

PART – 2 Bash Shell Scripting

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Questions:

1) Write a bash script to echo your name 25 times?

ANS.

A screenshot of a terminal window showing the GNU nano 6.0 text editor. The editor is open to a file named `#!/bin/bash`. The script contains the following code:

```
echo "Enter your Name "  
read Name  
  
for i in {1..25}  
do  
    echo " $Name "  
done
```

The terminal has a dark background with light blue and orange text. The prompt `#!/bin/bash` is at the top. The script uses `echo` and `read` commands, and a `for` loop to repeat the `echo` command 25 times.

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[illegible]

2) What command should I use to display the **first 30** entries of syslog file?

ANS.

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```
(kali@kali)-[~]
└─$ ls /var/log
alternatives.log  btmp          fontconfig.log  lastlog         nginx          runit          sysstat          Xorg.1.log
apache2          daemon.log    inetsim         lightdm         openvpn        samba          user.log         Xorg.1.log.old
apt             dpkg.log      installer       macchanger.log  postgresql     speech-dispatcher  wtmp
auth.log        faillog       journal         messages        private        stunnel4       Xorg.0.log
boot.log        faillog       kern.log        mysql           README         syslog         Xorg.0.log.old

(kali@kali)-[~]
└─$ head -30 /var/log/syslog
Feb 11 18:25:23 kali kernel: [ 0.000000] Linux version 5.15.0-kali3-amd64 (devel@kali.org) (gcc-11 (Debian 11.2.0-14) 11.2.0, GNU ld (GNU B
inutils for Debian) 2.37.90.20220123) #1 SMP Debian 5.15.15-2kali1 (2022-01-31)
Feb 11 18:25:23 kali kernel: [ 0.000000] Command line: BOOT_IMAGE=/boot/vmlinuz-5.15.0-kali3-amd64 root=UUID=491d3534-b3d9-47af-ad63-66b0e7
2fe8dd ro quiet splash
Feb 11 18:25:23 kali kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
Feb 11 18:25:23 kali kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
Feb 11 18:25:23 kali kernel: [ 0.000000] x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
Feb 11 18:25:23 kali kernel: [ 0.000000] x86/fpu: xstate_offset[2]: 576, xstate_sizes[2]: 256
Feb 11 18:25:23 kali kernel: [ 0.000000] x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'standard' format.
Feb 11 18:25:23 kali kernel: [ 0.000000] signal: max sigframe size: 1776
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-provided physical RAM map:
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x0000000000100000-0x00000000007fffff] usable
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x0000000007ff0000-0x0000000007fffff] ACPI data
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x00000000fec00000-0x00000000fec0ffff] reserved
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x00000000fee00000-0x00000000fee0ffff] reserved
Feb 11 18:25:23 kali kernel: [ 0.000000] BIOS-e820: [mem 0x00000000ffffc000-0x00000000ffffffffff] reserved
Feb 11 18:25:23 kali kernel: [ 0.000000] NX (Execute Disable) protection: active
Feb 11 18:25:23 kali kernel: [ 0.000000] SMBIOS 2.5 present.
Feb 11 18:25:23 kali kernel: [ 0.000000] DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
Feb 11 18:25:23 kali kernel: [ 0.000000] Hypervisor detected: KVM
Feb 11 18:25:23 kali kernel: [ 0.000000] kvm-clock: Using msrs 4b564d01 and 4b564d00
Feb 11 18:25:23 kali kernel: [ 0.000000] kvm-clock: cpu 0, msr 3ca01001, primary cpu clock
Feb 11 18:25:23 kali kernel: [ 0.000001] kvm-clock: using sched offset of 10400722342 cycles
Feb 11 18:25:23 kali kernel: [ 0.000003] clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb, max_idle_ns: 881590591
483 ns
Feb 11 18:25:23 kali kernel: [ 0.000004] tsc: Detected 3599.992 MHz processor
Feb 11 18:25:23 kali kernel: [ 0.000649] e820: update [mem 0x00000000-0x00000fff] usable ==> reserved
Feb 11 18:25:23 kali kernel: [ 0.000651] e820: remove [mem 0x000a0000-0x000fffff] usable
Feb 11 18:25:23 kali kernel: [ 0.000654] last_pfn = 0x7ffff max_arch_pfn = 0x400000000
Feb 11 18:25:23 kali kernel: [ 0.000661] Disabled

(kali@kali)-[~]
└─$
```

3) What command should I use to display the last 30 entries of syslog file?

ANS.

