

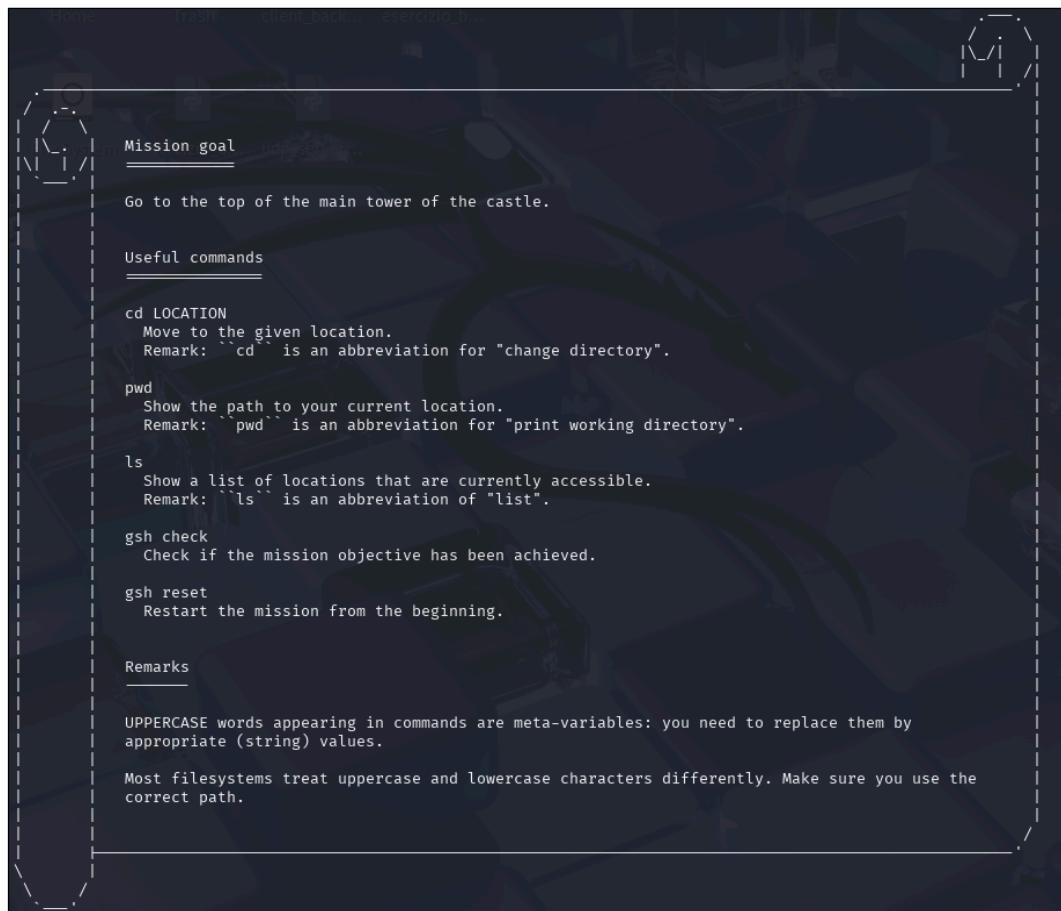
M2 - Progetto Finale - GameShell - Task.1

Obiettivo dell'esercitazione:

L'esercitazione con GameShell ha avuto come obiettivo principale l'apprendimento e l'applicazione pratica di comandi fondamentali della shell Unix/Linux attraverso una serie di sfide interattive. Utilizzando un ambiente simulato, abbiamo esplorato la navigazione del file system, la manipolazione di file e directory, la gestione dei permessi, la ricerca di informazioni e la combinazione di comandi tramite pipeline, sviluppando così una solida comprensione dei concetti chiave della riga di comando.

Livello 1

Obiettivo: Raggiungi la cima della torre principale (/Castle/Main_tower/Top_of_the_tower).
Istantanea: Mostra la navigazione gerarchica con ls e cd.



The screenshot shows a terminal window with a dark background and white text. At the top, there are several icons: Home, Flash, Client_Dock..., and esercizio_D... On the right side, there's a small map of a castle with various towers and paths. The terminal content is as follows:

```
Home Flash Client_Dock... esercizio_D...
[...]
Mission goal
_____
Go to the top of the main tower of the castle.

Useful commands
_____
cd LOCATION
Move to the given location.
Remark: ``cd`` is an abbreviation for "change directory".
pwd
Show the path to your current location.
Remark: ``pwd`` is an abbreviation for "print working directory".
ls
Show a list of locations that are currently accessible.
Remark: ``ls`` is an abbreviation of "list".
gsh check
Check if the mission objective has been achieved.
gsh reset
Restart the mission from the beginning.

Remarks
_____
UPPERCASE words appearing in commands are meta-variables: you need to replace them by appropriate (string) values.

Most filesystems treat uppercase and lowercase characters differently. Make sure you use the correct path.
```

```

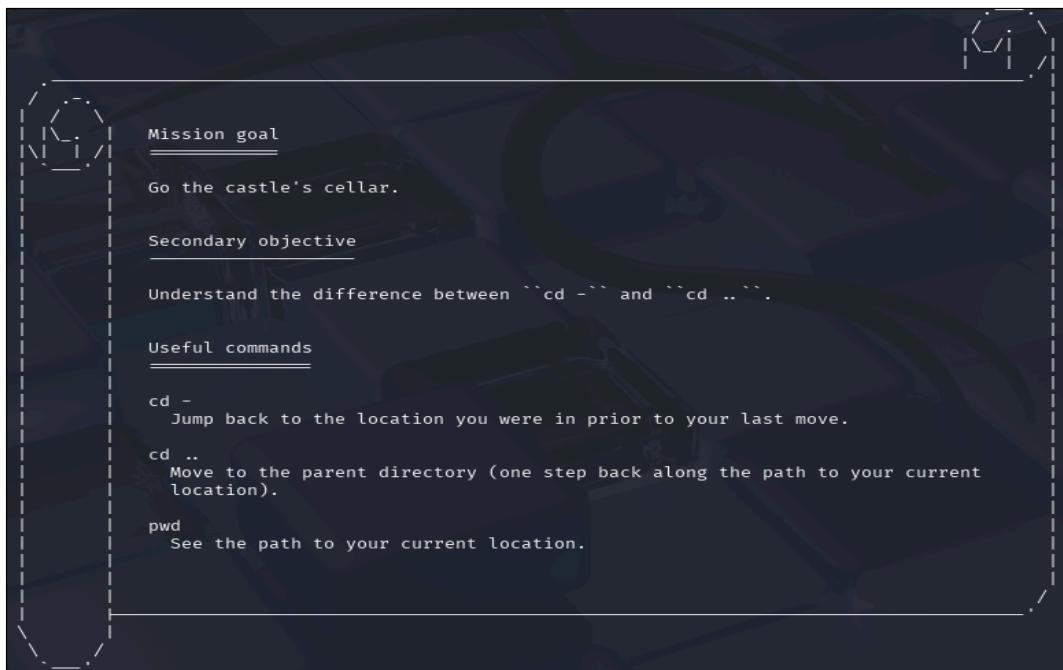
[mission 1] $ ls
Castle Forest Garden Mountain Stall
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd castle
bash: cd: castle: No such file or directory
[use 'gsh help' to get a list of available commands]
[mission 1] $ cd Castle
[use 'gsh help' to get a list of available commands]
[mission 1] $ pwd
/home/kali/gameshell.1/World/Castle
[use 'gsh help' to get a list of available commands]
[mission 1] $ ls
Cellar 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
[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] $ gsh check
Congratulations, mission 1 has been successfully completed!

```

Livello 2

Obiettivo: Raggiungere la cantina e capire cd ..

Istantanea: Da Second_floor, abbiamo usato cd .. tre volte per tornare a /Castle/. Con ls abbiamo visto Cellar/ e con cd Cellar l'abbiamo raggiunta. gsh check ha completato il livello, illustrando l'uso di cd .. per risalire di un livello.



```

[mission 2] $ pwd
/home/kali/gameshell.1/World/Castle/Main_tower/First_floor/Second_floor

[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] $ cd ..

[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.1/World/Castle

[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] $ pwd
/home/kali/gameshell.1/World/Castle/Cellar

[use 'gsh help' to get a list of available commands]
[mission 2] $ gsh check

Congratulations, mission 2 has been successfully completed!

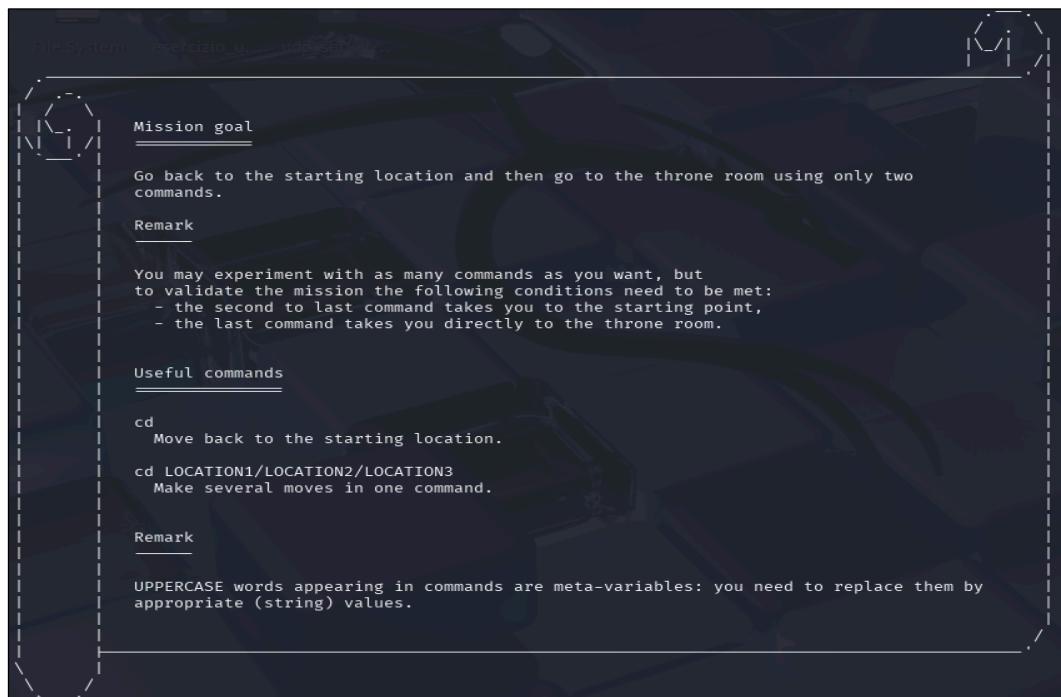
```

Livello 3

Obiettivo: Tornare all'inizio e poi alla sala del trono con due comandi.

Istantanea: cd senza argomenti riporta alla home. Poi, cd

Castle/Main_building/Throne_room ha permesso di raggiungere direttamente la sala del trono. gsh check ha completato il livello, mostrando la navigazione diretta con cd e percorsi completi.

