



GO

Overview On Go!

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 THE
DEVELOPER'S
CONFERENCE



Algumas aplicações feitas em Go 01

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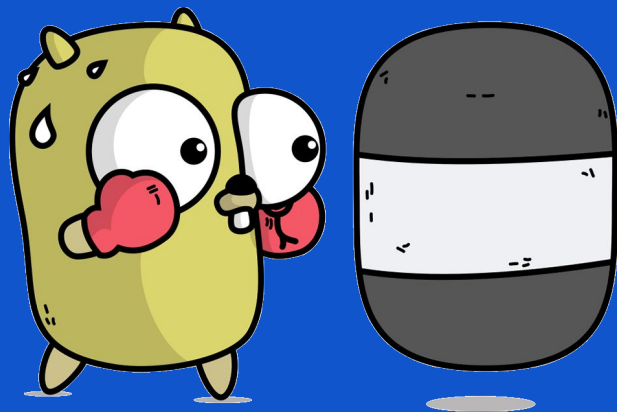
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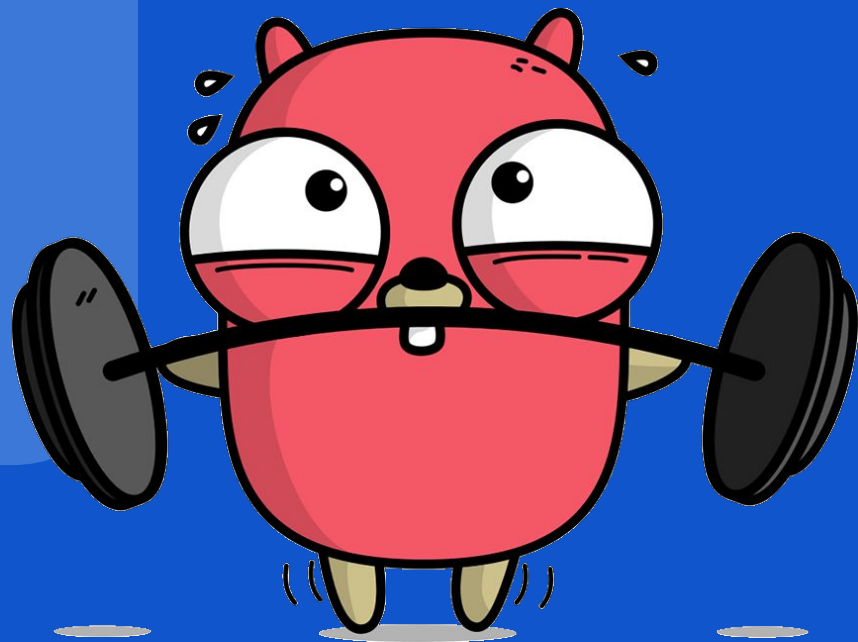
Go Terminal UI 07

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- **Compilada** e estática
- **Gc** (Garbage Collector)
- Paradigma **Concorrente**
- Tipagem **estática**
- Semântica **é clara**
- Sintaxe **é limpa**
- É de **uso Geral**
- Plataformas: **Linux**, Mac, FreeBSD, Windows





Occam	[1983]
Oberon	[1986]
Erlang	[1986]
Newsqueak	[1988]
Cocurrent ML	[1993]
Alef	[1995]
Limbo	[1996]
Go	[2009]



Simplicidade...
confiabilidade



The Go Playground

[Run](#) [Format](#) [Imports](#) [Share](#)

```
1 func main() {
2
3     mux := http.NewServeMux()
4
5     mux.Handle("/api/ping", http.HandlerFunc(Ping))
6     mux.Handle("/api/hello", http.HandlerFunc>Hello))
7     mux.Handle("/api/products", http.HandlerFunc(Products))
8     mux.Handle("/api/products/{id}", http.HandlerFunc(ProductsGetId))
9
10    server :=
11        &http.Server{
12            Addr:    ":8080",
13            Handler: mux,
14        }
15
16    if err := server.ListenAndServe(); err != nil {
17        log.Printf("Error while serving metrics: %s", err)
18    }
19 }
```



A Tour of Go

Goroutines

A *goroutine* is a lightweight thread managed by the Go runtime.

```
go f(x, y, z)
```

starts a new goroutine running

```
f(x, y, z)
```

The evaluation of `f`, `x`, `y`, and `z` happens in the current goroutine and the execution of `f` happens in the new goroutine.

