

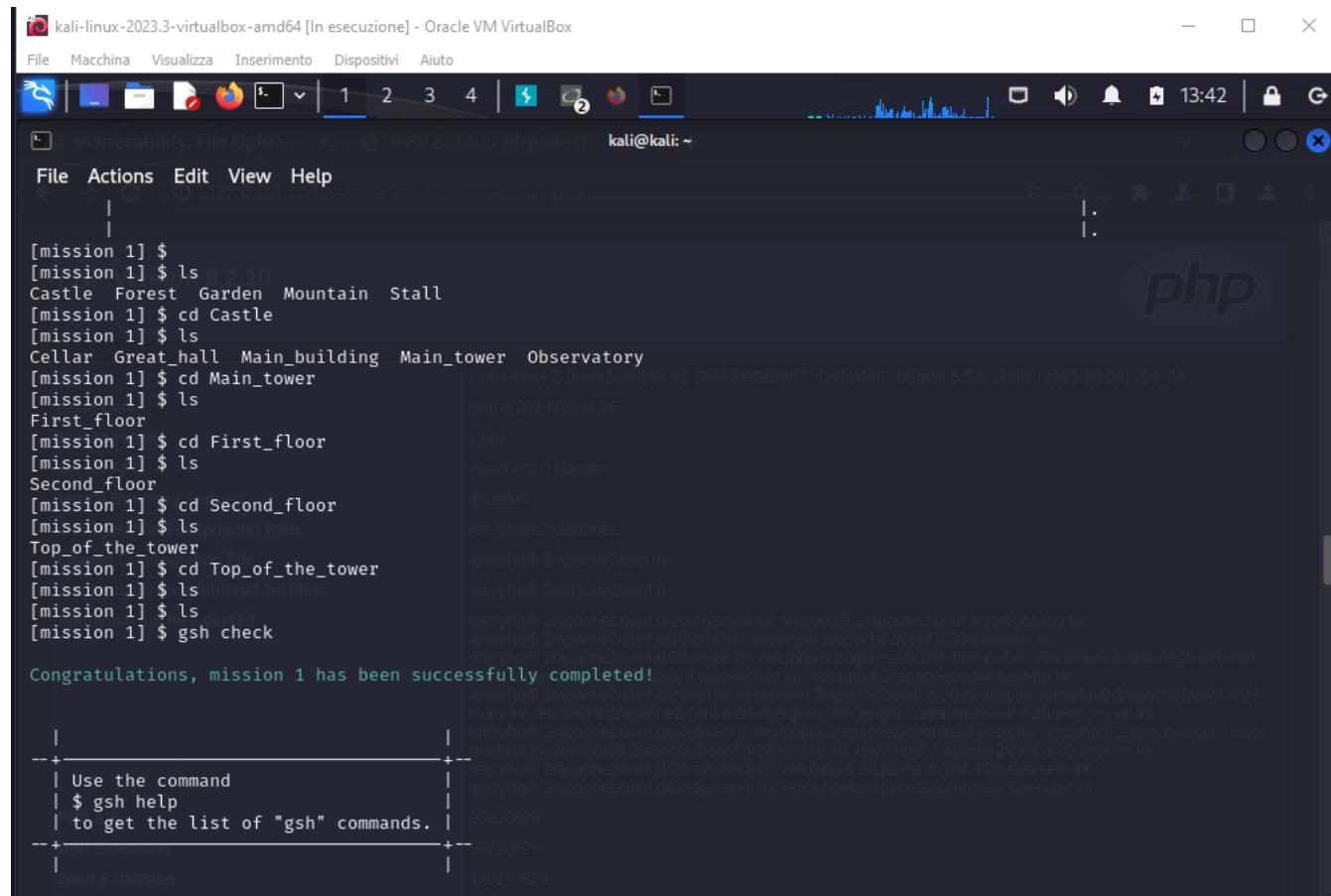
W8D4

GAMESHELL

# Gameshell

Nelle seguenti slide mostrerò la sequenza di comandi digitata per completare le singole missioni.

# Livello 1



The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal is running on a Kali Linux system with the command-line interface. The user has performed a file upload to a PHP script at the URL `http://127.0.0.1/mission1/maliciousfileupload.php`. The terminal output shows the user navigating through a directory structure, listing files, and executing commands like "gsh check" and "gsh help" to interact with the uploaded file. A watermark for "PHP" is visible in the background of the terminal window.

```
[mission 1] $ ls
[mission 1] $ ls 8.2.10
Castle Forest Garden Mountain Stall
[mission 1] $ cd Castle
[mission 1] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[mission 1] $ cd Main_tower
[mission 1] $ ls
First_floor
[mission 1] $ cd First_floor
[mission 1] $ ls
Second_floor
[mission 1] $ cd Second_floor
[mission 1] $ ls
Top_of_the_tower
[mission 1] $ cd Top_of_the_tower
[mission 1] $ ls
[mission 1] $ ls
[mission 1] $ gsh check
[mission 1] $ gsh help
[mission 1] $ 20220829
[mission 1] $ Zend Extension
[mission 1] $ 420220829
```

# Livello 2

The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal is running on a Kali Linux system (version 6.5.0-kali3-amd64 #1 SMP PREEMPT\_DYNAMIC Debian 6.5.6-1kali1 (2023-05-09) x86\_64). The user has completed a challenge named "mission 2". The terminal output is as follows:

```
[mission 2] $ cd ..
[mission 2] $ ls
Cellar  Great_hall  Main_building  Main_tower  Observatory
[mission 2] $ cd Cellar
[mission 2] $ ls
barrel_of_apples
[mission 2] $ pwd
/home/kali/gameshell/World/Castle/Cellar
[mission 2] $ cd -
/home/kali/gameshell/World/Castle
[mission 2] $ cd Cellar
[mission 2] $ ls
barrel_of_apples
[mission 2] $ nano barrel_of_apples
[mission 2] $ pwd
/home/kali/gameshell/World/Castle/Cellar
[mission 2] $ gsh check
Congratulations, mission 2 has been successfully completed!
```

At the bottom of the terminal, there is a "PHP API" section with the following table:

PHP API	20220829
PHP Extension	20220829
end Extension	47020829

# Livello 3

```
You left GameShell's directory structure. Use
$ cd
to go back to the GameShell's starting directory.
```

```
[mission 3] $ cd
[mission 3] $ ls
Castle Forest Garden Mountain Stall
[mission 3] $ cd Castle/World
bash: cd: Castle/World: No such file or directory
[mission 3] $ cd Castle
[mission 3] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[mission 3] $ cd Main_tower
[mission 3] $ ls
First_floor
[mission 3] $ cd ..
[mission 3] $ cd Main_building
[mission 3] $ ls
Library Throne_room
[mission 3] $ cd ../..
[mission 3] $ pwd
/home/kali/gameshell/World
[mission 3] $ cd ..
```

```
You left GameShell's directory structure. Use
$ cd
to go back to the GameShell's starting directory.
```

```
[mission 3] $ cd
[mission 3] $ cd Castle/Main_building/Throne_room
[mission 3] $ gsh check
```

```
Congratulations, mission 3 has been successfully completed!
```



Well done!!!

From now on, the current location will be shown just before the command prompt.

PHP Version 8.2.10

System	Linux kali 6.5.9-kali3-amd64 #1 SMP PREEMPT_DYNAMIC Debian 12.0.0-kali3-1-amd64
Build Date	Sep 5 2023 05:43:15
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.2/apache2
Loaded Configuration File	/etc/php/8.2/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.2/apache2/conf.d
Additional .ini files parsed	/etc/php/8.2/apache2/conf.d/10-mysqlind.ini /etc/php/8.2/apache2/conf.d/10-pdo.ini /etc/php/8.2/apache2/conf.d/20-c ctype.ini /etc/php/8.2/apache2/conf.d/20-fileno.ini /etc/php/8.2/apache2/conf.d/20-gd.ini /etc/php/8.2/apache2/conf.d/20-iconv.ini /etc/php/8.2/apache2/conf.d/20-mysqliini /etc/php/8.2/apache2/conf.d/20-phar.ini /etc/php/8.2/apache2/conf.d/20-shmop.ini /etc/php/8.2/apache2/conf.d/20-sysvmsg.ini /etc/php/8.2/apache2/conf.d/20-sysvshm.ini /etc/php/8.2/apache2/conf.d/20-zip.ini
PHP API	20220829
PHP Extension	20220829
Zend Extension	420220829
Zend Extension Build	API420220829 NTS
PHP Extension Build	API20220829 NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Multibyte Support	disabled
Zend Max Execution Timers	disabled
IPv6 Support	enabled
DTrace Support	available, disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2, tlsv1.3
Registered Stream Filters	zlib*, string.rot13, string.toupper, string.tolower, convert*, consumed

This program makes use of the Zend Scripting Language Engine  
Zend Engine v4.2.10, Copyright (c) Zend Technologies

# Livello 4

```
~  
[mission 4] $ cd Forest  
  
~/Forest  
[mission 4] $ ls  
  
~/Forest  
[mission 4] $ mkdir Hut  
  
~/Forest  
[mission 4] $ cd Hut  
  
~/Forest/Hut  
[mission 4] $ mkdir Chest  
  
~/Forest/Hut  
[mission 4] $ gsh check  
  
Congratulations, mission 4 has been successfully completed!
```

```
|  
|-----+-----|  
| Use the command |  
| $ gsh help |  
| to get the list of "gsh" commands. |  
|-----+-----|
```

PHP API  
PHP Extension  
Zend Extension  
Zend Extension  
PHP Extension  
Debug Build  
Thread Safety  
Zend Signal Handler  
Zend Memory Manager  
Zend Multibyte String  
Zend Max Execution Time  
IPv6 Support  
DTrace Support  
Registered PHP Functions  
Registered Streams  
Registered Stream Filters

# Livello 5

The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal displays the following text:

```
kali@kali: ~
[mission 5] $ rm FILE1 FILE2 ... FILEn
Delete the files (permanently).
Remark: "rm" is an abbreviation for "remove".
[mission 5] $ cd ..
[mission 5] $ cd Castle
bash: cd: Castle: No such file or directory
[mission 5] $ ls
Hut
[mission 5] $ cd ..
[mission 5] $ ls
Castle Forest Garden Mountain Stall
[mission 5] $ cd Castle
[mission 5] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[mission 5] $ cd Cellar
[mission 5] $ ls
barrel_of_apples bat_1 bat_2 spider_1 spider_2 spider_3
[mission 5] $ rm spider_1 spider_2 spider_3
[mission 5] $
```

The terminal also shows the output of the "phpinfo" command, which provides detailed information about the PHP configuration, including Zend Engine, MySQL support, and various extensions like curl, mbstring, and gd.