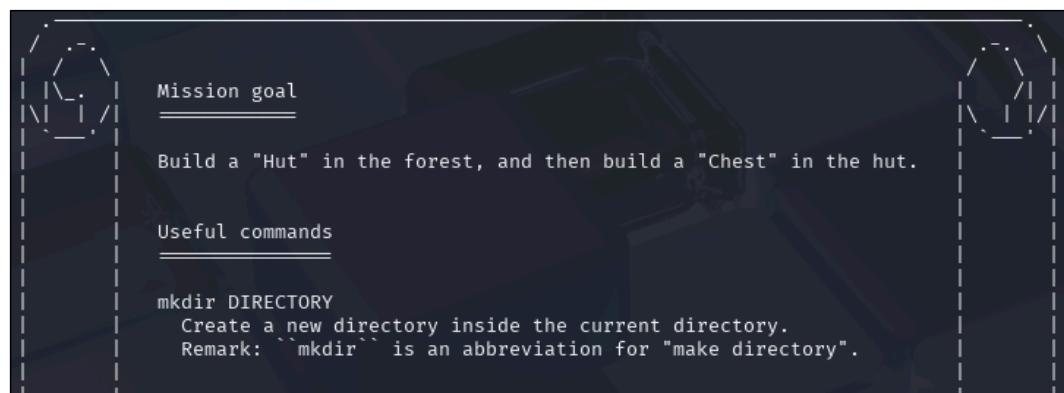


```
[mission 3] $ cd  
  
[use 'gsh help' to get a list of available commands]  
[mission 3] $ cd Castle/Main_building/Throne_room  
  
[use 'gsh help' to get a list of available commands]  
[mission 3] $ gsh check  
  
Congratulations, mission 3 has been successfully completed!
```

Livello 4

Obiettivo: Creare le directory "Hut" e "Chest".

Istantanea: Abbiamo usato cd per tornare alla home, poi cd Forest, mkdir Hut, cd Hut, e mkdir Chest. gsh check ha completato il livello, mostrando come creare directory con mkdir.

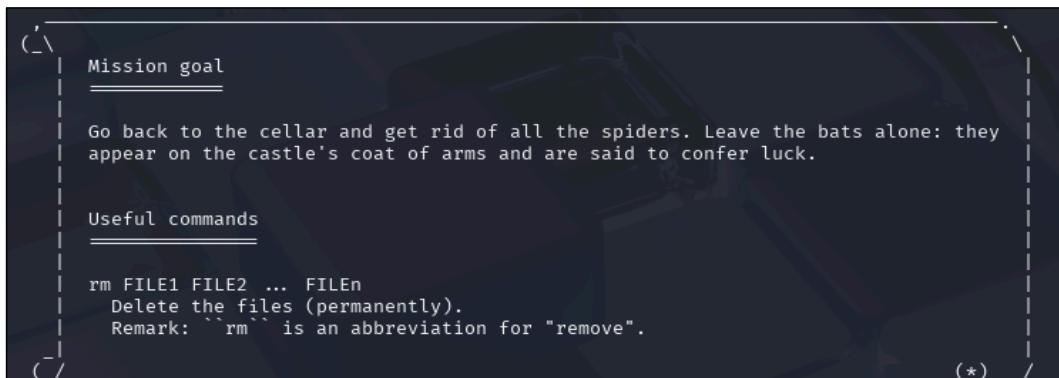


```
~/Castle/Main_building/Throne_room  
[mission 4] $ pwd  
/home/kali/gameshell.1/World/Castle/Main_building/Throne_room  
  
~/Castle/Main_building/Throne_room  
[mission 4] $ cd  
  
~  
[mission 4] $ ls  
Castle Forest Garden Mountain Stall  
  
~  
[mission 4] $ cd Forest  
  
~/Forest  
[mission 4] $ ls  
~/Forest  
[mission 4] $ mkdir Hut  
  
~/Forest  
[mission 4] $ ls  
Hut  
  
~/Forest  
[mission 4] $ cd Hut  
  
~/Forest/Hut  
[mission 4] $ mkdir Chest  
  
~/Forest/Hut  
[mission 4] $ ls  
Chest  
  
~/Forest/Hut  
[mission 4] $ gsh check  
  
Congratulations, mission 4 has been successfully completed!
```

Livello 5

Obiettivo: Eliminare i file "spider_*" nella cantina.

Istantanea: Abbiamo navigato in Castle/Cellar con cd. ls ha mostrato i file, e abbiamo usato rm spider_1 spider_2 spider_3 per rimuovere i ragni. ls ha confermato l'eliminazione e gsh check ha completato il livello, illustrando l'uso di rm.



```
~/Forest/Hut
[mission 5] $ pwd
/home/kali/gameshell.1/World/Forest/Hut

~/Forest/Hut
[mission 5] $ cd

~

[mission 5] $ ls
Castle Forest Garden Mountain Stall

~

[mission 5] $ cd Castle/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

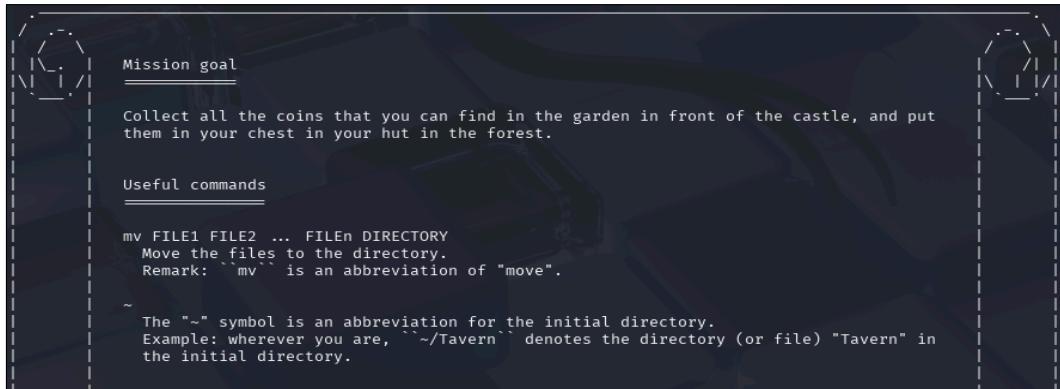
~/Castle/Cellar
[mission 5] $ gsh check

Congratulations, mission 5 has been successfully completed!
```

Livello 6

Obiettivo: Spostare le monete nel forziere.

Istantanea: Siamo andati in Garden/, abbiamo visto coin_*, e usato mv coin_* ~/Forest/Hut/Chest/ per spostarle. gsh check ha completato il livello, illustrando l'uso di mv.



```
[mission 6] $ cd Garden

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

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

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

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

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

~/Garden
[mission 6] $ gsh check

Congratulations, mission 6 has been successfully completed!
```

Livello 7

Obiettivo: Spostare le monete nascoste nel forziere.

Istantanea: Con ls -A abbiamo visto i file nascosti .coin_*. Usando mv .coin_* ~/Forest/Hut/Chest/ li abbiamo spostati. gsh check ha completato il livello, mostrando i file nascosti e suggerendo l'uso di Tab.

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

Learn how to use the "Tab" key to go faster.

Useful commands

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.

```
~/Garden
[mission 7] $ pwd
/home/kali/gameshell.3/World/Garden

~/Garden
[mission 7] $ ls -A
.3024_coin_2 .37323_coin_1 .64643_coin_3 Flower_garden Maze Shed

~/Garden
[mission 7] $ mv .3024_coin_2 ~/Forest/Hut/Chest/

~/Garden
[mission 7] $ mv .37323_coin_1 ~/Forest/Hut/Chest/

~/Garden
[mission 7] $ mv .64643_coin_3 ~/Forest/Hut/Chest/

~/Garden
[mission 7] $ ls -A ~/Forest/Hut/Chest
.3024_coin_2 .37323_coin_1 .64643_coin_3 coin_1 coin_2 coin_3

~/Garden
[mission 7] $ gsh check

Congratulations, mission 7 has been successfully completed!
```

Livello 8

Obiettivo: Eliminare i file "spider_*" nella cantina.

Istantanea: In Castle/Cellar/, abbiamo usato rm spider* per eliminare tutti i file che iniziavano con "spider". ls ha confermato l'eliminazione e gsh check ha completato il livello, mostrando l'uso della wildcard *.

```
\` Mission goal
| _____
|
| Get rid of all the spiders that are crawling in the cellar. Again, do not do not
| disturb the bats.
|
| Shell patterns
| _____
|
| *
|   The "*" character stands in for any sequence of characters
|   (including an empty sequence).
|
| ?
|   The "?" character stands in for any single character.
|
| Those wildcards can be used to denote lists of existing files / directories in the
| current working directory.
|
| 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
|   *o*    →  Folder-1 potato
|   x*    →  error, no matching file
|   *-?   →  file-1 Folder-1
|   *-??  →  file-14
|`
```

```
[mission 8] $ cd ~/Castle/Cellar/
~/Castle/Cellar
[mission 8] $ ls
10195_spider_30  14234_spider_19  23008_spider_48  26277_spider_5   372_spider_33  7705_spider_24
11387_bat_4      14515_spider_7   23146_spider_17  26693_spider_16  3925_spider_1   8009_spider_39
12174_spider_22  15836_spider_35  23430_spider_43  27139_spider_31  4411_spider_44  8191_spider_10
13182_spider_14  16187_spider_34  23461_spider_40  27949_bat_5   4555_spider_42  9184_bat_2
13203_spider_36  16854_spider_29  23520_spider_6   28916_spider_47  5304_bat_1   9239_spider_46
13298_spider_27  18725_spider_9   24182_spider_25  30587_spider_18  5552_spider_8   barrel_of_apples
13343_spider_26  1912_spider_2   25340_spider_4   3073_spider_50  5758_spider_3
13477_spider_37  20120_spider_32  25356_spider_49  31010_spider_13  5883_bat_3
13587_spider_28  20958_spider_12  25431_spider_11  32394_spider_38  6527_spider_23
13671_spider_15  2225_spider_45  25551_spider_20  32759_spider_21  7584_spider_41

~/Castle/Cellar
[mission 8] $ rm *spider*
~/Castle/Cellar
[mission 8] $ ls
11387_bat_4  27949_bat_5  5304_bat_1  5883_bat_3  9184_bat_2  barrel_of_apples

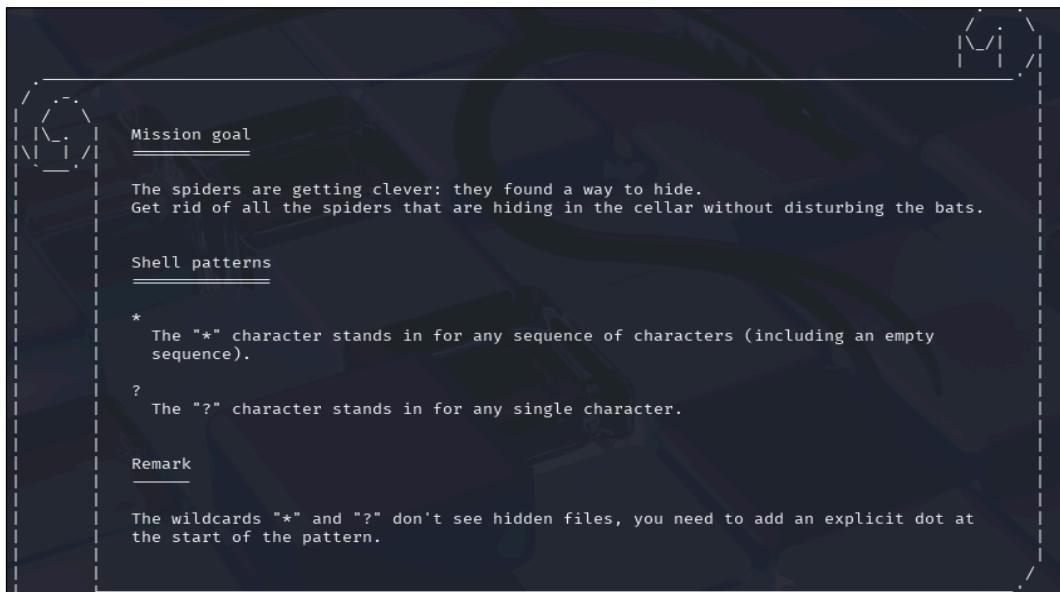
~/Castle/Cellar
[mission 8] $ gsh check

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

Livello 9

Obiettivo: Eliminare i file nascosti "spider_*" nella cantina.

Istantanea: In Castle/Cellar/, ls -A ha mostrato i file nascosti. Abbiamo usato rm .*spider* per eliminarli. ls -A ha confermato e gsh check ha completato il livello, illustrando la rimozione di file nascosti con wildcard.