Goroutines run in the same address space, so access to shared memory must be synchronized. The `sync` package provides useful primitives, although you won't need them much in Go as there are other primitives. (See the next slide.)

goroutines.go

Imports off

Syntax off

```

1 package main
2
3 import (
4     "fmt"
5     "time"
6 )
7
8 func say(s string) {
9     for i := 0; i < 5; i++ {
10        time.Sleep(100 * time.Millisecond)
11        fmt.Println(s)
12    }
13 }
14
15 func main() {
16     go say("world")
17     say("hello")
18 }
19

```

Reset

Format

Run





Downloads

After downloading a binary release suitable for your system, please follow the [installation instructions](#).

If you are building from source, follow the [source installation instructions](#).

See the [release history](#) for more information about Go releases.

Featured downloads

Microsoft Windows

Windows 7 or later, Intel 64-bit processor

[go1.12.6.windows-amd64.msi](#) (118MB)

Apple macOS

macOS 10.10 or later, Intel 64-bit processor

[go1.12.6.darwin-amd64.pkg](#) (121MB)

Linux

Linux 2.6.23 or later, Intel 64-bit processor

[go1.12.6.linux-amd64.tar.gz](#) (122MB)

Source

[go1.12.6.src.tar.gz](#) (21MB)

Stable versions

go1.12.6 ▾

File name	Kind	OS	Arch	Size	SHA256 Checksum
go1.12.6.src.tar.gz	Source			21MB	c96c5ccc7455638ae1a8b7498a030fe653731c8391c5f8e79590bce72f92b4ca
go1.12.6.darwin-amd64.tar.gz	Archive	macOS	x86-64	122MB	b12bbac3227e72c2964e638e85d6621996bd3c03e172e752334112c3f757ba6e

Install the Go tools

If you are upgrading from an older version of Go you must first [remove the existing version](#).

Linux, macOS, and FreeBSD tarballs

[Download the archive](#) and extract it into `/usr/local`, creating a Go tree in `/usr/local/go`. For example:

```
tar -C /usr/local -xzf go1.12.6.linux-amd64.tar.gz
```

(Typically these commands must be run as root or through `sudo`.)

Add `/usr/local/go/bin` to the `PATH` environment variable. You can do this by adding this line to your `/etc/profile` (for a system-wide installation) or `$HOME/.profile`:

```
export PATH=$PATH:/usr/local/go/bin
```



Hello World...



```
package main
```

```
import (  
    "fmt"  
)
```

```
func main() {  
    fmt.Println("Hello World!")  
}
```



Legibilidad...



```
package main

import (
    "time"
)

func main() {

    var c1 = make(chan string)
    go func() {
        time.Sleep(time.Millisecond * 10)
        c1 <- "Hello "
    }()

    go func() {
        time.Sleep(time.Millisecond * 12)
        c1 <- "World!"
    }()

    print(<-c1)
    print(<-c1)
}
```



—
nos leva...

Produtividade...



```
package main

import "net/http"

func main() {

    // diretório físico
    fs := http.FileServer(http.Dir("web/"))

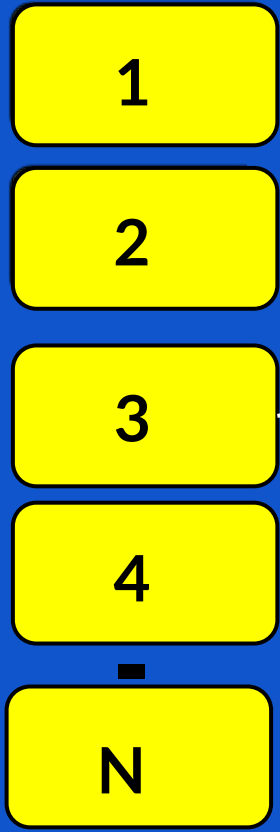
    // mostra no browser localhost:8080/static
    http.Handle("/static/", http.StripPrefix("/static/", fs))
    http.ListenAndServe(":8080", nil)
}
```



