

Go Piscine Go 03

Summary: THIS document is the subject for the Go 03 module of the Go Piscine @ 42 Tokyo.

Contents

1	Instructions	
II	Exercise 00 : firstrune	3
III	Exercise 01 : nrune	4
IV	Exercise 02 : lastrune	5
\mathbf{V}	Exercice 03: index	6
\mathbf{VI}	Exercise 04 : compare	7
VII	Exercise 05: toupper	8
VIII	Exercise 06: tolower	9
IX	Exercise 07 : capitalize	10
\mathbf{X}	Exercise 08: isalpha	11
XI	Exercise 09: isnumeric	13
XII	Exercise 10: isupper	14
XIII	Exercise 11: islower	15
XIV	Exercise 12: isprintable	16
XV	Exercise 13: concat	17
XVI	Exercise 14: basicjoin	18
XVII	Exercise 15: join	19
XVIII	Exercise 16 : printnbrbase	20
XIX	Evercise 17 · atoibase	22

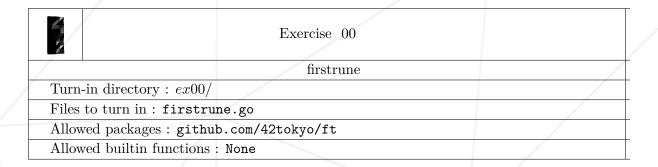
Chapter I

Instructions

- Only this page will serve as reference; do not trust rumors.
- Watch out! This document could potentially change up to an hour before submission.
- These exercises are carefully laid out by order of difficulty from easiest to hardest. We will not take into account a successfully completed harder exercise if an easier one is not perfectly functional.
- Make sure you have the appropriate permissions on your files and directories.
- You have to follow the submission procedures for every exercise.
- Your exercises will be checked and graded by your fellow classmates.
- You <u>cannot</u> leave <u>any</u> additional file in your directory than those specified in the subject.
- Got a question? Ask your peer on the right. Otherwise, try your peer on the left.
- Your reference guide is called Google / man / the Internet /
- Examine the examples thoroughly. They could very well call for details that are not explicitly mentioned in the subject...
- If no other explicit information is displayed, you must use the latest versions of Go.

Chapter II

Exercise 00: firstrune



Write a function that returns the first rune of a string.

• Expected function

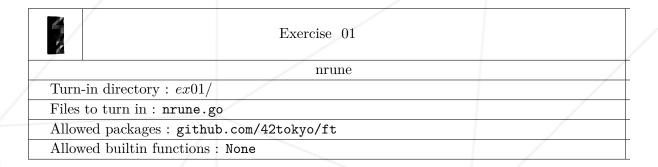
```
func FirstRune(s string) rune {
}
```

• Usage

```
$ go run .
HSO
$
```

Chapter III

Exercise 01: nrune



Write a function that returns the nth rune of a string. If not possible, it returns 0.

• Expected function

```
func NRune(s string, n int) rune {
}
```

• Usage

```
package main
import (
    "github.com/42tokyo/ft"

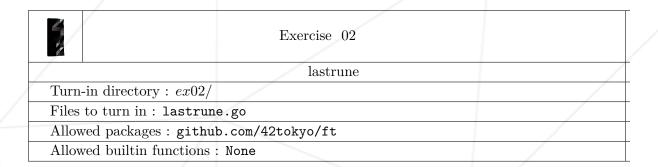
    "piscine"
)

func main() {
    ft.PrintRune(piscine.NRune("Hello!", 3))
    ft.PrintRune(piscine.NRune("Salut!", 2))
    ft.PrintRune(piscine.NRune("Bye!", -1))
    ft.PrintRune(piscine.NRune("Bye!", 5))
    ft.PrintRune(piscine.NRune("Bye!", 5))
    ft.PrintRune(piscine.NRune("Ola!", 4))
    ft.PrintRune('\n')
}
```

```
$ go run .
la!
$
```

Chapter IV

Exercise 02: lastrune



Write a function that returns the last rune of a string.

• Expected function

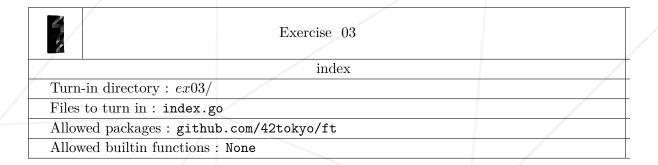
```
func LastRune(s string) rune {
}
```

• Usage

```
$ go run .
!!!
$
```

Chapter V

Exercice 03: index



Write a function that behaves like the Index function.