# Livello 6

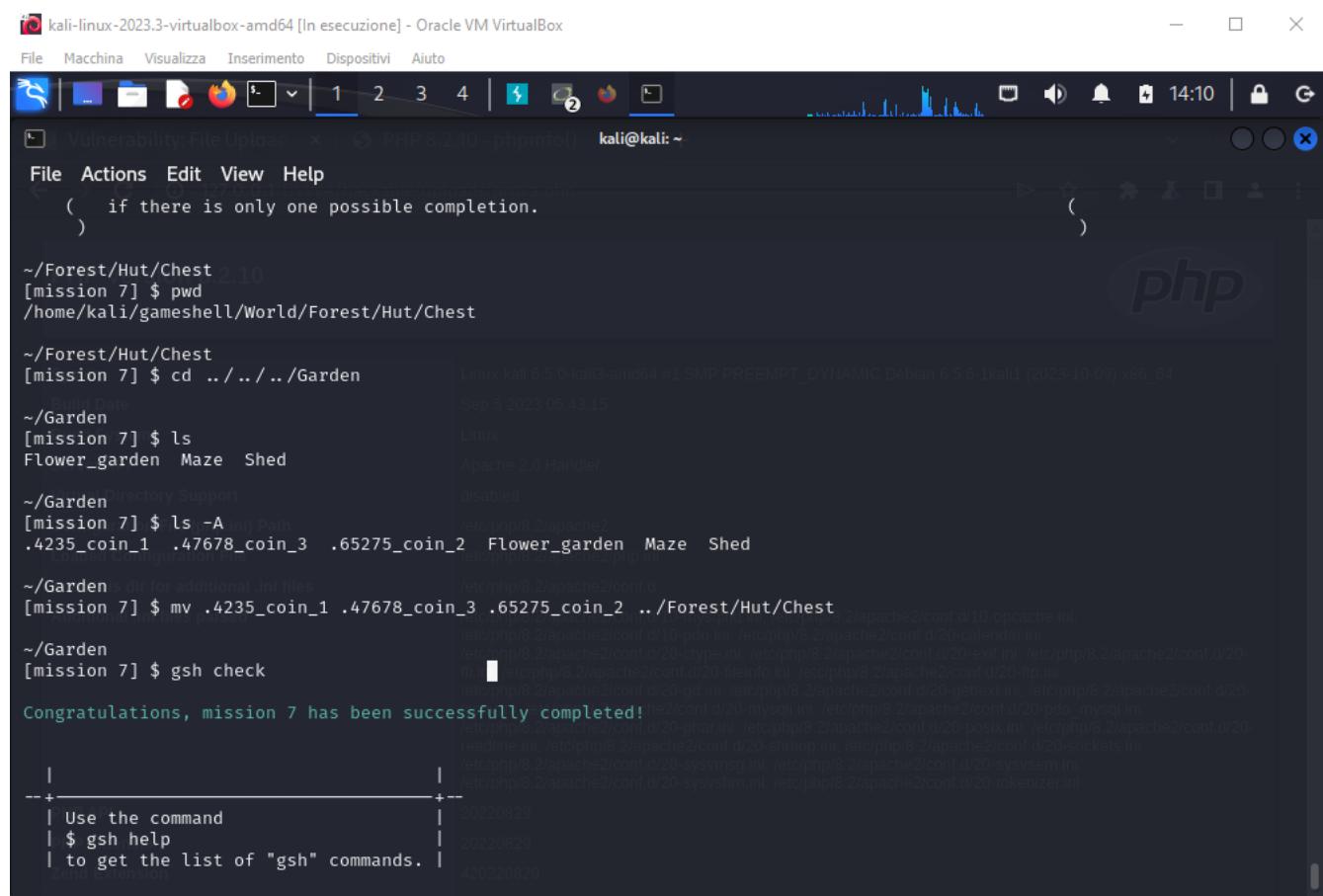
The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal is running on a Kali Linux system with the command line interface. The user has completed a mission, as indicated by the following text at the bottom of the terminal:

```
Vulnerability: File Upload - PHP 8.2.10 - phpinfo()
File Actions Edit View Help
~/Garden
[mission 6] $ ls
coin_1 coin_2 coin_3 Flower_garden Maze Shed
[mission 6] $ mv coin_1 coin_2 coin_3 ./Forest/Hut/Chest
mv: target './Forest/Hut/Chest': No such file or directory
[mission 6] $ mkdir ./Forest/Hut/Chest
mkdir: cannot create directory './Forest/Hut/Chest': No such file or directory
[mission 6] $ mv coin_1 coin_2 coin_3 .. /Forest/Hut/Chest
[mission 6] $ cd .. /Forest/Hut/Chest
[mission 6] $ ls
coin_1 coin_2 coin_3
[mission 6] $ gsh check
PHP API
Congratulations, mission 6 has been successfully completed!
```

The terminal also displays the standard Kali Linux footer information:

```
Zend Extension: 42020829
```

# Livello 7



The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal is running a shell on a Kali Linux host. The user has uploaded a file named "Vulnerability-File Upload" to a PHP info page at "http://127.0.0.1:8080/info.php". The terminal output shows the user navigating through a directory structure, creating a "Garden" folder, and listing files. The user then moves files from the "Garden" folder to the root directory and runs a "gsh check" command, which outputs a success message: "Congratulations, mission 7 has been successfully completed!".

```
kali@kali: ~
File Actions Edit View Help
( if there is only one possible completion.
)
~/Forest/Hut/Chest [mission 7] $ pwd
/home/kali/gameshell/World/Forest/Hut/Chest
~/Forest/Hut/Chest [mission 7] $ cd ../../..../Garden
~/Garden
[mission 7] $ ls
Flower_garden Maze Shed
~/Garden $ ls -A
.4235_coin_1 .47678_coin_3 .65275_coin_2 Flower_garden Maze Shed
~/Garden $ mv .4235_coin_1 .47678_coin_3 .65275_coin_2 .. /Forest/Hut/Chest
~/Garden
[mission 7] $ gsh check
Congratulations, mission 7 has been successfully completed!
```

# Livello 8

kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox

File Macchina Visualizza Inserimento Dispositivi Aiuto

Vulnerability: File Upload | PHP 8.2.10 - phpinfo()

kali@kali: ~

File Actions Edit View Help

```
[mission 8] $ ls
Castle Forest Garden Mountain Stall

~/PHP Version 8.2.10
[mission 8] $ cd Castle

~/Castle
[mission 8] $ cd Cellar
~/Castle/Cellar
[mission 8] $ ls
11175_bat_3 15220_spider_43 20146_spider_49 24244_spider_8 27092_spider_26 30351_spider_25 7862_spider_30
13150_spider_45 15890_spider_28 20536_spider_41 24392_bat_5 27428_bat_1 31362_spider_10 8733_spider_44
13155_spider_50 17581_spider_19 20878_spider_14 24768_spider_23 27496_spider_42 315_spider_40 8913_spider_24
13245_spider_3 18318_spider_4 20904_spider_6 24949_spider_46 27764_spider_38 31906_bat_4 8927_spider_31
13497_spider_37 18632_spider_1 21072_spider_21 25102_spider_32 28120_spider_2 31985_spider_35 9208_spider_34
14105_spider_13 18786_spider_5 21765_spider_20 25464_spider_18 28224_spider_33 356_spider_9 9733_spider_47
14272_spider_7 18825_spider_17 23009_bat_2 25771_spider_36 29416_spider_39 3732_spider_48 9799_spider_29
1512_spider_12 19064_spider_11 24172_spider_15 26157_spider_27 29710_spider_22 5918_spider_16 barrel_of_apples

~/Castle/Cellar
[mission 8] $ rm *spider*
~/Castle/Cellar
[mission 8] $ ls
11175_bat_3 23009_bat_2 24392_bat_5 27428_bat_1 31906_bat_4 barrel_of_apples

~/Castle/Cellar
[mission 8] $ gsh check
20230929

Congratulations, mission 8 has been successfully completed!
```

Zend Extension 420220929

Screenshot taken

View image

PHP

# Livello 9

The screenshot shows a terminal window titled "kali-linux-2023.3-virtualbox-amd64 [In esecuzione] - Oracle VM VirtualBox". The terminal is running a shell on a Kali Linux host. The user has uploaded a file named "phpinfo.php" to a directory at "/var/www/html". The terminal session shows the following commands and output:

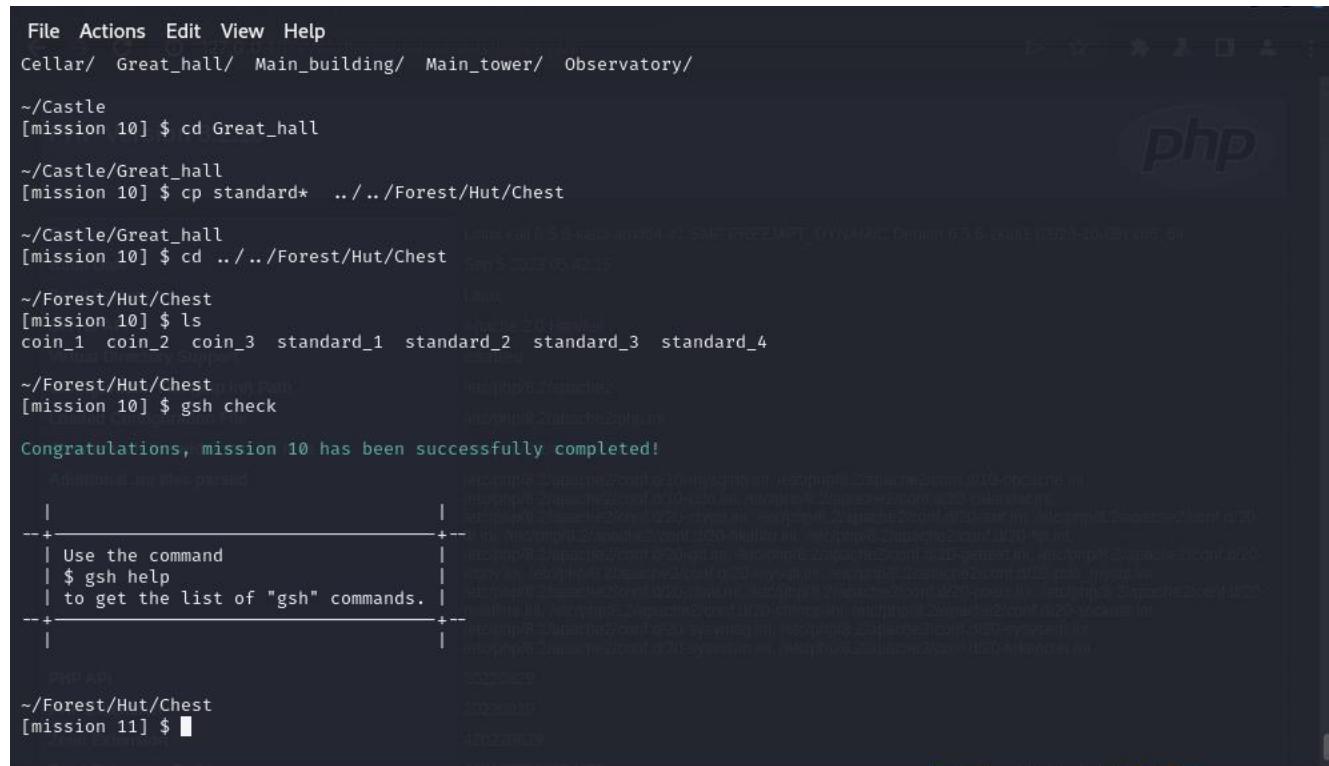
```
File Macchina Visualizza Inserimento Dispositivi Aiuto
Vulnerability: File Upload | PHP 8.2.10 - phpinfo() | kali@kali: ~
File Actions Edit View Help
`__'
~/Castle/Cellar$ ls
11175_bat_3 23009_bat_2 24392_bat_5 27428_bat_1 31906_bat_4 barrel_of_apples

~/Castle/Cellar$ ls -A
Linux kali 5.5.0-kali3-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.5.6-kali1 (2023-10-09) x86_64
.10273_spider_23 .17449_spider_5 .24564_bat_4 .28868_spider_41 .5098_bat_5 .8630_spider_48
.10771_spider_34 .17877_spider_24 .25137_spider_2 .29124_spider_22 .5984_spider_49 .942_spider_9
11175_bat_3 .20612_bat_1 .25177_spider_29 .29201_spider_36 .6596_spider_35 .944_spider_28
.11660_spider_46 .2080_spider_37 .25399_spider_38 .29251_spider_8 .6665_spider_50 .9657_spider_18
.13582_spider_21 .21259_spider_47 .25600_spider_44 .30109_spider_11 .6896_spider_15 .9806_spider_45
.13888_spider_7 .21794_spider_6 .25805_spider_31 .30141_spider_16 .7090_spider_43 barrel_of_apples
.13986_spider_39 .2205_spider_42 .26589_spider_13 .30427_spider_4 .7601_spider_19
.14148_spider_33 .22370_spider_17 .27428_bat_1 .30688_spider_40 .7646_spider_12
.14423_spider_14 .22546_spider_27 .27893_spider_3 31906_bat_4 .8231_spider_10
.17371_spider_20 23009_bat_2 .28286_bat_3 .32294_spider_25 .8413_spider_26
.1740_spider_30 24392_bat_5 .28860_spider_1 .4713_spider_32 .8499_bat_2

~/Castle/Cellar$ rm .*spider*
~/Castle/Cellar$ ls
11175_bat_3 23009_bat_2 24392_bat_5 27428_bat_1 31906_bat_4 barrel_of_apples

~/Castle/Cellar$ gsh check
PHP Extension: 20230829
PHP Extension: 20230829
Congratulations, mission 9 has been successfully completed!
```

# Livello 10



```
File Actions Edit View Help
Cellar/ Great_hall/ Main_building/ Main_tower/ Observatory/
~/Castle
[mission 10] $ cd Great_hall
~/Castle/Great_hall
[mission 10] $ cp standard* ../../Forest/Hut/Chest
~/Castle/Great_hall
[mission 10] $ cd ../../Forest/Hut/Chest
~/Forest/Hut/Chest
[mission 10] $ ls
coin_1 coin_2 coin_3 standard_1 standard_2 standard_3 standard_4
~/Forest/Hut/Chest
[mission 10] $ gsh check
Congratulations, mission 10 has been successfully completed!
Additional files passed:
|-----+-----+
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
|-----+-----+
PHP API
~/Forest/Hut/Chest
[mission 11] $
```

# Livello 11

```
~/Castle
[mission 11] $ lls
Command 'lls' not found, but there are 16 similar ones.

~/Castle
[mission 11] $ ls
Cellar/ Great_hall/ Main_building/ Main_tower/ Observatory/

~/Castle
[mission 11] $ cd Great_hall

~/Castle/Great_hall
[mission 11] $ ls
11362_tapestry_10  19338_tapestry_02  37196_suit_of_armour      47007_tapestry_05  985_tapestry_03  standard_3
11433_stag_head    2864_tapestry_01    41562_tapestry_04        53703_tapestry_08  standard_1   standard_4
18088_tapestry_07  30947_tapestry_09  44846_decorative_shield 57270_tapestry_06  standard_2

~/Castle/Great_hall
[mission 11] $ cp *tapestry* ..../Forest/Hut/Chest

~/Castle/Great_hall
[mission 11] $ gsh check
```

Congratulations, mission 11 has been successfully completed!

Intercept is off

When enabled, requests sent by Burp's browser are held here so that you can analyze and modify them before forwarding them to the target server.

|

| Use the command

| \$ gsh help

| to get the list of "gsh" commands.

[Learn more](#) [Open browser](#)

# Livello 12

# Livello 13

```
~/Castle/Main_tower/First_floor
[mission 13] $ gsh check
What was the day of the week for the 09-15-1970?
  1 : Monday
  2 : Tuesday
  3 : Wednesday
  4 : Thursday
  5 : Friday
  6 : Saturday
  7 : Sunday
Your answer: 2

Congratulations, mission 13 has been successfully completed!

|-----+-----|
| Use the command |-----+
| $ gsh help      |
| to get the list of "gsh" commands. |
|-----+-----|
```

Intercept traffic

When enabled, requests sent by your browser will be captured and decrypted so that you can analyze and modify them to the target.

Learn more

```
~/Castle/Main_tower/First_floor
[mission 14] $
```

# Livello 14

kali㉿kali: ~

File Actions Edit View Help Intercept is off Action Open browser

( )= ( )  
Mission goal  
=====

Checking for hidden files is taking too long!

Create an alias "la" to run the command ``ls -A`` in order to list all files, including hidden ones, with only 2 letters.

Define the synonym

la

for the command

ls -A

and check that it works as expected.

How fortunate, there is a nice rock hidden just where you are.

Intercept is off

When enabled, requests sent by Burp's browser are held here so that you can analyze and modify them before forwarding them to the target server.

Useful commands  
=====

alias STRING='COMMAND'  
Create a synonym for a string, that will stand for a command.

( )= ( )

~/Castle/Main\_tower/First\_floor  
[mission 14] \$ alias la='ls -A'

~/Castle/Main\_tower/First\_floor  
[mission 14] \$ gsh check

Congratulations, mission 14 has been successfully completed!

# Livello 15

```
kali@kali: ~
```

File Actions Edit View Help Intercept is off Action Open browser

/&\\/\_.. . /\\\_\\  
( \\/\_\\ || Mission goal || )  
||  
|| Create a file named "journal.txt" in your chest and write a short message in it.  
|| You can use this file to record your notes and solutions for the upcoming missions.  
||  
|| Details  
||  
|| ``nano`` is a command-line text editor. You can use it whenever you need to edit a file from the shell.  
||  
|| Useful commands  
||  
|| nano FILE  
|| Edit the file from the shell.  
|| (If the file does not exist, it will be created.)  
||  
|| Keybindings are listed at the bottom of the screen (the "``` symbol means "Control"). The most important ones are:  
|| Control-x quit  
|| Control-o save  
|| Control-w search for a string  
||  
|| Remark: do not use Control-s or Control-z!  
||  
|| /&\\/\_.. . /\\\_\\  
( \\/\_\\ |

When enabled, requests sent by Burp's browser are held here so that you can analyze and modify them before forwarding them to the target server.

Learn more Open browser

```
~/Castle/Main_tower/First_floor  
[mission 15] $ cd ../../Forest/Hut/Chest
```

```
~/Forest/Hut/Chest  
[mission 15] $ nano journal.txt
```

```
~/Forest/Hut/Chest  
[mission 15] $ gsh check
```

Congratulations, mission 15 has been successfully completed!

# Livello 16

kali㉿kali: ~

File Actions Edit View Help Intercept is off Action Open browser

```
[mission 16] $ alias journal='nano /home/kali/gameshell/World/Forest/Hut/Chest/journal.txt'

[mission 16] $ gsh check

Congratulations, mission 16 has been successfully completed!
```

Congratulations!

From now on you can use the file  
"~/gshrc"  
to record aliases. More information can be found in the file (it has been created for you).

Intercept is off

When enabled, requests sent by Burp's browser are held here  
so that you can analyze and modify them before forwarding  
them to the target server.

Learn more Open browser

```
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
```

# Livello 17

```
~/Castle/Cellar
[mission 17] $ cd .Lair_of_the_spider_queen\ xvJ0emEaxtpjrbUT dbcywraHtffMcoXQ/
~/Castle/Cellar/.Lair_of_the_spider_queen xvJ0emEaxtpjrbUT dbcywraHtffMcoXQ
[mission 17] $ ls -a
./ .. / ORDoADpaDPseaNGn_baby_bat_UXWgdUkmVYKtutiw XzTpDmKVJvUClYnf_spider_queen_CvfmYQhMqgKENQMK
~/Castle/Cellar/.Lair_of_the_spider_queen xvJ0emEaxtpjrbUT dbcywraHtffMcoXQ
[mission 17] $ rm XzTpDmKVJvUClYnf_spider_queen_CvfmYQhMqgKENQMK
~/Castle/Cellar/.Lair_of_the_spider_queen xvJ0emEaxtpjrbUT dbcywraHtffMcoXQ
[mission 17] $ gsh check
Perfect, it took you only 18 seconds to complete this mission!
Congratulations, mission 17 has been successfully completed!
```

When enabled, requests sent by Burp's browser are held here so that you can analyze and modify them before forwarding them to the target server.