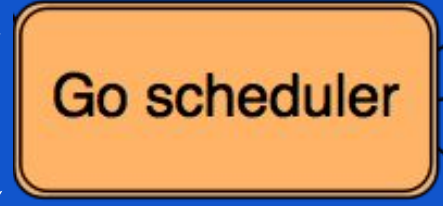

Goroutine e não Threads



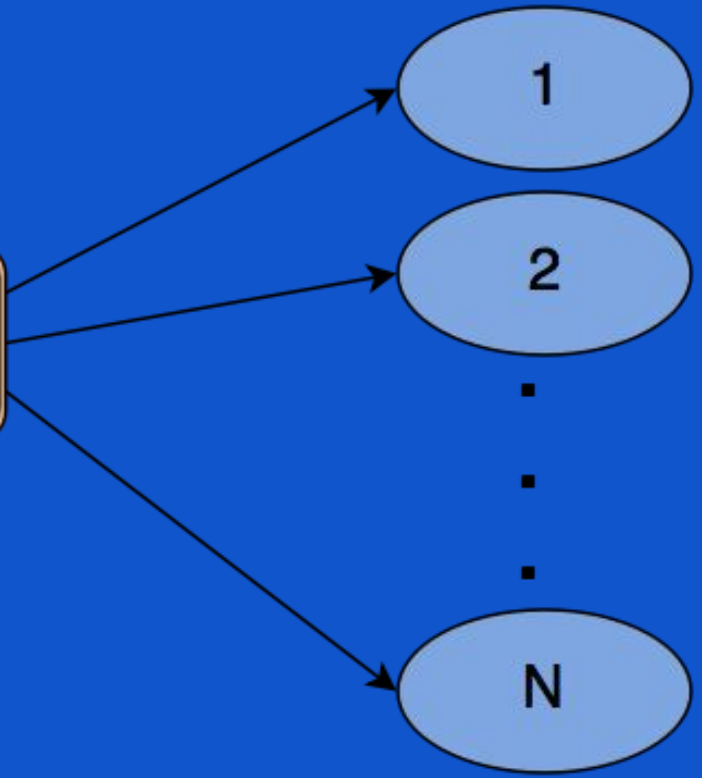
Goroutines



Dijkstra

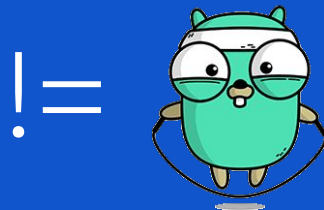


Threads

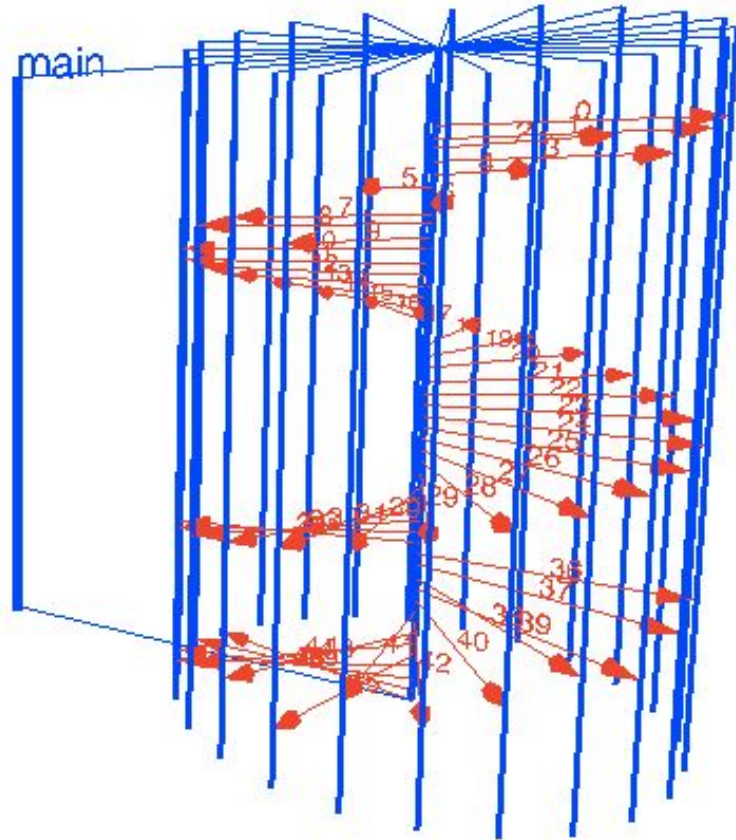




— Concorrência



Paralelismo





```
func worker(tasksCh <-chan int, wg *sync.WaitGroup) {
    defer wg.Done()
    for {
        task, ok := <-tasksCh
        if !ok {
            return
        }
        d := time.Duration(task) * time.Millisecond
        time.Sleep(d)
        fmt.Println("processing task", task)
    }
}
```

```
func pool(wg *sync.WaitGroup, workers, tasks int) {
    tasksCh := make(chan int)

    for i := 0; i < workers; i++ {
        go worker(tasksCh, wg)
    }

    for i := 0; i < tasks; i++ {
        tasksCh <- i
    }

    close(tasksCh)
}
```

```
func main() {
    trace.Start(os.Stderr)
    var wg sync.WaitGroup
    wg.Add(36)
    go pool(&wg, 36, 50)
    wg.Wait()
    trace.Stop()
}
```



import C



```
package main                                #include "greeter.h"
                                             #include <stdio.h>

// #cgo CFLAGS: -g -Wall
// #include <stdlib.h>
// #include "greeter.h"
import "C"
import (
    "fmt"
    "unsafe"
)

func greet(const char *name, int year, char *out) {
    int n;

    n = sprintf(out, "Greetings, %s from %d! We come in peace :)", name, year);

    return n;
}

func main() {