• Expected function

```
func Index(s string, toFind string) int {
}
```

• Usage

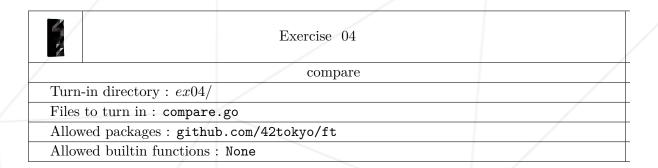
```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.Index("Hello!", "l"))
    fmt.Println(piscine.Index("Salut!", "alu"))
    fmt.Println(piscine.Index("Ola!", "hOl"))
}
```

```
$ go run .
2
1
-1
$
```

Chapter VI

Exercise 04: compare



Write a function that behaves like the Compare function.

• Expected function

```
func Compare(a, b string) int {
}
```

• Usage

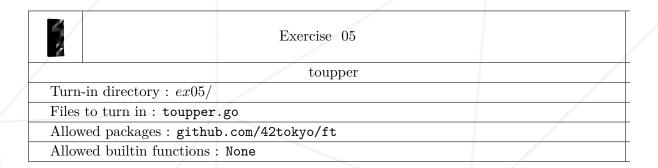
```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.Compare("Hello!", "Hello!"))
    fmt.Println(piscine.Compare("Salut!", "lut!"))
    fmt.Println(piscine.Compare("Ola!", "Ol"))
}
```

```
$ go run .
0
-1
1
```

Chapter VII

Exercise 05: toupper



Write a function that capitalizes each letter in a string.

• Expected function

```
func ToUpper(s string) string {
}
```

Usage

```
package main

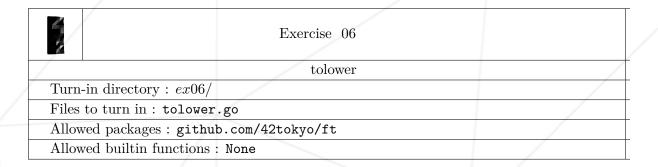
import (
         "fmt"
         "piscine"
)

func main() {
         fmt.Println(piscine.ToUpper("Hello! How are you?"))
}
```

```
$ go run .
HELLO! HOW ARE YOU?
$
```

Chapter VIII

Exercise 06: tolower



Write a function that lower cases for each letter in a string.

• Expected function

```
func ToLower(s string) string {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)
func main() {
    fmt.Println(piscine.ToLower("Hello! How are you?"))
}
```

```
$ go run .
hello! how are you?
$
```

Chapter IX

Exercise 07: capitalize

None	Exercise 07	
	capitalize	
	Turn-in directory : $ex07/$	
	Files to turn in : capitalize.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that capitalizes the first letter of each word and lowercases the rest.

- A word is a sequence of alphanumeric characters.
- Expected function

```
func Capitalize(s string) string {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.Capitalize("Hello! How are you? How+are+things+4you?"))
}
```

```
$ go run .
Hello! How Are You? How+Are+Things+4you?
$
```

Chapter X

Exercise 08: isalpha

	Exercise 08	
	isalpha	
None	Turn-in directory : $ex08/$	
	Files to turn in : isalpha.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns true if the string passed as the parameter only contains alphanumerical characters or is empty, otherwise, and returns false.

