

C Piscine
Shell 00

Summary: This document contains the subject matter for the Shell module 00 of the C Piscine at 42.

Version: 4.6

Contents

I	Instructions	2
II	Foreword	3
III	Exercise 00: Z	5
IV	Exercise 01: testShell00	6
V	Exercise 02: Oh yeah, mooore	7
VI	Exercise 03: SSH me!	9
VII	Exercise 04: midLS	10
VIII	Exercise 05: GiT commit	11
IX	Exercise 06: gitignore	13
\mathbf{X}	Exercise 07: diff	14
XI	Exercise 08: clean	15
XII	Exercise 09: Illusions, not tricks, Michael	16
XIII	Submission and peer-evaluation	17

Chapter I

Instructions

- These exercises are carefully arranged in order of difficulty, from easiest to hardest. We <u>will not</u> consider a successfully completed harder exercise if an easier one is not perfectly functional.
- Ensure that you have the appropriate permissions on your files and directories.
- You must follow the **submission procedures** for every exercise.
- Your exercises will be checked and graded by your fellow classmates.
- Additionally, your exercises will be checked and graded by a program called **Moulinette**.
- Moulinette is extremely meticulous and strict in its evaluation. It is entirely automated, and there is no way to negotiate with it. To avoid unpleasant surprises, be as thorough as possible.
- Shell exercises must be executable with /bin/sh.
- You <u>must not</u> leave any additional files in your directory other than those specified in the assignment.
- Have a question? Ask the peer on your right. If not, try the peer on your left.
- Your reference guide is called Google / man / the Internet / ...
- Examine the examples carefully. They may contain details that are not explicitly mentioned in the assignment.

Chapter II

Foreword

Below are the lyrics to City Hunter's theme song, "Moonlight Shadow":

The last time ever she saw him
Carried away by a moonlight shadow
He passed on worried and warning
Carried away by a moonlight shadow.
Lost in a riddle that Saturday night
Far away on the other side.
He was caught in the middle of a desperate fight
And she couldn't find how to push through

The trees that whisper in the evening Carried away by a moonlight shadow Sing a song of sorrow and grieving Carried away by a moonlight shadow All she saw was a silhouette of a gun Far away on the other side.

He was shot six times by a man on the run And she couldn't find how to push through

[Chorus]

I stay, I pray
See you in Heaven far away...
I stay, I pray
See you in Heaven one day.

Four A.M. in the morning
Carried away by a moonlight shadow
I watched your vision forming
Carried away by a moonlight shadow
A star was glowing in the silvery night
Far away on the other side
Will you come to talk to me this night
But she couldn't find how to push through

C Piscine Shell 00

[Chorus]

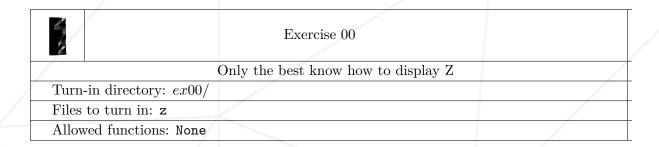
Far away on the other side.

Caught in the middle of a hundred and five
The night was heavy and the air was alive
But she couldn't find how to push through
Carried away by a moonlight shadow
Carried away by a moonlight shadow
Far away on the other side.

Unfortunately, this topic has nothing to do with City Hunter.

Chapter III

Exercise 00: Z



 \bullet Create a file called z that returns "Z", followed by a newline, whenever the cat command is used on it.

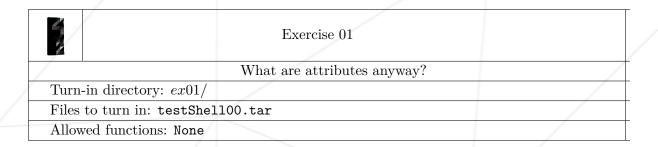
```
?>cat z
Z
?>
```



Google is your friend.

Chapter IV

Exercise 01: testShell00



- Create a file called testShell00 in your submission directory.
- Figure out a way to make the output look like this (except for the "total 1" line):

```
%> ls -1
total 1
-r--r-xr-x 1 XX XX 40 Jun 1 23:42 testShell00
%>
```

• Once you've achieved the previous steps, execute the following command to create the file to be submitted:

%> tar -cf testShell00.tar testShell00



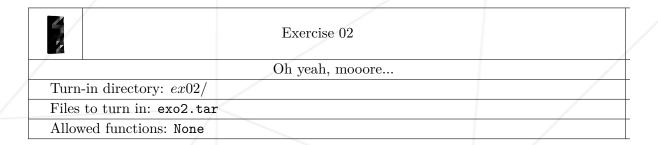
- Don't worry about what appears instead of "XX".
- A year will be accepted instead of the time in the file's timestamp.



Did you check with your right-side neighbor?

Chapter V

Exercise 02: Oh yeah, mooore...



