



```
override@Atul-HP: ~  
override@Atul-HP:~$ ls -l  
total 212  
drwxrwxr-x  5 override override 4096 May 19 03:45 acadenv  
drwxrwxr-x  4 override override 4096 May 27 18:20 acadview_demo  
drwxrwxr-x 12 override override 4096 May  3 15:14 anaconda3  
drwxr-xr-x  6 override override 4096 May 31 16:49 Desktop  
drwxr-xr-x  2 override override 4096 Oct 21  2016 Documents  
drwxr-xr-x  7 override override 4096 Jun  1 13:09 Downloads  
-rw-r--r--  1 override override 8980 Aug  8  2016 examples.desktop  
-rw-rw-r--  1 override override 45005 May 28 01:40 hs_err_pid1971.log  
-rw-rw-r--  1 override override 45147 Jun  1 03:24 hs_err_pid2006.log  
drwxr-xr-x  2 override override 4096 Mar  2 18:22 Music  
drwxrwxr-x 21 override override 4096 Dec 25 00:13 Mydata  
drwxrwxr-x  2 override override 4096 Sep 20  2016 newbin  
drwxrwxr-x  5 override override 4096 Dec 20 22:44 nltk_data  
drwxr-xr-x  4 override override 4096 May 31 20:46 Pictures  
drwxr-xr-x  2 override override 4096 Aug  8  2016 Public  
drwxrwxr-x  2 override override 4096 May 31 19:49 scripts  
drwxr-xr-x  2 override override 4096 Aug  8  2016 Templates  
drwxrwxr-x  2 override override 4096 Feb 14 11:22 test  
drwxr-xr-x  2 override override 4096 Mar 11 13:27 Videos  
drwxrwxr-x  2 override override 4096 Sep  1  2016 xdm-helper  
override@Atul-HP:~$
```

Source: <https://www.geeksforgeeks.org/introduction-linux-shell-shell-scripting/>

LINUX FUNDAMENTALS PROJECT: PERSONAL LINUX

Name: Muhd Fazil Istamar

Class: Centre for Cybersecurity (Batch – CFC240722)

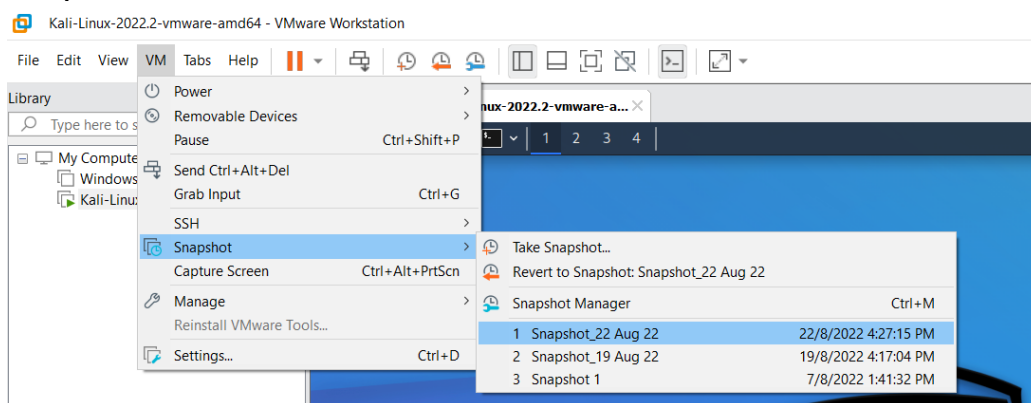
Trainer Name: James Lim

Objective

Create your own Kali Linux Virtual Machine with your own shell and name banner.