```
~/Castle/Cellar
[mission 9] $ ls -A
.10261_spider_4 .13773_spider_13 .21016_spider_21 27949_bat_5      .3723_spider_10 .7914_spider_37
.11071_spider_29 .15211_spider_19 .22216_spider_26 .27987_bat_4      .3875_spider_33 .7982_spider_47
.11215_spider_43 .16619_spider_6  .2464_spider_20  .28061_spider_9      .4172_spider_30 .8709_spider_17
.11302_spider_12 .16689_spider_34 .25730_spider_15 .28062_spider_25  .5154_spider_31 9184_bat_2
11387_bat_4     .16889_spider_36 .26231_spider_11 .28232_bat_5      5304_bat_1   .930_spider_41
.11635_spider_24 .18121_spider_44 .26296_spider_40 .29238_spider_5    .5859_bat_3   barrel_of_apples
.11885_spider_18 .18357_spider_35 .26826_spider_2  .29829_spider_45  5883_bat_3
.1212_bat_2     .18406_spider_7   .27142_spider_39 .3036_spider_46    .6400_spider_8
.12268_spider_22 .19455_spider_14 .27303_bat_1   .31125_spider_28  .7375_spider_27
.1310_spider_50 .19942_spider_49 .27425_spider_38 .32506_spider_16  .7741_spider_3
.13546_spider_48 .19979_spider_42 .27444_spider_23 .3454_spider_1    .7845_spider_32

~/Castle/Cellar
[mission 9] $ rm .*spider*

~/Castle/Cellar
[mission 9] $ ls -A
11387_bat_4  .27303_bat_1  .27987_bat_4  5304_bat_1  5883_bat_3  barrel_of_apples
.1212_bat_2  27949_bat_5   .28232_bat_5  .5859_bat_3  9184_bat_2

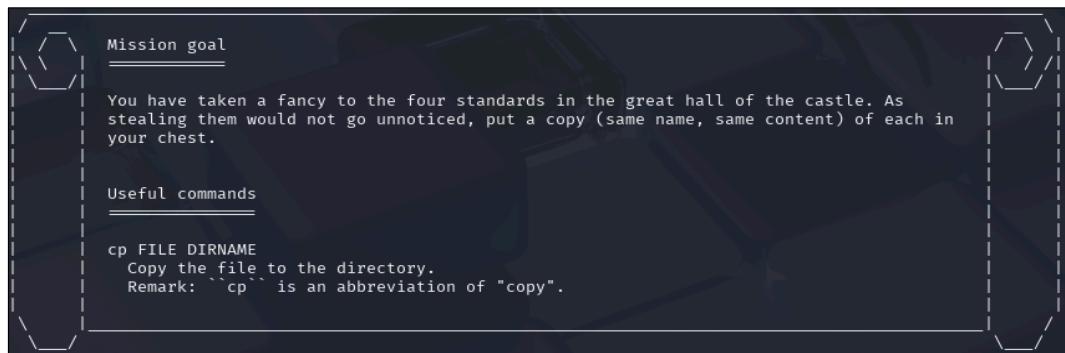
~/Castle/Cellar
[mission 9] $ gsh check

Congratulations, mission 9 has been successfully completed!
```

Livello 10

Obiettivo: Copiare le insegne nel forziere.

Istantanea: Ci siamo spostati in Castle/Great_hall/ e abbiamo usato ls per vedere le insegne (standard_*). Il comando cp standard* ~/Forest/Hut/Chest/ ha copiato tutti questi file nel forziere. gsh check ha verificato il successo, dimostrando l'uso di cp con wildcard per duplicare file in un'altra directory.

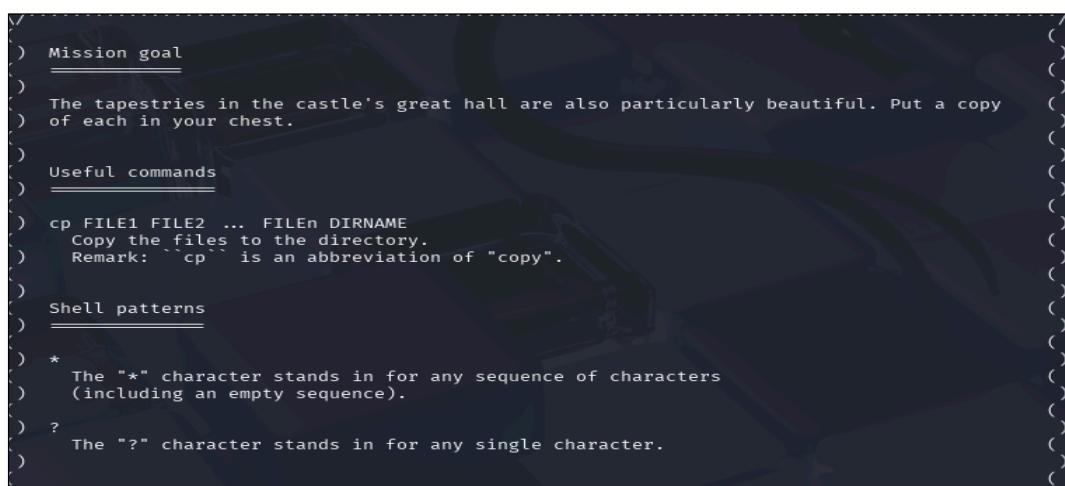


```
[mission 10] $ cd ~/Castle/Great_hall/  
~/Castle/Great_hall  
[mission 10] $ ls  
29141_decorative_shield 34153_stag_head 62057_suit_of_armour standard_1 standard_2 standard_3 standard_4  
~/Castle/Great_hall  
[mission 10] $ cp standard* ~/Forest/Hut/Chest/  
~/Castle/Great_hall  
[mission 10] $ ls ~/Forest/Hut/Chest/  
coin_1 coin_2 coin_3 standard_1 standard_2 standard_3 standard_4  
~/Castle/Great_hall  
[mission 10] $ gsh check  
Congratulations, mission 10 has been successfully completed!
```

Livello 11

Obiettivo: Copiare gli arazzi nel forziere.

Istantanea: In Castle/Great_hall/, abbiamo usato cp tapestry* ~/Forest/Hut/Chest/ per copiare tutti i file con "tapestry" nel nome. gsh check ha completato il livello, mostrando l'uso efficiente di cp con wildcard.



```

~/Castle/Great_hall
[mission 11] $ ls
21047_tapestry_01 24099_tapestry_04 36891_decorative_shield 51028_tapestry_08 61461_tapestry_06 standard_3
21875_tapestry_05 30803_tapestry_03 4368_suit_of_armour       61190_tapestry_10 standard_1      standard_4
23883_tapestry_09 32513_tapestry_02 50810_stag_head        61426_tapestry_07 standard_2

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

~/Castle/Great_hall
[mission 11] $ ls ~/Forest/Hut/Chest/
21047_tapestry_01 24099_tapestry_04 51028_tapestry_08 61461_tapestry_06 coin_3      standard_3
21875_tapestry_05 30803_tapestry_03 61190_tapestry_10 coin_1      standard_1      standard_4
23883_tapestry_09 32513_tapestry_02 61426_tapestry_07 coin_2      standard_2

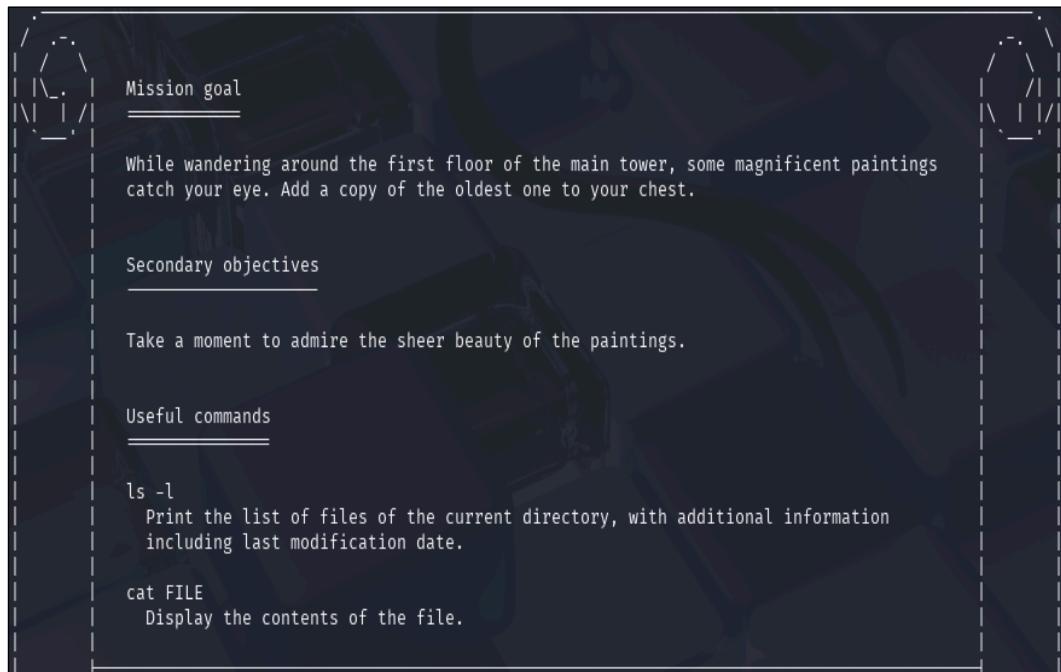
~/Castle/Great_hall
[mission 11] $ gsh check
Congratulations, mission 11 has been successfully completed!

```

Livello 12

Obiettivo: Copiare il dipinto più vecchio nel forziere.

Istantanea: In Castle/Main_tower/First_floor/, ls -l ha rivelato che painting_mFWfNCRIH era il più vecchio. Abbiamo usato cp painting_mFWfNCRIH ~/Forest/Hut/Chest/ per copiarlo. gsh check ha completato il livello, mostrando la copia di un file specifico.