• Create the following files and directories. Adjust their properties so that when you run the ls -l command in your directory, the output looks like this:

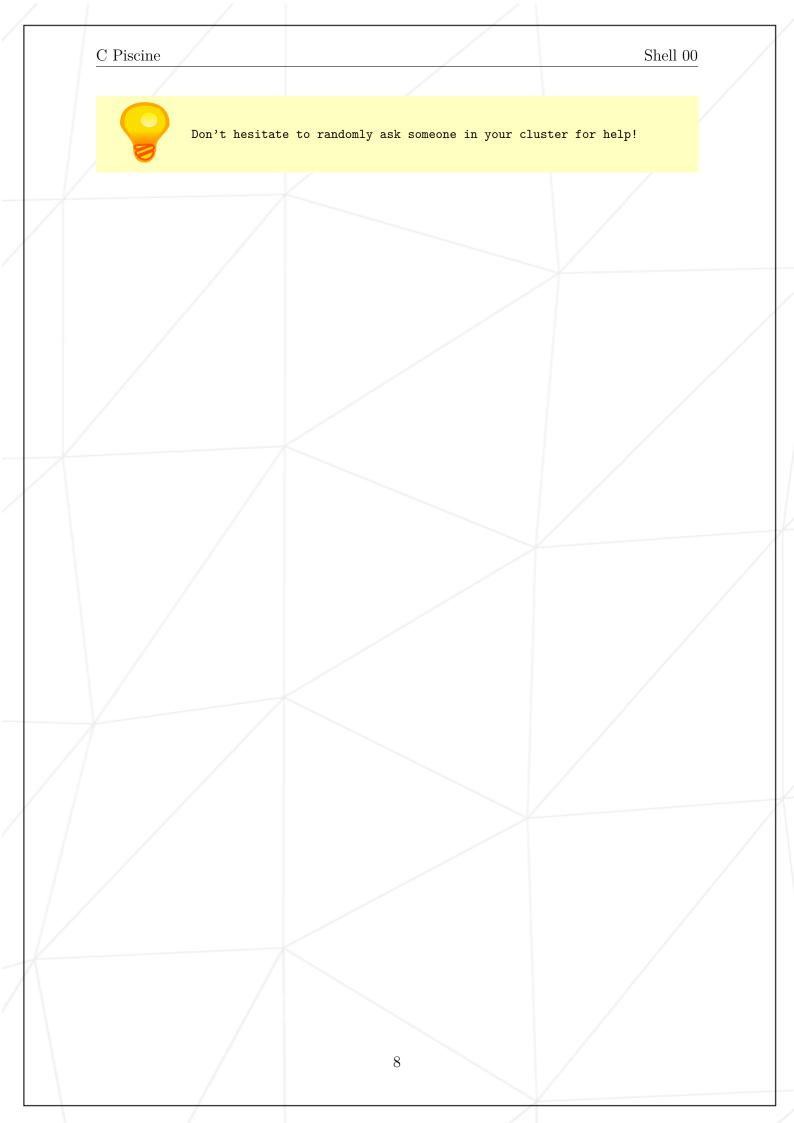
```
%> ls -1
total XX
drwx--xr-x 2 XX XX XX Jun 1 20:47 test0
-rwx--xr-- 1 XX XX 4 Jun 1 21:46 test1
dr-x---r-- 2 XX XX XX Jun 1 22:45 test2
-r----r-- 2 XX XX 1 Jun 1 23:44 test3
-rw-r---x 1 XX XX 2 Jun 1 23:43 test4
-r------ 2 XX XX 1 Jun 1 23:44 test5
lrwxrwxrwx 1 XX XX 5 Jun 1 22:20 test6 -> test0
%>
```

• Once you've completed this, run the following command to create the file to be submitted:

```
%> tar -cf exo2.tar *
```

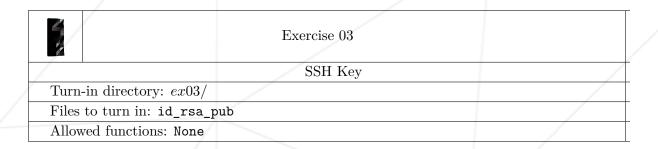


- Don't worry about what appears instead of "XX".
- A year will be accepted instead of the time in the file's timestamp.



Chapter VI

Exercise 03: SSH me!



- Create your own SSH key. Once done:
 - Add your public key to your repository in a file named id_rsa_pub.
 - Update your SSH key on the intranet. This will allow you to push the repository to our git server.



- The file name was not chosen randomly.
- Make sure you understand the difference between the public key and the private key.



Did you check with your left-side neighbor?

Chapter VII

Exercise 04: midLS

	Exercise 04	
/	midLS	
Turn-in directory: $ex04/$		
Files to turn in: midLS		
Allowed functions: None		

- In a file named midLS, write the command that lists all files and directories in your current directory (excluding hidden files or any file starting with a dot, including double dots).
- The output should be sorted by modification date, with entries separated by a comma and a space.
- Directory names should end with a slash (/).