Learn more    Open browser

```
|-----+-----|
| Use the command |
| $ gsh help |
| to get the list of "gsh" commands. |
|-----+-----|
~/Castle/Cellar/.Lair_of_the_spider_queen xvJ0emEaxtpjrbUT dbcywraHtffMcoXQ
[mission 18] $ █
```

# Livello 18



```
kali㉿kali: ~
File Actions Edit View Help
~/Castle/Main_building/Throne_room
[mission 18] $ stop xeyes
Command 'stop' not found, but there are 18 similar ones.

~/Castle/Main_building/Throne_room
[mission 18] $ xeyes
[1]+ Done xeyes (wd: ~/Castle)
(wd now: ~/Castle/Main_building/Throne_room)

~/Castle/Main_building/Throne_room
[mission 18] $ xeyes
^C

~/Castle/Main_building/Throne_room
[mission 18] $ xeyes &
[1] 539702

~/Castle/Main_building/Throne_room
[mission 18] $ cd ..
~/Castle/Main_building
[mission 18] $ cd ..
~/Castle
[mission 18] $ gsh check

Congratulations, mission 18 has been successfully completed!
```

# Livello 19

A screenshot of a terminal window titled "kali@kali: ~". The terminal shows a sequence of commands and their outputs:

```
File Actions Edit View Help
~/Garden/Maze
[mission 19] $ cd /home/kali/gameshell/World/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28
662c4cd92a1815038ba5c069884a/
~/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28662c4cd92a1815038ba5c069884a
[mission 19] $ ls
00000_copper_coin_00000
~/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28662c4cd92a1815038ba5c069884a
[mission 19] $ cd /home/kali/gameshell/World/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28
662c4cd92a1815038ba5c069884a/^C
~/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28662c4cd92a1815038ba5c069884a
[mission 19] $ mv /home/kali/gameshell/World/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28
662c4cd92a1815038ba5c069884a/00000_copper_coin_00000 /home/kali/gameshell/World/Forest/Hut/Chest
~/Garden/Maze/fe4c33aea6ee375e3342891d1d6b083/cca04d656a45024861e52b81806dd/28662c4cd92a1815038ba5c069884a
[mission 19] $ gsh check
Congratulations, mission 19 has been successfully completed!
```

The terminal then displays a decorative ASCII art banner:

```
..-.-.
.-.-:-:-
.-.-:-:;:-
.-.-:-:;:;:-
.-.-:-:;:;:;:-
./';|:;:;:;:-
|| :;:;:;:;:-
Congratulations!
From now on, the command `ls` will try using a color code to make it easier to
differentiate between directories and several kinds of files.
```

# Livello 20

```
Places
~/Garden/Maze
[mission 20] $ mv /home/kali/gameshell/World/Garden/Maze/8ca56a07665ec60336308/625178c9b9d28a5d94e0d44230c/1bbd0fcb3ec50dbd8031ac4c633ce/00000_silver_coin_00000 /home/kali/gameshell/World/Forest/Hut/Chest
mv: cannot stat '/home/kali/gameshell/World/Garden/Maze/8ca56a07665ec60336308/625178c9b9d28a5d94e0d44230c/1bbd0fcb3ec50dbd8031ac4c633ce/00000_silver_coin_00000': No such file or directory

~/Garden/Maze
[mission 20] $ mv /home/kali/gameshell/World/Garden/Maze/23fd934ff66a44ee741c3f3804e6c9f/341b2afe861a6e7728/900f15fd/00000_silver_coin_00000 /home/kali/gameshell/World/Forest/Hut/Chest

~/Garden/Maze
[mission 20] $ gsh check
Congratulations, mission 20 has been successfully completed!

|      "the qu...      |
+--+
| Use the command   |
| $ gsh help        |
| to get the list of "gsh" commands. |
+--+
|      "the qu...      |
+--+
| 10 folders | Free space: 51.1 GiB
```

# Livello 21

```
kali㉿kali: ~
File Actions Edit View Help
GoLD_CoiN_2
~/Garden/Maze/d8108376c1114fbe11686/bb02e0a6e5/862cbafca13661931fa7c425
[mission 21] $ g
Display all 235 possibilities? (y or n)

~/Garden/Maze/d8108376c1114fbe11686/bb02e0a6e5/862cbafca13661931fa7c425
[mission 21] $ mv GoLD_CoiN_2 /home/kali/gameshell/World/Forest/Hut/Chest

~/Garden/Maze/d8108376c1114fbe11686/bb02e0a6e5/862cbafca13661931fa7c425
[mission 21] $ pwd
/home/kali/gameshell/World/Garden/Maze/d8108376c1114fbe11686/bb02e0a6e5/862cbafca13661931fa7c425
[mission 21] $ cd ../../..
~/Garden
[mission 21] $ find -name "*coin*"
./Maze/ce8b002438876/58e44cfea5c2/8b97b34e1eafc201b8e2f/gold_coin_1

~/Garden
[mission 21] $ mv ./Maze/ce8b002438876/58e44cfea5c2/8b97b34e1eafc201b8e2f/gold_coin_1
/home/kali/gameshell/World/Forest/Hut/Chest
mv: missing destination file operand after './Maze/ce8b002438876/58e44cfea5c2/8b97b34e1eafc201b8e2f/gold_coin_1'
Try 'mv --help' for more information.
bash: /home/kali/gameshell/World/Forest/Hut/Chest: Is a directory

~/Garden
[mission 21] $ mv ./Maze/ce8b002438876/58e44cfea5c2/8b97b34e1eafc201b8e2f/gold_coin_1 /home/kali/gameshell/World/Forest/
Hut/Chest

~/Garden
[mission 21] $ ls
Flower_garden/ Maze/ Shed/
~/Garden
[mission 21] $ gsh check
Congratulations, mission 21 has been successfully completed!
```

# Livello 22

```
~/Mountain/Cave
[mission 22] $ head -n 6 ./Book_of_potions/page_07
Herbal tea
_____
1) Boil water.
2) Add herbs from the forest.
3) Let it sit for five minutes and drink while hot.

~/Mountain/Cave
[mission 22] $ gsh check

Congratulations, mission 22 has been successfully completed!
```

# Livello 23

```
kali㉿kali: ~
File Actions Edit View Help
| $ gsh help
| to get the list of "gsh" commands.
+--+
| ~/Mountain/Cave
[mission 23] $ tail -n 9 ./Book_of_potions/page_1
tail: cannot open './Book_of_potions/page_1' for reading: No such file or directory
~/Mountain/Cave
[mission 23] $ tail -n 9 ./Book_of_potions/page_12
1) Boil water in a cauldron.
2) Add in a few death caps (Amanita phalloides).
3) Also add a few fly agarics (Amanita muscaria).
4) And some destroying angels (Amanita virosa).
5) Mix in a few deadly webcaps (Cortinarius rubellus).
6) Feel free to add in any colourful fungi you have on hand.
7) Let half of the water evaporate.
8) Season with a pinch of salt and a few herbs.
9) Serve hot in a bowl.

~/Mountain/Cave
[mission 23] $ gsh check
Congratulations, mission 23 has been successfully completed!
+--+
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
+--+
| ~/Mountain/Cave
```

# Livello 24

A screenshot of a Kali Linux desktop environment. The desktop background features a purple and red abstract design. A terminal window titled "kali@kali: ~" is open, displaying a numbered list of steps for potion brewing:

- 1) Boil water in a cauldron.
- 2) Add 3 measures of fluxweed to the cauldron.
- 3) Add 2 bundles of knotgrass to the cauldron.
- 4) Stir 4 times, clockwise.
- 5) Wave your wand then let potion brew for 80 minutes.
- 6) Add 4 leeches to the cauldron.
- 7) Crush 2 scoops of lacewing flies to a fine paste.
- 8) Add 2 measures of the crushed lacewings to the cauldron.
- 9) Heat for 30 seconds on a low heat.
- 10) Add 3 measures of boomslang skin to the cauldron.
- 11) Crush a bicorn horn into a fine powder.
- 12) Add 1 measure of the crushed horn to the cauldron.
- 13) Heat for 20 seconds at a high temperature.
- 14) Wave your wand then let potion brew for 24 hours.
- 15) Add 1 additional scoop of lacewings to the cauldron.
- 16) Stir 3 times, counter-clockwise.
- 17) Split potion into multiple doses, if desired.
- 18) Add a pieces of the person you wish to become.
- 19) Wave your wand to complete the potion.

The terminal also shows the command `~/Mountain/Cave [mission 24] $ gsh check` and the message "Congratulations, mission 24 has been successfully completed!"

Below the terminal, a small text box provides instructions: "Use the command \$ gsh help to get the list of "gsh" commands."

The desktop interface includes a file manager window showing files like "gold\_coin\_1" and "Gold\_Coin\_2", and a system tray with icons for network, battery, and volume.

