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DT/NT : DT

LESSON : LINUX

SUBJECT : WORKING WITH FILE CONTENTS

SESSION : 3

BATCH : B 303

AWS-DEVOPS

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Text Editors

Vi/Vim Editor

- Vi is a text editor originally created for the Unix operating system.
- Vim (Vi IMproved) as its name suggests, is a clone of Vi and offers more features than Vi.

The reasons why we should use Vi/Vim editor.

- Vim is available on most linux distro's.
- Vim Uses Less Amount of System Resources.
- Vim Supports All Programming Languages and File Formats
- Vim is Very Popular in the Linux World.

Vim Editor

vim filename

- Vim is a powerful text editor used in CLI (command line interface).
- Vim is an editor to create or edit a text file.

Insert Mode

- You cannot write text in command mode. To write text into a file, there is a dedicated insert mode. When you want to write something on a file, you must enter the insert mode.

Command Mode

- When you start Vim, you are placed in Command mode. In this mode, you can move across the screen, delete text and copy text.

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Vim Editor

Vim Command	Decription
i	Enter insert mode
Esc	Enter command mode
x or Del	Delete a character
X	Delete character is backspace mode
u	Undo changes
Ctrl + r	Redo changes
yy	Copy a line
dd	Delete a line
p	Paste the content of the buffer
[[or gg	Move to the beginning of a file
]] or G	Move to the end of a file
:%s/foo/bar/g	Search and replace all occurrences
Esc + :w	Save changes
Esc + :wq or Esc + ZZ	Save and quit Vim

Nano Editor

nano filename

- GNU nano is a small and friendly text editor.
- Besides basic text editing, nano offers features like:

- undo/redo
- syntax coloring
- interactive search-and-replace
- auto-indentation
- line numbers
- word completion
- file locking, backup files
- internationalization support.

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Nano Editor

- Unlike vim, nano is a modeless editor, which means that you can start typing and editing the text immediately after opening the file.
- To open an existing file or to create a new file, type nano followed by the file name.

```
nano filename
```

Nano Command	Meaning
Ctrl G	Get Help
Ctrl X	Exit
Ctrl O	Write Out
Ctrl R	Read File
Ctrl W	Where Is
Ctrl \	Replace
Ctrl K	Cut Text
Ctrl U	Uncut Text
Ctrl J	Justify
Ctrl T	To Spell
Ctrl C	Cur Pos
Alt U	Undo
Alt E	Redo

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Working With File Contents

Working with File Contents

head	output the first ten lines of a file.

```
linuxuser@techproeducation:/etc$ ls passwd
passwd
linuxuser@techproeducation:/etc$ head passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
linuxuser@techproeducation:/etc$
```

Working with File Contents

head -n	output the first n lines of a file.

```
linuxuser@techproeducation:/etc$ head -5 passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
linuxuser@techproeducation:/etc$
```

Working with File Contents

tail	output the last ten lines of a file.

```
linuxuser@techproeducation:/etc$
linuxuser@techproeducation:/etc$ tail passwd
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:106:112::/run/uuidd:/usr/sbin/nologin
tcpdump:x:107:113::/nonexistent:/usr/sbin/nologin
linuxuser:x:1000:1000::/home/linuxuser:/bin/bash
linuxuser@techproeducation:/etc$
linuxuser@techproeducation:/etc$
```

Working with File Contents

tail -n	output the last n lines of a file.

```
linuxuser@techproeducation:/etc$ tail -5 passwd
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:106:112::/run/uuidd:/usr/sbin/nologin
tcpdump:x:107:113::/nonexistent:/usr/sbin/nologin
linuxuser:x:1000:1000::/home/linuxuser:/bin/bash
linuxuser@techproeducation:/etc$
```