Project

A. Snapshot of Kali Linux



B. Creation of new user and addition of new user to 'sudo' group

- Created a new user 'mdfazel' using command: `sudo adduser mdfazel`
- Added new user to 'sudo' user group using command: `sudo usermod -aG sudo mdfazel`
- Checked if the user has been created using command: `cat /etc/passwd | grep mdfazel`

```
(fazel@kali)-[~]  
$ cat /etc/passwd | grep mdfazel  
mdfazel:x:1003:1003:,,,:/home/mdfazel:/bin/bash
```

- Checked the user group memberships of user 'mdfazel' using command: `id mdfazel`

```
(fazel@kali)-[/]  
$ id mdfazel  
uid=1003(mdfazel) gid=1003(mdfazel) groups=1003(mdfazel),27(sudo)
```

C. Change of user 'mdfazel' shell language

- Logged in to Kali Linux as user 'mdfazel'
- Searched for user 'mdfazel' in passwd file using command: `cat /etc/passwd | grep mdfazel`
- Changed the shell language to zsh using command: `sudo usermod --shell /bin/zsh mdfazel`
- Verified the shell language of user 'mdfazel' using the same 1st command

```
(mdfazel@kali)-[/]  
$ cat /etc/passwd | grep mdfazel  
mdfazel:x:1003:1003:,,,:/home/mdfazel:/bin/bash  
  
(mdfazel@kali)-[/]  
$ sudo usermod --shell /bin/zsh mdfazel  
[sudo] password for mdfazel:  
  
(mdfazel@kali)-[/]  
$ cat /etc/passwd | grep mdfazel  
mdfazel:x:1003:1003:,,,:/home/mdfazel:/bin/zsh
```

D. Figlet – Name Banner

- Installed figlet using command: **sudo apt-get install figlet**

```
(mdfazil@kali)~$ sudo apt-get install figlet
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
figlet is already the newest version (2.2.5-3+b1).
The following packages were automatically installed and are no longer required:
  libltn1-ust-ctl4 libltn1-ust0
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 233 not upgraded.
```

- Locate .zshrc file using command: **locate .zshrc**

```
(mdfazil@kali)~$ locate .zshrc
/etc/skel/.zshrc
/etc/zsh/newuser.zshrc.recommended
/etc/zsh/newuser.zshrc.recommended.original
/home/fazil/.zshrc
/home/kali/.zshrc
/home/newuser/.zshrc
/usr/share/doc/zsh-common/examples/carstenh.zshrc
/usr/share/doc/zsh-common/examples/old/jhm.zshrc
/usr/share/kali-defaults/etc/zsh/newuser.zshrc.recommended
```

- Checked for list of fonts available by accessing **/usr/share/figlet** using **'ls'** command

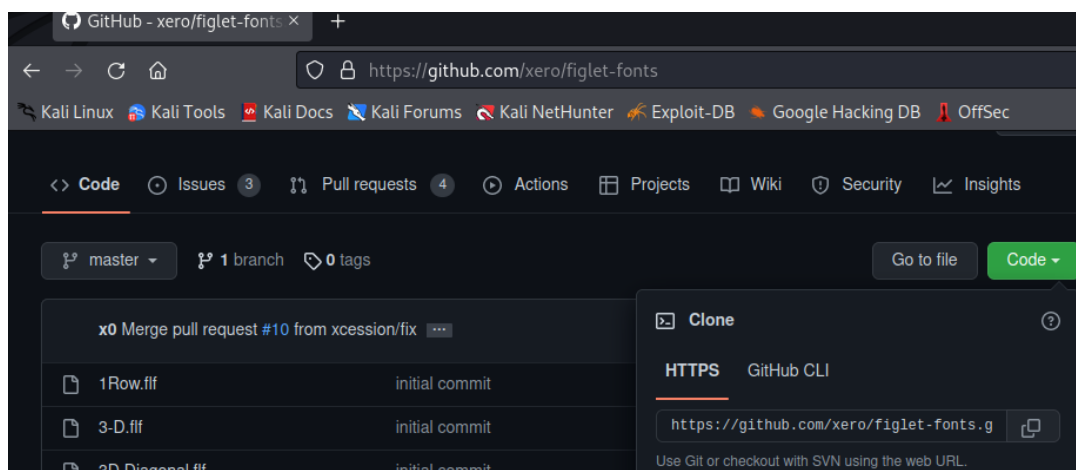
```
(mdfazil@kali)~$ ls /usr/share/figlet
646-ca2.flc  646-es2.flc  646-it.flc  646-pt.flc  8859-4.flc  ascii9.tlf  bigmono9.tlf  emboss.tlf  jis0201.flc  mono12.tlf  slant.flc  smmono12.tlf  term.flc
646-ca.flc   646-es.flc   646-jp.flc  646-se2.flc  8859-5.flc  banner.flf  block.flf     frango.flc  koi8r.flc    mono9.tlf   small.flf  smmono9.tlf   upper.flc
646-cn.flc   646-fr.flc   646-kr.flc  646-se.flc   8859-7.flc  bigasci12.tlf  bubble.flf    future.flf   lean.flf     moscow.flc  smasci12.tlf  smscript.flf  ushebrew.flc
646-cu.flc   646-gb.flc   646-no2.flc  646-yu.flc   8859-8.flc  bigasci19.tlf  circle.tlf     hz.flc       letter.tlf   pagga.tlf   smasci19.tlf  smshadow.flf  uskata.flc
646-de.flc   646-hu.flc   646-no.flc   8859-2.flc   8859-9.flc  big.flf       digital.tlf    ilhebrew.flc  mini.flf     script.flf  smbblock.tlf  smslant.flf   utf8.flc
646-dk.flc   646-irv.flc  646-pt2.flc  8859-3.flc   asci112.tlf  bigmono12.tlf  emboss2.tlf   ivrit.flf    mnemonic.flc  shadow.flf  smbraille.tlf  standard.flf  wideterm.tlf
```