```
~/Castle/Main_tower
[mission 12] $ ls
First_floor/
~/Castle/Main_tower
[mission 12] $ cd First_floor
File System esercizio... udpserver...
~/Castle/Main_tower/First_floor
[mission 12] $ ls -l
total 16
-rw-rw-r-- 1 kali kali 1055 Jan  7 1988 painting_mWFNcRlh
-rw-rw-r-- 1 kali kali 1503 Mar 16 1998 painting_rfZMHRcn
-rw-rw-r-- 1 kali kali 1455 Jul  6 2010 painting_sRoeYwmh
drwxrwxr-x 3 kali kali 4096 Apr 19 09:07 Second_floor/
~/Castle/Main_tower/First_floor
[mission 12] $ ls -l --sort=time
total 16
drwxrwxr-x 3 kali kali 4096 Apr 19 09:07 Second_floor/
-rw-rw-r-- 1 kali kali 1455 Jul  6 2010 painting_sRoeYwmh
-rw-rw-r-- 1 kali kali 1503 Mar 16 1998 painting_rfZMHRcn
-rw-rw-r-- 1 kali kali 1055 Jan  7 1988 painting_mWFNcRlh
~/Castle/Main_tower/First_floor
[mission 12] $ cp painting_mWFNcRlh ~/Forest/Hut/Chest/
~/Castle/Main_tower/First_floor
[mission 12] $ ls -l ~/Forest/Hut/Chest/
total 72
-rw-r--r-- 1 kali kali 3877 Apr 19 14:16 21047_tapestry_01
-rw-r--r-- 1 kali kali  573 Apr 19 14:16 21875_tapestry_05
-rw-r--r-- 1 kali kali 3877 Apr 19 14:16 23883_tapestry_09
-rw-r--r-- 1 kali kali  574 Apr 19 14:16 24099_tapestry_04
-rw-r--r-- 1 kali kali 1290 Apr 19 14:16 30803_tapestry_03
-rw-r--r-- 1 kali kali  786 Apr 19 14:16 32513_tapestry_02
-rw-r--r-- 1 kali kali  786 Apr 19 14:16 51028_tapestry_08
-rw-r--r-- 1 kali kali 1214 Apr 19 14:16 61190_tapestry_10
-rw-r--r-- 1 kali kali 3877 Apr 19 14:16 61426_tapestry_07
-rw-r--r-- 1 kali kali 1290 Apr 19 14:16 61461_tapestry_06
-rw-rw-r-- 1 kali kali   47 Apr 19 12:53 coin_1
-rw-rw-r-- 1 kali kali   47 Apr 19 12:53 coin_2
-rw-rw-r-- 1 kali kali   47 Apr 19 12:53 coin_3
-rw-rw-r-- 1 kali kali 1055 Apr 19 14:25 painting_mWFNcRlh
-rw-rw-r-- 1 kali kali   47 Apr 19 14:10 standard_1
-rw-rw-r-- 1 kali kali   46 Apr 19 14:10 standard_2
-rw-rw-r-- 1 kali kali   47 Apr 19 14:10 standard_3
-rw-rw-r-- 1 kali kali   47 Apr 19 14:10 standard_4
```

Livello 13

Obiettivo: Trovare il giorno della settimana per il 27-09-1940.

Istantanea: Abbiamo usato cal 1940 per vedere il calendario del 1940. Il 27 settembre era un venerdì, quindi abbiamo risposto 5 a gsh check, completando il livello e mostrando l'uso di cal.

```

~/Castle/Main_tower/First_floor
[mission 13] $ cal 1940
           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  5  6   1  2  3  4  5  6  7  8  9 10  3  4  5  6  7  8  9
  7  8  9 10 11 12 13   4  5  6  7  8  9 10 11 12 13 14 15 16 17 10 11
14 15 16 17 18 19 20 11 12 13 14 15 16 17 18 19 20 21 22 23 24 17 18
21 22 23 24 25 26 27 18 19 20 21 22 23 24 25 26 27 28 29 24 25 26 27 28
28 29 30 31               25 26 27 28 29            29 30

           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  6   1  2  3  4   1  2  3  4  5  6  7  8  9 10 11 12 13 14
  7  8  9 10 11 12 13   5  6  7  8  9 10 11 12 13 14 15 16 17 18 9 10
14 15 16 17 18 19 20 12 13 14 15 16 17 18 19 20 21 22 23 24 25 16 17
21 22 23 24 25 26 27 19 20 21 22 23 24 25 26 27 28 29 30 31 23 24
28 29 30               26 27 28 29 30 31            25 26 27 28 29 30

           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  6   1  2  3  4   1  2  3  4  5  6  7  8  9 10 11 12 13 14
  7  8  9 10 11 12 13   4  5  6  7  8  9 10 11 12 13 14 15 16 17 15 16
14 15 16 17 18 19 20 11 12 13 14 15 16 17 18 19 20 21 22 23 24 22 23
21 22 23 24 25 26 27 18 19 20 21 22 23 24 25 26 27 28 29 30 31 29 30

           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  5  6   1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21
  6  7  8  9 10 11 12  3  4  5  6  7  8  9  8  9 10 11 12 13 14 15 16 17 18 19 20
13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 20 21 22 23 22 23 24 25 26 27 28
20 21 22 23 24 25 26 17 18 19 20 21 22 23 24 25 26 27 28 29 30 29 30 31

~/Castle/Main_tower/First_floor
[mission 13] $ gsh check
What was the day of the week for the 09-27-1940?
 1 : Monday
 2 : Tuesday
 3 : Wednesday
 4 : Thursday
 5 : Friday
 6 : Saturday
 7 : Sunday
Your answer: 5

Congratulations, mission 13 has been successfully completed!

```

Livello 14

Obiettivo: Creare l'alias la per ls -A.

Istantanea: Abbiamo usato alias la='ls -A'. Il comando la ha poi mostrato tutti i file, inclusi quelli nascosti come .nice_rock, verificato con la | grep -i "rock". gsh check ha completato il livello, dimostrando la creazione di un alias.

```
(\_\\_ 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] $ la
.nice_rock  painting_mWFNcRlH  painting_rFZMHRCn  painting_sRoeYwmh  Second_floor/
~/.nice_rock

~/Castle/Main_tower/First_floor
[mission 14] $ la | grep -i "rock"
.nice_rock

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

Congratulations, mission 14 has been successfully completed!
```

Livello 15

Obiettivo: Creare e scrivere in journal.txt.

Istantanea: In ~/Forest/Hut/Chest/, abbiamo usato nano journal.txt, scritto "La Missione è stata completata!", salvato con Ctrl+O e chiuso con Ctrl+X. cat journal.txt ha mostrato il contenuto e gsh check ha completato il livello, illustrando l'uso base di nano.

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

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

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

~/Forest/Hut/Chest
[mission 15] $ ls
21047_tapestry_01  30803_tapestry_03  61426_tapestry_07  coin_3          standard_2
21875_tapestry_05  32513_tapestry_02  61461_tapestry_06  journal.txt      standard_3
23883_tapestry_09  51028_tapestry_08  coin_1          painting_mWFNcRlH standard_4
24099_tapestry_04  61190_tapestry_10  coin_2          standard_1

~/Forest/Hut/Chest
[mission 15] $ cat journal.txt
La Missione 15 è stata completata!

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

Congratulations, mission 15 has been successfully completed!
```

Livello 16

Obiettivo: Creare un alias journal per aprire journal.txt con nano.

Istantanea: Abbiamo usato alias journal='nano ~/Forest/Hut/Chest/journal.txt'. Da ~/Castle/Cellar, il comando journal ha aperto il file in nano. gsh check ha completato il livello, mostrando l'uso di un alias con un percorso assoluto.

```
\tempo esercizio_u... uop...er...
 \
| Mission goal
/| _____
Create an alias "journal" in order to easily edit your journal file wherever you are.

Details
_____
To edit the journal file with ``nano`` from, for example, the cellar or the throne room, you need to give the full path to the file: "~/Forest/ ... /journal.txt".

To avoid typing this long command each time, you can create an alias just like
alias la='ls -a'

Useful commands
_____
nano FILE
Edit the file from the shell.
(If the file does not exist, it will be created.)

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

Note
_____
If (and only if) you know what you're doing, you can use the ``EDITOR`` variable to define your favorite editor and use it in the alias.
```

```
[mission 16] $ alias journal='nano ~/Forest/Hut/Chest/journal.txt'
~

[mission 16] $ cd ~/Castle/Cellar
~/Castle/Cellar
[mission 16] $ journal
~/Castle/Cellar
[mission 16] $ gsh check
Congratulations, mission 16 has been successfully completed!
```

Livello 17

Obiettivo: Rimuovere la regina dei ragni nel suo covo.

Istantanea: In Castle/Cellar/, abbiamo navigato nella directory Lair_of_the_spider_queen_... (usando Tab). Lì, abbiamo identificato il file della regina dei ragni (zqXnUxRdfSsRBjaF...) con la e l'abbiamo rimosso con rm zqXnUxRdfSsRBjaF.... gsh check ha completato il livello.

```
~/Castle/Cellar
[mission 17] $ ls -A
11387_bat_4  27949_bat_5  5304_bat_1  9184_bat_2
.1212_bat_2  .27987_bat_4  .5859_bat_3  barrel_of_apples
.27303_bat_1 .28232_bat_5  5883_bat_3  .Lair_of_the_spider_queen FzjrzaUMdtDROMKT VwfFIwKxkWElxtxg

~/Castle/Cellar
[mission 17] $ cd .Lair_of_the_spider_queen\ FzjrzaUMdtDROMKT VwfFIwKxkWElxtxg/
~/Castle/Cellar/.Lair_of_the_spider_queen FzjrzaUMdtDROMKT VwfFIwKxkWElxtxg
[mission 17] $ la -A
myjptGGXrHEsBVaM_baby_bat_PctyhiIiqcsGIhHh  zqXnUxRdfSsRBjaF_spider_queen_GXYCvaHGinuRXJss

~/Castle/Cellar/.Lair_of_the_spider_queen FzjrzaUMdtDROMKT VwfFIwKxkWElxtxg
[mission 17] $ rm zqXnUxRdfSsRBjaF_spider_queen_GXYCvaHGinuRXJss

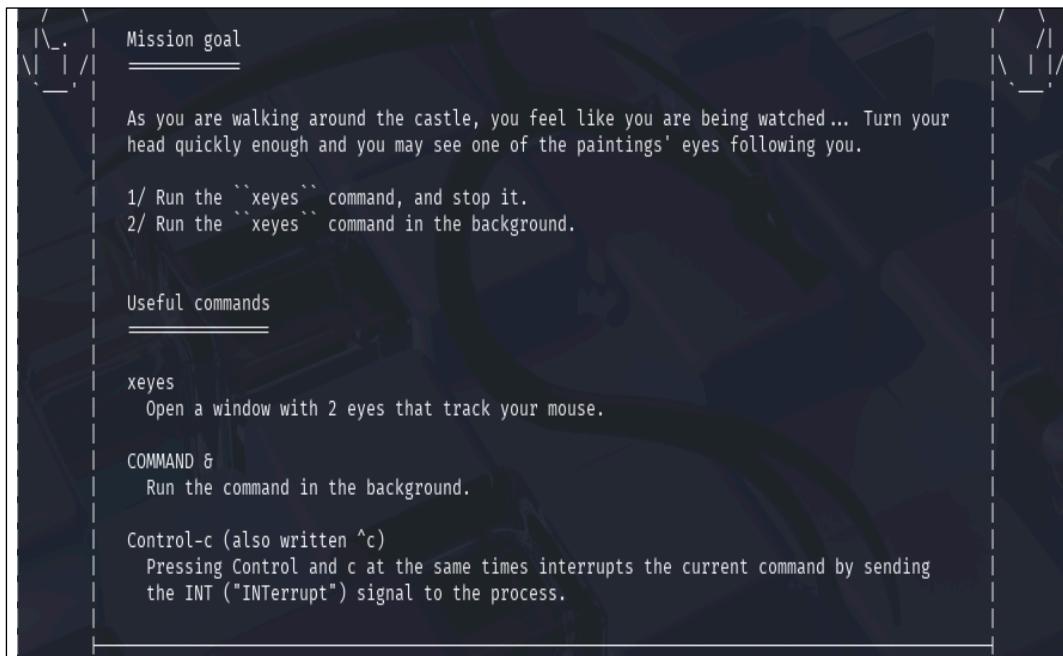
~/Castle/Cellar/.Lair_of_the_spider_queen FzjrzaUMdtDROMKT VwfFIwKxkWElxtxg
[mission 17] $ gsh check
Perfect, it took you only 18 seconds to complete this mission!

Congratulations, mission 17 has been successfully completed!
```

Livello 18

Obiettivo: Eseguire il comando xeyes e poi eseguirlo in background.

