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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 work will be checked and graded by your fellow classmates.
- On top of that, your work will be checked and graded by a program called Moulinette.
- The Moulinette is very meticulous and strict in its evaluation of your work. It is entirely automated and there is no way to negotiate with it. So if you want to avoid bad surprises, be as thorough as possible.
- Exercises in Shell must be executable with `/bin/sh`.
- You cannot leave any additional file in your directory other 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 /`
- Check out the "C Piscine" part of the forum on the intranet.
- Examine the examples thoroughly. They could very well call for details that are not explicitly mentioned in the subject...

- By Odin, by Thor ! Use your brain !!!

Chapter II

Foreword

Here's what Wikipedia has to say about otters :

The European otter (*Lutra lutra*), also known as the Eurasian otter, Eurasian river otter, common otter and Old World otter, is a European and Asian member of the Lutrinae or otter subfamily, and is typical of freshwater otters.

The European otter is a typical species of the otter subfamily. Brown above and cream below, these long, slender creatures are well-equipped for their aquatic habits. Its bones show osteosclerosis, increasing their density to reduce buoyancy.

This otter differs from the North American river otter by its shorter neck, broader visage, the greater space between the ears and its longer tail.

However, the European otter is the only otter in its range, so it cannot be confused for any other animal. Normally, this species is 57 to 95 cm (23-37 in) long, not counting a tail of 35-45 cm (14-18 in).

The female is shorter than the male.

The otter's average body weight is 7 to 12 kg (15.4-26.4 lbs), although occasionally a large old male may reach up to 17 kg (37 lbs).

The record-sized specimen, reported by a reliable source but not verified, weighed over 24 kg (53 lbs).

The European otter is the most widely distributed otter species, its range including parts of Asia and Africa, as well as being spread across Europe. Though currently believed to be extinct in Liechtenstein, and Switzerland, they are now very common in Latvia, along the coast of Norway and across Great Britain, especially Shetland, where 12% of the UK breeding population exist. Ireland has the highest density of Eurasian otters in Europe.


In Italy, they can be found in southern parts of the peninsula.

The South Korean population is endangered.

Otters are cute.

Chapter III


Exercise 00 : Exam

	Exercice : 00
	Exam
Remarks : n/a	

- On the intranet's home page, click on the Agenda section and register for Friday's exam.
- You also have to register for the Exam00 project.
- Make sure you've registered for the exam (the event AND the project !).
- Make sure you've made sure you've registered for the exam (the event AND the project ! Yep, both !).

Chapter IV

Exercise 01 : print_groups

	Exercice : 01
	print_groups.sh
	Turn-in directory : <i>ex01/</i>
	Files to turn in : print_groups.sh
	Allowed functions : Nothing
	Remarks : n/a

- Write a command line that will display the list of groups for which the login, contained in the environment variable `FT_USER` , is a member. Separated by commas without spaces.

- Examples :

- for `FT_USER=nours`, the result is "god,root,admin,master,nours,bocal" (without quotation marks)

```
$>./print_groups.sh
god,root,admin,master,nours,bocal$>
```

- for `FT_USER=daemon`, the result is "daemon,bin" (without quotation marks)


```
$>./print_groups.sh
daemon,bin$>
```



man groups

Chapter V

Exercise 02 : find_sh


	Exercise : 02
find_sh.sh	
Turn-in directory : <i>ex02/</i>	
Files to turn in : find_sh.sh	
Allowed functions : Nothing	
Remarks : n/a	

- Write a command line that searches for all file names that end with ".sh" (without quotation marks) in the current directory and all its sub-directories. It should display only the file names without the .sh.
- Example of output :

```
$>./find_sh.sh | cat -e
find_sh$
file1$
file2$
file3$
$>
```

Chapter VI

Exercise 03 : count_files


	Exercice : 03
	count_files.sh
	Turn-in directory : <i>ex03/</i>
	Files to turn in : count_files.sh
	Allowed functions : Nothing
	Remarks : n/a

- Write a command line that counts and displays the number of regular files and directories in the current directory and all its sub-directories. It should include ".", the starting directory.
- Example of output :

```
$>./count_files.sh | cat -e
42$
$>
```


Chapter VII

Exercise 04 : MAC

	Exercice : 04
MAC.sh	
Turn-in directory : <i>ex04/</i>	
Files to turn in : MAC.sh	
Allowed functions : Nothing	
Remarks : n/a	


- Write a command line that displays your machine's MAC addresses. Each address must be followed by a line break.



`man ifconfig`

Chapter VIII

Exercise 05 : Can you create it ?

	Exercice : 05
Can you create it ?	
Turn-in directory : <i>ex05/</i>	
Files to turn in : "\?*\$*'KwaMe'*\$?\\"	
Allowed functions : Nothing	
Remarks : n/a	

- Create a file containing only "42", and NOTHING else.
- Its name will be :


```
"\?*$*'KwaMe'*$?\\"
```

- Example :

```
$>ls -lRa *waM* | cat -e
-rw---xr-- 1 75355 32015 2 Oct 2 12:21 "\?*$*'KwaMe'*$?\\"$
$>
```

Chapter IX


Exercise 06 : Skip

	Exercise : 06
skip.sh	
Turn-in directory : <i>ex06/</i>	
Files to turn in : skip.sh	
Allowed functions : Nothing	
Remarks : n/a	

- Write a command line that displays every other line for the command `ls -l`, starting from the first line.

Chapter X

Exercise 07 : r_dwssap

	Exercice : 07
	r_dwssap.sh
	Turn-in directory : <i>ex07/</i>
	Files to turn in : r_dwssap.sh
	Allowed functions : Nothing
	Remarks : n/a

- Write a command line that displays the output of a `cat /etc/passwd` command, removing comments, every other line starting from the second line, reversing each login, sorted in reverse alphabetical order, and keeping only logins between FT_LINE1 and FT_LINE2 included, and they must be separated by ", " (without quotation marks), and the output must end with a ".".
- Example: Between lines 8 and 16, the result should be something like this :


```
$> ./r_dwssap.sh
sstq_, sorebrek_brk_, soibten_, sergtsop_, scodved_, rlaxcm_, rgmecived_, revreswodniw_, revressta_
.$>
```



Rigorously follow the order indicated in the instructions.

Chapter XI

Exercise 08 : bon

	Exercice : 08
bon.sh	
Turn-in directory : <i>ex08/</i>	
Files to turn in : bon.sh	
Allowed functions : Nothing	
Remarks : n/a	

- Write a command line that displays the number of users of the infrastructure whose names contain "bon" (that also includes "mr. bonheur").
- Example of output :


```
$> ./bon.sh 2> /dev/null | cat -e
4$
$>
```



LDAP is my friend :-)

Chapter XII

Exercise 09 : add_chelou

	Exercice : 09
	add_chelou.sh
	Turn-in directory : <i>ex09/</i>
	Files to turn in : add_chelou.sh
	Allowed functions : Nothing
	Remarks : n/a

- Write a command line that takes numbers from variables FT_NBR1, in '!\"? base, and FT_NBR2, in mrdoc base, and displays the sum of both in gtaio luSnemf base.

- Example 1:

```
FT_NBR1='!\"?'\  
FT_NBR2=rcrdmdd
```

- The sum is :

```
Salut
```

- Example 2 :

```
FT_NBR1='!\"?'\  
FT_NBR2=dcrmcmooododmrrrmorcmcmomo
```

- The sum is :

```
Segmentation fault
```