- New fonts can be installed if the default fonts are not to user liking:-

- 1) Google for figlet fonts github
- 2) Navigate to one of the link:-

```
https://github.com > xero > figlet-fonts
my collection of figlet / toilet ascii art fonts - GitHub
my collection of figlet / toilet ascii art fonts. Contribute to xero/figlet-fonts development by
creating an account on GitHub.
```

- 3) Click on Code button and copy the HTTPS URL



- ```
(mdfazil@kali)-[~/usr/share/figlet]
$ cd ~

(mdfazil@kali)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos

(mdfazil@kali)-[~]
$ mkdir FigletFonts

(mdfazil@kali)-[~]
$ ls
Desktop Documents Downloads FigletFonts Music Pictures Public Templates Videos

(mdfazil@kali)-[~]
$ cd FigletFonts

(mdfazil@kali)-[~/FigletFonts]
$ git clone https://github.com/xero/figlet-fonts.git
Cloning into 'figlet-fonts'...
remote: Enumerating objects: 439, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 439 (delta 0), reused 3 (delta 0), pack-reused 434
Receiving objects: 100% (439/439), 1.29 MiB | 5.69 MiB/s, done.
Resolving deltas: 100% (42/42), done.
```

- ```
(mfazil@kali) ~/~/figletFonts [~/figletFonts/figlet-fonts]
└─$ cd figlet-fonts

(mfazil@kali) ~/~/figletFonts/figlet-fonts
└─$ ls
1Row.flc  'AMC Thin.flc'  Contrast.flc  'Flower Power.flc'  'Konto Slant.flc'  'Monospace'  s-relief.flc
2D.flc  'AMC2II.flc'  cosmic.flc  fourtops.flc  'Larry 3D 2.flc'  README.md  Stacey.flc
3D_diagonal.flc  'AMC Tubes.flc'  Cosmic.flc  'Four Tops.flc'  'Larry3d.flc'  Rectangles.flc  Stampate.flc
'3D Diagonal.flc'  'ancun1.flc'  Crawford2.flc  'Fraktur.flc'  'Larry 3D.flc'  red.phoenix.flc  Stampatello.flc
3-D.flc  'AMC Untitled.flc'  Crawford.flc  frango.flc  LCD.flc  red.phoenix.flc  Standard.flc
3d-flc  'AMSI Regular.flc'  Crazy.flc  'Funface.flc'  'Lean Flc.flc'  'red Phoenix.flc'  starslps.flc
3-S.flc  'AMSI Shadow.flc'  Cricket.flc  'Fun Face.flc'  Letters.flc  Relief2.flc  'Star Strips.flc'
4Max.flc  Arrows.flc  Cursive.flc  funfaces.flc  letter.flc  Relief.flc  starwars.flc
'5 Line Oblique.flc'  'asci12.tlf'  'Cyberlarge.flc'  'Fun Faces.flc'  'lildevil.flc'  Reverse.flc  'Star Wars.flc'
5Lineoblique.flc  'asci19.tlf'  'Cybermedium.flc'  future.flc  'Lil Devil.flc'  rev.flc  Stellar.flc
646-ca2.flc  'ascil_new_roman.flc'  'Cybersmall.flc'  Fuzzy.flc  lineblocks.flc  Roman.flc  Stforek.flc
646-ca.flc  'ASCI1 New Roman.flc'  Cygnat.flc  'Gorgias.flc'  'Line Blocks.flc'  'Rot13.php'  'Stick Letters.flc'
646-cn.flc  Avatar.flc  'DANC4.flc'  'Georgi11.flc'  Linux.flc  Rotated.flc  Stop.flc
646-cu.flc  B1FF.flc  dancingfont.flc  Ghost.flc  'Logergnome.flc'  Rounded.flc  Straight.flc
646-de.flc  B1FF.php  'Dancing Font.flc'  'Ghoulish.flc'  Madrid.flc  rowanap.flc  'Stronger Than All.flc'
646-dk.flc  Banner3-D.flc  Decimal.flc  Gleny.flc  Marquee.flc  'rowanap.flc'  Sub-Zero.flc