Istantanea: Abbiamo prima lanciato xeyes e l'abbiamo interrotto con Ctrl+C. Poi, abbiamo eseguito xeyes & per avviarlo in background. Il comando jobs ha confermato che xeyes era in esecuzione in background. Infine, gsh check ha verificato il completamento del livello.



```
[mission 18] $ xeyes
^C

~
[mission 18] $ xeyes &
[1] 3950

~
[mission 18] $ jobs
[1]+  Running                  xeyes &

~
[mission 18] $ gsh check

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

Livello 19

Obiettivo: Eseguire almeno tre comandi flarigo consecutivamente.

Istantanea: Abbiamo utilizzato l'operatore di background & per eseguire il comando flarigo tre volte in parallelo: flarigo & flarigo & flarigo &. Questo ha avviato tre processi separati per creare i fuochi d'artificio senza dover attendere il completamento di ciascuno. Il comando gsh check ha probabilmente verificato l'avvio corretto di questi tre processi in background, confermando il raggiungimento dell'obiettivo.

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.

)

Livello 20

Obiettivo: Trovare le quattro lettere corrette per charmiglio.

Istantanea: Abbiamo provato charmiglio asdf, che ha funzionato. Abbiamo risposto asdf a gsh check, completando il livello.

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.

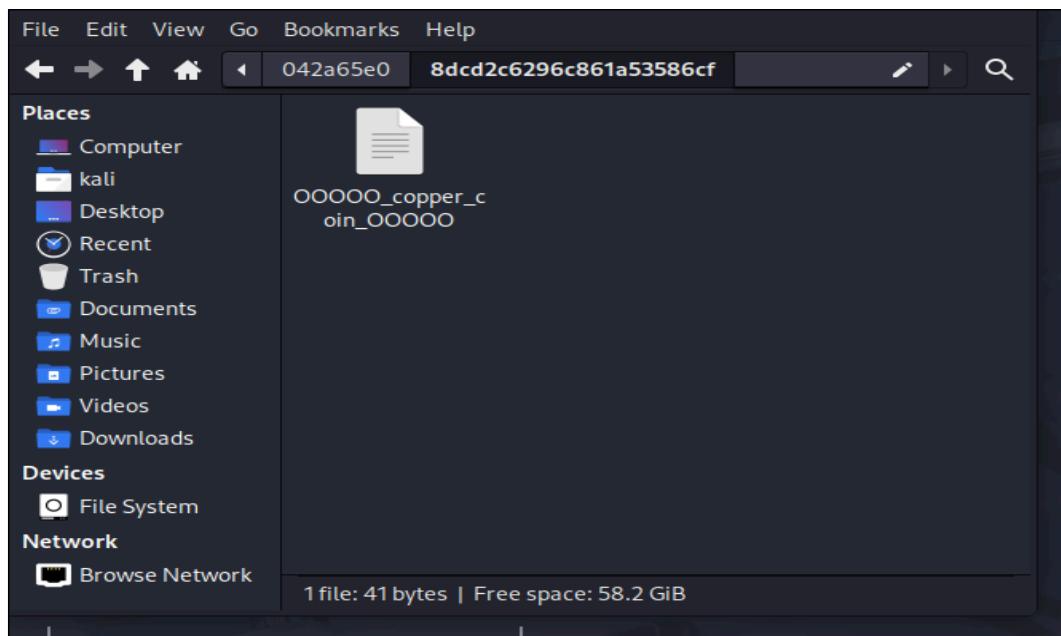
Control-c (also written ^c)
Pressing Control and c at the same times interrupts the current command by sending the INT ("INTerrupt") signal to the process.

Livello 21

Obiettivo: Spostare la moneta di rame nel forziere.

Istantanea: Abbiamo usato il file manager grafico per trovare 00000_copper_coin_00000 in /home/kali/gameshell.8/World/Garden/Maze e l'abbiamo spostata in ~/Forest/Hut/Chest/. gsh check ha confermato il completamento.

```
()=(`  
|  
| Mission goal  
| =====  
|  
| Find the copper coin in the small maze in the garden and move it to your chest.  
|  
| If you want, you can use a graphical file manager. The maze is to be found in  
| directory  
| /home/kali/gameshell.8/World/Garden/Maze  
()  
()=(`
```

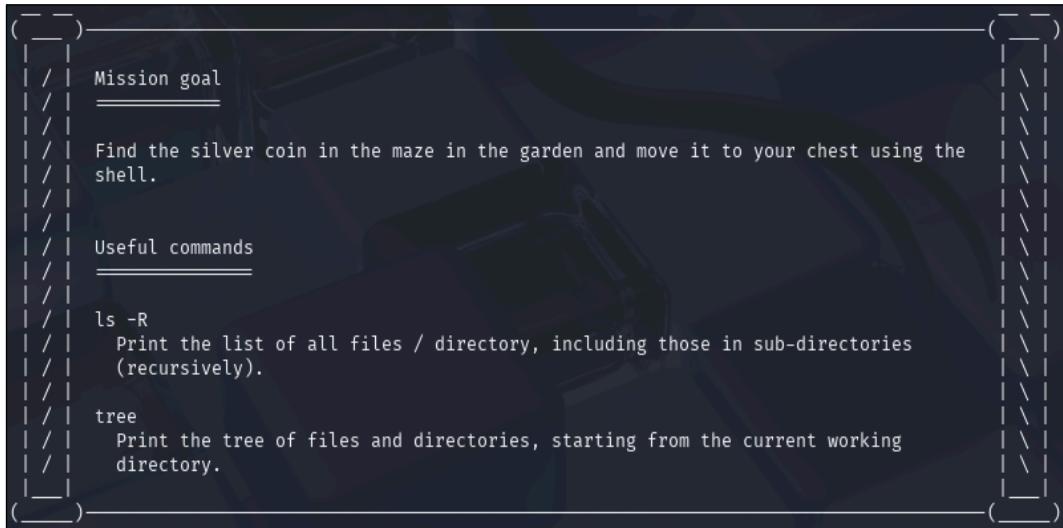


```
/home/kali/gameshell/World/Garden/Maze  
[mission 21] $ gsh check  
  
Congratulations, mission 21 has been successfully completed!
```

Livello 22

Obiettivo: Spostare la moneta d'argento nel forziere via shell.

Istantanea: Con tree abbiamo trovato 00000_silver_coin_00000 nel labirinto. Abbiamo usato mv /percorso/completo/della/moneta ~/Forest/Hut/Chest/ (comando non mostrato, ma dedotto) per spostarla. gsh check ha completato il livello.



```
~/Garden/Maze
[mission 22] $ tree
.
├── 5491182d46761
│   ├── 6c21a655a643a6
│   │   ├── 0abea6200f62cc594191a9216f063
│   │   ├── 5ff66e86d2ea4
│   │   └── abd0844f7897331
│   ├── 83b40f90932
│   │   ├── 714470392087a1
│   │   ├── e2021e73c0e128e579e90387df
│   │   └── e724c80103337c751
│   └── f79719b3803
│       ├── 8b7a068e0d
│       └── b07ac5ab2
└── f3cff4a45d403463d4e4bd4
    └── 00000_silver_coin_00000
```

```
~/Garden/Maze
[mission 22] $ gsh check
Congratulations, mission 22 has been successfully completed!
```

Livello 23

Obiettivo: Trovare e spostare le monete d'oro nel forziere.

Istantanea: Abbiamo usato find . -name "*coin*" per trovare gold_coin_1 e mv [...] ~/Forest/Hut/Chest/ per spostarla. Poi, find . -size -1k ha trovato GOLD_CoIN_2, spostata con mv [...] ~/Forest/Hut/Chest/. gsh check ha completato il livello.

```
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"
-iname "PATTERN"
are both related to file names.

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
=====
The description of the ``find`` command is deliberately kept short. You will find more
information in the manual. (You can for exemple search for the string "-name" in the
manual.)
```

```
~/Garden/Maze
[mission 23] $ find . -name "*coin*"
./d4fb6d89c1a4b98415623d8f9/e2ea1edabdc861fadd95df59/d2f966a575c5b99a2f6d98f82472/gold_coin_1

~/Garden/Maze
[mission 23] $ mv ./d4fb6d89c1a4b98415623d8f9/e2ea1edabdc861fadd95df59/d2f966a575c5b99a2f6d98f82472/gold_coin_1 ~/Fo
rest/Hut/Chest/

~/Garden/Maze
[mission 23] $ find . -size -1k

~/Garden/Maze
[mission 23] $ find . -type f
./d4fb6d89c1a4b98415623d8f9/1b4c88bb91b/06500f8b72c30605/Gold_CoIN_2

~/Garden/Maze
[mission 23] $ mv ./d4fb6d89c1a4b98415623d8f9/1b4c88bb91b/06500f8b72c30605/Gold_CoIN_2 ~/Forest/Hut/Chest/

~/Garden/Maze
[mission 23] $ gsh check

Congratulations, mission 23 has been successfully completed!
```

Livello 24

Obiettivo: Mostrare la ricetta del tè di Servillus.

Istantanea: In ~/Mountain/Cave/, abbiamo usato head -n 6 Book_of_potions/page_07 per visualizzare il titolo "Herbal tea" e la ricetta. gsh check ha completato il livello.

```
/s\|\_|| _____/|\s\_
( \_\_|| 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.
|| _____/|\s\_
/\|\_|| _____/|\s\_
```

```
~/Mountain/Cave
[mission 24] $ head -n 6 Book_of_potions/page_07
vvvvvvvvvvv
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!
```

Livello 25

Obiettivo: Mostrare la ricetta dello stufato senza il titolo.

Istantanea: In ~/Mountain/Cave/, abbiamo usato tail -n 9 Book_of_potions/page_12 per visualizzare le ultime nove righe del file, che contenevano i passaggi della ricetta "Toadstool stew" senza il titolo. gsh check ha completato il livello.

```
(____) _____(____)
/   Mission goal
/   =====
/
/   The old man seems to enjoy your company very much. He invites you to stay for supper,
/   and starts preparing a delicious stew for the both of you. While getting the cauldron
/   ready he asks for your help.
/   Read him the steps of the recipe from his book.
/
/   In order to validate the mission, you need to be in the cave with Servillus **and** last command prior to ``gsh check`` must show the steps of the recipe (without its title).
/
/   Note: you shouldn't alter the content of the book of potions.
/
/
/   Useful commands
/   =====
/
/   cat FILE
/   Display the contents of the file.
/
/   tail FILE
/   Print the last 10 lines of the file.
/
/   tail -n K FILE
/   Print the last K lines of the file.
(____) _____(____)
```

```
~/Mountain/Cave [mission 25] $ cat Book_of_potions/page_12
vvvvvvvvvvvvvvv
Toadstool stew
^^^^^^^^^^^^^^^

1) Boil water in a cauldron.
2) Add in a few death caps (Amanita phalloides).
3) Also add a few fly agarics (Amanita muscaria).
4) And some destroying angels (Amanita virosa).
5) Mix in a few deadly webcaps (Cortinarius rubellus).
6) Feel free to add in any colourful fungi you have on hand.
7) Let half of the water evaporate.
8) Season with a pinch of salt and a few herbs.
9) Serve hot in a bowl.