    name := C.CString("Gopher / DesktopGo / jeffotoni")
    defer C.free(unsafe.Pointer(name))

    year := C.int(2018)

    ptr := C.malloc(C.sizeof_char * 1024)
    defer C.free(unsafe.Pointer(ptr))

    size := C.greet(name, year, (*C.char)(ptr))

    b := C.GoBytes(ptr, size)
    fmt.Println(string(b))
}
```



go Desktop Qt



Atividades Rich Text

qui, 15:41

```
go get -u -v github.com/therecipe/qt/cmd/... && $(go env GOPATH)/bin/qtsetup
```

```
go get -u -v github.com/therecipe/qt/cmd/... && $(go env GOPATH)/bin/qtsetup 211x55
```

```


github.com/... Basic layouts
github.com/... drawer_nav_x
github.com/... Qt Quick Controls 2
github.com/... calc
github.com/... Line Edits
github.com/... Sprite Editor
github.com/... example.html - Rich Text
File Edit Format Help
Standard DejaVu Sans 11
This is heading 1
This is heading 2
This is heading 3
This is heading 4
This is heading 5
instead
instead
/qtminimal
tdeploy ins
/home/netcatc/repositorioSvn/golang/src/github.
QT_...
QT_DIR:
QT_STUB:
QT_DEBUG:
QT_QMAKE_DIR:
QT_WEBKIT:
QT_DISTRO:
QT_PKG_CONFIG:
running: 'qtsetup generate linux' [docker=false] [vagrant=false]
INFO[0005] generating full qt/core
INFO[0020] generating full qt/androidextras
INFO[0021] generating full qt/gui
INFO[0041] generating full qt/network
INFO[0047] generating full qt/xml
INFO[0048] generating full qt/dbus
TMEFI0050] generati... full qt/nfc
  
