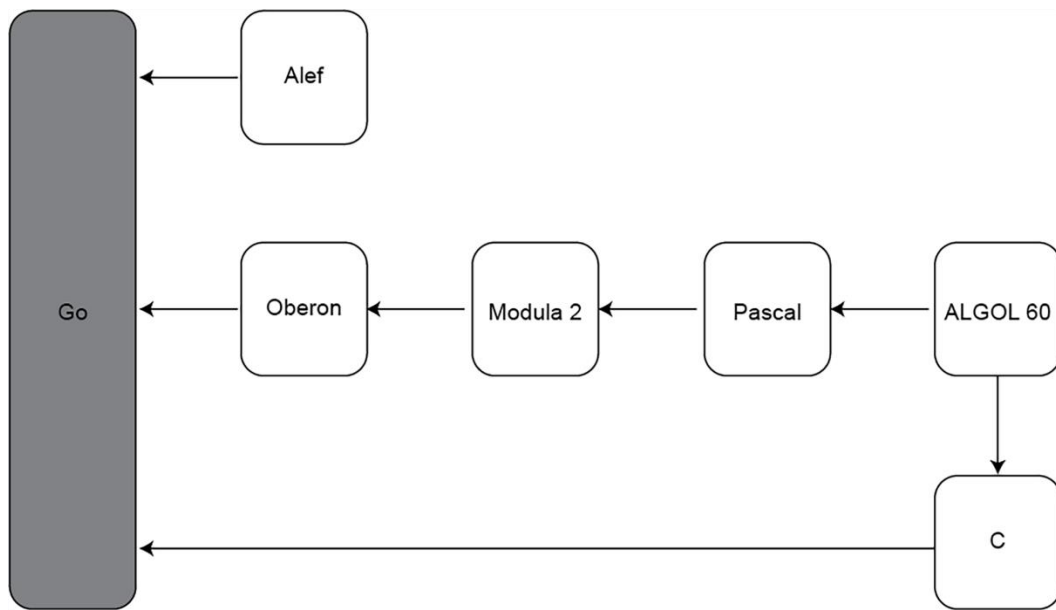
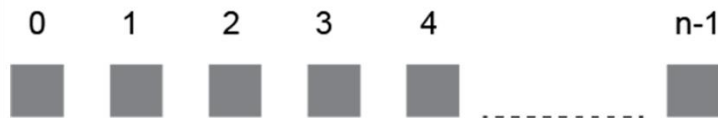


Chapter 1: A Quick Introduction to Go



The os.Args slice



Example: `./goApp fileToProcess -n 10 /tmp "A phrase"`

The size of `os.Args` will be 6. The indexes will be from 0 to 5.

Index	Value
-------	-------

0	<code>"./goApp"</code> 
---	--

1	<code>"fileToProcess"</code>
---	------------------------------

2	<code>"-n"</code>
---	-------------------

3	<code>"10"</code>
---	-------------------

4	<code>"/tmp"</code>
---	---------------------

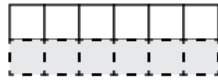
5	<code>"A phrase"</code>
---	-------------------------

Everything is considered a string in `os.Args` as `os.Args` is a slice of strings.

Chapter 2: Basic Go Data Types

Slice length: 6

Slice capacity: 6



Actual cell



Virtual capacity cell

About to add a new element to the slice



Slice length: 7

Slice capacity: 6



If this happens, the length will be bigger than the capacity, which is not allowed.



Therefore, capacity will be doubled first.

Slice length: 7

Slice capacity: 12

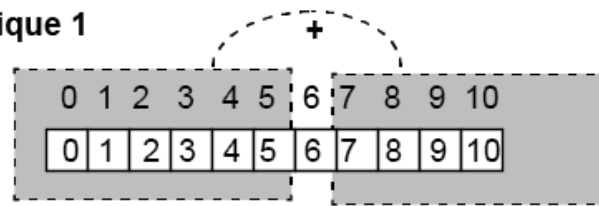


Then, the new element will be added to the slice.

