

# GameShell: a "game" to teach the Unix shell

## CSPT0324 Modulo 2



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## Consegna esercizio

### Traccia:

Nell'esercizio di oggi installeremo su Kali Linux un gioco per familiarizzare con i comandi della shell.

Installazione:

Per installare il gioco GameShell, eseguire in ordine i seguenti comandi, assicurarsi di avere connettività ad Internet prima e di aver eseguito il comando **sudo apt update**

**sudo apt install gettext man-db procps psmisc nano tree bsdmainutils x11-apps wget**

**wget <https://github.com/phyver/GameShell/releases/download/latest/gameshell.sh>**

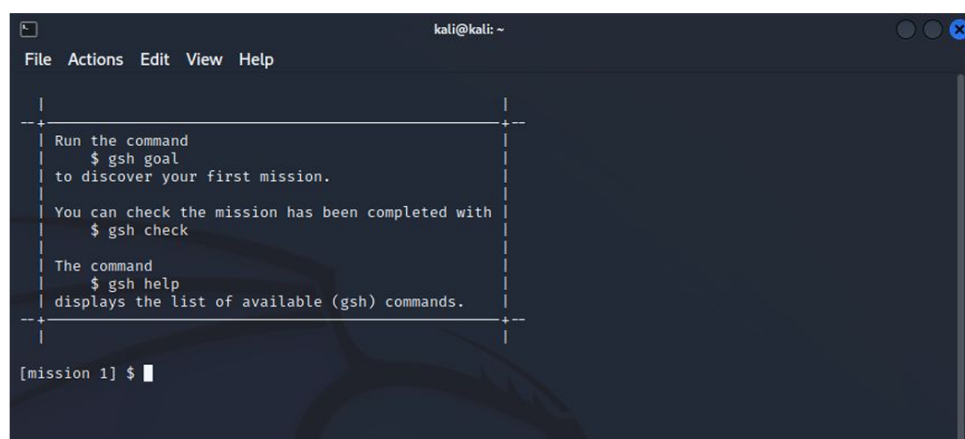
Una volta eseguiti i comandi, il gioco può essere lanciato con il comando bash **gameshell.sh**

### Struttura del gioco:

Il gioco è strutturato in più livelli, l'avanzamento di livello richiede il completamento di particolari missioni. Per ogni livello si può controllare la missione ed il suo stato con i comandi:

# **gsh goal** □ mostra la missione per il livello corrente

# **gsh check** □ controlla lo stato della missione attuale (se completata o meno)



```
kali@kali: ~  
File Actions Edit View Help  
+-----+  
| Run the command  
| $ gsh goal  
| to discover your first mission.  
+-----+  
| You can check the mission has been completed with  
| $ gsh check  
+-----+  
| The command  
| $ gsh help  
| displays the list of available (gsh) commands.  
+-----+  
[mission 1] $
```

## Sviluppo del gioco:

Per capire meglio come andare avanti, facciamo qualche livello insieme.

Per prima cosa una volta fatto partire il gioco, controlliamo la missione del livello attuale con «gsh goal»

La missione, che trovate nella sezione «Mission Goal» è «raggiungete la cima della torre principale del castello». Tra i comandi utili c'è **cd**, quindi molto probabilmente si tratterà di raggiungere una directory particolare. Iniziamo a vedere in che directory stiamo con il comando «**pwd**» e poi vediamo quali sono le directory presenti con il comando «**ls**»

```
Replace them by appropriate (string) values.
Most filesystems treat uppercase and lowercase characters differently.
Make sure you use the correct path.

()=(
[mission 1] $ pwd
/home/kali/gameshell/World
[mission 1] $ ls
Castle Forest Garden Mountain Stall
```

```
File Actions Edit View Help

The command
$ gsh help
displays the list of available (gsh) commands.

[mission 1] $ gsh goal

()=(
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.

()=(
```

## Sviluppo del gioco:

Lanciamo **cd Castle** per entrare nel castello e di nuovo «**ls**» per vedere le sottodirectory presenti. Troviamo «main tower», visto che il nostro obiettivo è raggiungere la cima di «main tower» proviamo ad entrare con «**cd**» in «main tower» ed eseguiamo sempre «**ls**» per vedere le sottodirectory presenti.