• Expected function

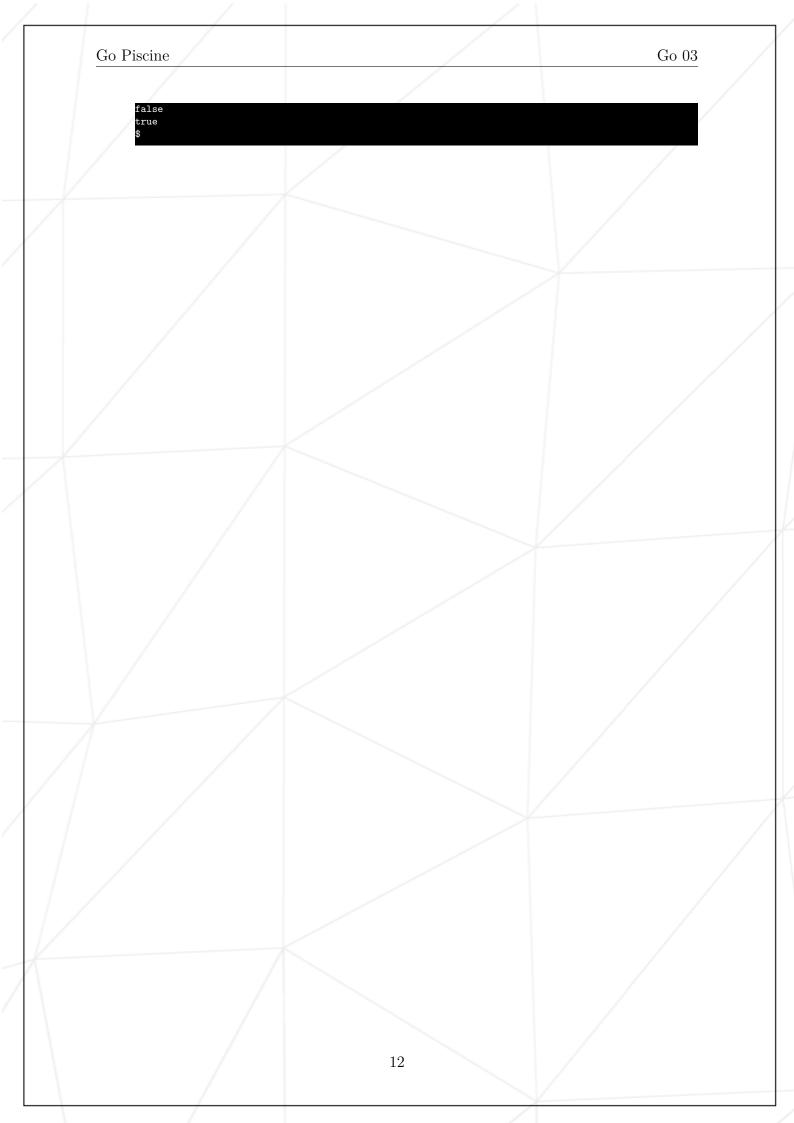
```
func IsAlpha(s string) bool {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.IsAlpha("Hello! How are you?"))
    fmt.Println(piscine.IsAlpha("HelloHowareyou"))
    fmt.Println(piscine.IsAlpha("What's this 4?"))
    fmt.Println(piscine.IsAlpha("Whatsthis4"))
}
```

```
$ go run .
false
true
```



Chapter XI

Exercise 09: isnumeric

None	Exercise 09	
	isnumeric	
	Turn-in directory : $ex09/$	
	Files to turn in : isnumeric.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns true if the string passed as a parameter contains only numerical characters, otherwise, returns false.

• Expected function

```
func IsNumeric(s string) bool {
}
```

• Usage

```
package main
import (
    "fmt"
        "piscine"
)

func main() {
        fmt.Println(piscine.IsNumeric("010203"))
        fmt.Println(piscine.IsNumeric("01,02,03"))
}
```

```
$ go run .
true
false
$
```

Chapter XII

Exercise 10: isupper

None	Exercise 10	
	isupper	
	Turn-in directory : $ex10/$	
	Files to turn in : isupper.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns true if the string passed as parameter contains only uppercase characters, otherwise, returns false.

• Expected function

```
func IsUpper(s string) bool {
}
```

• Usage

```
$ go run .
true
false
$
```

Chapter XIII

Exercise 11: islower

None	Exercise 11	
	islower	
	Turn-in directory : $ex11/$	
	Files to turn in : islower.go	/
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns true if the string passed as the parameter contains only lowercase characters, otherwise, returns false.

• Expected function

```
func IsLower(s string) bool {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.IsLower("hello"))
    fmt.Println(piscine.IsLower("hello!"))
}
```

```
$ go run .
true
false
$
```

Chapter XIV

Exercise 12: isprintable

None	Exercise 12	
	isprintable	
	Turn-in directory : $ex12/$	
	Files to turn in : isprintable.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns true if the string passed as the parameter contains only lowercase characters, otherwise, returns false.

• Expected function

```
func IsPrintable(s string) bool {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.IsPrintable("Hello"))
    fmt.Println(piscine.IsPrintable("Hello\n"))
}
```

```
$ go run .
true
false
$
```

Chapter XV

Exercise 13: concat

None	Exercise 13	
	concat	
	Turn-in directory : $ex13/$	
	Files to turn in : concat.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns the concatenation of two string passed in arguments.