```



```
INFO[0005] generating full qt/core
INFO[0020] generating full qt/androidextras
INFO[0021] generati
INFO[0041] generati
INFO[0047] generati
INFO[0048] generati
INFO[0050] generati
INFO[0051] generati
INFO[0052] generati
INFO[0057] generati
INFO[0059] generati
INFO[0106] generati
INFO[0109] generati
INFO[0112] generati
INFO[0112] generati
INFO[0113] generati
INFO[0116] generati
INFO[0116] generati
INFO[0117] generati
INFO[0131] generati
INFO[0135] generati
INFO[0139] generati
INFO[0141] generati
INFO[0141] generati
INFO[0141] generati
INFO[0144] generati
INFO[0144] generati
INFO[0145] generati
INFO[0146] generati
INFO[0149] generating full qt/designer
INFO[0153] generating full qt/scxml
```

Basic layouts

Row layout




Grid layout

Line 1	jeffotoni	This widget spans over three rows in the GridLayout. All items in the GridLayout are implicitly positioned from top to bottom.
Line 2	golambdaman	
Line 3	Go is Life!	

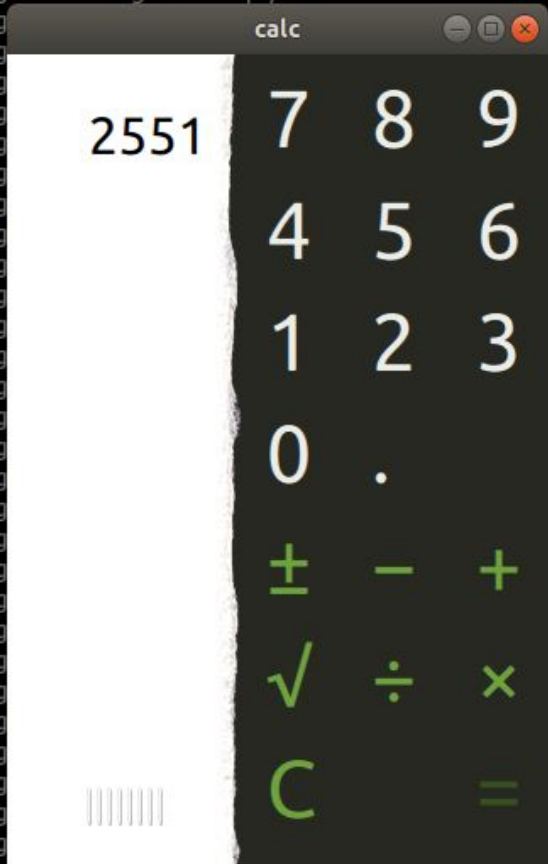
This fills the whole cell

Stack layout





```
INFO[0021] generating full qt/gui
INFO[0041] generating full qt/network
INFO[0047] g
INFO[0048] g
INFO[0050] g
INFO[0051] g
INFO[0052] g
INFO[0057] g
INFO[0059] g
INFO[0106] g
INFO[0109] g
INFO[0112] g
INFO[0112] g
INFO[0113] g
INFO[0116] g
INFO[0116] g
INFO[0117] g
INFO[0131] g
INFO[0135] g
INFO[0139] g
INFO[0141] g
INFO[0141] g
INFO[0141] g
INFO[0144] g
INFO[0144] g
INFO[0145] g
INFO[0146] g
INFO[0149] g
INFO[0153] g
INFO[0155] g
INFO[0156] generating full qt/purchasing
INFO[0156] generating full qt/datavisualization [GPLV3]
INFO[0162] generating full qt/charts [GPLV3]
```





```
INFO[0000] QT_STUB: 'false'  
INFO[0000] QT_DEBUG: 'false'  
INFO[0000] QT_QMAKE_D  
INFO[0000] QT_WEBKIT  
INFO[0000] QT_DISTRO  
INFO[0000] QT_PKG_CO  
INFO[0000] running:  
INFO[0005] generating  
INFO[0020] generating  
INFO[0021] generating  
INFO[0041] generating  
INFO[0047] generating  
INFO[0048] generating  
INFO[0050] generating  
INFO[0051] generating  
INFO[0052] generating  
INFO[0057] generating  
INFO[0059] generating  
INFO[0106] generating  
INFO[0109] generating  
INFO[0112] generating  
INFO[0112] generating  
INFO[0113] generating  
INFO[0116] generating  
INFO[0116] generating  
INFO[0117] generating  
INFO[0131] generating  
INFO[0135] generating  
INFO[0139] generating  
INFO[0141] generating  
INFO[0141] generating  
INFO[0141] generating  
INFO[0144] generating full qt/testlib  
INFO[0144] generating full qt/serialport
```