Troviamo «first\_floor», entriamo con «**cd**» e di nuovo «**ls**», ripetendo il processo troveremo prima «second\_floor» e successivamente «Top\_of\_the\_tower». Una volta entrati in questa directory, siamo arrivati in cima alla torre. Eseguiamo **gsh check** per avere conferma che la missione è completata.

```
Cellar Great_hall Main_building Main_tower Observatory
[mission 1] $ cd Main_tower/
[mission 1] $ ls
First_floor
[mission 1] $ cd First_floor/
[mission 1] $ ls
Second_floor
[mission 1] $ cd Second_floor/
[mission 1] $ ls
Top_of_the_tower
[mission 1] $ cd Top_of_the_tower/
[mission 1] $ ls
[mission 1] $ gsh check

Congratulations, mission 1 has been successfully completed!
```

```
Replace them by appropriate (string) values.
Most filesystems treat uppercase and lowercase characters differently.
Make sure you use the correct path.

()=(
[mission 1] $ pwd
/home/kali/gameshell/World
[mission 1] $ ls
Castle Forest Garden Mountain Stall
```

```
UPPERCASE words appearing in commands are meta-variables: you
replace them by appropriate (string) values.
Most filesystems treat uppercase and lowercase characters differently.
Make sure you use the correct path.

()=(
[mission 1] $ pwd
/home/kali/gameshell/World
[mission 1] $ ls
Castle Forest Garden Mountain Stall
[mission 1] $ cd Castle/
[mission 1] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[mission 1] $
```

```
Make sure you use the correct path.

()=(
[mission 1] $ pwd
/home/kali/gameshell/World
[mission 1] $ ls
Castle Forest Garden Mountain Stall
[mission 1] $ cd Castle/
[mission 1] $ ls
Cellar Great_hall Main_building Main_tower Observatory
[mission 1] $ cd Main_tower/
[mission 1] $ ls
First_floor
[mission 1] $
```