Working with File Contents

cat	Display a file on the screen.

```
linuxuser@techproeducation:/etc$ cat passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologinproxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:106:112::/run/uuidd:/usr/sbin/nologin
tcpdump:x:107:113::/nonexistent:/usr/sbin/nologin
linuxuser:x:1000:1000::/home/linuxuser:/bin/bash
linuxuser@techproeducation:/etc$
```

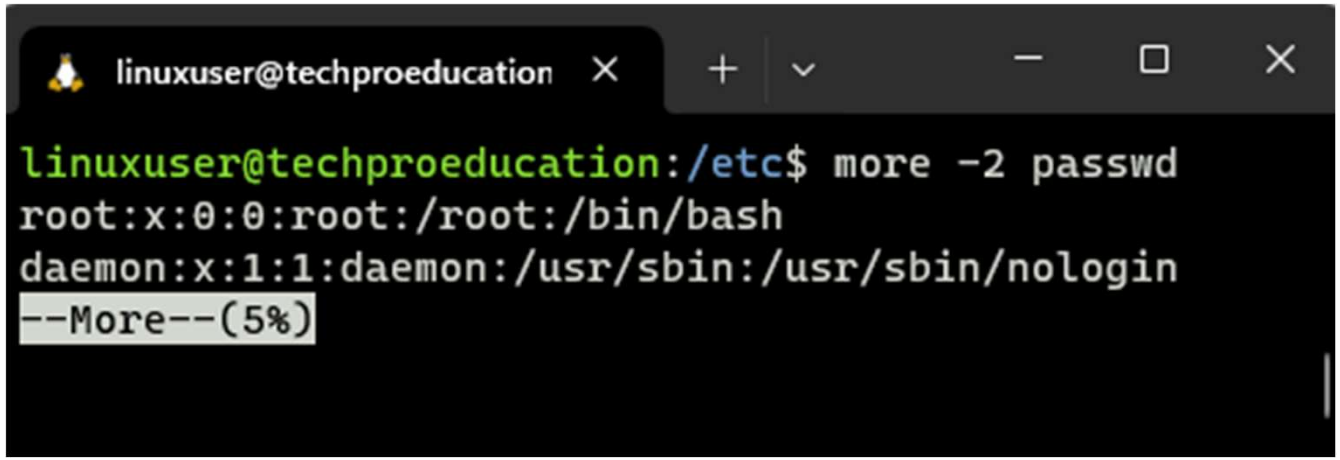
Working with File Contents

more view (but not modify) the contents of a text file one screen at a time.

```
linuxuser@techproeducation:
linuxuser@techproeducation:/etc$
linuxuser@techproeducation:/etc$ more passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
--More--(48%)
```