	0	1	2	3	4	5	6	7	8	9	10
Index											
Value	0	1	2	3	4	5	6	7	8	9	10

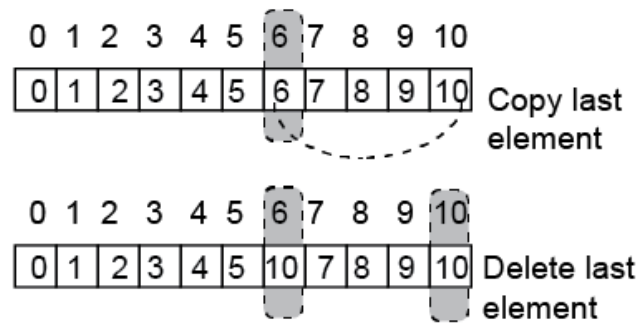
↑
Delete this element

Technique 1



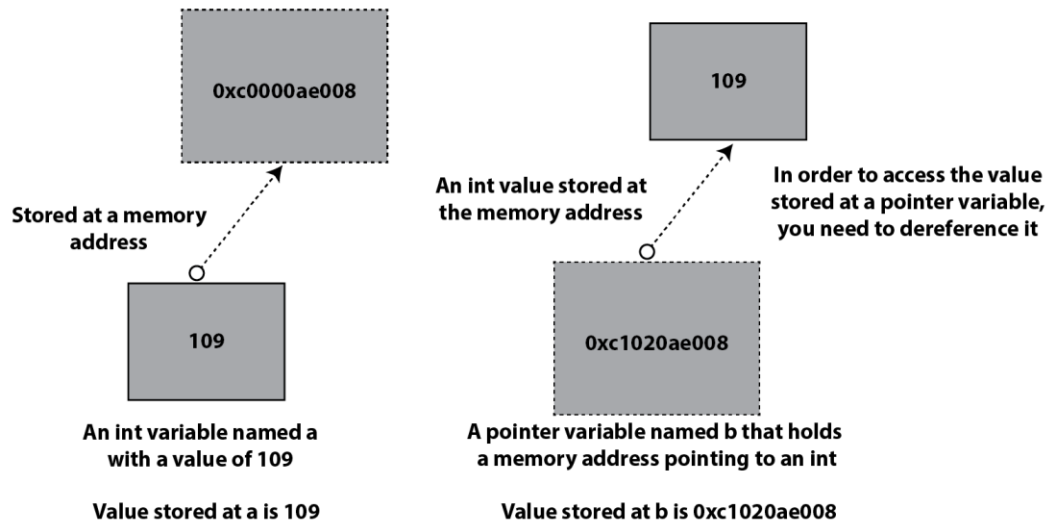
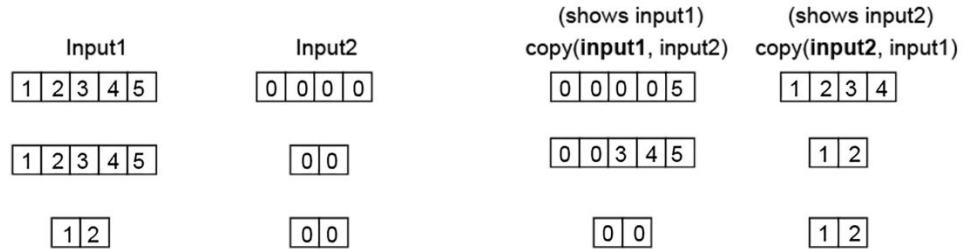
	0	1	2	3	4	5	6	7	8	9	
Index											
Value	0	1	2	3	4	5	7	8	9	10	