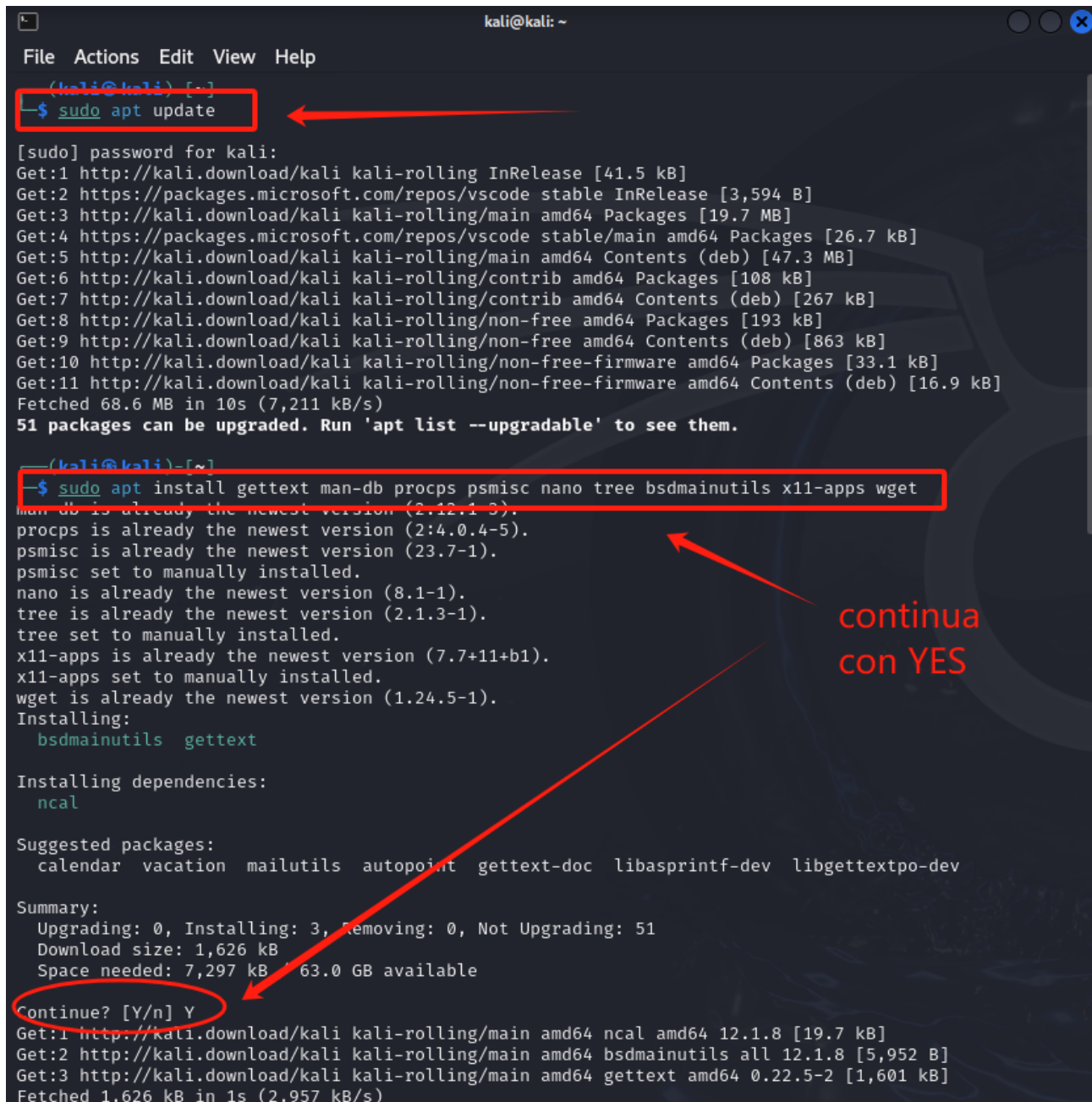
## Sviluppo del gioco:

Cercate di completare quanti più livelli possibili.

## Installazione

Assicurarsi che Kali Linux sia correttamente configurato con la connessione a rete esterna, internet: DHCP attivo e che sia connesso alla Scheda con bridge.