~/Mountain/Cave
[mission 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.

~/Mountain/Cave
[mission 25] $ gsh check

Congratulations, mission 25 has been successfully completed!
```

Livello 26

Obiettivo: Mostrare l'intera ricetta della pozione che cambia aspetto.

Istantanea: In ~/Mountain/Cave/, abbiamo usato cat Book_of_potions/page_01 Book_of_potions/page_02 per visualizzare il titolo "Transformation potion" e tutti i passaggi. gsh check ha completato il livello.

```
^
(0)==>oooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo<)=0)
 \/
(
 ) Mission goal
(
)
(
) 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
(
)
(
) cat FILE1 FILE2 ... FILEn
) Display the contents of the files in order.
) Remark: ``cat`` is an abbreviation for "concatenate".
(
\/
(0)==>oooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo<)=0)
 \/_
```

```
~/Mountain/Cave
[mission 26] $ cat Book_of_potions/page_01 Book_of_potions/page_02
vvvvvvvvvvvvvvvvvvvvv
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.

~/Mountain/Cave
[mission 26] $ gsh check

Congratulations, mission 26 has been successfully completed!
```

Livello 27

Obiettivo: Mostrare i passaggi dell'elisir di giovinezza.

Istantanea: Abbiamo usato cat Book_of_potions/page_03 Book_of_potions/page_04 | tail -n +5 per visualizzare il contenuto dei due file e poi usare tail per mostrare solo le righe dalla quinta in poi (i passaggi). gsh check ha completato il livello.

```
./mission27
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.

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".

Explanations
_____
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.
```

```
~/Mountain/Cave
[mission 27] $ cat Book_of_potions/page_03 Book_of_potions/page_04 | tail -n +5
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

Congratulations, mission 27 has been successfully completed!
```

Livello 28

Obiettivo: Mostrare la ricetta dell'acqua distillata.

Istantanea: Abbiamo usato cat Book_of_potions/page_13 | head -n 6 | tail -n 3 per visualizzare il contenuto del file, prendere le prime 6 righe e poi mostrare le ultime 3 di quelle, che contenevano la ricetta. gsh check ha completato il livello.

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 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

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]
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.

```
~/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).

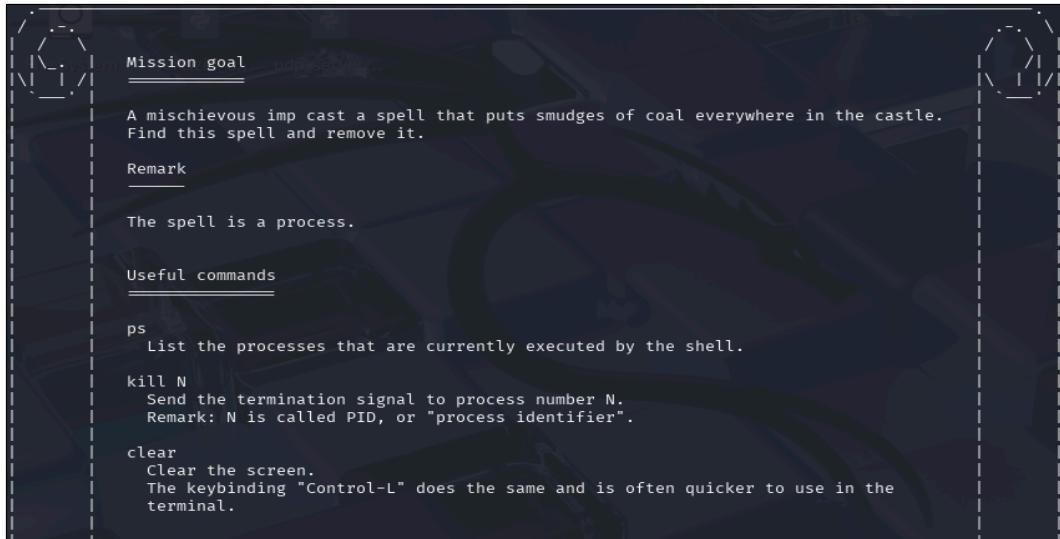
~/Mountain/Cave
[mission 28] $ gsh check

Congratulations, mission 28 has been successfully completed!
```

Livello 29

Obiettivo: Eliminare l'incantesimo del folletto.

Istantanea: Abbiamo usato pkill spell per terminare il processo chiamato "spell". gsh check ha confermato il successo.



```
*#@*  
δ_**/~  
!$-#  
  
*#@*  
δ_**/~  
!$-#  
  
*#@*  
δ_**/~  
!$-#  
  
*#@*  
δ_**/~  
!$-#  
  
ps  
PID TTY      TIME CMD  
205561 pts/0    00:00:00 zsh  
205637 pts/0    00:00:00 bash  
205709 pts/0    00:00:00 bash  
206060 pts/0    00:00:00 spell  
207342 pts/0    00:00:00 ps
```

```
pkill spell  
[1]+  Terminated                 "$GSH_TMP/${gettext "spell"})"  
~  
[mission 29] $ gsh check  
Congratulations, mission 29 has been successfully completed!
```

Livello 30

Obiettivo: Rimuovere l'incantesimo potenziato.

Istantanea: Abbiamo usato pkill -9 spell per forzare la terminazione del processo "spell". La successiva esecuzione di ps non ha mostrato il processo e gsh check ha completato il livello.

```
(____) _____(____)
 / \ Mission goal
 / \ _____(____)
 / \ 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.
 / \
 / \ Remark
 / \
 / \ The spell is a process.
 / \
 / \ Useful commands
 / \ _____(____)
 / \ ps
 / \ List the processes that are currently executed by the shell.
 / \ kill [OPTIONS] N
 / \ Send the termination signal to process number N.
 / \ 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!
 / \
(____) _____(____)
```

```
*#@*
&_**/~
!$-#
```



```
*#@*
&_**/~
!$-#
```



```
*#@*
&_**/~
!$-#
```



```
kill 209
*#@*
&_**/~
!$-#
```



```
kill 209301
bash: kill: 209kill: arguments must be process or job IDs
You'll need to do better than that to kill my spell!
```

```
pkill -9 spell
~ [mission 30] $ ps
      PID TTY      TIME CMD
 205561 pts/0    00:00:00 zsh
 205637 pts/0    00:00:00 bash
 205709 pts/0    00:00:00 bash
 212620 pts/0    00:00:00 ps
~ [mission 30] $ gsh check
Congratulations, mission 30 has been successfully completed!
```

Livello 31

Obiettivo: Rimuovere gli incantesimi del carbone senza toccare quelli della neve.

Istantanea: Abbiamo usato pstree -p (ipotizzato) per identificare i processi del carbone e poi il comando kill (ipotizzato) sui loro PID. gsh check ha confermato la rimozione selettiva.

```
Mission goal
=====
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
=====
Do not kill the imp or the fairy.

Useful commands
=====
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.

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".
```

```
~/Castle/Cellar
[mission 31] $ gsh check

Congratulations, mission 31 has been successfully completed!
```

Livello 32

Obiettivo: Superare la prova di calcolo.

Istantanea: Abbiamo eseguito gsh check, che ha mostrato delle somme con i risultati. Il completamento del livello è seguito immediatamente, suggerendo che la prova consisteva nel visualizzare le operazioni.

```
(())=(  
|  
| Mission goal  
| _____  
| To get better in the magical art, one needs to know mental math.  
| Get ready, because Merlin is about to test your precision with sums.  
| Run the command ``gsh check`` to start.  
|  
)=(  
| _____  
| @=()
```

```
~/Castle/Cellar  
[mission 32] $ gsh check  
62 + 8 = ?? 70  
37 + 28 = ?? 65  
95 + 87 = ?? 182  
26 + 14 = ?? 40  
18 + 78 = ?? 96  
  
Congratulations, mission 32 has been successfully completed!
```

Livello 33

Obiettivo: Superare la prova di velocità con le moltiplicazioni.

Istantanea: Ci siamo spostati in ~/Castle/Main_building/library e abbiamo eseguito gsh check < Mathematics_101. Il completamento immediato indica che fornire il file di matematica come input ha superato la prova.

```
|  
| Mission goal  
| _____  
| To get better in the magical art, one needs to know mental math.  
| Get ready, because Merlin is about to test your speed with products.  
| Run the command ``gsh check`` to start.  
|  
| Remark  
| _____  
| There now is a time constraint.  
|  
| Hint  
| _____  
| The library is rumored to contain some mathematics books and hidden volumes.  
|  
| Useful commands  
| _____  
|  
| 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.  
)
```

```

~/Castle/Main_building/Library
[mission 33] $ gsh check < Mathematics_101
60 * 93 = ?? 99 * 94 = ?? 9 * 6 = ?? 13 * 54 = ?? 22 * 39 = ?? 80 * 13 = ?? 37 * 7 = ?? 39 * 41 = ?? 5 * 86 = ?? 49
* 3 = ?? 59 * 100 = ?? 96 * 76 = ?? 53 * 47 = ?? 6 * 25 = ?? 29 * 39 = ?? 13 * 92 = ?? 58 * 44 = ?? 28 * 23 = ?? 34
* 97 = ?? 51 * 46 = ?? 3 * 80 = ?? 70 * 96 = ?? 93 * 27 = ?? 6 * 32 = ?? 31 * 41 = ?? 14 * 87 = ?? 60 * 34 = ?? 18 *
53 = ?? 89 * 15 = ?? 47 * 95 = ?? 66 * 29 = ?? 2 * 49 = ?? 49 * 52 = ?? 25 * 83 = ?? 56 * 68 = ?? 82 * 95 = ?? 30 *
35 = ?? 66 * 53 = ?? 55 * 55 = ?? 8 * 4 = ?? 91 * 89 = ?? 21 * 51 = ?? 67 * 35 = ?? 25 * 37 = ?? 84 * 17 = ?? 48 *
9 = ?? 81 * 9 = ?? 89 * 91 = ?? 46 * 67 = ?? 9 * 86 = ?? 96 * 92 = ?? 33 * 42 = ?? 98 * 43 = ?? 45 * 50 = ?? 4 * 99
= ?? 42 * 78 = ?? 35 * 62 = ?? 57 * 83 = ?? 21 * 73 = ?? 35 * 27 = ?? 81 * 37 = ?? 15 * 36 = ?? 73 * 43 = ?? 21 * 69
= ?? 60 * 91 = ?? 41 * 17 = ?? 34 * 80 = ?? 20 * 71 = ?? 10 * 46 = ?? 50 * 52 = ?? 58 * 26 = ?? 48 * 33 = ?? 83 * 2
1 = ?? 78 * 98 = ?? 73 * 45 = ?? 24 * 67 = ?? 54 * 26 = ?? 76 * 73 = ?? 4 * 26 = ?? 4 * 42 = ?? 18 * 39 = ?? 15 * 8
= ?? 41 * 83 = ?? 14 * 16 = ?? 34 * 16 = ?? 97 * 49 = ?? 54 * 68 = ?? 95 * 26 = ?? 34 * 7 = ?? 75 * 57 = ?? 7 * 28 =
?? 94 * 15 = ?? 34 * 95 = ?? 83 * 8 = ?? 32 * 33 = ?? 20 * 84 = ?? 23 * 54 = ?? 94 * 93 = ?? 74 * 28 = ?? 50 * 81 =
??