Technique 2

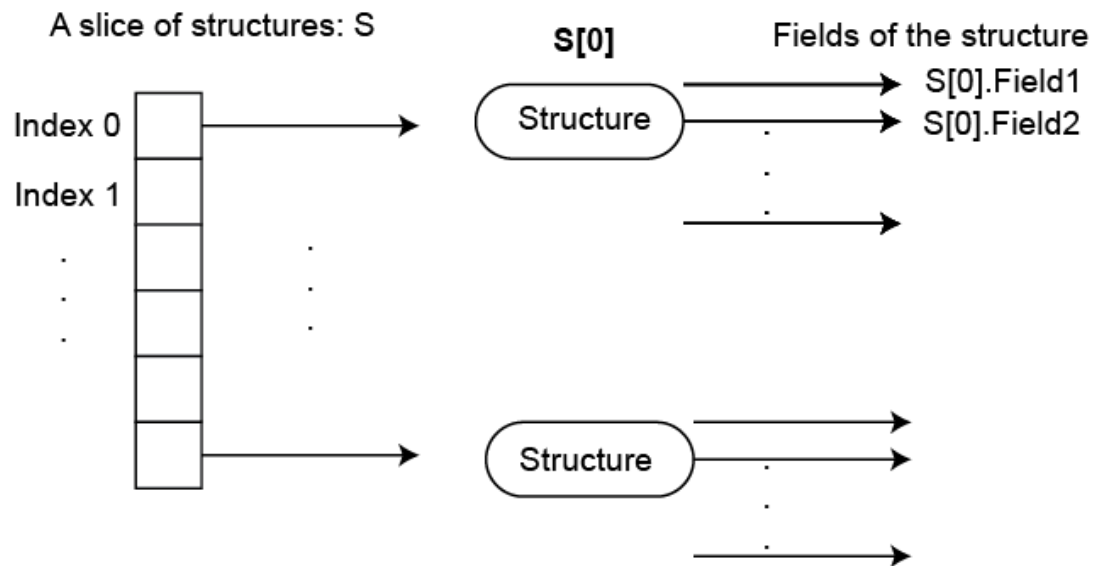


	0	1	2	3	4	5	6	7	8	9	
Index											
Value	0	1	2	3	4	5	10	7	8	9	

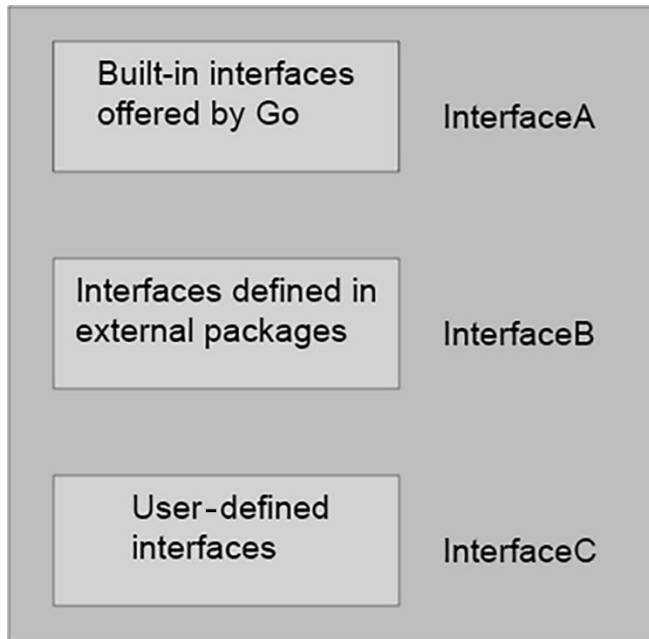
copy(destination, input)



Chapter 3: Composite Data Types

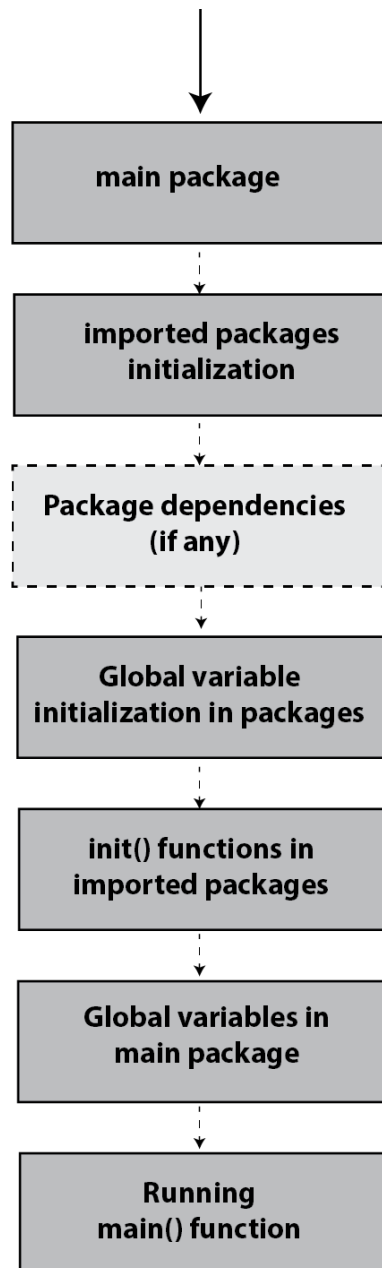


Chapter 4: Reflection and Interfaces



```
type ABC interface {  
    InterfaceA  
    InterfaceB  
    InterfaceC  
}
```

Chapter 5: Go Packages and Functions



mactsouk/post05

Unwatch1Star0Fork0

<> CodeIssuesPull requestsActionsProjectsWikiSecurityInsights...

main

Go to fileAdd fileCode

About

mactsouk Small typo CH0526 days ago52

.gitignore	.DS_Store	7 months ago
LICENSE	Initial commit	7 months ago
README.md	How to create PostgreSQL tables	6 months ago
create_tables.sql	Minor chages CREATE TABLES	6 months ago
post05.go	Small typo CH05	26 days ago

README.md

post05

Working with PostgreSQL DB in Go

Create tables by running the next command:

```
$ psql -h localhost -p 5432 -U mtsouk master < create_tables.sql
```

Working with PostgreSQL DB in Go

Readme

Apache-2.0 License

Releases

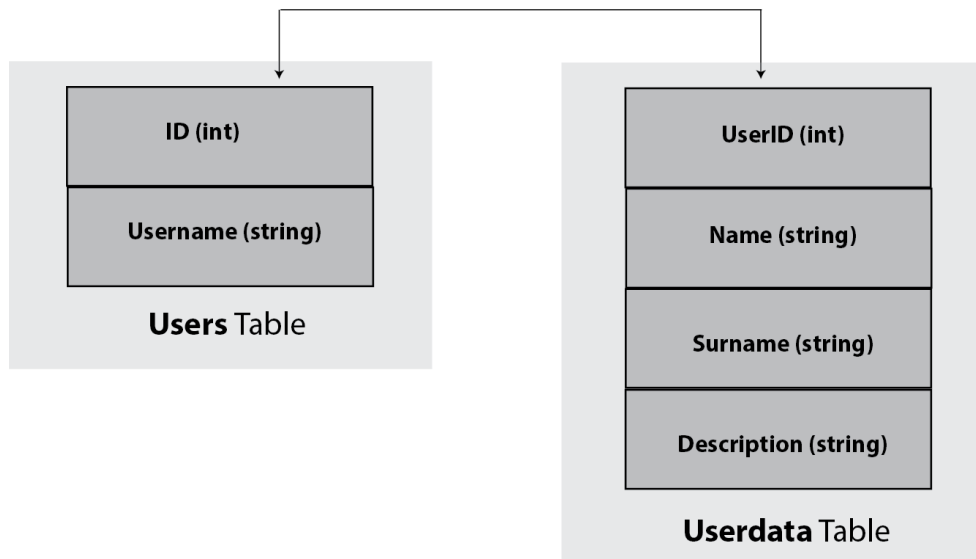
No releases published
[Create a new release](#)

