



# 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

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

# Chapter I

## Instructions

- Only this page will serve as reference; do not trust rumors.
- Watch out! This document may change up to an hour before submission.
- These exercises are carefully arranged in order of difficulty, from easiest to hardest. We will not 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 must not 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


[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

	Exercise 00
Only the best know how to display Z	
Turn-in directory : <i>ex00/</i>	
Files to turn in : <b>z</b>	
Allowed functions : <b>None</b>	

- Create a file called **z** that returns "Z", followed by a new line, whenever the **cat** command is used on it.


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



Google is your friend.

# Chapter IV

## Exercise 01: testShell00

	Exercise 01
What are attributes anyway ?	
Turn-in directory : <i>ex01/</i>	
Files to turn in : <b>testShell00.tar</b>	
Allowed functions : <b>None</b>	

- 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 -l
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...

	Exercise 02
Oh yeah, mooore...	
Turn-in directory : <i>ex02/</i>	
Files to turn in : <b>exo2.tar</b>	
Allowed functions : None	

- 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 -l
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-----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.






Don't hesitate to randomly ask someone in your cluster for help!

# Chapter VI

## Exercise 03: SSH me!

	Exercise 03
SSH Key	
Turn-in directory : <i>ex03/</i>	
Files to turn in : <code>id_rsa_pub</code>	
Allowed functions : None	

- 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 : <i>ex04/</i>	
Files to turn in : <b>midLS</b>	
Allowed functions : <b>None</b>	

- 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

	Exercise 05
GiT commit?	
Turn-in directory : <i>ex05/</i>	
Files to turn in : <i>git_commit.sh</i>	
Allowed functions : None	

- 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!

## 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

	Exercise 06
GiT	
Turn-in directory : <i>ex06/</i>	
Files to turn in : <code>git_ignore.sh</code>	
Allowed functions : None	

- 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

	Exercise 07
Turn-in directory : <i>ex07/</i>	
Files to turn in : <b>b</b>	
Allowed functions : None	

- 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

	Exercise 08
Turn-in directory : <i>ex08/</i>	
Files to turn in : <b>clean</b>	
Allowed functions : <b>None</b>	

- 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 : <code>ex09/</code>	
Files to turn in : <code>ft_magic</code>	
Allowed functions : <code>None</code>	

- Create a **magic file** named `ft_magic` that is correctly formatted to detect files of type42 file, specifically those that contain 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.