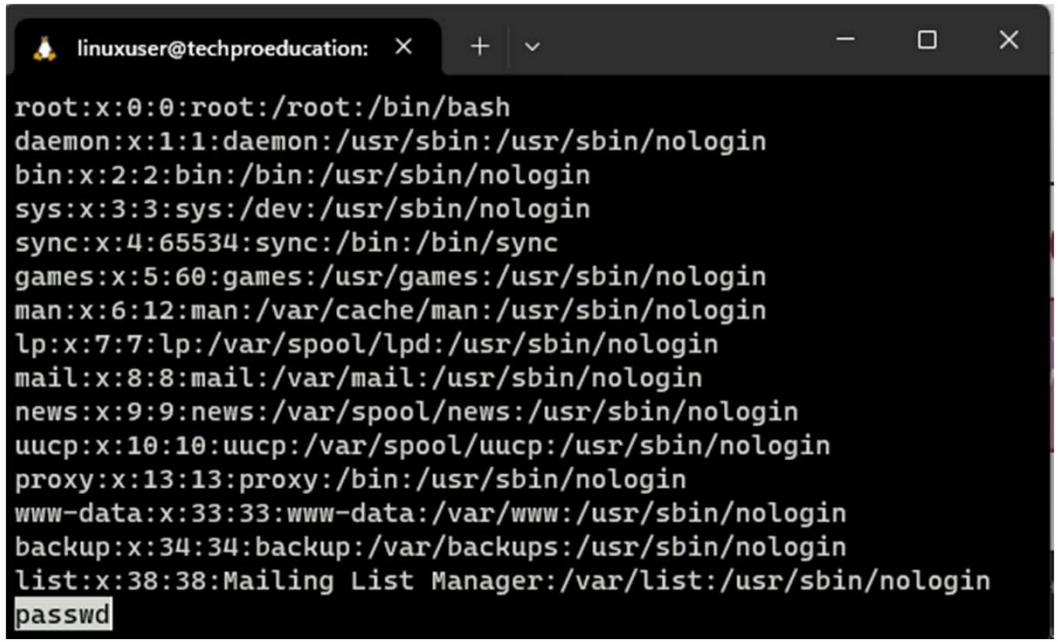
Working with File Contents

more -n This option specifies an integer which is the screen size (in lines).



Working with File Contents

less Similar to more, less command allows you to view the contents of a file and navigate through file. The main difference between more and less is that less command is faster because it does not load the entire file at once.



Working with File Contents

tac	concatenate and print files in reverse.

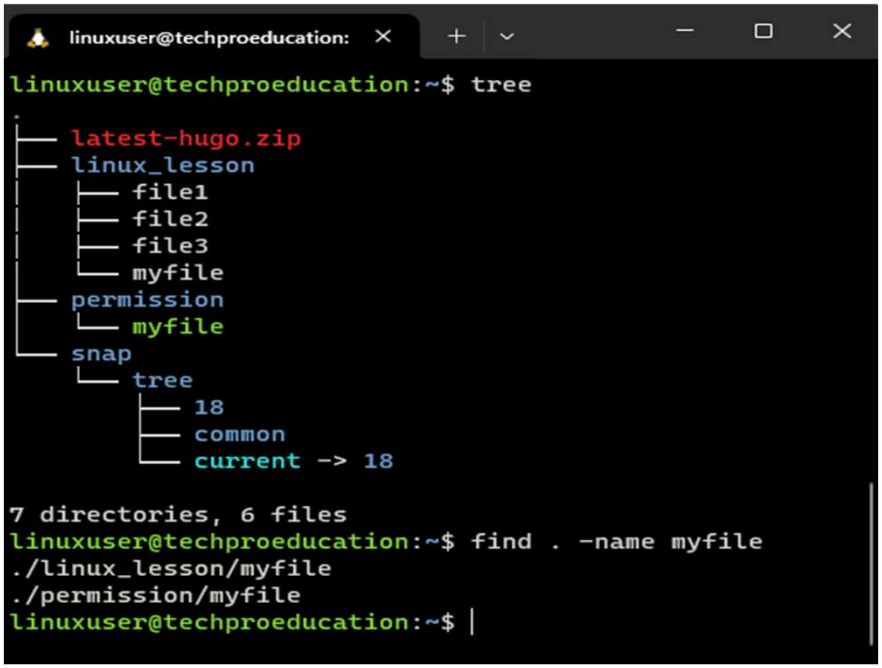
```
linuxuser@techproeducation:/etc$
linuxuser@techproeducation:/etc$ tac passwd
linuxuser:x:1000:1000::/home/linuxuser:/bin/bash
tcpdump:x:107:113::/nonexistent:/usr/sbin/nologin
uuidd:x:106:112::/run/uuidd:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
sys:x:3:3:sys:/dev:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
root:x:0:0:root:/root:/bin/bash
```

Searching Files

Searching Files

find	search for files in a directory hierarchy.

```
find [starting-point...] [expression]
```



