

Summary: THIS document is the subject for the Go 01 module of the Go Piscine @ 42Tokyo.

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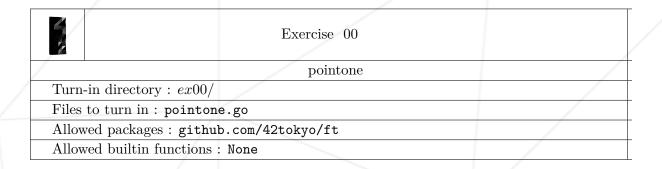
Chapter I

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: pointone



Write a function that takes a pointer to an int as argument and gives to this int the value of 1.

• Expected function

```
func PointOne(nb *int) {
}
```

• Usage

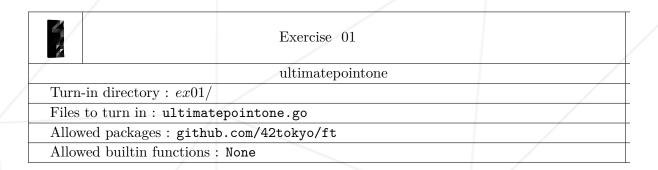
```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    n := 0
    piscine.PointOne(&n)
    fmt.Println(n)
    }
}
```

```
$ go run .
1
$
```

Chapter III

Exercise 01: ultimatepointone



Write a function that takes a pointer to a pointer to a pointer to an int as argument and gives to this int the value of 1.

• Expected function

```
func UltimatePointOne(nb *int) {
}
```

• Usage

```
$ go run .
1
$
```

Chapter IV

Exercise 02: divmod

Exercise 0)2
divmo	od
Turn-in directory : $ex02/$	
Files to turn in : divmod.go	
Allowed packages: github.com/42tokyo/ft	
Allowed builtin functions : None	

Write a function that does the following:

- \bullet This function will divide an int a by another int b.
- The result of this division will be stored in the int pointed by div.
- The remainder of this division will be stored in the int pointed by mod.
- Expected function

```
func DivMod(a int, b int, div *int, mod *int) {
}
```

- Usage
- Output of usage

```
$ go run .
6
1
```

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

func main() {
    a := 13
    b := 2
    var div int
    var mod int
    piscine.DivMod(a, b, &div, &mod)
    fmt.Println(div)
    fmt.Println(mod)
}
```

Chapter V

Exercise 03: ultimatedivmod

Exercise 03	
ultimatedivmod	
Turn-in directory : $ex03/$	
Files to turn in: ultimatedivmod.go	
Allowed packages: github.com/42tokyo/ft	
Allowed builtin functions : None	

Write a function that does the following:

- This function will divide an int a by another int b.
- The result of this division will be stored in the int pointed by a.
- \bullet The remainder of this division will be stored in the int pointed by b.
- Expected function

```
func UltimateivMod(a *int, b *int) {
}
```

- Usage
- Output of usage

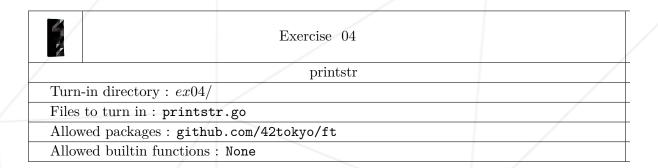
```
$ go run .
6
1
```

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

func main() {
    a := 13
    b := 2
    piscine.UltimateDivMod(&a, &b)
    fmt.Println(a)
    fmt.Println(b)
}
```

Chapter VI

Exercise 04: printstr



Write a function that prints one by one the characters of a string on the screen.

• Expected function

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

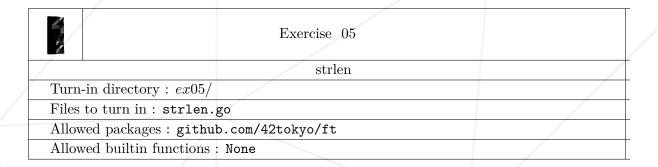
Usage

```
package main
import "piscine"
func main() {
     piscine.PrintStr("Hello World!")
}
```

```
$ go run . | cat -e
Hello World!%
$
```

Chapter VII

Exercise 05: strlen



Write a function that counts the runes of a string and that returns that count.

• Expected function

```
func StrLen(s string) int {
}
```

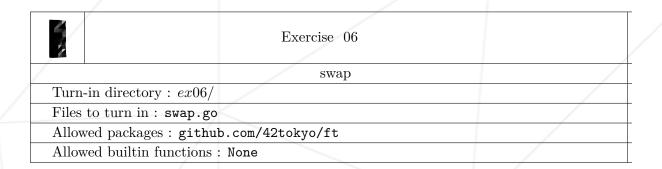
• Usage

```
package main
import (
    "fmt"
    "piscine"
)
func main() {
    l := piscine.StrLen("Hello World!")
    fmt.Println(1)
}
```

```
$ go run .
12
$
```

Chapter VIII

Exercise 06: swap



Write a function that takes two pointers to an int (*int) and swaps their contents.

