

Taming Complexity with Go

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SE2016, Sep 2016

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Overview

Created in  in 2009

Authors: Rob Pike, Ken Thompson, Robert Griesemer

Created to build software at scale

Overview

- Static-typed compiled language
- Garbage Collector
- Simplicity - only 25 keywords (+ 5 secret)
- Ultra-fast compilation
- Built-in concurrency
- Great tooling and standard library

Overview

- Boring

Hello, world

```
package main

import (
    "net/http"
)

func handler(w http.ResponseWriter, r *http.Request) {
    w.Write([]byte("Hello world!"))
}

func main() {
    http.HandleFunc("/", handler)
    http.ListenAndServe(":8000", nil)
}
```

WTF?

- No exceptions
- No generics
- No algebraic types
- No inheritance
- No classes-based OOP
- No warnings

Go in production



Google Trends: Golang

Interest over time ?

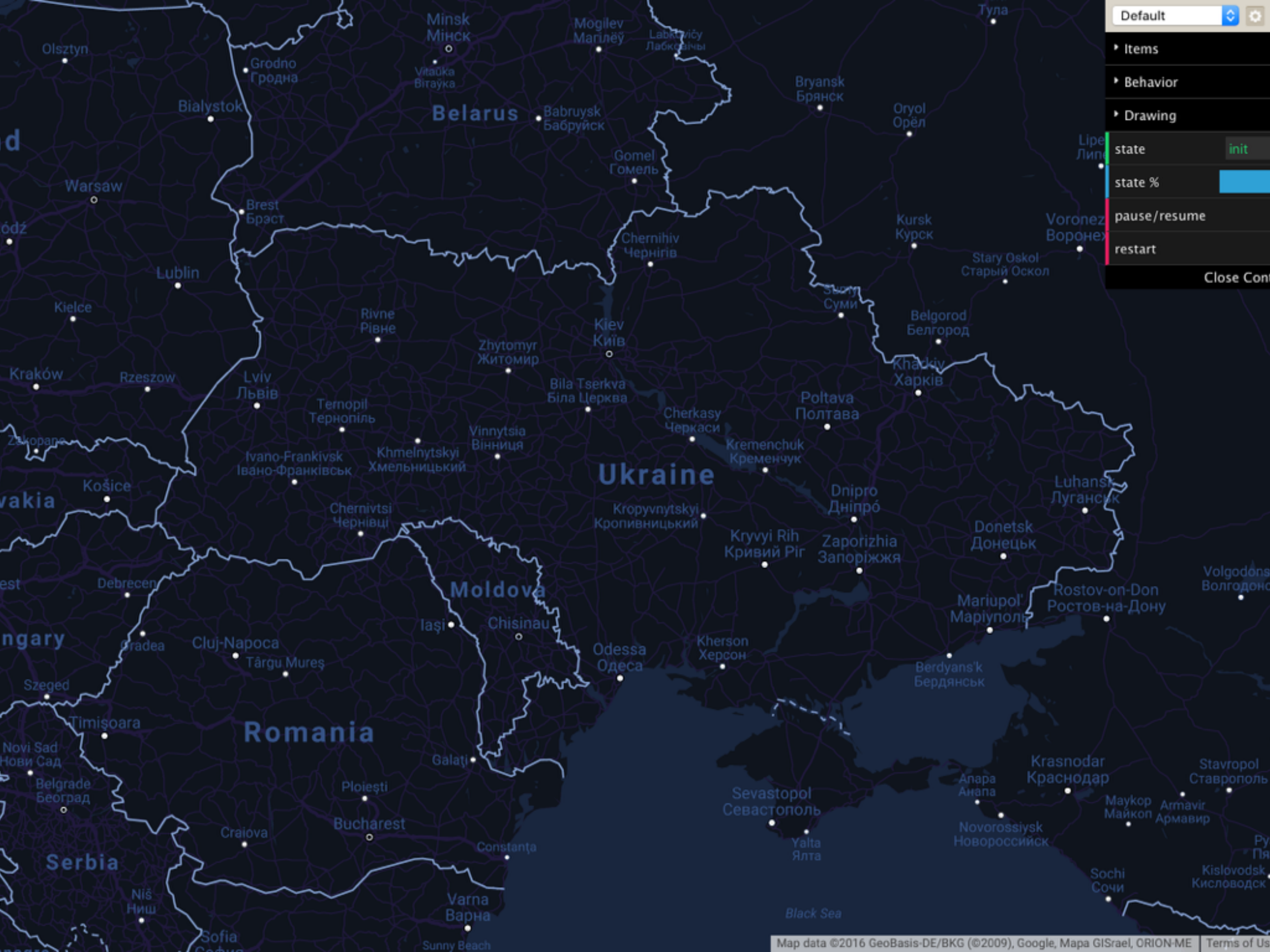


Go removes
accidental complexity*

* https://en.wikipedia.org/wiki/No_Silver_Bullet

Demo project

Visualize Ukrainian
Corruption :)



Default

Items

Behavior

Drawing

stateinit

state %

pause/resume

restart

Close Control

Input JSON

```
[  
  {  
    "timestamp": "2016-09-02T12:01:01Z",  
    "from": "Київ",  
    "to": "Харків"  
  },  
  {  
    "timestamp": "2016-09-02T12:01:44Z",  
    "from": "Дніпропетровськ",  
    "to": "Луцьк"  
  }  
]
```

Input JSON

```
[  
  {  
    "timestamp": 1472574200,  
    "lat_from": 51.5895,  
    "lat_to": 51.3,  
    "long_from": -0.16409999999999991,  
    "long_to": -0.11670000000000009  
  },  
  {  
    "timestamp": 1472574210,  
    "long_from": 120.9721,  
    "long_to": -97.9503,  
    "lat_from": 14.5955,  
    "lat_to": 30.1746  
  }  
]
```

Installation

- Install Go 1.7
 - <https://golang.org>
- Setup **GOPATH** variable (once)
- Install vim-go
 - <https://github.com/fatih/vim-go>
 - <https://github.com/fatih/vim-go-tutorial>

Step 1

- Package management
- Hello, world
- HTTP hello, world
- JSON unmarshalling
- go fmt

Step 2

- Tests
- Benchmarks
- GoCoverage
- GoConvey?

Step 3

- Storage
- Results endpoint
- Interface, refactoring storage
- Cities package

Step 4

- Replicated Storage
- Concurrency
- Goroutines, channels
- Cross compilation

Demo Code

- github.com/divan/talks/2016/kiev/code/

Ukrainian Go Community

- Golang UA & Golang Lviv meetups (meetup.com)
- Slack channel **golang-ua**
- /r/golang
- Jobs

Typical job requirements

- Get things done
- Microservices
- AWS/Cloud/Containers
- Distributed systems
- Caching/MQ/DBs/etc
- Highload
- ~~Good English~~

Go helps with all, except last :)

How to start

- Go Tour (<https://tour.golang.org>)
- Effective Go (https://golang.org/doc/effective_go.html)
- Brian Kernigan & Alan Donovan's Book "The Go Programming language"

Thank you