Congratulations, mission 33 has been successfully completed!

```

Livello 34

Obiettivo: Creare una lista dei libri di incantesimi in inventory.txt nel cassetto.

Istantanea: In ~/Castle/Main_building/Library/Merlin_s_office/, abbiamo usato /bin/ls -1 grimoire_* > Drawer/inventory.txt per listare i file "grimoire_%" (i libri di incantesimi) uno per riga e salvare l'output in inventory.txt nella directory Drawer/. gsh check ha completato il livello.

```

Mission goal
_____
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.
_____
(*)_____

```

```

~/Castle/Main_building
[mission 34] $ cd Library/
~/Castle/Main_building/Library
[mission 34] $ ls
Greek_Latin_and_other_modern_languages  Mathematics_101  Merlin_s_office/
~/Castle/Main_building/Library/Merlin_s_office
[mission 34] $ /bin/ls -1 grimoire_* > Drawer/inventory.txt
~/Castle/Main_building/Library/Merlin_s_office
[mission 34] $ cd Drawer/
~/Castle/Main_building/Library/Merlin_s_office/Drawer
[mission 34] $ less inventory.txt
~/Castle/Main_building/Library/Merlin_s_office/Drawer
[mission 34] $ gsh check
Congratulations, mission 34 has been successfully completed!

```

Livello 35

Obiettivo: Elencare i libri contenenti 'gsh' (case-insensitive), ignorando gli errori.
Istantanea: In ~/Castle/Main_building/Library/Merlin_s_office/, abbiamo usato grep -il 'gsh' grimoire_* 2>/dev/null per trovare e listare solo i nomi dei file "grimoire_%" che contengono 'gsh' (ignorando la case), reindirizzando gli errori a /dev/null. gsh check ha completato il livello.

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.

Useful commands

grep STRING FILE1 ... FILEn
Search for a string inside a file and print the corresponding lines.
Some interesting options are
-l : 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.)

COMMAND 2> FILE
Send error messages (stderr) 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.

```
~/Castle/Main_building/Library/Merlin_s_office
[mission 35] $ grep -il 'gsh' grimoire_* 2>/dev/null
grimoire_AJJVLmFfg
grimoire_BYXutfaWX
grimoire_DcoitFLeDRV0gjhPMTvnKKRJc
grimoire_DIETzpcivg
grimoire_EDKUtnwczFASzzWFAUaEOrgVE
grimoire_fHSaZjLr
grimoire_GeIBPTxYEmcSTPvkM
grimoire_HIuvVFFoShHIxJzKIrD
grimoire_KDJJgIGqqqKYf
grimoire_LJGylPTzCSwhPhEmiaeVoFbzabHRVbh
grimoire_lzIQWgKWUCVrHiXAZWHD
grimoire_obSAufXPIC
grimoire_omYCDNERzgpmQSjz
grimoire_OpNJvKXQ
grimoire_oYZITayYkUJhSslLxcTNqvLoIY
grimoire_TBTEKuuVsrrNMUVYnLVLedEVBvKpxd
grimoire_TDGAMGWLWJevfZMiHtjPTIC
grimoire_TgWnixbVbNWIxDGnNA
grimoire_uTAcAnPNFEUAYoncxBJwHipYxUXC
grimoire_xaklFkvGkpzUIhqfkOCxiJ
grimoire_XdxysycaPYbHweYzzKB
grimoire_XOfTHCsGVvvZOVDxPIOEP
grimoire_YkKtUTzYPyWiuRLKLn
grimoire_zrokkkaxmDHft

~/Castle/Main_building/Library/Merlin_s_office
[mission 35] $ gsh check

Congratulations, mission 35 has been successfully completed!
```

Livello 36

Obiettivo: Trovare e fornire la chiave segreta tramite file redirection.

Istantanea: In ~/Castle/Observatory/, abbiamo eseguito `./merlin 2> secret_key_stderr` per salvare l'output di errore nel file. Abbiamo poi fornito questo file come input a `gsh check` con `gsh check < secret_key_stderr`, ottenendo la chiave segreta.

(_ _)—(_ _)

/ | Mission goal
/ |
/ |
/ |
/ | Merlin has turned crazy ... He paces around the observatory tower and mumbles
/ | incoherently.
/ |
/ | You need to filter out his ramblings to discover the secret key he is the only one to
/ | know.
/ |
/ | Hint
/ |
/ |
/ | It is likely that Merlin's message is riddled with errors.
/ | To complete this mission, you have to give the secret key **using a file
/ | redirection**.
/ |
/ |
/ | Useful commands
/ |
/ |
/ |
/ | ./FILE
/ | Run an executable file as a program. Needless to say that Merlin is executable ...
/ |
/ |
/ | COMMAND > FILE
/ | Send standard output (stdout) for the command to a file.
/ | (The file is overwritten.)
/ |
/ |
/ | COMMAND 2> FILE
/ | Send error output (stderr) for the command to a file.
/ | (The file is overwritten.)
/ |
/ |
/ | COMMAND < FILE
/ | Send the file to the standard input (stdin) of the command.
(_ _)—(_ _)

```
~/Castle/Observatory
[mission 36] $ ./merlin 2> secret_key_stderr
THESECRETKEYISONSTDERR

~/Castle/Observatory
[mission 36] $ cat secret_key_stderr
MExpWhbzFFDTWCwrActHihxKfyaNrynfSmJCeNzVMAoFubnwGbjustWaknVZTawWhplRsUyQlZcXGmKGkeYMQnoqTRjRlJssokdsDVWdGSimgEyXauf
hHUhegNeWhGuSBGdObIaWynbgUuklCp0JDGffPQLCJqpxDxHidSDSaPYYRpHAUbhFsptbQTpJMBUmihWTkXet

~/Castle/Observatory
[mission 36] $ gsh check < secret_key_stderr
What is the secret key?
Congratulations, mission 36 has been successfully completed!
```

Livello 37

Obiettivo: Accedere agli alloggi del Re.

Istantanea: In ~/Castle/Main_building/Throne_room/, abbiamo provato a usare cd Kings_quarter/ ma l'accesso è stato negato. Abbiamo usato chmod u+x Kings_quarter per aggiungere il permesso di esecuzione alla directory e poi siamo riusciti ad entrarvi con cd Kings_quarter/. gsh check ha completato il livello.

```
/&\\_.. _____ ._\\&\\_
\\/_\\_|| Mission goal
|| _____
|| The door to the King's quarter is in the throne room.
|| Go to the King's quarter.
|| Remark
|| _____
|| Access to this part of the castle is probably restricted.
|| _____
|| Useful commands
|| _____
|| ls -l
|| List the files with their important meta-data.
|| Access permissions are listed first on each line.
|| chmod [OPTIONS] FILE
|| Modify the permissions for the file (or directory).
|| Refer to the manual to discover which options are available.
/_\\_.. _____ ._\\&\\_
\\/_\\_||
```

```
~/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 Kings_quarter
total 0

~/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] $ gsh check

Congratulations, mission 37 has been successfully completed!
```

Livello 38

Obiettivo: Trovare la combinazione della cassaforte.

Istantanea: In ~/Castle/Main_building/Throne_room/Kings_quarter/, abbiamo trovato il file nascosto .secret_note con ls -a. La lettura con cat è fallita per mancanza di permessi, verificati con ls -l. Abbiamo aggiunto il permesso di lettura con chmod u+r .secret_note e poi letto la combinazione con cat. gsh check ha completato il livello.

```
(())=()
_____
| Mission goal
| _____
| The King is rumored to keep the combination to his safe written on a note in his
| room.
| Find that combination.
|
| Remark
| _____
| The King probably tried to make this note unreadable!
|
| Useful commands
| _____
| ls -l
|   Lists the files with their important meta-data.
|
|   Access permissions are listed first on each line.
|
| chmod [OPTIONS] FILE
|   Modifies the permissions for the file (or directory).
|
|   Refer to the manual to discover which options are available.
| _____
| )=()
| _____
| @=()
```

```
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ ls -a
./ .. /  note .secret_note

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ cat .secret_note
cat: .secret_note: Permission denied

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ ls -l .secret_note
--w--w--- 1 kali kali 11 Apr 22 08:47 .secret_note

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

~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ cat .secret_note
2162640632

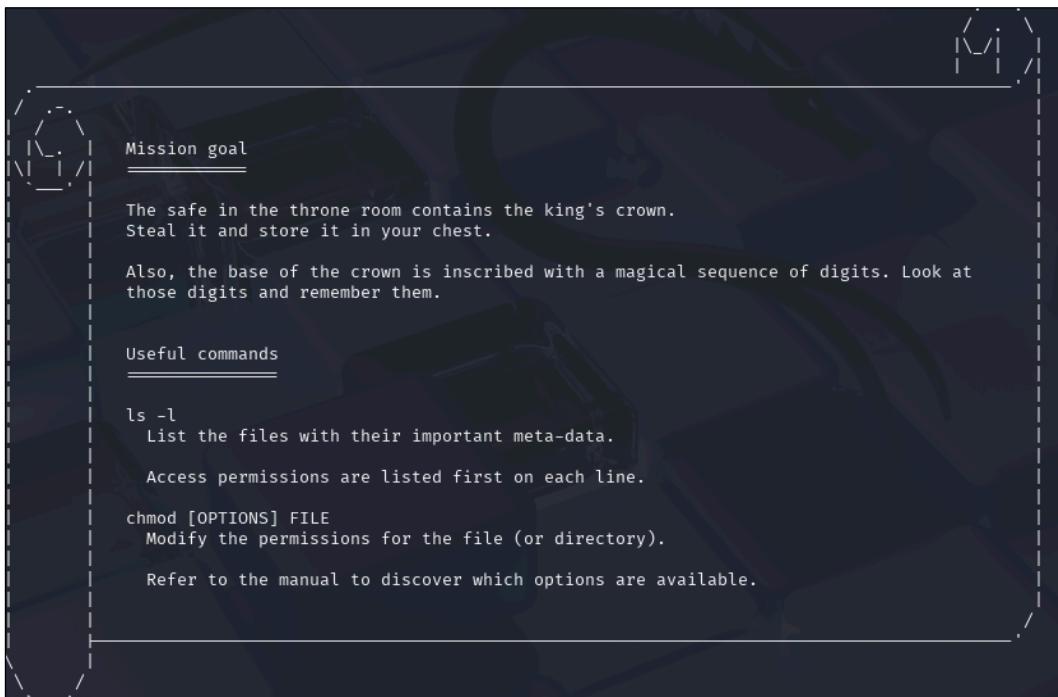
~/Castle/Main_building/Throne_room/Kings_quarter
[mission 38] $ gsh check
What's the combination to open the King's safe? 2162640632

Congratulations, mission 38 has been successfully completed!
```

Livello 39

Obiettivo: Prendere la corona e memorizzare il codice.

Istantanea: In ~/Castle/Main_building/Throne_room/Safe/, abbiamo letto crown con cat per trovare il codice 367. Abbiamo copiato la corona nel nostro forziera (~/Forest/Hut/Chest/) con cp e poi risposto al gsh check con il codice.