Qt Quick Controls 2

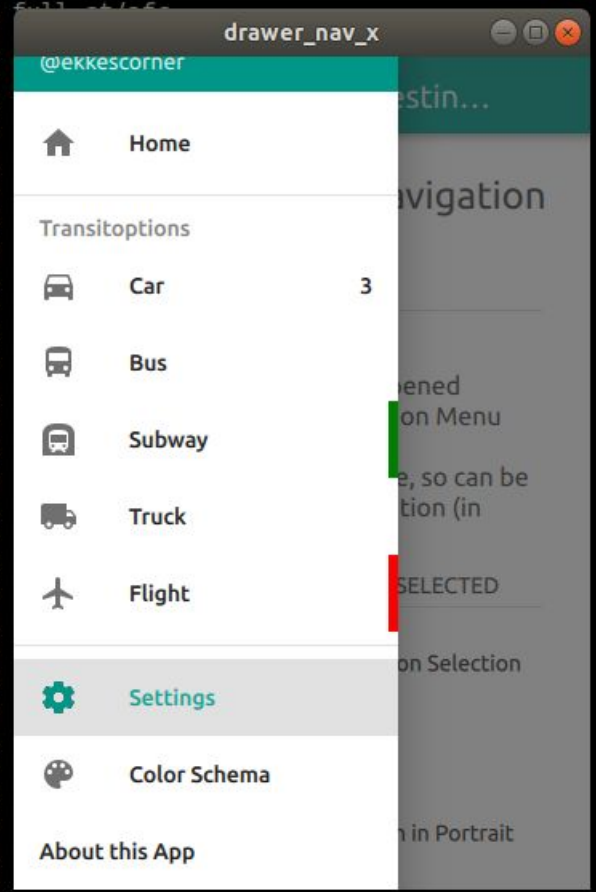
- BusyIndicator
- Button
- CheckBox
- ComboBox
- Dial
- Delegates
- Drawer
- Frame
- GroupBox
- Menu
- PageIndicator

set of controls
te interfaces

vagrant=false]



```
INFO[0047] generating full qt/xml
INFO[0048] generating full qt/dbus
INFO[0050] generating full qt/dbus
INFO[0051] generating full qt/dbus
INFO[0052] generating full qt/dbus
INFO[0057] generating full qt/dbus
INFO[0059] generating full qt/dbus
INFO[0106] generating full qt/dbus
INFO[0109] generating full qt/dbus
INFO[0112] generating full qt/dbus
INFO[0112] generating full qt/dbus
INFO[0113] generating full qt/dbus
INFO[0116] generating full qt/dbus
INFO[0116] generating full qt/dbus
INFO[0117] generating full qt/dbus
INFO[0131] generating full qt/dbus
INFO[0135] generating full qt/dbus
INFO[0139] generating full qt/dbus
INFO[0141] generating full qt/dbus
INFO[0141] generating full qt/dbus
INFO[0141] generating full qt/dbus
INFO[0144] generating full qt/dbus
INFO[0144] generating full qt/dbus
INFO[0145] generating full qt/dbus
INFO[0146] generating full qt/dbus
INFO[0149] generating full qt/dbus
INFO[0153] generating full qt/dbus
INFO[0155] generating full qt/dbus
INFO[0156] generating full qt/dbus
INFO[0156] generating full qt/dbus
INFO[0162] generating full qt/dbus
INFO[0172] generating full qt/dbus
INFO[0173] generating full qt/dbus
INFO[0173] generating full qt/sailfish
INFO[0173] generating full qt/webview
INFO[0173] generating full qt/remoteobjects
```





go Win





```
MINGW64:/c/Users/netcatc/go/walk/examples/notifyicon  
netcatc@DESKTOP-OSH3BB0 MINGW64 ~/go/walk/examples/notifyicon (master)  
$ ./notifyicon.exe
```