# Livello 25

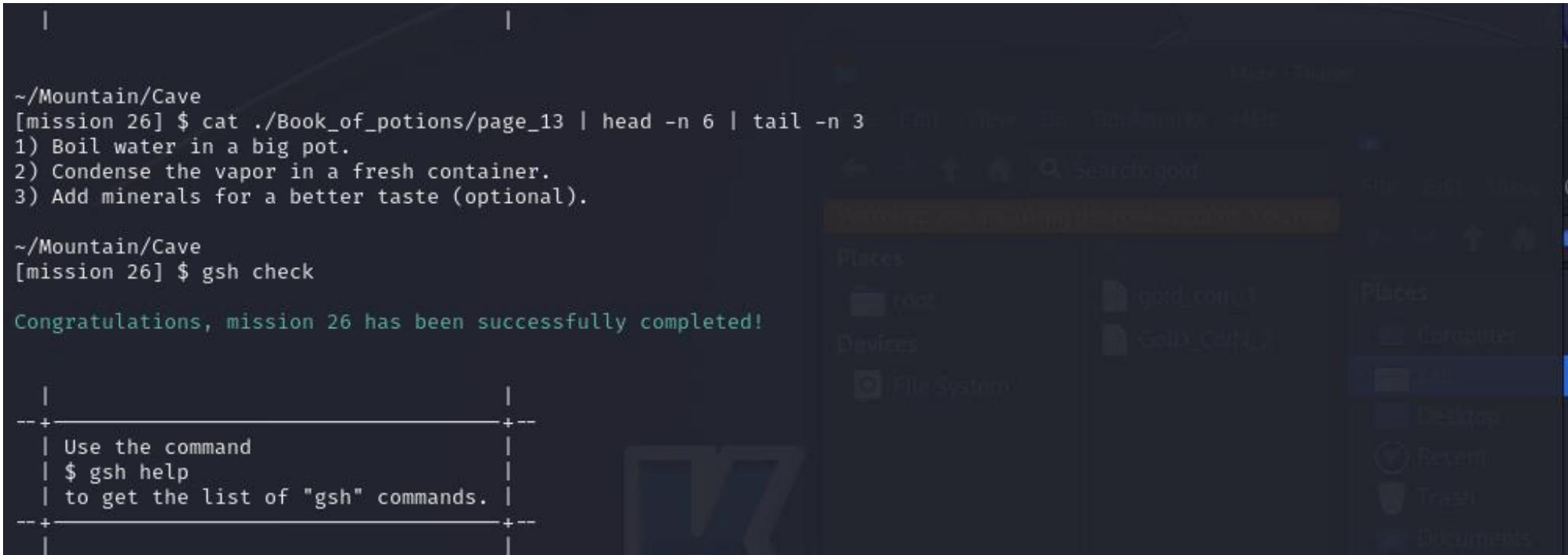
```
kali㉿kali: ~
File Actions Edit View Help
| Many of Unix commands process text: they receive text as input and produce text as output. |.
~/Mountain/Cave
[mission 25] $ cat ./Book_of_potions/page_03 ./Book_of_potions/page_04 | tail -n 16
1) Fill a cauldron with used bath water.
2) Put a moderately large frog in the water.
3) Let the preparation rest overnight.
4) The next morning thank and free your little green friend.
5) Boil the water and add in a few sticks of oak tree.
6) Crush 5 river stones to a fine powder.
7) Mix in a third of the powder and stir vigorously.
8) Let the preparation rest for a day.
9) Add hairs from the tail of a squirrel (willingly given).
10) Add the remaining stone powder.
11) Stir the potion very vigorously, in all directions.
12) Take some time to rest after such an effort.
13) Rest a little bit more.
14) Even take a nap if you want.
15) Add a few larch tree needles for seasoning.
16) Drink the potion from the cauldron.

~/Mountain/Cave
[mission 25] $ gsh check
Congratulations, mission 25 has been successfully completed!

|-----+-----|
| Use the command |
| $ gsh help |
| to get the list of "gsh" commands. |
|-----+-----|
~/Mountain/Cave
[mission 26] $ |.
```

The terminal window shows a sequence of commands and their outputs. It starts with a command to merge two files and use `tail` to extract the last 16 lines. This results in a numbered list of 16 steps for potion-making. Following this, a `gsh check` command is run, which outputs a congratulatory message about mission 25 being completed. Finally, a command is shown that will display a help page for the `gsh` command. The desktop environment visible in the background includes a file manager window showing a warning about using the root account, and a terminal window showing a file system browser.

# Livello 26

```
|  
|  
~/Mountain/Cave  
[mission 26] $ cat ./Book_of_potions/page_13 | head -n 6 | tail -n 3  
1) Boil water in a big pot.  
2) Condense the vapor in a fresh container.  
3) Add minerals for a better taste (optional).  
  
~/Mountain/Cave  
[mission 26] $ gsh check  
  
Congratulations, mission 26 has been successfully completed!  
  
--+-----+--  
| Use the command  
| $ gsh help  
| to get the list of "gsh" commands.  
--+-----+--  
  


The image shows a screenshot of a Linux desktop environment, likely Ubuntu. In the foreground, a terminal window is open with the text from the 'Book_of_potions/page_13' file. The terminal window has a dark background with light-colored text. In the background, there is a file browser window titled 'Places' showing icons for 'root', 'gold.com.1', 'gold.com.2', 'Computer', 'File System', 'Desktop', 'Recent', 'Trash', and 'Documents'. A system tray is visible at the bottom, showing icons for battery status, signal strength, and other system information. The overall interface is typical of a standard Linux desktop.


```

# Livello 27

The screenshot shows a Kali Linux desktop environment. On the left, a terminal window titled "kali@kali: ~" displays a series of commands and their outputs:

```
[mission 27] $ sudo kill 616601
gsh: sudo: command not found

[mission 27] $ find spell
find: 'spell': No such file or directory

[mission 27] $ find -name gettext

[mission 27] $ kill [1]
bash: kill: [1]: arguments must be process or job IDs

[mission 27] $ kill %
[1]+  Terminated                  "$GSH_TMP/${gettext "spell"}"

[mission 27] $ ps
      PID TTY      TIME CMD
  554960 pts/0    00:00:00 zsh
  616216 pts/0    00:00:00 bash
  616263 pts/0    00:00:00 bash
  617749 pts/0    00:00:00 ps

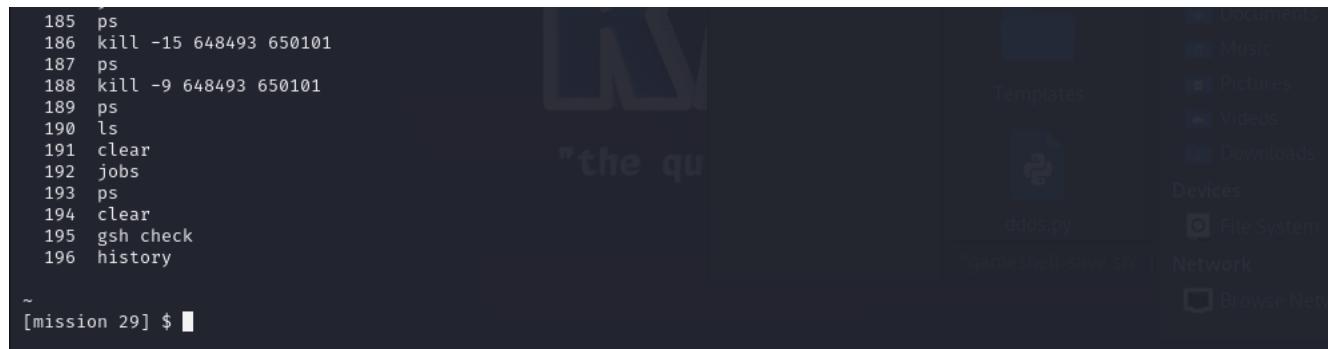
[mission 27] $ gsh check
Congratulations, mission 27 has been successfully completed!
```

Below the terminal, a small text box provides instructions:

```
|-----+-----|
| Use the command |
| $ gsh help |
| to get the list of "gsh" commands. |
|-----+-----|
```

On the right side of the screen, a file manager window titled "kali - Thunar" is open. It shows a tree view of the file system, with the root directory expanded. A warning message at the top of the file manager says: "Warning: you are using the root account. You may".

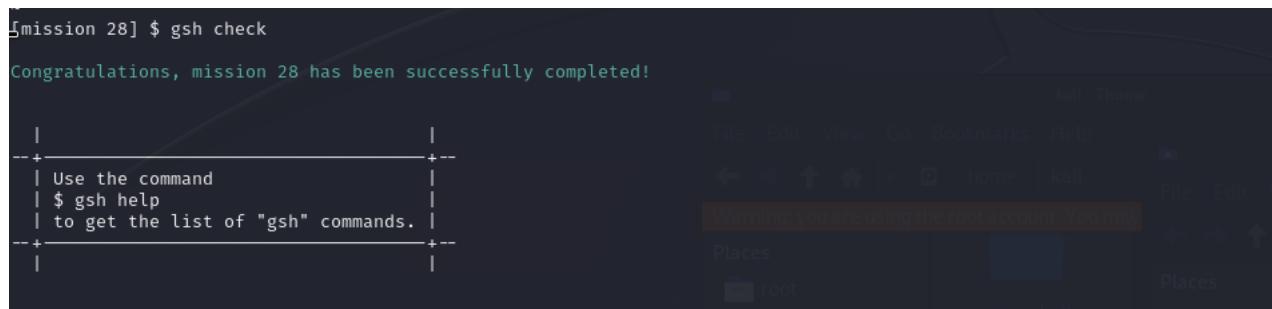
# Livello 28



A screenshot of a terminal window on a dark-themed desktop environment. The terminal shows a session log from line 185 to 196, which includes commands like ps, kill, ls, clear, and gsh check. The session ends with a prompt at line 196: "[mission 29] \$". In the background, a file browser window titled "kali - Thunar" is visible, showing a sidebar with categories like Document, Music, Pictures, Videos, Downloads, Devices, File System, Network, and Browse Netw.

```
185 ps
186 kill -15 648493 650101
187 ps
188 kill -9 648493 650101
189 ps
190 ls
191 clear
192 jobs
193 ps
194 clear
195 gsh check
196 history

~ [mission 29] $
```



A screenshot of a terminal window showing the result of running gsh check. The output says "Congratulations, mission 28 has been successfully completed!" followed by a message about using gsh commands. Below the terminal, a root shell window titled "kali - Thunderbird" is open, displaying a warning message: "Warning: you are using the root account. You may".

```
[mission 28] $ gsh check
Congratulations, mission 28 has been successfully completed!
| Use the command
| $ gsh help
| to get the list of "gsh" commands.

File Edit View Go Bookmarks Help
File Edit
Places
root
Places
```