```
~/Castle/Main_building/Throne_room/Safe
[mission 39] $ cat crown
jgs
(^_+_-)
\@*@\@/
{367_}

~/Castle/Main_building/Throne_room/Safe
[mission 39] $ cp crown ~/Forest/Hut/Chest/crown

~/Castle/Main_building/Throne_room/Safe
[mission 39] $ cd ~/Forest/Hut/Chest/

~/Forest/Hut/Chest
[mission 39] $ ls
21047_tapestry_01 30803_tapestry_03 61426_tapestry_07 coin_3 journal.txt standard_1
21875_tapestry_05 32513_tapestry_02 61461_tapestry_06 CROWN 00000_copper_coin_00000 standard_2
23883_tapestry_09 51028_tapestry_08 coin_1 gold_coin_1 00000_silver_coin_00000 standard_3
24099_tapestry_04 61190_tapestry_10 coin_2 Gold_CoiN_2 painting_mWFNcRLH standard_4

~/Forest/Hut/Chest
[mission 39] $ gsh check
What are the 3 digits inscribed on the base of the crown? 367

Congratulations, mission 39 has been successfully completed!
```

Livello 40

Obiettivo: Trovare e spostare il rubino nel forziere.

Istantanea: In ~/Garden/Maze/, abbiamo usato cat su un file dal nome lungo e passato l'output a grep ruby per trovare il file contenente "ruby". Abbiamo poi spostato questo file nel forziere (~/Forest/Hut/Chest/) con mv. gsh check ha completato il livello.

```
/ \
| Mission goal
\_|

Look for the ruby in the maze in the garden, and move it to your chest.

System: esercizio_u...ndows server...
Hint
|_
The filename does not contain the string "ruby". Since there aren't many files in the
maze, a possible strategy is to look for all **files** (as opposed to directories),
and check by hand which one contains the string "ruby".

Useful commands
|_
find
Search files / directories from the current working directory.

Conditions may be added about names, size, modification date, etc.
An interesting condition is:
    -type TYPE

cat FILE
Output the content of the file on the screen.

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
|_
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 "-type" in
the manual.)
|_/
\_|
```

```
~/Garden/Maze
[mission 40] $ cat ./6202420fca4247fb69/ca5b608ebf8179ae275110/86af1fb84985bbd17069/43035 | grep "ruby"
43035 ruby ad95081ac6bf87d50c940c4c58640ddd0411a5dd

~/Garden/Maze
[mission 40] $ mv ./6202420fca4247fb69/ca5b608ebf8179ae275110/86af1fb84985bbd17069/43035 ~/Forest/Hut/Chest/

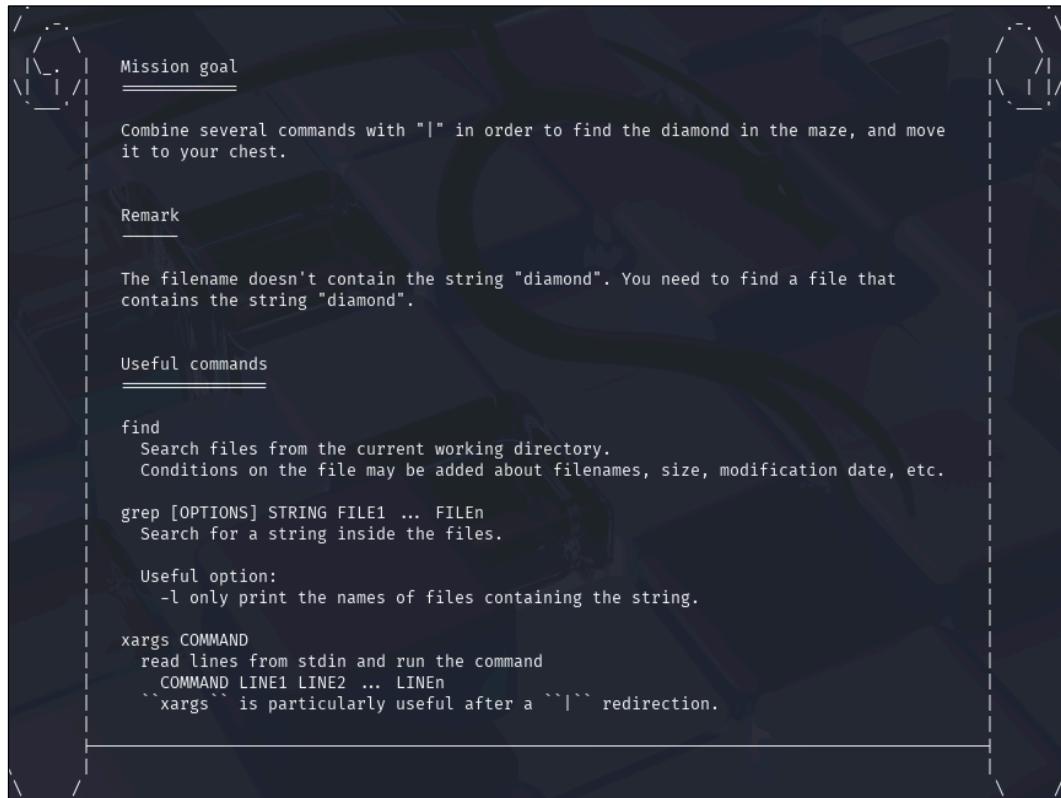
~/Garden/Maze
[mission 40] $ gsh check

Congratulations, mission 40 has been successfully completed!
```

Livello 41

Obiettivo: Trovare e spostare il diamante usando una pipe.

Istantanea: In ~/Garden/Maze/, abbiamo usato `find . -type f | xargs grep -l "diamond"` per trovare il file del diamante. Poi, con `find . -type f | xargs grep -l "diamond" | xargs mv -t ~/Forest/Hut/Chest/`, abbiamo passato il nome del file trovato a `mv` tramite `xargs` per spostarlo nel forziere. `gsh check` ha completato il livello.



```
~/Garden/Maze
[mission 41] $ find . -type f | xargs grep -l "diamond"
./a8531d757/0d85da0f58ffc/8cb84c88c06a0440ec70

~/Garden/Maze
[mission 41] $ find . -type f | xargs grep -l "diamond" | xargs mv -t ~/Forest/Hut/Chest/

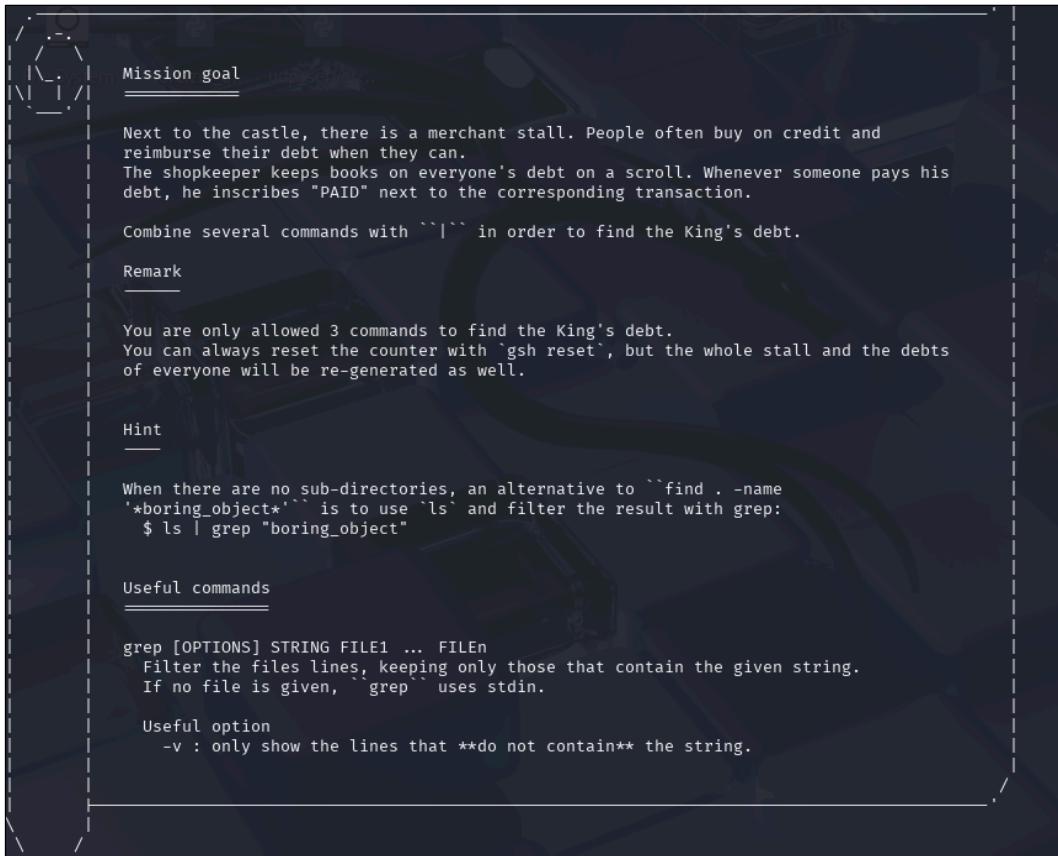
~/Garden/Maze
[mission 41] $ gsh check

Congratulations, mission 41 has been successfully completed!
```

Livello 42

Obiettivo: Trovare il debito non saldato del Re.

Istantanea: Abbiamo usato find e grep (con xargs) per cercare nei file le transazioni del Re e poi filtrato quelle che *non* contenevano "PAID" (probabilmente con grep -v "PAID"). Il gsh check ha rivelato che l'ammontare dovuto era 26.



```
~/Stall
[mission 42] $ find . -maxdepth 1 -type f -print0 | xargs -0 grep -v "PAID" | grep "King"
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought a wooden spoon for 5 coppers.
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought a blanket for 2 coppers.
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought an apple for 5 coppers.
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought a goat for 4 coppers.
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought a bag flour for 5 coppers.
./f8501dd5ab47_s_c_r_o_l_l_f8501dd5ab47ca34:the King bought a pick for 5 coppers.
(1)
~/Stall
[mission 42] $ gsh check
How much does the king owe? 26

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

Livello 43

Obiettivo: Trovare il numero di articoli non pagati con una pipe.

Istantanea: Abbiamo usato cat \$(grep -l "bought" *) | grep "bought" | grep -v "PAID" | wc -l per trovare il file dei debiti, filtrare le transazioni di acquisto non pagate e contarle, ottenendo 63 come risultato. gsh check ha confermato la risposta.

```
)=(_____  
|  
| Mission goal  
| _____  
|  
| 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.  
|  
| Useful commands  
| _____  
|  
| grep [OPTIONS] STRING FILE1 ... FILEn  
|   Filter the files lines, keeping only those that contain the given string.  
|   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.  
)=(_____
```

```
~/Stall  
[mission 43] $ cat $(grep -l "bought" *) | grep "bought" | grep -v "PAID" | wc -l  
63  
(1)  
~/Stall  
[mission 43] $ gsh check  
How many unpaid items are there? 63  
  
Congratulations, mission 43 has been successfully completed!
```

Livello 44

Obiettivo: Decifrare il messaggio segreto.

Istantanea: Abbiamo letto secret_message e tentato una decifratura con tr (shift 15), ma il risultato non era chiarissimo. Tuttavia, rispondendo al gsh check con la parola cifrata pxkv presente nel messaggio originale, abbiamo completato il livello e l'intera serie di missioni!

/ \

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 = "klmnop"`
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] $ cat secret_message | tr 'abcdefghijklmnopqrstuvwxyz' 'opqrstuvwxyzabcdefghijklmnopqrstuvwxyz'
here is my will:
you will get my chest, and everything it contains.
this chest is in the cellar, and the word to make
it re-appear is: pxkv
merlin the enchanter

~/Castle/Main_building/Library/Merlin_s_office/Drawer
[mission 44] $ gsh check
What's the key that will make Merlin's chest to appear?
pxkv

Congratulations, mission 44 has been successfully completed!
[ progress was saved in /home/kali/gameshell-save.sh ]

CONGRATULATIONS!
You have finished all the missions.
```