Inserire i comandi della traccia nel terminale Kali.



```
kali@kali: ~  
File Actions Edit View Help  
(kali@kali) [~]  
$ sudo apt update  
[sudo] password for kali:  
Get:1 http://kali.download/kali kali-rolling InRelease [41.5 kB]  
Get:2 https://packages.microsoft.com/repos/vscode stable InRelease [3,594 B]  
Get:3 http://kali.download/kali kali-rolling/main amd64 Packages [19.7 MB]  
Get:4 https://packages.microsoft.com/repos/vscode stable/main amd64 Packages [26.7 kB]  
Get:5 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [47.3 MB]  
Get:6 http://kali.download/kali kali-rolling/contrib amd64 Packages [108 kB]  
Get:7 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [267 kB]  
Get:8 http://kali.download/kali kali-rolling/non-free amd64 Packages [193 kB]  
Get:9 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [863 kB]  
Get:10 http://kali.download/kali kali-rolling/non-free-firmware amd64 Packages [33.1 kB]  
Get:11 http://kali.download/kali kali-rolling/non-free-firmware amd64 Contents (deb) [16.9 kB]  
Fetched 68.6 MB in 10s (7,211 kB/s)  
51 packages can be upgraded. Run 'apt list --upgradable' to see them.  
  
(kali@kali) [~]  
$ sudo apt install gettext man-db procs psmisc nano tree bsdmainutils x11-apps wget  
man-db is already the newest version (2:12.1-3).  
procs is already the newest version (2:4.0.4-5).  
psmisc is already the newest version (23.7-1).  
psmisc set to manually installed.  
nano is already the newest version (8.1-1).  
tree is already the newest version (2.1.3-1).  
tree set to manually installed.  
x11-apps is already the newest version (7.7+11+b1).  
x11-apps set to manually installed.  
wget is already the newest version (1.24.5-1).  
Installing:  
  bsdmainutils  gettext  
  
Installing dependencies:  
  ncal  
  
Suggested packages:  
  calendar vacation mailutils autopoint gettext-doc libasprintf-dev libgettextpo-dev  
  
Summary:  
  Upgrading: 0, Installing: 3, Removing: 0, Not Upgrading: 51  
  Download size: 1,626 kB  
  Space needed: 7,297 kB / 63.0 GB available  
  
Continue? [Y/n] Y  
Get:1 http://kali.download/kali kali-rolling/main amd64 ncal amd64 12.1.8 [19.7 kB]  
Get:2 http://kali.download/kali kali-rolling/main amd64 bsdmainutils all 12.1.8 [5,952 B]  
Get:3 http://kali.download/kali kali-rolling/main amd64 gettext amd64 0.22.5-2 [1,601 kB]  
Fetched 1,626 kB in 1s (2,957 kB/s)
```

continua  
con YES



```
(kali@kali) [~]
$ wget https://github.com/phyver/GameShell/releases/download/latest/gameshell.sh
--2024-09-01 13:02:01-- https://github.com/phyver/GameShell/releases/download/latest/gameshell.sh
Resolving github.com (github.com)... 140.82.121.4
Connecting to github.com (github.com)|140.82.121.4|:443 ... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/94422621/5d32ba9d-07f2-4e1a-b968-0d2145050985?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20240901%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240901T170204.6X-Amz-Expires=3006X-Amz-Signature=6397283fdf910527f61bf75323e9a99f19373747d964e1ac6129c5f14aa924cb6X-Amz-SignedHeaders=host&actor_id=0&key_id=0&repo_id=94422621&response-content-disposition=attachment%3B%20filename%3Dgameshell.sh&response-content-type=application%2Foctet-stream [following]
--2024-09-01 13:02:01-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/94422621/5d32ba9d-07f2-4e1a-b968-0d2145050985?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20240901%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240901T170204.6X-Amz-Expires=3006X-Amz-Signature=6397283fdf910527f61bf75323e9a99f19373747d964e1ac6129c5f14aa924cb6X-Amz-SignedHeaders=host&actor_id=0&key_id=0&repo_id=94422621&response-content-disposition=attachment%3B%20filename%3Dgameshell.sh&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.111.133, 185.199.108.133, 185.199.109.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.111.133|:443 ... connected.
HTTP request sent, awaiting response... 200 OK
Length: 210298 (205K) [application/octet-stream]
Saving to: 'gameshell.sh'

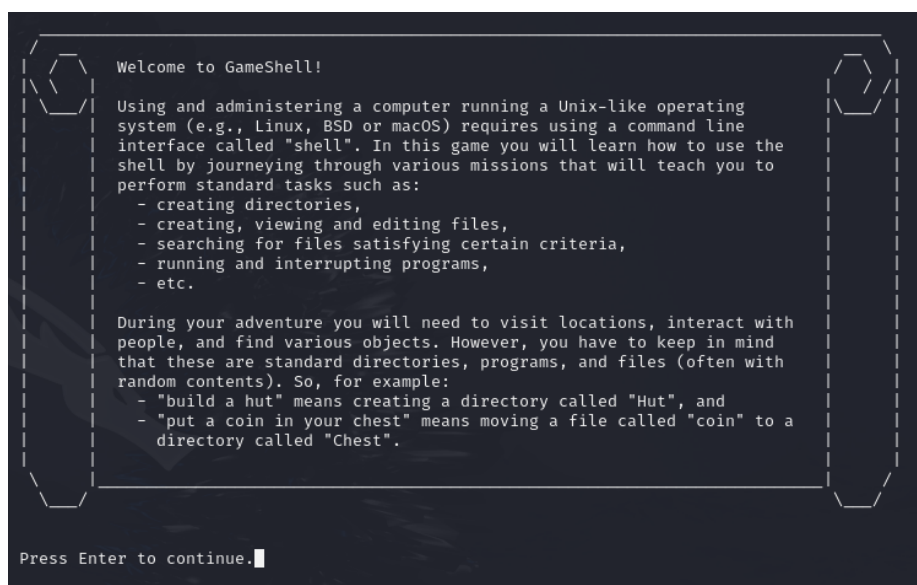
gameshell.sh          100%[=====] 205.37K  --.-KB/s   in 0.05s

2024-09-01 13:02:02 (4.37 MB/s) - 'gameshell.sh' saved [210298/210298]
```