Walk Notiflcon Example
Click the icon to show again.
notifyicon.exe





The screenshot shows a Windows desktop with a blue background. On the left, there is a taskbar with icons for 'instagram autoriza...', 'rk mockup-m...', 'Adobe CSS Master C...', and 'WinZip'. In the center, a terminal window titled 'MINGW64/c/Users/netcatc/go/walk/examples/filebrowser' is open. The terminal shows the following commands and output:

```
netcatc@DESKTOP-OSH3880 MINGW64 ~/go/walk/examples/drawing (master)
$ cd ..

netcatc@DESKTOP-OSH3880 MINGW64 ~/go/walk/examples (master)
$ ls
actions/      gradientcomposite/  logview/           slider/
clipboard/    imageicon/          multiplepages/     statusbar/
databinding/  imageview/          notifyicon/        tableview/
drawing/      imageviewer/        progressindicator/ webview/
dropfiles/    img/                radiobutton/       webview_events/
externalwidgets/ linklabel/          rsrc.exe*         wintest/
filebrowser/  listbox/            settings/

netcatc@DESKTOP-OSH3880 MINGW64 ~/go/walk/examples (master)
$ cd filebrowser/

netcatc@DESKTOP-OSH3880 MINGW64 ~/go/walk/examples/filebrowser (master)
$ ls
filebrowser.exe* fileb

netcatc@DESKTOP-OSH3880 MINGW64 ~/go/walk/examples/filebrowser (master)
$ ./filebrowser.exe
```

Overlaid on the terminal is a 'Walk File Browser Example' window showing the contents of the 'D:\' drive. The window has a sidebar with 'C:\' and 'D:\' and a main pane with a table of files and folders:

Name	Size	Modified
\$GetCurrent	0	2018-07-16 16...
\$Recycle.Bin	0	2018-05-29 19...
\$WINRE_BACKUP_PAR...	0	2018-07-11 13...
Arquivos de Programas	0	2018-05-21 09...
BOOTNXT	1	2015-07-10 08...
Documents and Settings	0	2015-07-10 09...
Go	4096	2018-07-25 03...
Intel	0	2018-05-21 10...
PerfLogs	0	2018-04-11 20...
Program Files	8192	2018-10-31 08...
Program Files (x86)	8192	2019-01-19 20...
ProgramData	8192	2018-10-31 09...
Recovery	0	2018-07-16 16...
TDM-GCC-64	8192	2018-08-09 01...
Users	4096	2018-07-11 14...
Windows	28672	2019-03-21 16...
Windows10Upgrade	8192	2018-07-16 16...
bootmgr	395268	2015-07-10 08...
hiberfil.sys	25360...	2019-03-21 15...

On the right side of the desktop, there is a white box with the text 'Não é possível ac' and a list of actions:

- Verifique se o endereço v
- [Pesquisar este site no Bir](#)
- [Atualizar a página](#)



go Terminal UI



Enter some data

Title Mr.