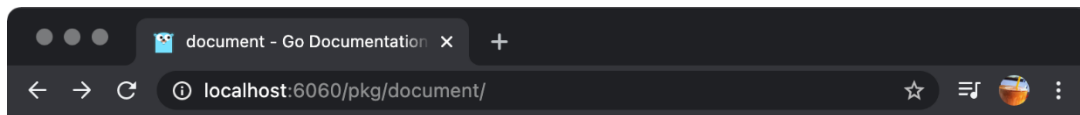
Packages

No packages published
[Publish your first package](#)

Languages

Go 100.0%





- * Users
- * Userdata

The definitions of the tables in the PostgreSQL server are:

```
CREATE TABLE Users (  
  ID SERIAL,  
  Username VARCHAR(100) PRIMARY KEY  
);
```

```
CREATE TABLE Userdata (  
  UserID Int NOT NULL,  
  Name VARCHAR(100),  
  Surname VARCHAR(100),  
  Description VARCHAR(200)  
);
```

This is rendered as code

This is not rendered as code

Index ▾

Variables

```
func AddUser(d Userdata) int  
func DeleteUser(id int) error  
func UpdateUser(d Userdata) error  
type Userdata  
    func ListUsers() ([]Userdata, error)  
Bugs
```

Package files

document.go

Variables

This block of global variables holds the connection details to the Postgres server

 **passed** Pipeline #250059145 triggered 1 minute ago by  Mihalis Tsoukalos

Minor changes

 2 jobs for **master** in 1 minute and 30 seconds (queued for 1 second)

 **latest**


 **019c0d8a** 

 No related merge requests found.


Pipeline Needs Jobs **2** Tests **0**

Download

Execute

 **compile**



 **execute**



```
11 Fetching changes with git depth set to 50...
12 Initialized empty Git repository in /builds/mactsouk/runners-go/.git/
13 Created fresh repository.
14 Checking out 8ba14df7 as master...
15 Skipping Git submodules setup
16 Executing "step_script" stage of the job script
17 $ echo "Compiling usePost05.go"
18 Compiling usePost05.go
19 $ mkdir bin
20 $ go get -v -d ./...
21 github.com/mactsouk/post05 (download)
22 github.com/lib/pq (download)
23 $ go build -o ./bin/usePost05 usePost05.go
24 Uploading artifacts for successful job 00:03
25 Uploading artifacts...
26 bin/: found 2 matching files and directories
27 Uploading artifacts as "archive" to coordinator... ok id=1001258536 responseStatus=201 Created token=_JMwiwt
28 Cleaning up file based variables 00:01
29 Job succeeded
```

```
19 Downloading artifacts 00:01
20 Downloading artifacts for compile (1001263660)...
21 bin: Downloading artifacts from coordinator... ok id=1001263660 responseStatus=200 OK token=SkrLxVpx
23 Executing "step_script" stage of the job script 00:01
24 $ echo "Executing usePost05"
25 Executing usePost05
26 $ ls -l bin
27 total 5752
28 -rwxr-xr-x. 1 root root 5883134 Feb  2 07:23 usePost05
29 $ ./bin/usePost05
30 2345
31 localhost
33 Cleaning up file based variables 00:01
35 Job succeeded
```

mactsouk / actions-with-go

Unwatch1

Star0

Fork0

<> Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

...

Workflows

New workflow

All workflows

Go + PostgreSQL

All workflows

Showing runs from all workflows

Filter workflow runs

31 workflow runs

EventStatusBranchActor

Minor message

Go + PostgreSQL #31: Commit 4ef3b7c pushed by mactsouk

main

6 months ago54s

docker run without -it

Go + PostgreSQL #30: Commit 5163600 pushed by mactsouk

main

6 months ago50s

Repository secrets

🔒

PASSWORD

Updated 7 hours ago

Update

Remove

🔒

USERNAME

Updated 7 hours ago

Update

Remove

```
146 WARNING! Your password will be stored unencrypted in /home/runner/.docker
    /config.json.
147 Login Succeeded
148 Configure a credential helper to remove this warning. See
149 https://docs.docker.com/engine/reference/commandline/login/#credentials-store
150
151 The push refers to repository [docker.io/***/gopost]
152 327a1f07ee35: Preparing
153 5516549e02ba: Preparing
154 72e830a4dff5: Preparing
155 72e830a4dff5: Mounted from library/alpine
156 5516549e02ba: Pushed
157 327a1f07ee35: Pushed
158 latest: digest:
    sha256:82beefee80b89ba4a28b2fc7aba11d17d3b3034d4752c257eece18862e9a94ce size:
    945
159 * Running Docker Image
160 2345
161 localhost
```