Avviare il gioco con il comando **"bash gameshell.sh"**



Iniziare a giocare e seguire le istruzioni del gioco.



## Inizio del gioco

### Livello 1

```
Congratulations, mission 1 has been successfully completed!

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

[mission 2] $ █
```

### Livello 10

```
^
(-----)
/ Mission goal
/
/
/ You have taken a fancy to the four standards in the great hall of the
/ castle. As stealing them would not go unnoticed, put a copy (same
/ name, same content) of each in your chest.
/
/ Useful commands
/
/ cp FILE DIRNAME
/ Copy the file to the directory.
/ Remark: ``cp`` is an abbreviation of "copy".
(-----)
^

~/Castle/Cellar
[mission 10] $ cd /home/kali/gameshell/World/Castle/Great_hall/

~/Castle/Great_hall
[mission 10] $ ls
27198_decorative_shield 49617_suit_of_armour standard_2 standard_4
47475_stag_head         standard_1             standard_3

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

~/Castle/Great_hall
[mission 10] $ gsh check

Congratulations, mission 10 has been successfully completed!
```

## Livello 25

```
~/Mountain/Cave
[mission 25] $ gsh goal
```

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.

## Livello 36

```
~/Castle/Observatory
[mission 36] $ ./merlin < star_chart > key.txt
jLTnBPTImHiIBtUX0trqGKXCYtopXtgYurwjoYgTnQtTUtRyOFHRgbSXCqqcKBcvqzLaaqJBmVsOryFPJVDiFYNZdbuEjQTKvFoWTeqItNPhNmLUgcLkBXUz
fxnRQYnasIvvVJbTQyFcrhjAAzNFpvtgvWsGW0zSjeFcQv0zvCOCxnEHRpHafbUwsuzZANKIehLzMaex

~/Castle/Observatory
[mission 36] $ ./merlin < star_chart 2> merlin2.txt
THESECREKEYISONSTDERR

~/Castle/Observatory
[mission 36] $ cat merlin2.txt
jLTnBPTImHiIBtUX0trqGKXCYtopXtgYurwjoYgTnQtTUtRyOFHRgbSXCqqcKBcvqzLaaqJBmVsOryFPJVDiFYNZdbuEjQTKvFoWTeqItNPhNmLUgcLkBXUz
fxnRQYnasIvvVJbTQyFcrhjAAzNFpvtgvWsGW0zSjeFcQv0zvCOCxnEHRpHafbUwsuzZANKIehLzMaex

~/Castle/Observatory
[mission 36] $ gsh check <merlin2.txt
What is the secret key?
Congratulations, mission 36 has been successfully completed!
```