```
(kali@kali)-[~]
└─$ ls /var/log
alternatives.log  boot.log      dpkg.log      installer      lightdm        nginx          README         stunnel4      wtmp          Xorg.1.log.old
apache2          daemon.log    faillog       journal        macchanger.log openvpn        postgresql     samba         syslog        Xorg.0.log
auth.log         debug        fontconfig.log lastlog        messages       private        speech-dispatcher  user.log     Xorg.0.log
boot.log         faillog       kern.log      mysql          README         syslog         Xorg.0.log.old

(kali@kali)-[~]
└─$ tail -30 /var/log/syslog
Feb 27 08:15:32 kali systemd[49975]: Stopped Accessibility services bus.
Feb 27 08:15:32 kali systemd[49975]: Stopping PipeWire Multimedia Service...
Feb 27 08:15:32 kali systemd[49975]: Stopped Virtual filesystem service.
Feb 27 08:15:32 kali systemd[49975]: Stopped PipeWire Multimedia Service.
Feb 27 08:15:32 kali systemd[49975]: Removed slice User Core Session Slice.
Feb 27 08:15:32 kali systemd[49975]: Stopped target Basic System.
Feb 27 08:15:32 kali systemd[49975]: Stopped target Paths.
Feb 27 08:15:32 kali systemd[49975]: Stopped target Sockets.
Feb 27 08:15:32 kali systemd[49975]: Stopped target Timers.
Feb 27 08:15:32 kali systemd[49975]: Closed D-Bus User Message Bus Socket.
Feb 27 08:15:32 kali systemd[49975]: Closed GnuPG network certificate management daemon.
Feb 27 08:15:32 kali systemd[49975]: Closed GnuPG cryptographic agent and passphrase cache (access for web browsers).
Feb 27 08:15:32 kali systemd[49975]: Closed GnuPG cryptographic agent and passphrase cache (restricted).
Feb 27 08:15:32 kali systemd[49975]: Closed GnuPG cryptographic agent (ssh-agent emulation).
Feb 27 08:15:32 kali systemd[49975]: Closed GnuPG cryptographic agent and passphrase cache.
Feb 27 08:15:32 kali systemd[49975]: Closed PipeWire Multimedia System Socket.
Feb 27 08:15:32 kali systemd[49975]: Closed Sound System.
Feb 27 08:15:32 kali systemd[49975]: Removed slice User Application Slice.
Feb 27 08:15:32 kali systemd[49975]: Reached target Shutdown.
Feb 27 08:15:32 kali systemd[49975]: Finished Exit the Session.
Feb 27 08:15:32 kali systemd[49975]: Reached target Exit the Session.
Feb 27 08:15:32 kali systemd[1]: user@130.service: Deactivated successfully.
Feb 27 08:15:32 kali systemd[1]: Stopped User Manager for UID 130.
Feb 27 08:15:32 kali systemd[1]: Stopping User Runtime Directory /run/user/130 ...
Feb 27 08:15:32 kali systemd[1]: run-user-130.mount: Deactivated successfully.
Feb 27 08:15:32 kali systemd[1]: user-runtime-dir@130.service: Deactivated successfully.
Feb 27 08:15:32 kali systemd[1]: Stopped User Runtime Directory /run/user/130.
Feb 27 08:15:32 kali systemd[1]: Removed slice User Slice of UID 130.
Feb 27 08:15:32 kali systemd[1]: user-130.slice: Consumed 1.355s CPU time.
Feb 27 08:17:01 kali CRON[53080]: (root) CMD ( cd / && run-parts --report /etc/cron.hourly)

(kali@kali)-[~]
└─$
```

4) What command should I use to arrange the entries of a file?

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i. *Alphabetical*

ANS.