Chapter 7: Go Concurrency

Global queue



Local queue



M

M

P1

Local queue



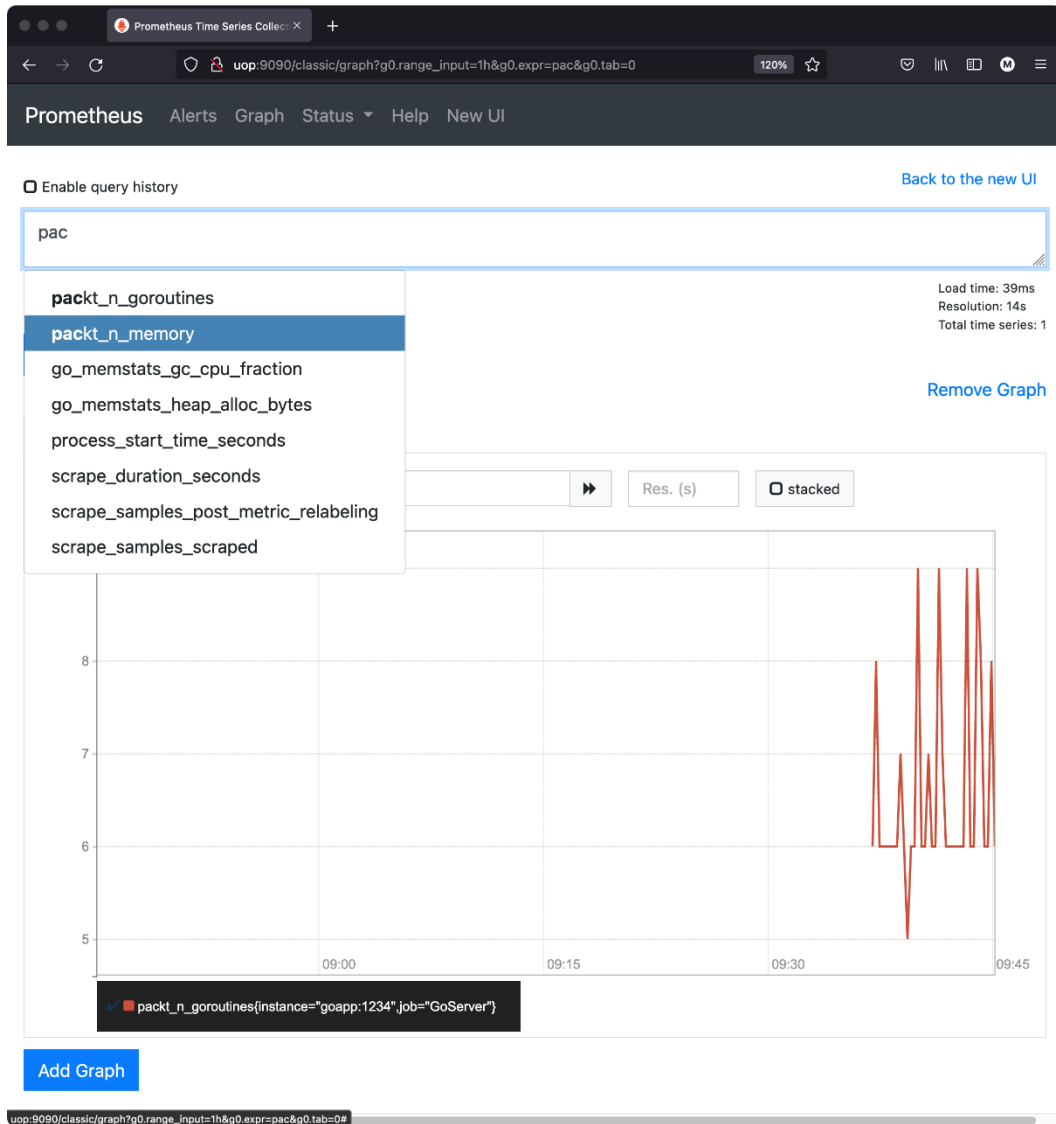
M

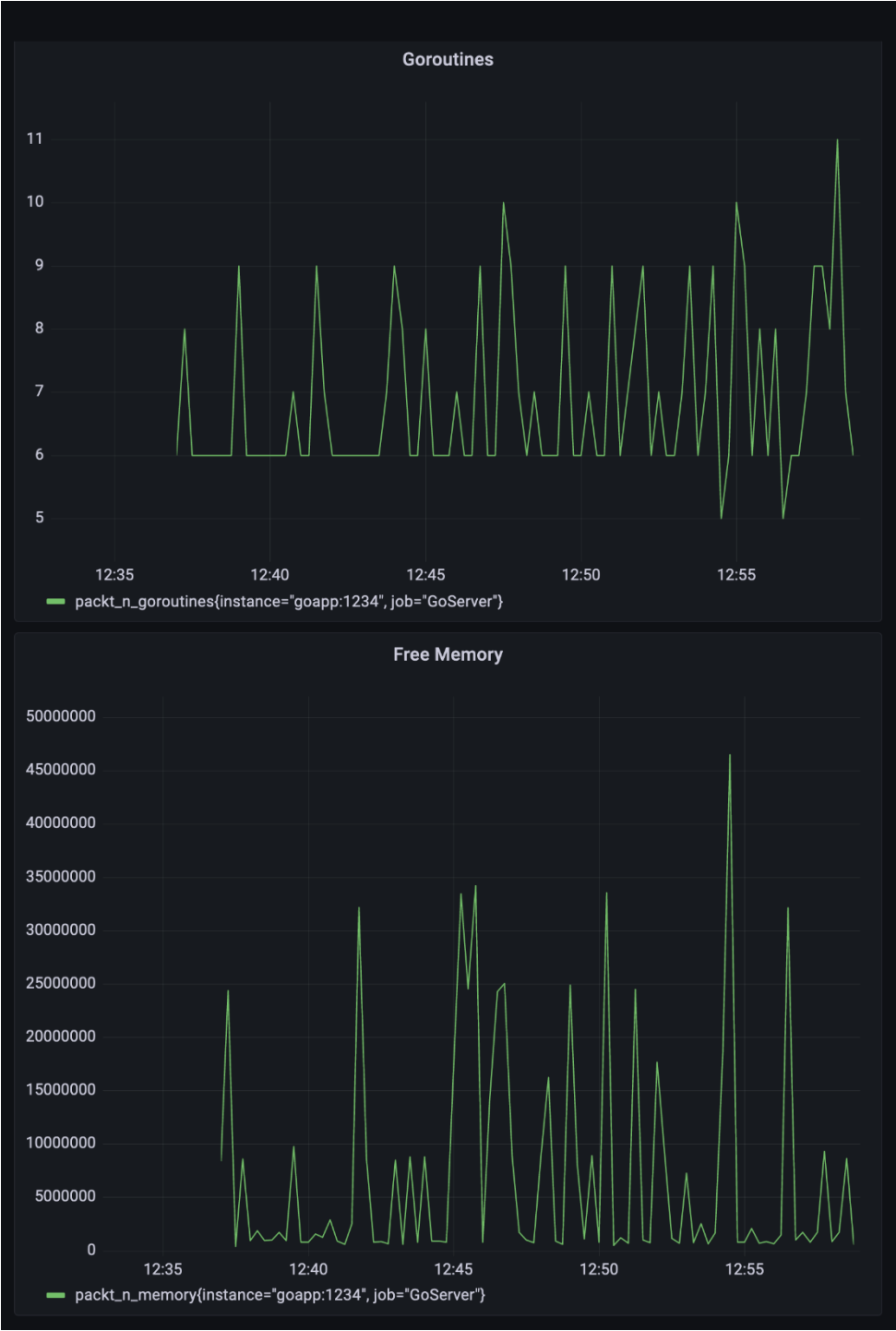


M

P2

Chapter 8: Building Web Services





Chapter 9: Working with TCP/IP and WebSocket

Testing a WebSocket Server

file:///Users/mtsouk/Desktop/mGo3rd/code/ch09/test.html

Hello There!

Inspector Console Debugger Network

Filter Output

Errors Warnings Logs Info Debug CSS XHR Requests

Trying to connect to server. test.html:16:17

Connected! test.html:19:21

[message] Data received from server: Hello From the Client! test.html:24:19

[close] Connection closed cleanly, code=1000 reason= test.html:30:23

Socket Closed Connection: test.html:32:21

close { target: WebSocket, isTrusted: true, wasClean: true, code: 1000, reason: "", srcElement: WebSocket, eventPhase: 0, bubbles: false, cancelable: false, returnValue: true, ... }

bubbles: false

cancelBubble: false

cancelable: false

code: 1000

composed: false

currentTarget: null

defaultPrevented: false

eventPhase: 0

explicitOriginalTarget: WebSocket { url: "ws://localhost:1234/ws", readyState: 3, bufferedAmount: 0, ... }

isTrusted: true

originalTarget: WebSocket { url: "ws://localhost:1234/ws", readyState: 3, bufferedAmount: 0, ... }

reason: ""

returnValue: true

srcElement: WebSocket { url: "ws://localhost:1234/ws", readyState: 3, bufferedAmount: 0, ... }

target: WebSocket { url: "ws://localhost:1234/ws", readyState: 3, bufferedAmount: 0, ... }

timestamp: 35

type: "close"

wasClean: true

Chapter 10: Working with REST APIs

loggedInfo

Returns the ID of a User given their username and password

REQUEST BODY SCHEMA: application/json

A list of users

active required	integer <int64> Is the User Logged In or Not
admin required	integer <int64> Is the User Admin or not
id	integer <int64> <input type="text" value="1"/> The ID for the user in: body
lastlogin required	integer <int64> <input type="text" value="0"/> The Last Login time of the User
password required	string The Password of the user
username required	string The Username of the user in: body