# Livello 29

```
~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---spell(736678)---sleep(740980)
                         |---spell(736680)---sleep(741045)
                         |---spell(736682)
                         |---tail(736683)

~/Castle/Cellar
[mission 29] $ kill 736678 740980 736680 741045 736682 736683
bash: kill: (740980) - No such process
bash: kill: (741045) - No such process

~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---tail(736683)

~/Castle/Cellar
[mission 29] $ kill 736683

~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---tail(736683)

~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---tail(736683)
```

```
Warning: you are using the root account. You may
          do anything.
~/Castle/Cellar
[mission 29] $ rm *coal
~/Castle/Cellar
[mission 29] $ ps
      PID TTY      TIME CMD
      554960 pts/0    00:00:00 zsh
      616216 pts/0    00:00:00 bash
      616263 pts/0    00:00:01 bash
      736665 pts/0    00:00:00 nice_fairy
      736667 pts/0    00:00:00 mischievous_imp
      736676 pts/0    00:00:00 spell
      736677 pts/0    00:00:00 spell
      736679 pts/0    00:00:00 spell
      736681 pts/0    00:00:00 tail
      736683 pts/0    00:00:00 tail
      749740 pts/0    00:00:00 sleep
      749998 pts/0    00:00:00 sleep
      750039 pts/0    00:00:00 sleep
      750040 pts/0    00:00:00 ps

~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---tail(736683)

~/Castle/Cellar
[mission 29] $ gsh check

Congratulations, mission 29 has been successfully completed!
```

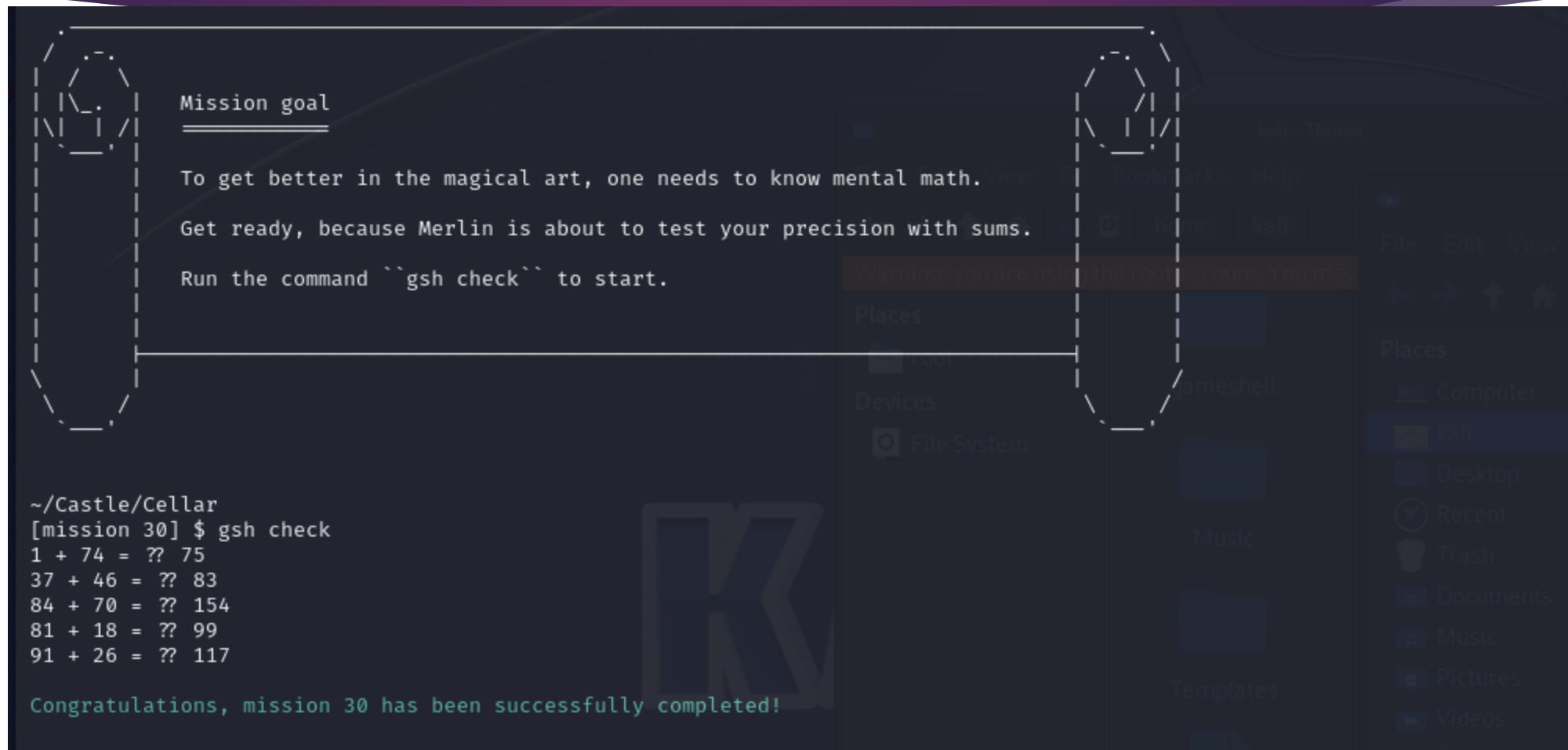
```
Warning: you are using the root account. You may
          do anything.
~/Castle/Cellar
[mission 29] $ rm *coal
~/Castle/Cellar
[mission 29] $ ps
      PID TTY      TIME CMD
      554960 pts/0    00:00:00 zsh
      616216 pts/0    00:00:00 bash
      616263 pts/0    00:00:01 bash
      736665 pts/0    00:00:00 nice_fairy
      736667 pts/0    00:00:00 mischievous_imp
      736676 pts/0    00:00:00 spell
      736677 pts/0    00:00:00 spell
      736679 pts/0    00:00:00 spell
      736681 pts/0    00:00:00 tail
      736683 pts/0    00:00:00 tail
      749740 pts/0    00:00:00 sleep
      749998 pts/0    00:00:00 sleep
      750039 pts/0    00:00:00 sleep
      750040 pts/0    00:00:00 ps

~/Castle/Cellar
[mission 29] $ pstree -p 736667
mischievous_imp(736667)---tail(736683)

~/Castle/Cellar
[mission 29] $ gsh check

Congratulations, mission 29 has been successfully completed!
```

# Livello 30



# Livello 31

```
| COMMAND < FILE
| Replace the command's standard input by a file.
| Instead of reading lines from the keyboard device, the command will read lines from the
| file.
()=()
'                                     (ə=())
Places
Places
~/Castle/Main_building/Library
[mission 31] $ gsh check < Mathematics_101
77 * 33 = ?? 97 * 8 = ?? 76 * 60 = ?? 60 * 11 = ?? 58 * 51 = ?? 57 * 40 = ?? 78 * 100 = ?? 65 * 36 = ?? 15 * 47 = ?? 97 *
][80 = ?? 11 * 21 = ?? 40 * 92 = ?? 73 * 92 = ?? 67 * 14 = ?? 33 * 15 = ?? 95 * 75 = ?? 6 * 84 = ?? 74 * 70 = ?? 68 * 86 =
?? 82 * 24 = ?? 58 * 48 = ?? 51 * 32 = ?? 58 * 45 = ?? 50 * 51 = ?? 84 * 23 = ?? 47 * 69 = ?? 30 * 95 = ?? 75 * 49 = ??
97 * 30 = ?? 17 * 37 = ?? 19 * 59 = ?? 79 * 19 = ?? 16 * 2 = ?? 14 * 12 = ?? 71 * 49 = ?? 94 * 46 = ?? 12 * 64 = ?? 35 *
23 = ?? 89 * 70 = ?? 31 * 42 = ?? 13 * 48 = ?? 72 * 90 = ?? 60 * 77 = ?? 5 * 3 = ?? 82 * 41 = ?? 30 * 44 = ?? 15 * 74 = ?
? 98 * 29 = ?? 60 * 32 = ?? 74 * 80 = ?? 17 * 77 = ?? 24 * 57 = ?? 23 * 30 = ?? 60 * 79 = ?? 55 * 66 = ?? 80 * 11 = ?? 72
* 78 = ?? 76 * 59 = ?? 1 * 55 = ?? 86 * 58 = ?? 86 * 97 = ?? 13 * 10 = ?? 35 * 71 = ?? 25 * 59 = ?? 100 * 92 = ?? 31 * 1
5 = ?? 66 * 59 = ?? 72 * 66 = ?? 15 * 40 = ?? 93 * 89 = ?? 83 * 61 = ?? 10 * 40 = ?? 71 * 66 = ?? 47 * 74 = ?? 28 * 75 =
?? 19 * 73 = ?? 84 * 63 = ?? 18 * 23 = ?? 100 * 37 = ?? 52 * 86 = ?? 4 * 63 = ?? 50 * 64 = ?? 7 * 95 = ?? 24 * 10 = ?? 20
* 7 = ?? 72 * 90 = ?? 60 * 87 = ?? 43 * 86 = ?? 3 * 43 = ?? 86 * 20 = ?? 89 * 13 = ?? 43 * 69 = ?? 78 * 88 = ?? 99 * 73
= ?? 70 * 2 = ?? 62 * 34 = ?? 31 * 67 = ?? 30 * 25 = ?? 2 * 79 = ?? 61 * 96 = ??
Congratulations, mission 31 has been successfully completed!
While you are waiting, a spider crawls by ...
"the qu
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
|
```

# Livello 32

```
[mission 32] $ ls grimoire*
grimoire_10259  grimoire_14285  grimoire_18544  grimoire_2438  grimoire_29397  grimoire_3717  grimoire_7925
grimoire_11019  grimoire_14570  grimoire_19426  grimoire_25459  grimoire_29546  grimoire_4748  grimoire_7975
grimoire_11033  grimoire_14665  grimoire_19465  grimoire_25471  grimoire_29671  grimoire_5080  grimoire_8260
grimoire_11061  grimoire_14717  grimoire_19581  grimoire_2583   grimoire_30439  grimoire_5266  grimoire_8793
grimoire_11424  grimoire_14718  grimoire_20398  grimoire_26007  grimoire_30497  grimoire_5298  grimoire_924
grimoire_11757  grimoire_14953  grimoire_21565  grimoire_26163  grimoire_30716  grimoire_546   grimoire_9304
grimoire_11951  grimoire_15178  grimoire_21605  grimoire_26547  grimoire_30966  grimoire_5570  grimoire_9674
grimoire_12317  grimoire_1561   grimoire_21620  grimoire_27039  grimoire_31099  grimoire_6009  grimoire_969
grimoire_12530  grimoire_15869  grimoire_22620  grimoire_27382  grimoire_3145   grimoire_6448  grimoire_9841
grimoire_12565  grimoire_1663   grimoire_2275   grimoire_27438  grimoire_3178   grimoire_6553  grimoire_9957
grimoire_12717  grimoire_16845  grimoire_22928  grimoire_27449  grimoire_32310  grimoire_7025
grimoire_12827  grimoire_16964  grimoire_23011  grimoire_27496  grimoire_32347  grimoire_7080
grimoire_12901  grimoire_17803  grimoire_2311   grimoire_28215  grimoire_32475  grimoire_7100
grimoire_13165  grimoire_18240  grimoire_23141  grimoire_28961  grimoire_3601   grimoire_7457
grimoire_14229  grimoire_1842   grimoire_24310  grimoire_29200  grimoire_3610   grimoire_7634

~/Castle/Main_building/Library/Merlin_s_office
[mission 32] $ ls grimoire* > ./Drawer/inventory.txt
```

```
~/Castle/Main_building/Library/Merlin_s_office  
[mission 32] $ nano ./Drawer/inventory.txt
```

```
~/Castle/Main_building/Library/Merlin_s_office  
[mission 32] $ gsh goal
```

```
~/Castle/Main_building/Library/Merlin_s_office  
[mission 32] $ gsh check
```