```
GNU nano 6.0
Apples
Oranges
Grapes
Cherries
Pineapple
Alpino mangoes
Watermelon
Muskmelon
Plum
Peach
Kiwifruit
Gauva
Leechi
Jackfruit
Sugarcane
Goose berry
Pomegranate
Avocado
```

PART – 2 Bash Shell Scripting

```
(kali㉿kali)-[~]  
$ nano Fruits.txt  
  
(kali㉿kali)-[~]  
$ sort Fruits.txt  
  
Alpino mangoes  
Apples  
Avocado  
Cherries  
Gauva  
Goose berry  
Grapes  
Jackfruit  
Kiwifruit  
Leechi  
Muskmelon  
Oranges  
Peach  
Pineapple  
Plum  
Pomegranate  
Sugarcane  
Watermelon
```

ii. *Reverse order*

ANS.

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```
(kali㉿kali)-[~]  
$ sort -r Fruits.txt  
Watermelon  
Sugarcane  
Pomegranate  
Plum  
Pineapple  
Peach  
Oranges  
Muskmelon  
Leechi  
Kiwifruit  
Jackfruit  
Grapes  
Goose berry  
Gauva  
Cherries  
Avocado  
Apples  
Alpino mangoes
```

```
(kali㉿kali)-[~]  
$ sort -r Numbers.txt  
9  
8  
7  
6  
5  
4  
3  
2  
1  
0  
  
(kali㉿kali)-[~]  
$
```

iii. Numerical order

ANS.

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```
GNU nano 6.0
1
2
3
4
5
6
7
8
9
0
```

```
(kali㉿kali)-[~]
$ nano Numbers.txt

(kali㉿kali)-[~]
$ sort Numbers.txt

0
1
2
3
4
5
6
7
8
9

(kali㉿kali)-[~]
$ sort -n Numbers.txt

0
1
2
3
4
5
6
7
8
9

(kali㉿kali)-[~]
$
```

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5) Copee is a hard-working cop. He found a case and almost at the verge of cracking it. It could be his best breakthrough. He has the list of criminals but lots of duplicates are there. He needs to find the only one that is *different*. He sought your help. How will you sort this issue?

ANS.

```
GNU nano 6.0
Bob John
Melvin Josei
Jiang Xuiachan
Gu Qiao
Hade's Lair
Adam Hall
James Parker
Christina Martis
Janet
Allen
Bob John
Gu Qiao
Allen
Adam Hall
Adam Hall
Bella Hadid
Bella Hadid
Janet
Janet
Mike
Mike
Kevin
Melvin Josei
Jose House
```


PART – 2 Bash Shell Scripting

```
(kali㉿kali)-[~]  
$ nano Criminal list.txt  
  
(kali㉿kali)-[~]  
$ sort Criminal list.txt  
  
Adam Hall  
Adam Hall  
Adam Hall  
Allen  
Allen  
Bella Hadid  
Bella Hadid  
Bob John  
Bob John  
Christina Martis  
Gu Qiao  
Gu Qiao  
Hade's Lair  
James Parker  
Janet  
Janet  
Janet  
Jiang Xuiachan  
Jose House  
Kevin  
Melvin Josei  
Melvin Josei  
Mike  
Mike
```

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```
(kali㉿kali)-[~]
$ sort Criminal_list.txt | uniq

Adam Hall
Allen
Bella Hadid
Bob John
Christina Martis
Gu Qiao
Hade's Lair
James Parker
Janet
Jiang Xuiachan
Jose House
Kevin
Melvin Josei
Mike

(kali㉿kali)-[~]
$
```

6) What are the Three parts of file's permission?

ANS.

Read (r) : Allows to read a file.

Write (w) : Allows to make changes to the content of the file.

Execute (x) : Allows to use the file as a command.

```
# ls -l file
-rw-r--r-- 1 root root 0 Nov 19 23:49 file
```

r = Readable
w = Writeable
x = Executable
- = Denied