Responses

— 200 Generic OK message returned as an HTTP Status Code

— 400 Generic BadRequest message returned as an HTTP Status Code

GET /getid

Request samples

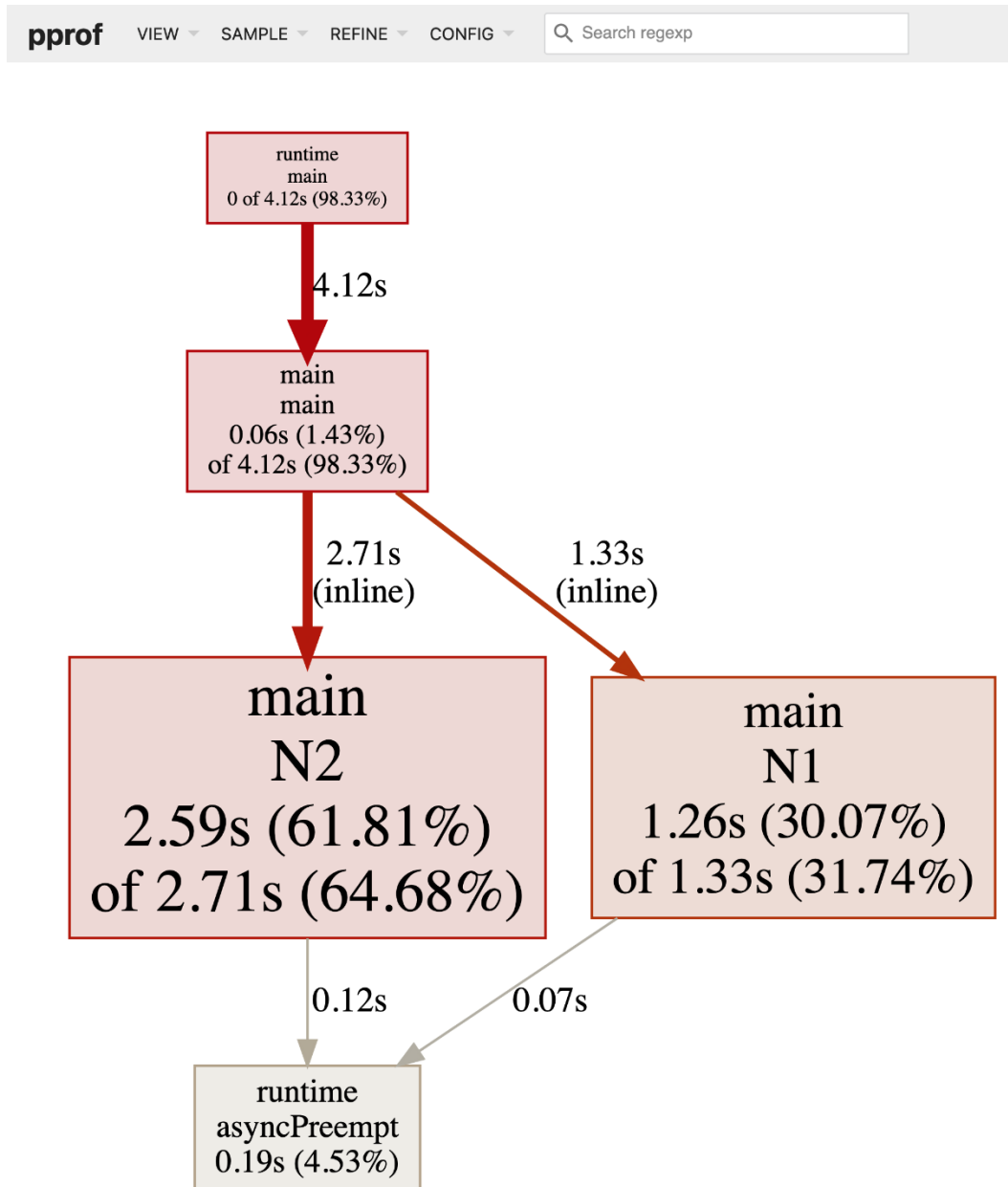
Payload

Content type
application/json

Copy Expand all Collapse all

```
{
  "active": 0,
  "admin": 0,
  "id": 1,
  "lastlogin": 0,
  "password": "string",
  "username": "string"
}
```