While you are waiting, a snail goes by ...

```
--+-----+  
| Use the command |  
| $ gsh help |  
| to get the list of "gsh" commands. |  
--+-----+  
| |
```

# Livello 33

```
kali㉿kali: ~
File Actions Edit View Help
| |
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
| |
~/Castle/Main_building/Library/Merlin_s_office
[mission 33] $ grep -l -i "gsh" grimoire*
grep: grimoire_aJcgVOOkjE yapGBDKHu zH: Permission denied
grep: grimoire_aWZXhPAGghFFFqXzHsd cxT: Permission denied
grep: grimoire_bjpZMUnfgRCXzUugxKFLYla lsOZXYU: Permission denied
grep: grimoire_CQXr nPvquNP KkgVifMGAoG: Permission denied
grep: grimoire_DPB NegJGvoN: Permission denied
grimoire_DTgXis zPoekTzbz jDpgPAOTnRzy
grep: grimoire_dyQrKWN OOVBpcUNkxBt: Permission denied
grep: grimoire_EmFwN Eptwu: Permission denied
grep: grimoire_eoMEzkskEgcGoJzTRulidY: Permission denied
grep: grimoire_fFHMiPDIDbWnOanWLdQ: Permission denied
grimoire_FoVRCIkLkvq
grep: grimoire_ftTw eGhsXXFn h: Permission denied
grep: grimoire_FuQoSd sJawTxYZXCEnrLLxxIru: Permission denied
grep: grimoire_FwmfaIVtbVzAyyYthC OuyUVHD: Permission denied
grimoire_GcrDdu cwfK
grep: grimoire_gFc xjERvji: Permission denied
grep: grimoire_gLPjvtmcvQsTfxCkj mRgrrr: Permission denied
grimoire_GvlmoRvdGH HtlMvNxEHQXzW yKl
grimoire_hFFQKxOsBCxjlPV RnZbRyJWqE
grep: grimoire_HIWSOd kPmpPJXqkKihBU: Permission denied
grep: grimoire_JHqzyRVrWDuWotovjXTzZYQU DSS: Permission denied
grimoire_JIwQFMas lXNIkTiSntTd
grep: grimoire_jiyLGYNlulJErhPMFFcQ: Permission denied
grep: grimoire_jljj sHiNSilDdEWFCGpZTUTRDyGlqj: Permission denied
grep: grimoire_jPj lssjHtoFadVkJdlcAL AqovIj: Permission denied
grep: grimoire_kGfPfuJnvSNsGWHVRPF: Permission denied
grimoire_KhcBgPlgjIUCd3M
grimoire_KIglpUeIPLJCZCWYVv ozi sZfif
```

```
kali㉿kali: ~
File Actions Edit View Help
grep: grimoire_quRgFCgjvfuUZVCfbZI: Permission denied
grep: grimoire_QYJFuDNrsROY: Permission denied
grep: grimoire_RctjbFmiNvQcPedrvPmhkLwklyVT: Permission denied
grep: grimoire_ REqzb nCuvFTJSzw hJxUWzbcm yXNEiiP: Permission denied
grep: grimoire_rvvMebftW: Permission denied
grep: grimoire_scyRMWGFxgNjfiv: Permission denied
grep: grimoire_sgSTBRYL UUWRoazp: Permission denied
grep: grimoire_stIdbbirSPMOKZnqytsfuB: Permission denied
grep: grimoire_ugxktfQEHfQir: Permission denied
grep: grimoire_uoiVTMNDtjloAXXsr0cmkwCKRX: Permission denied
grep: grimoire_wskvPyUSRqQeTI: Permission denied
grep: grimoire_xjrhuBpetgfuhbaWnIx FbfLg: Permission denied
grep: grimoire_XYWeuPVVZjs: Permission denied
grep: grimoire_yapHdfGAAjgXSs: Permission denied
grep: grimoire_yGXLyikXg: Permission denied
grep: grimoire_YLPKXnhbKgzoDAXvOCIKVN iNy: Permission denied
grep: grimoire_yLRt eXfUvOT: Permission denied
grep: grimoire_yTIBDcrOFbfH: Permission denied
grep: grimoire_yYklLatuvQMhGU: Permission denied
grep: grimoire_zAAvYKggaMlwXqafhdNwJbVzXEmWLk: Permission denied
grep: grimoire_ZBjxdYnrqa: Permission denied
grep: grimoire_zsyqxuGJOQNid: Permission denied
grep: grimoire_ZtHHLJWSi: Permission denied
grep: grimoire_ZzBPJmuUyx sNVXVNgNR: Permission denied
Congratulations, mission 33 has been successfully completed!
```

# Livello 34

```
kali㉿kali: ~
File Actions Edit View Help
~/Castle/Observatory
[mission 34] $ ./merlin
uSSZTQgfGDXEZhnFqVNEsQKSAvoFdAfJTSadLeOxeivEhCsbPybXRVYOPRKQFEUBgjyPvHMZzYaDPrfTVQKhEocdCYIZpVLEykSTBoqQnFJzwk
LoioRGlrDcInQYQabbjaNzluvLSzpRNgmUqrDlgVVoTTBSDNHajKFXKfMkZqgexWLYUfqMdKfNIINpqIvphLgnGByKEPFRLRFLVrCeD

~/Castle/Observatory
[mission 34] $ ls
merlin  star_chart

~/Castle/Observatory
[mission 34] $ nano star_chart

~/Castle/Observatory
[mission 34] $ ./merlin > start_chart
uSSZQgfGDXEZnFqVNsQKSAvoFdAfJTadLeOxeivhsbPybXRVYOPKQFUBgjyPvHMZzYaDPrfVQhocdCzpVLEykTBqQnFJzwkKEIFMmAMEBLioR
abbjazluvLzpRNgmUqrDlgVVoTBSNHajKFXKfMkZqgexWLYUfqMdKfNIINpqIvphLgnGByKPFLFLVrCeD

~/Castle/Observatory
[mission 34] $ ./merlin 2> start_chart
THESECRETKEYISONSTDERR

~/Castle/Observatory
[mission 34] $ gsh check < start_chart
What is the secret key?
Congratulations, mission 34 has been successfully completed!

| |
+-----+--+
| Use the command |
| $ gsh help |
| to get the list of "gsh" commands. |
+-----+--+
| |

~/Castle/Observatory
[mission 35] $ █
```

# Livello 35

```
kali㉿kali:~  
File Actions Edit View Help  
[mission 35] $ cd Main_building/  
~/Castle/Main_building  
[mission 35] $ ls  
Library/ Throne_room/  
~/Castle/Main_building  
[mission 35] $ cd Throne_room/  
~/Castle/Main_building/Throne_room  
[mission 35] $ ls  
Kings_quarter/  
~/Castle/Main_building/Throne_room  
[mission 35] $ chmod 777 Kings_quarter/  
~/Castle/Main_building/Throne_room  
[mission 35] $ cd Kings_quarter/  
~/Castle/Main_building/Throne_room/Kings_quarter  
[mission 35] $ ls  
~/Castle/Main_building/Throne_room/Kings_quarter  
[mission 35] $ gsh check  
you become, the more you are able to bear"  
Congratulations, mission 35 has been successfully completed!  
  
|  
+-----+  
| Use the command  
| $ gsh help  
| to get the list of "gsh" commands.  
+-----+  
|  
~/Castle/Main_building/Throne_room/Kings_quarter  
[mission 36] $ █
```

# Livello 36

```
kali@kali: ~
File Actions Edit View Help
[mission 36] $ ls -l
total 8
-rw-r--r-- 1 kali kali 3959 Dec 16 13:51 -
-rwxrwxrwx 1 kali kali 11 Dec 16 13:53 note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 36] $ ls -la
total 20
drwxrwxrwx 2 kali kali 4096 Dec 16 13:51 /
drwxr-xr-x 3 kali kali 4096 Dec 15 13:19 ..
-rw-r--r-- 1 kali kali 3959 Dec 16 13:51 -
-rwxrwxrwx 1 kali kali 11 Dec 16 13:53 note
--w----- 1 kali kali 9 Dec 16 13:53 .secret_note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 36] $ chmod 777 .secret_note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 36] $ gsh < .secret_note
Error: unknown gsh command ''.
Use one of the following commands: check, goal, help, reset.

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 36] $ gsh check < .secret_note
What's the combination to open the King's safe?
Congratulations, mission 36 has been successfully completed!

+-----+
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
+-----+
|



~/Castle/Main_building/Throne_room/Kings_quarter
[mission 37] $
```

# Livello 37

```
kali@kali: ~
File Actions Edit View Help
> [mission 37] $ ls
> Kings_quarter/  Safe/
> ls
> ^C

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ ls
crown

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ nano crown

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ chmod 777 crown

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ nano crown

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ mv crown  ../../Forest/Hut/Chest

~/Castle/Main_building/Throne_room/Safe
[mission 37] $ gsh check
What are the 3 digits inscribed on the base of the crown? 410  are able to hear

Congratulations, mission 37 has been successfully completed!

| _____ |
| Use the command |
| $ gsh help |
| to get the list of "gsh" commands. |
| _____ |
```