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

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

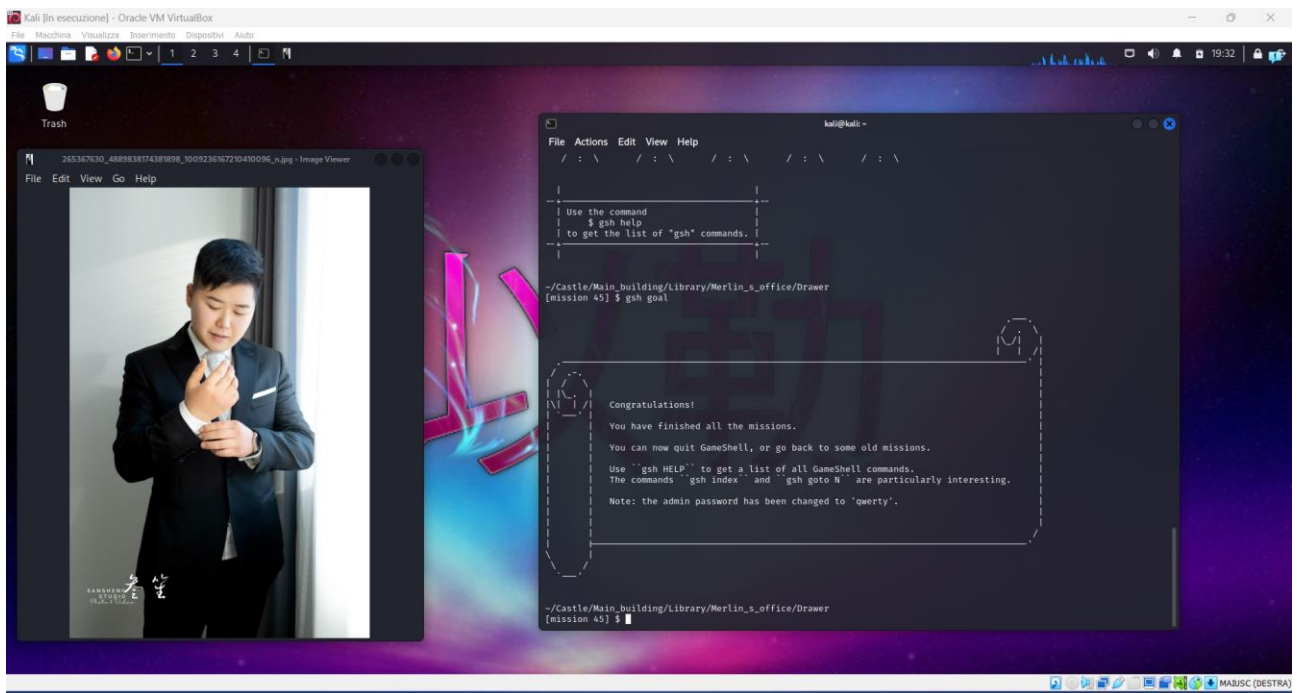


## Livello 45 – Livello Finale

```
kali@kali: ~  
File Actions Edit View Help  
it re-appear is: yymt  
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?  
yymt  
  
Congratulations, mission 44 has been successfully completed!  
  
CONGRATULATIONS!  
  
You have finished all the missions.  
  
Use the command  
$ gsh help  
to get the list of "gsh" commands.  
  
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 45] $
```

```
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 45] $ gsh goal  
  
Congratulations!  
  
You have finished all the missions.  
  
You can now quit GameShell, or go back to some old missions.  
  
Use ``gsh HELP`` to get a list of all GameShell commands.  
The commands ``gsh index`` and ``gsh goto N`` are particularly interesting.  
  
Note: the admin password has been changed to 'qwerty'.  
  
~/Castle/Main_building/Library/Merlin_s_office/Drawer  
[mission 45] $
```

## Prova dell'effettivo successo



Link video: <https://youtu.be/t8IMTfCAFny> (visibile solo per chi ha il link)