Chapter 11: Code Testing and Profiling



```
package coverage


import "fmt"

func f1() {
    if true {
        fmt.Println("Hello!")
    } else {
        fmt.Println("Hi!")
    }
}

func f2(n int) int {
    if n >= 0 {
        return 0
    } else if n == 1 {
        return 1
    } else {
        return f2(n-1) + f2(n-2)
    }
}
```

cannotReach.go 2 X

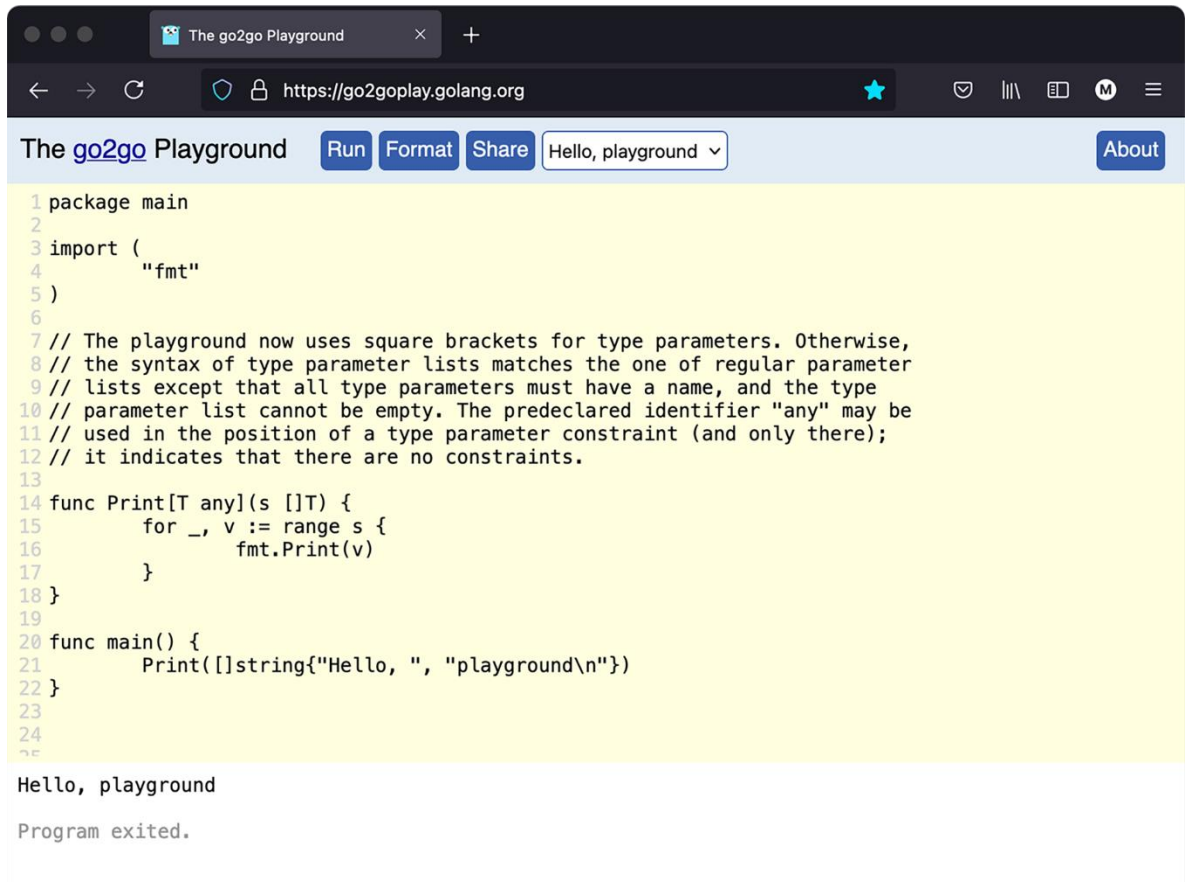
code > ch11 > cannotReach.go > S1

```
4 | func
5 | )
6 |
7 | func S2() {
8 |     return
9 |     fmt.Println("Hello!")
10 | }
11 |
12 | func S1() {
13 |     fmt.Println("In S1()")
14 |
15 |
16 |  fmt.Println("Leaving S1()")
17 | }
18 |
19 | func main() {
20 |     S1()
21 | }
22 |
```

unreachable code unreachable

View Problem (⌘F8) Quick Fix... (⌘.)

Chapter 13: Go Generics



The screenshot shows a web browser window with the address bar displaying `https://go2goplay.golang.org`. The page title is "The go2go Playground". Below the title bar, there are buttons for "Run", "Format", and "Share", followed by a dropdown menu showing "Hello, playground" and an "About" button. The main area contains a Go code editor with the following code:

```
1 package main
2
3 import (
4     "fmt"
5 )
6
7 // The playground now uses square brackets for type parameters. Otherwise,
8 // the syntax of type parameter lists matches the one of regular parameter
9 // lists except that all type parameters must have a name, and the type
10 // parameter list cannot be empty. The predeclared identifier "any" may be
11 // used in the position of a type parameter constraint (and only there);
12 // it indicates that there are no constraints.
13
14 func Print[T any](s []T) {
15     for _, v := range s {
16         fmt.Print(v)
17     }
18 }
19
20 func main() {
21     Print([]string{"Hello, ", "playground\n"})
22 }
23
24
```

Below the code editor, the output of the program is displayed:

```
Hello, playground
Program exited.
```

Appendix A: Go Garbage Collector

