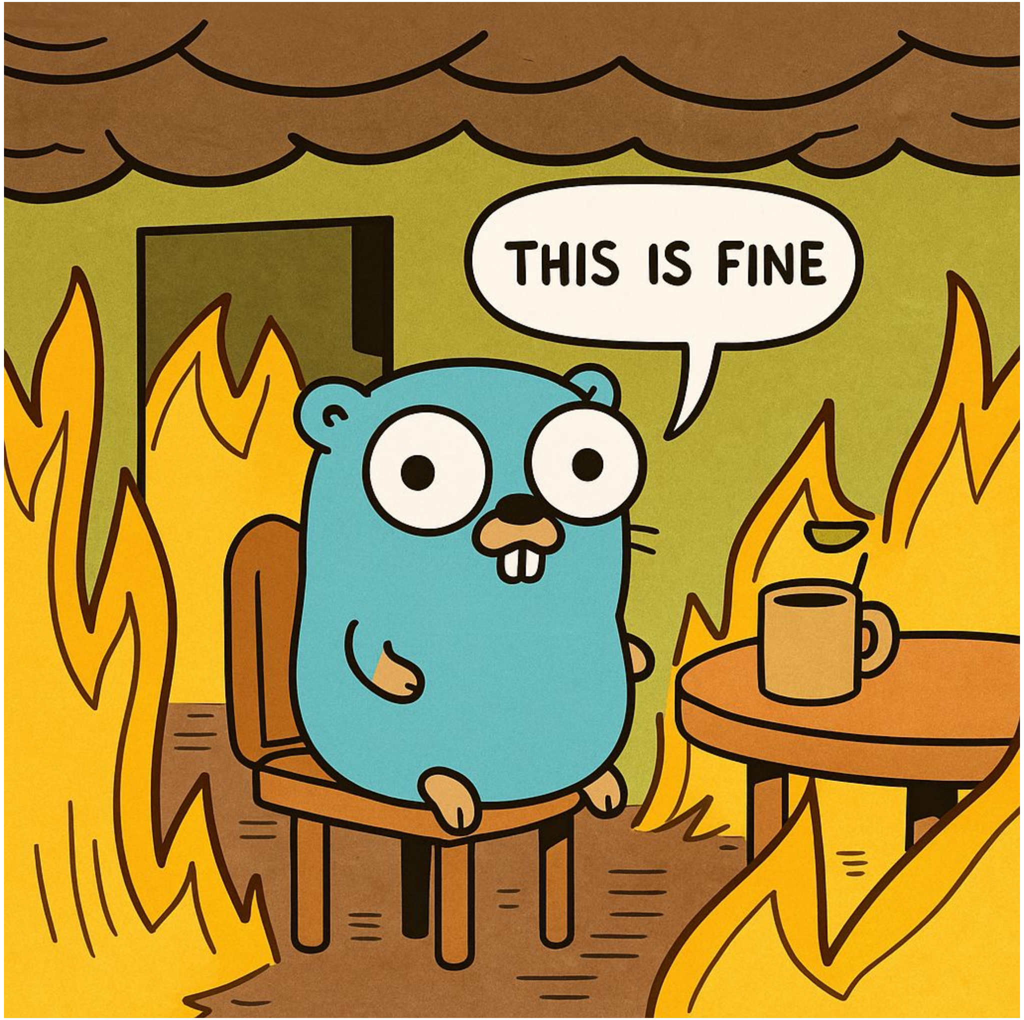
Values returns an iterator over values in m. The iteration order is not specifie

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


THIS IS FINE

TANSTAAFL

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

CODE

`order/order.go`

CODE

`leak/leak.go`

Questions?

Range-Over Functions in Go

ArdanLab Blog

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