• Expected function

```
func Swap(a *int, b *int) {
}
```

• Usage

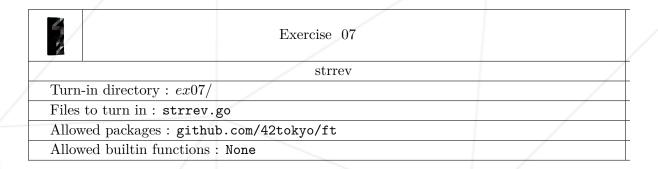
```
package main
import (
    "fmt"
    "piscine"
)

func main() {
    a := 0
    b := 1
    piscine.Swap(&a, &b)
    fmt.Println(a)
    fmt.Println(b)
}
```

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

Chapter IX

Exercise 07: strrev



Write a function that takes a string and returns that string reversed.

• Expected function

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

• Usage

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

func main() {
    s := "Hello World!"
    s = piscine.StrRev(s)
    fmt.Println(s)
}
```

```
$ go run .
!dlroW olleH
$
```

Chapter X

Exercise 08: basicatoi

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

Write a function that simulates the behaviour of the Atoi function in Go. Atoi transforms a number defined as a string in a number defined as an int.

- Atoi returns 0 if the string is not considered as a valid number. For this exercise only valid string will be tested. They will only contain one or several digits as characters.
- For this exercise, the handling of the signs + or does not have to be taken into account.
- This function will only have to return the int. For this exercise, the error return of Atoi is not required.
- Expected function

```
func BasicAtoi(s string) int {
}
```

- \bullet Usage
- Output of usage

```
$ go run .
12345
12345
0
$
```

Chapter XI

Exercise 09: basicatoi2

	Exercise 09	
/	basicatoi2	
Turn-in directory : $ex09/$		
Files to turn in : basicatoi2.go		
Allowed packages: github.com/42tokyo/ft		
Allowed builtin functions : None		

Write a function that simulates the behaviour of the Atoi function in Go. Atoi transforms a number defined as a string in a number defined as an int.

- Atoi returns 0 if the string is not considered as a valid number. For this exercise non-valid string chains will be tested. Some will contain non-digits characters.
- For this exercise the handling of the signs + or does not have to be taken into account.
- This function will only have to return the int. For this exercise the error return of Atoi is not required.
- Expected function

```
func BasicAtoi2(s string) int {
}
```

- Usage
- Output of usage

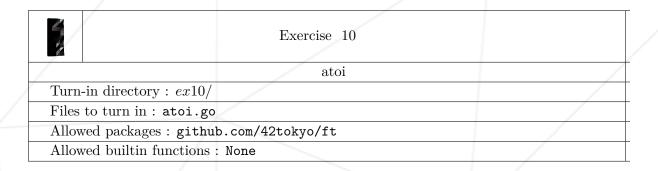
```
$ go run .
12345
12345
0
0
$
```

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

func main() {
    fmt.Println(piscine.BasicAtoi2("12345"))
    fmt.Println(piscine.BasicAtoi2("000000012345"))
    fmt.Println(piscine.BasicAtoi2("012 345"))
    fmt.Println(piscine.BasicAtoi2("Hello World!"))
}
```

Chapter XII

Exercise 10: atoi



Write a function that simulates the behaviour of the Atoi function in Go. Atoi transforms a number represented as a string in a number represented as an int.

- Atoi returns 0 if the string is not considered as a valid number. For this exercise non-valid string chains will be tested. Some will contain non-digits characters.
- \bullet For this exercise the handling of the signs + or does have to be taken into account.
- This function will only have to return the int. For this exercise the error result of Atoi is not required.
- Expected function

```
func Atoi(s string) int {
}
```

- Usage
- Output of usage

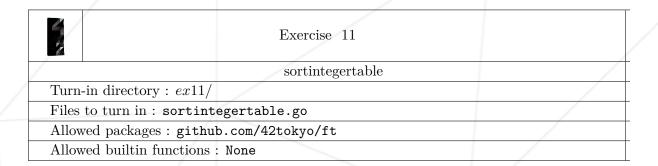
```
$ go run .
12345
12345
0
0
1234
-1234
0
0
0
1284
```

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

func main() {
    fmt.Println(piscine.Atoi("12345"))
    fmt.Println(piscine.Atoi("0000000012345"))
    fmt.Println(piscine.Atoi("012 345"))
    fmt.Println(piscine.Atoi("Hello World!"))
    fmt.Println(piscine.Atoi("+1234"))
    fmt.Println(piscine.Atoi("-1234"))
    fmt.Println(piscine.Atoi("-1234"))
    fmt.Println(piscine.Atoi("-1234"))
}
```

Chapter XIII

Exercise 11: sortintegertable



Write a function that reorders a slice of int in ascending order.

• Expected function

```
func SortIntegerTable(table []int) {
}
```

• Usage

```
$ go run .
[0 1 2 3 4 5]
$
```