• Expected function

```
func Concat(str1 string, str2 string) string {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)
func main() {
    fmt.Println(piscine.Concat("Hello!", " How are you?"))
}
```

```
$ go run .
Hello! How are you?
$
```

Chapter XVI

Exercise 14: basicjoin

None	Exercise 14	
	basicjoin	
	Turn-in directory : $ex14/$	
	Files to turn in : basicjoin.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns a concatenated string from the 'strings' passed as arguments.

• Expected function

```
func BasicJoin(elems []string) string {
}
```

• Usage

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    elems := []string{"Hello!", " How", " are", " you?"}
    fmt.Println(piscine.BasicJoin(elems))
}
```

```
$ go run .
Hello! How are you?
$
```

Chapter XVII

Exercise 15: join

None	Exercise 15	
	join	
	Turn-in directory: $ex15/$	
	Files to turn in : join.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that returns a concatenated string from the 'strings' passed as arguments.

• Expected function

```
func Join(strs []string, sep string) string {
}
```

• Usage

```
package main

import (
        "fmt"
        "piscine"
)

func main() {
        toConcat := []string{"Hello!", " How", " are", " you?"}
        fmt.Println(piscine.Join(toConcat, ":"))
}
```

```
$ go run .
Hello!: How: are: you?
$
```

Chapter XVIII

Exercise 16: printnbrbase

None	Exercise 16	
	printnbrbase	
	Turn-in directory : $ex16/$	
	Files to turn in : printnbrbase.go	
	Allowed packages: github.com/42tokyo/ft	/
	Allowed builtin functions:	

Write a function that prints an int in a string base passed as parameters.

- If the base is not valid, the function prints NV (Not Valid):
- Validity rules for a base :
 - A base must contain at least 2 characters.
 - Each character of a base must be unique.
 - $\circ\,$ A base should not contain + or characters.
- The function has to manage negative numbers. (as shown in the example)
- Expected function

```
func PrintNbrBase(nbr int, base string) {
}
```

- Usage
- Output of usage

```
$ go run .
125
-1111101
7D
-uoi
NV
$
```

Go Piscine Go 03

```
package main
import (
    "fmt"
    "github.com/42tokyo/ft"
    "piscine"
)

func main() {
    piscine.PrintNbrBase(125, "0123456789")
    ft.PrintRune('\n')
    piscine.PrintNbrBase(-125, "01")
    ft.PrintRune('\n')
    piscine.PrintNbrBase(125, "0123456789ABCDEF")
    ft.PrintRune('\n')
    piscine.PrintNbrBase(125, "0123456789ABCDEF")
    ft.PrintRune('\n')
    piscine.PrintNbrBase(-125, "choumi")
    ft.PrintRune('\n')
    piscine.PrintNbrBase(125, "aa")
    ft.PrintRune('\n')
}
```

Chapter XIX

Exercise 17: atoibase

	Exercise 17	
	atoibase	
None	Turn-in directory : $ex17/$	
	Files to turn in: atoibase.go	
	Allowed packages: github.com/42tokyo/ft	
	Allowed builtin functions:	

Write a function that does the following:

- The function that takes two arguments:
 - s: a numeric string in a given base.
 - base: a string representing all the different digits that can represent a numeric value.
- And returns the integer value of s in the given base.
- If the base is not valid it returns 0.
- Validity rules for a base:
 - A base must contain at least 2 characters.
 - Each character of a base must be unique.
 - \circ A base should not contain + or characters.
- String number must contain only elements that are in base.
- Only valid string numbers will be tested.
- The function does not have to manage negative numbers.
- Expected function
- Usage

Go Piscine Go 03

```
func AtoiBase(s string, base string) int {
}
```

```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    fmt.Println(piscine.AtoiBase("125", "0123456789"))
    fmt.Println(piscine.AtoiBase("111101", "01"))
    fmt.Println(piscine.AtoiBase("7D", "0123456789ABCDEF"))
    fmt.Println(piscine.AtoiBase("uoi", "choumi"))
    fmt.Println(piscine.AtoiBase("uoi", "choumi"))
    fmt.Println(piscine.AtoiBase("bbbbbab", "-ab"))
}
```

```
$ go run .
125
125
125
125
125
0
$
```