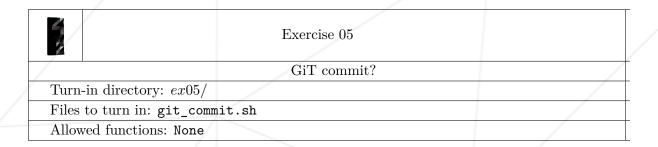
Do only what is asked, nothing more!



- RTFM
- Git push regularly.

Chapter VIII

Exercise 05: GiT commit



• Create a shell script that displays the ids of the last 5 commits in your git repository.

%> bash git_commit.sh | cat -e baa23b54f0adb7bf42623d6d0a6ed4587e11412a\$ 2f52d74b1387fa80eea844969e8dc5483b531ac1\$ 905f53d98656771334f53f59bb984fc29774701f\$ 5ddc8474f4f15b3fcb72d08fcb333e19c3a27078\$ e94d0b448c03ec633f16d84d63beaef9ae7e7be8\$ %>

• Your script will be tested in our own environment.



- RTFM!
- The first retry delay is short, trigger an intermediate evaluation to track your progress!

C Piscine Shell 00

Milestone Achieved, Keep Going!

You've completed the mandatory exercises for this project. Now, you have a choice:

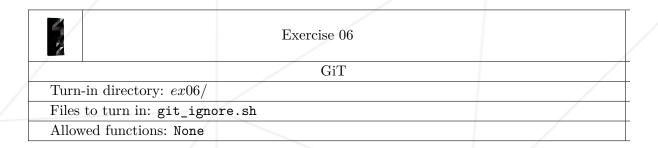
- Continue with the **optional exercises** to explore more.
- Move on to your **next project**.

Both paths will introduce you to useful concepts. Consider the following before making your decision:

- Your first exam, as well as the end-of-week rush, will focus on C programming. It might therefore be useful to gain experience in this field beforehand. (You'll learn more about the rush soon).
- Your performance in this Piscine is evaluated on multiple factors:
 - Project completion is one aspect.
 - Overall progress through the full list of Piscine projects is another. Choose wisely to maximize your results.
- You can retry the same project in a few days or weeks until the end of the Piscine.
- Staying in sync with your peers promotes better collaboration.

Chapter IX

Exercise 06: gitignore



• Write a short shell script that lists all the existing files ignored by your Git repository.

Example output:

```
%> bash git_ignore.sh | cat -e
.DS_Store$
mywork.c-$
%>
```

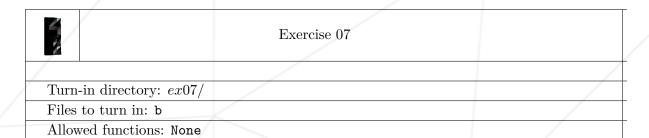
• Your script will be tested in our own environment.



- RTFM!
- Get inspired by others, but don't let them do your work!

Chapter X

Exercise 07: diff



• Create a file named b, so that:

```
%>cat -e a
STARWARS$
Episode IV, A NEW HOPE It is a period of civil war.$
$
Rebel spaceships, striking from a hidden base, have won their first victory against the evil
    Galactic Empire.$
During the battle, Rebel spies managed to steal secret plans to the Empire's ultimate weapon,
    the DEATH STAR,$
an armored space station with enough power to destroy an entire planet.$
$
Pursued by the Empire's sinister agents, Princess Leia races home aboard her starship, custodian
    of the stolen plans that can save her people and restore freedom to the galaxy...$
$
```

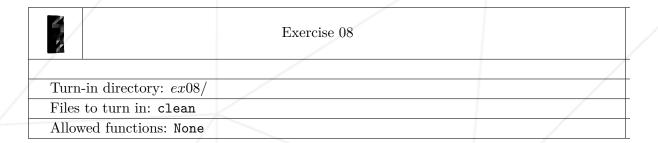
%>diff a b > sw.diff



- man patch
- Don't blindly trust any source, always test, verify, and validate your results yourself!

Chapter XI

Exercise 08: clean



- In a file called clean write a single command that:
 - Searches for all files in the current directory and its subdirectories that end with ~ (tilde) or, start and end with # (hash).
 - Displays the found files and deletes them.
- Only one command is allowed, no ';' or '&&' or other chaining tricks.



- man find
- Collaboration is key to success!

Chapter XII

Exercise 09: Illusions, not tricks, Michael...

	Exercise 09	
·	Illusions, not tricks, Michael	
Turn-in directory: $ex09/$		
Files to turn in: ft_magi		
Allowed functions: None		

• Create a magic file named ft_magic that is properly formatted to enable the file command to detect files of type 42 file, defined as those containing the string "42" at the 42nd byte.



- man file
- Failure is part of your learning journey

Chapter XIII

Submission and peer-evaluation

Submit your assignment to your Git repository as usual. Only the work inside your repository will be evaluated during the defense. Make sure to double-check the filenames to ensure they are correct.



You must submit only the files explicitly required by the project instructions.