646-es2.flc  Banner3.flc  'deffleppard.flc'  Goofy.flc  'Maxfour.flc'  'Rowan Cap.flc'  swampland.flc
646-ff.flc  Banner4.flc  'Def Leppard.flc'  Gothic.flc  'maxwei.flc'  Rozzo.flc  'Swamp Land.flc'
646-fr.flc  Banner.flc  'Delta Corps Priest 1.flc'  Graceful.flc  Merlin2.flc  Runic.flc  Swan.flc
646-gb.flc  Barbwire.flc  Diamond.flc  Gradient.flc  Merlino2.flc  Runyc.flc  Sweet.flc
646-hu.flc  Basic.flc  dietcola.flc  Graffiti.flc  Mike.flc  rustofat.tlf  Tanja.flc
646-irv.flc  Bear.flc  'Diet Cola.flc'  Greek.flc  Mini.flc  rusto.tlf  Tengwar.flc
646-it.flc  Bell.flc  Digital.flc  heart_left.flc  'miniwi.flc'  'santclara.flc'  Term.flc
646-jp.flc  Benjamin.flc  'DoH.flc'  'Heart Left.flc'  Mizzor.flc  'Santa Clara.flc'  Testi.flc
646-kr.flc  bigasci12.tlf  Doom.flc  'Heart Right.flc'  Mnemonic.flc  sblood.flc  'The Edge.flc'
646-no2.flc  bigasci19.tlf  dosrebel.flc  'Heart Right.flc'  Modular.flc  'S Blood.flc'  Thick.flc
646-no.flc  bigchief.flc  'DOS Rebel.flc'  Henry3d.flc  mono12.tlf  Script.flc  Thin.flc
646-pt2.flc  'Big Chief.flc'  dotmatrix.flc  'Henry 3D.flc'  mono01.flc  Serifcap.flc  THIS.flc
646-qd.flc  Bigfig.flc  'Dot Matrix.flc'  'Hox.flc'  Morse22.flc  Shadow.flc  Thorne.flc
646-se2.flc  Big.flc  Double.flc  Hieroglyphs.flc  Morse.flc  Shirod.flc  threepoint.flc
646-se.flc  'Big Money-me.flc'  doubleshorts.flc  Hollywood.flc  moscow.flc  Short.flc  'Three Point.flc'
646-yu.flc  'Big Money-mw.flc'  'Double Shorts.flc'  horizontalleft.flc  Moscow.flc  Slant.flc  Ticks.flc
8859-2.flc  'Big Money-se.flc'  drepper.flc  'Horizontal Left.flc'  'Mshewb210.flc'  'Slant Relief.flc'  ticksslant.flc
8859-3.flc  'Big Money-sw.flc'  'Dr Pepper.flc'  horizontalright.flc  Muzzle.flc  Slide.flc  'Ticks Slant.flc'
8859no12.flc  bigmono12.flc  'Distorted.flc'  Horizontal Right.flc  'Morse-Fancy.flc'  'slscript.flc'  Tiles.flc
8859no9.flc  bigmono9.flc  effichess.flc  hz.flc  'SL Script.flc'  Tinker-Toy.flc  Tinkers.flc
8859-7.flc  Binary.flc  'Efti Chess.flc'  ICL-1900.flc  Nancyj-Improved.flc  smallcaps.flc  Tombstone.flc
8859-8.flc  Block.flc  'Eftifont.flc'  ilhebrew.flc  Nancyj-Underlined.flc  'Small Caps.flc'  Train.flc
```

- ```

[mdfazil@kali] ~/FigletFonts/figlet-fonts
$ sudo mv ~/FigletFonts/figlet-fonts/* /usr/share/figlet

[mdfazil@kali] ~/FigletFonts/figlet-fonts
$ ls

[mdfazil@kali] ~/FigletFonts/figlet-fonts
$ cd /usr/share/figlet

[mdfazil@kali] [/usr/share/figlet]
$ ls
1Row.flf 'AMC Tubes.flf' Contrast.flf fourtops.flf larry3d.flf rebel.tlf s-relief.flf
3D-ASCII.flf amcun1.flf cosmic.flf 'Four Tops.flf' 'Larry 3D.flf' Rectangles.flf Stacey.flf
3d ASCII.ttf 'AMC Units.flf' 'Cosmic.flf' Fraktur.flf LCD.flf red_phoenix.flf Stampate.flf
'3D Diagonal.flf' 'ANSI Regular.flf' Crawford2.flf frango.flc lean.flf 'Red Phoenix.flf' Stampatello.flf
'3-D.flf' 'ANSI Shdow.flf' Crawford.flf funface.flf lean.flf Relief2.flf standard.flf