# Livello 38

```
kali㉿kali: ~
File Actions Edit View Help
| Important key bindings:
|   q      quit
|   Space  scroll down one page
| / STRING search for the string

~/Garden/Maze
[mission 38] $ find -type f | cat
./94a31b0e4b76ab/076d3b3f99b70ef77/93f5b7cb5607/25569
./f7426bf8241f9eaed24ec7/3dbd32e73b12dbde4e2a9d3d97dc4/0d738852/44669
./f7426bf8241f9eaed24ec7/5663a86e752c943927ad1b0e/8e1240f81bc6c869ae285a4fe/40764
./845a7718d37d1cacbdd2c/667a2706f13ef0/bf11f80f352aa30bcde05c624cd17af/19927
./db3e307d55d1791/bcc4a58d9af05/2bdc5543e9a90af9249b8/1619
./7a5cc0e5d919c60cd1f9f6b/642dc7e0ea046c8998cf6c5d24fcbe/f23d3efb2b98a4d4c7/9269

~/Garden/Maze
[mission 38] $ nano ./7a5cc0e5d919c60cd1f9f6b/642dc7e0ea046c8998cf6c5d24fcbe/f23d3efb2b98a4d4c7/9269

~/Garden/Maze
[mission 38] $ mv ./7a5cc0e5d919c60cd1f9f6b/642dc7e0ea046c8998cf6c5d24fcbe/f23d3efb2b98a4d4c7/9269 .. / .. /Forest/Hut/Ch
t

~/Garden/Maze
[mission 38] $ gsh check
"you become, the more you are able to hear"
Congratulations, mission 38 has been successfully completed!

+-----+
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
+-----+
| 

~/Garden/Maze
[mission 39] $
```

# Livello 39

```
kali㉿kali: ~
File Actions Edit View Help
`__`'

~/Garden/Maze
[mission 39] $ find -type f | xargs grep -l "diamond"
./3721c08ec3fb0ef02f4657/beaaa699e3e34e92b56/7c09267cb95cdda99c9a6737a63a

~/Garden/Maze
[mission 39] $ nano ./3721c08ec3fb0ef02f4657/
ethHunter >>
~/Garden/Maze
[mission 39] $ nano ./3721c08ec3fb0ef02f4657/beaaa699e3e34e92b56/7c09267cb95cdda99c9a6737a63a

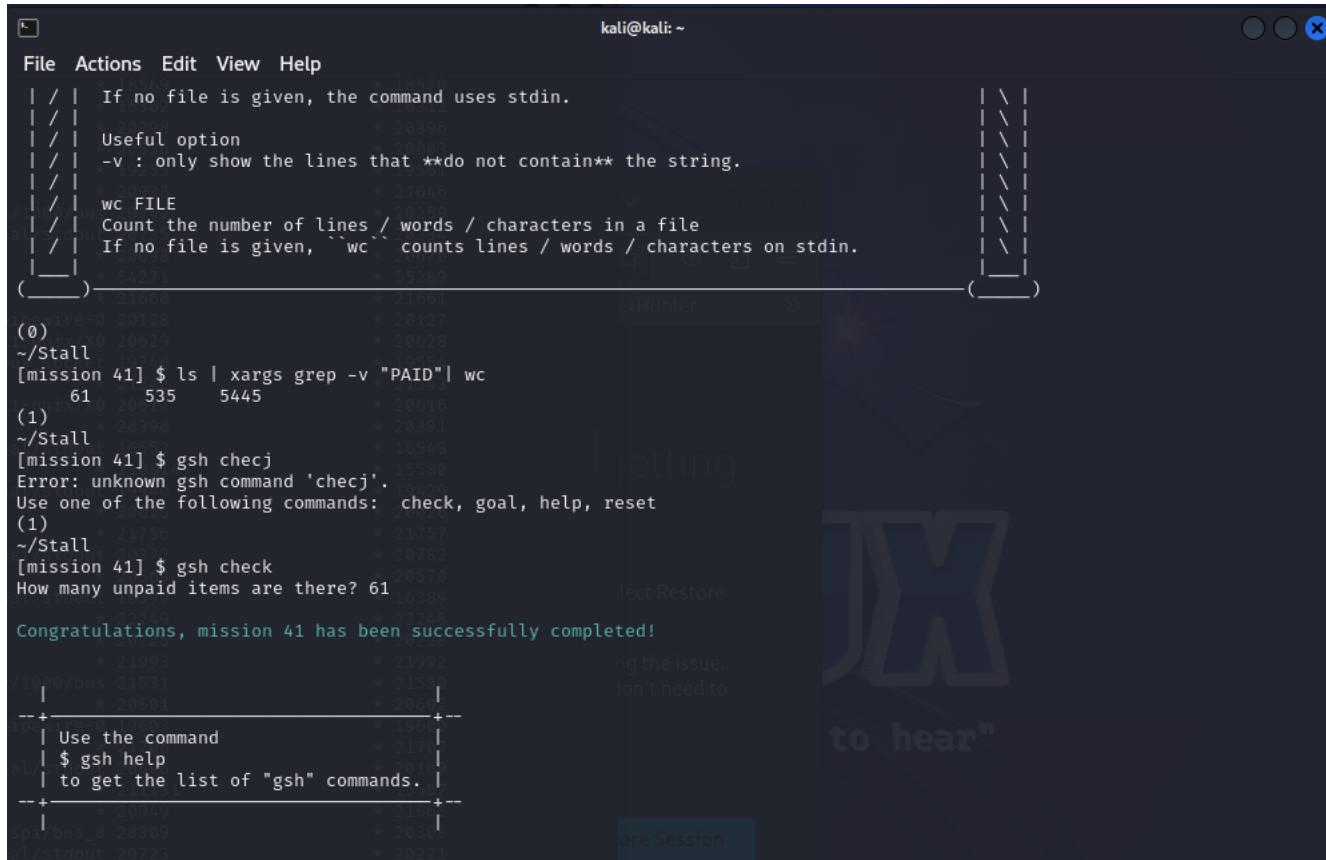
~/Garden/Maze
[mission 39] $ find -type f | xargs grep -l "diamond" | mv ../../Forest/Hut/Chest
mv: missing destination file operand after ' ../../Forest/Hut/Chest'
Try 'mv --help' for more information.
xargs: grep: terminated by signal 13
jetting
~/Garden/Maze
[mission 39] $ mv ./3721c08ec3fb0ef02f4657/beaaa699e3e34e92b56/7c09267cb95cdda99c9a6737a63a ../../Forest/Hut/Chest
~/Garden/Maze
[mission 39] $ gsh check
Select Restore
Congratulations, mission 39 has been successfully completed!
ng the issue.
on't need to
| _____ |
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
| _____ |
(0)
~/Garden/Maze
[mission 40] $
```

# Livello 40

```
(1) ~ 20617 * 20616
~/Stall
[mission 40] $ ls | xargs grep -v "PAID"
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Alienor Messonnier bought a knife for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Alienor Aubernard bought a pick for 3 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Roland Ageorges bought a leather bag for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Evrard Langlois bought a stool for 3 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Ulric Aubernard bought an apple for 5 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Justine Poudevigne bought a cow for 2 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Ulric Fromentin bought a bag flour for 5 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Khadidja Sarrazin bought a spade for 2 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Evrard Coulon bought an opal for 5 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Aure Lenain bought a shiny rock for 2 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Enguerrand Cabrera bought a cow for 5 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Arnaud Coulomb bought a wooden spoon for 5 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Agnes Georges' son bought a piece of soap for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Abdel Rabier bought a goat for 3 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Clovis Georges' son bought a stool for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Thibaud Ageorges bought a goat for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Venance Ageorges bought a shiny rock for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Anastasie Chauvin bought a goat for 4 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:the King bought a bottle of cider for 3 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:the King bought a dented helmet for 2 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:the King bought a chicken for 3 coppers.
b4948315d373b_s_c_r_o_l_l_b4948315d373b7a5:Merlin Aubernard bought a pick for 4 coppers.
```

```
~/Stall
[mission 40] $ gsh check
How much does the king owe? 13
Congratulations, mission 40 has been successfully completed!
```

# Livello 41



A terminal window titled "kali@kali: ~" showing the completion of a challenge. The terminal output includes:

```
| / | If no file is given, the command uses stdin.  
| / |  
| / | Useful option  
| / | -v : only show the lines that **do not contain** the string.  
| / |  
| / | wc FILE  
| / | Count the number of lines / words / characters in a file  
| / | If no file is given, ``wc`` counts lines / words / characters on stdin.  
| / |  
| / | (____) * 55271 * 55289  
| / | (____) * 21660 * 21661 stHunter >>  
(0)  
~/Stall [mission 41] $ ls | xargs grep -v "PAID" | wc  
61 535 5445  
(1)  
~/Stall [mission 41] $ gsh checj  
Error: unknown gsh command 'checj'.  
Use one of the following commands: check, goal, help, reset  
(1)  
~/Stall [mission 41] $ gsh check  
How many unpaid items are there? 61  
Congratulations, mission 41 has been successfully completed!  
--+  
| Use the command  
| $ gsh help  
| to get the list of "gsh" commands.  
--+  
pi1/bus_0 20309 * 20309  
pi1/stdout 20723 * 20223
```

The terminal window is set against a background featuring a watermark of a person wearing headphones with the text "getting JX to hear".

# Livello 42

kali@kali: ~

```
vlr tfii dbq jv zebpq, xka bsbovqefkd fq zlkqxfkp.  
qefp zebpq fp fk qeb zbiixo, xka qeb tloa ql jxhb  
fq ob-xmmbxo fp: mfii  
jboifk qeb bkhzexkqbo  
  
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 42] $ cat secret_message | tr "a-z" "lmnopqrstuvwxyzabcdefghijklmnopqrstuvwxyz"  
gdqd hr lx vhkk:  
xnt vhkk fds lx bgdrs, zmc dudqxsghmf hs bnmszhmr.  
sghr bgdrs hr hm sgd bdkkzq, zmc sgd vnqc sn lzjd  
hs qd-zoodzq hr: ohkk  
ldqkham sgd dmbgzmsdq  
  
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 42] $ cat secret_message | tr "a-z" "mnopqrstuvwxyzabcdefghijklmnopqrstuvwxyz"  
here is my will:  
you will get my chest, and everything it contains.  
this chest is in the cellar, and the word to make  
it re-appear is: pill  
merlin the enchanter  
  
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 42] $ gsh check  
What's the key that will make Merlin's chest to appear? Select Restore  
pill  
  
Congratulations, mission 42 has been successfully completed!
```

JK  
to hear"