First name Jefferson

Last name GoLambdaMan

Age 18+ X

Password *****

Save

Quit



Services Monitor

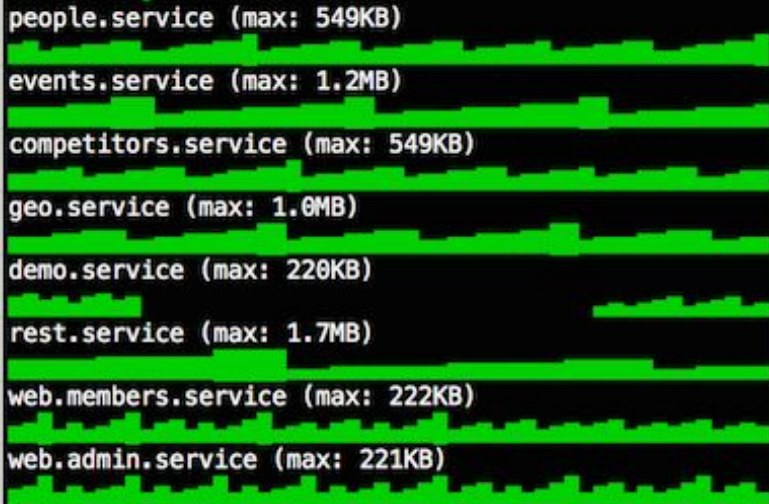
monitoring 8 services every 2s, press q to quit

Status

Last update: May 3 15:57:01

Services	Alloc	Gorout...	Sys	HeapAl...	HeapIn...	Respon...	Enable...	NumGC	PauseT...	Uptime
[R] people.serv...	528KB	9	3.8MB	528KB	888KB	N/A	true	50	83ms	12m29s
[R] events.serv...	1.0MB	15	40MB	1.0MB	1.5MB	N/A	true	67	212ms	12m29s
[R] competitors...	418KB	9	3.8MB	418KB	784KB	N/A	true	50	71ms	12m29s
[R] geo.service	693KB	16	20MB	693KB	1.0MB	N/A	true	43	102ms	12m29s
[R] 🚀 demo.serv...	121KB	7	2.8MB	121KB	392KB	429ms	true	7	3ms	23s
[R] 🚀 rest.serv...	899KB	19	4.9MB	899KB	1.4MB	N/A	true	15	14ms	2m29s
[R] web.members...	125KB	5	2.8MB	125KB	496KB	N/A	true	132	85ms	12m29s
[R] web.admin.s...	124KB	5	2.8MB	124KB	456KB	N/A	true	122	73ms	12m29s

Monitoring memstats.Alloc



Monitoring Goroutines





—

go `Html/css/js`



```
// GoMustAssetString returns the asset
func GoMustAssetString(strtext string) string {
    return string(MustAsset(strtext))
}

////////// template func
// Render a template, or server error
func Render(w http.ResponseWriter, r *http.Request, tpl *template.Template, name string, data interface{}) {
    buf := new(bytes.Buffer)
    if err := tpl.ExecuteTemplate(buf, name, data); err != nil {
        util.Print("\nRender Error" + err.Error() + "\n")
        return
    }
    w.Write(buf.Bytes())
}

// Push the given resource to the client.
func Push(w http.ResponseWriter, resource string) {
    pusher, ok := w.(http.Pusher)
    if ok {
        if err := pusher.Push(resource, nil); err == nil {
            return
        }
    }
}
}
```

go-bindata



go \$ statik -src=web/static



```
// Package statik contains static assets.  
package statik
```

```
import (  
    "github.com/rakyll/statik/fs"  
)
```

```
func init() {  
    data := "PK\x03\x04\x14\x00\x08\x00\x08\x00\xe21ZN\x00\x00\x00\  
    fs.Register(data)  
}
```




Archivio **One**

Online

Efetuar Login

[Esqueci minha senha](#)



ArchivioOne/Admin x Jefferson

localhost:5001/admin

Archivio **One**

S3wf Sistema

Lista Fileworks

Perfil

Lista de Fileworks do Usuário [sgi]

Pasta local	Filework	Cliente	Transf.	Tipo Perm.	Statu
archivioneclientdesktop	Teste Joy New	Teste Teste		admin full	Ativa

sgi
02/07/2014

Perfil Sair

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λ Thanks := &Origado{...}

Obrigado...



github.com/jeffotoni



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[linkedin.com/in/jeffotoni](https://www.linkedin.com/in/jeffotoni)



https://t.me/go_br



<https://t.me/awsbrasil>



<https://t.me/devopsbh>