```

- Linux Fundamental Project: Personal Linux  
Centre for Cybersecurity (CFC); Batch 240722

- Installed lolcat to get a rainbow effect on terminal text using command: `sudo apt-get install lolcat`
- Try out the figlet on the terminal using this command: `figlet -cf 3d "Muhd Fazil"`

```
(mdfakil@kali)-[/]
$ figlet -cf 3d "Muhd Fazil"
```

**-cf** : (-c) Centralize the word and (-f) choose a font in /usr/share/figlet

**3d** : Name of the font file stored in /usr/share/figlet

**"Muhd Fazil"** : Choice of text

- Pipe through the text of figlet through another application 'lolcat' that will add in rainbow colours to the text using this command: `figlet -cf 3d "Muhd Fazil" | lolcat`

```
(mdfakil@kali)-[/]
$ figlet -cf 3d "Muhd Fazil" | lolcat
```

- Open .zshrc file using Nano editor in user's home folder `nano .zshrc`

```
GNU nano 6.3 .zshrc *
alias la='ls -A'
alias l='ls -CF'

enable auto-suggestions based on the history
if [-f /usr/share/zsh-autosuggestions/zsh-autosuggestions.zsh]; then
 . /usr/share/zsh-autosuggestions/zsh-autosuggestions.zsh
change suggestion color
ZSH_AUTOSUGGEST_HIGHLIGHT_STYLE='fg=#999'
fi

enable command-not-found if installed
if [-f /etc/zsh_command_not_found]; then
 . /etc/zsh_command_not_found
fi
figlet -cf 3d "Muhd Fazil" | lolcat
```

- Keyed in the figlet commands: `figlet -cf "Muhd Fazil" | lolcat`. Saved and exited from the terminal. Restarted Kali Linux and login as user 'mdfakil'. Launched the terminal.

```
(mdfakil@kali)-[~]
$
```

## E. Script – Details of the User

- Accessed user Created a new script file using command: `touch UD.zsh`
- The following script commands are keyed into `touch UD.zsh`

```
#!/bin/zsh
```

```
user=$(whoami)
echo "User Logged in as: $user"
echo
```

```
directory=$(pwd)
echo "The directory is: $directory"
echo
```

```
SL=$(echo $SHELL)
echo "Your Shell Language is: $SL"
echo
```

```
ilP=$(ifconfig | grep broadcast | awk '{print$2}')
```

```
(mdfazel@kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
 inet [redacted] netmask 255.255.255.0 broadcast [redacted]
 inet6 [redacted] prefixlen 64 scopeid 0x20<link>
 ether [redacted] txqueuelen 1000 (Ethernet)
 RX packets 930 bytes 141076 (137.7 KiB)
 RX errors 0 dropped 0 overruns 0 frame 0
 TX packets 272 bytes 23024 (22.4 KiB)
 TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
 inet 127.0.0.1 netmask 255.0.0.0
 inet6 ::1 prefixlen 128 scopeid 0x10<host>
 loop txqueuelen 1000 (Local Loopback)
 RX packets 0 bytes 0 (0.0 B)
 RX errors 0 dropped 0 overruns 0 frame 0
 TX packets 0 bytes 0 (0.0 B)
 TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

(mdfazel@kali)-[~]
└─$ ifconfig | grep broadcast
 inet [redacted] netmask 255.255.255.0 broadcast [redacted]

(mdfazel@kali)-[~]
└─$ ifconfig | grep broadcast | awk '{print$2}'
[redacted]
```

```
echo "User Internal IP Address: $ilP"
echo
```

```
DG=$(route | grep UG | awk '{print$2}')
```

```
(mdfazel@kali)-[~]
└─$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default [redacted] 0.0.0.0 UG 100 0 0 eth0
[redacted] 0.0.0.0 255.255.255.0 U 100 0 0 eth0

(mdfazel@kali)-[~]
└─$ route | grep UG
default [redacted] 0.0.0.0 UG 100 0 0 eth0

(mdfazel@kali)-[~]
└─$ route | grep UG | awk '{print$2}'
[redacted]
```

```
echo "Default Gateway: $DG"
```



```
mdfakil@kali: ~
File Actions Edit View Help
GNU nano 6.3 UD.zsh
#!/bin/zsh

As the script is using 'zsh' shell language, shebang command in the first line entry is set to '/bin/zsh'.
The script below makes use of terminal variable and 'echo' command to acquire details and print it out.
The 1st echo prints out the details obtained from the command of variable; together with a fixed text.
A 2nd echo is incorporated so that there is a line space in between line entries.
[1] Name of the user can be checked via 'whoami' command. A variable 'user' name is assigned for this.
[2] User working directory can be checked via 'pwd' command. A variable 'directory' name is assigned for this.
[3] User shell language can be checked via 'echo $SHELL' command. A variable 'SL' name is assigned for this.
[4] User internal IP address can be checked via the command within the variable 'iIP'.
[4a] 'ifconfig' command will print out different IP address. inet IP address is of interest.
[4b] 'grep' is used to filter the line entries.
[4c] 'awk {print$N}' is used to print out the column with inet IP address.
[5] Default gateway can be checked via the command within the variable 'DG'.
[5a] 'route' command will print out the routing table but the default gateway is of interest.
[5b] 'grep' is used to filter the line entry of interest using unique keyword 'UG'.
[5c] 'awk {print$N}' is used to print only the default gateway IP address.

user=$(whoami)
echo "User logged in as: $user"
echo
directory=$(pwd)
echo "User's current working directory: $directory"
echo
SL=$(echo $SHELL)
echo "User's shell language: $SL"
echo
iIP=$(ifconfig | grep broadcast | awk '{print$2}')
echo "User's internal IP Address: $iIP"
echo
DG=$(route | grep UG | awk '{print$2}')
echo "Default gateway: $DG"
```

- Run the script using this command: **zsh UD.zsh**

```
(mdfakil@kali)-[~]
$ zsh UD.zsh
User logged in as: mdfakil

User's current working directory: /home/mdfakil

User's shell language: /bin/zsh

User's internal IP Address:
Default gateway:
```

- Pipe through the script to lolcat for colourful line entries: **zsh UD.zsh | lolcat**

```
(mdfakil@kali)-[~]
$ zsh UD.zsh | lolcat
User logged in as: mdfakil

User's current working directory: /home/mdfakil

User's shell language: /bin/zsh

User's internal IP Address:
Default gateway:
```