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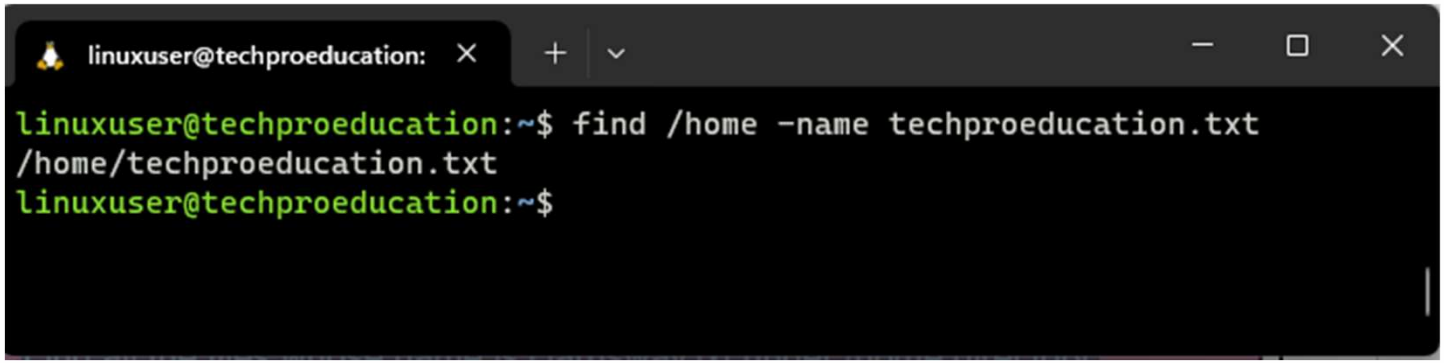
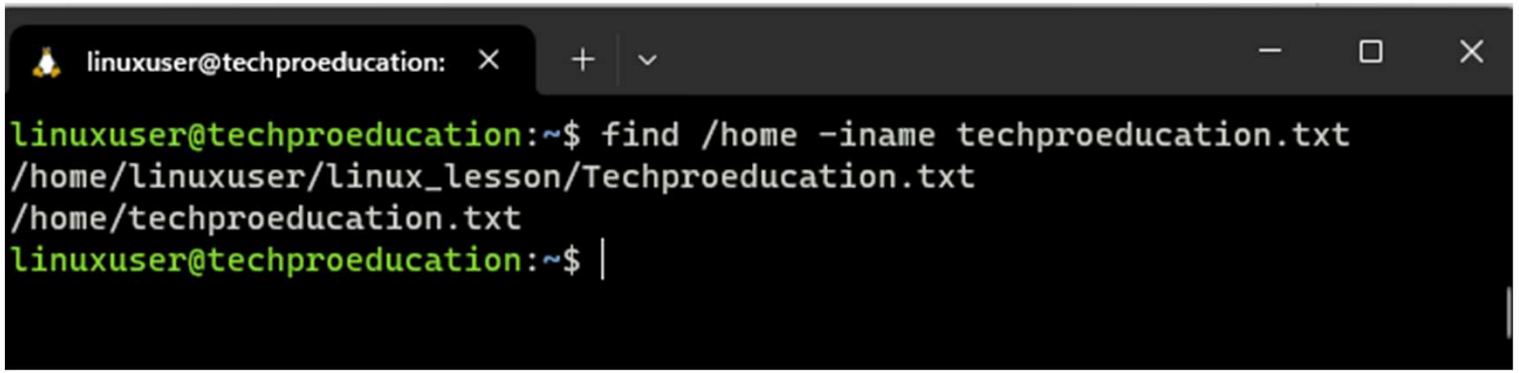
Searching Files

find	Find all the files whose name is techproeducation.txt under /home directory.



Searching Files

find	Find all the files whose name is techproeducation.txt and contains both capital and small letters in /home directory.



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Searching Files

grep	The grep, which stands for "global regular expression print," is used to search text.

```
grep [options] pattern [files]
```

Options	Description
-c	This prints only the number of lines that match a pattern
-h	Do not display the filenames headers.
-i	Ignores, case for matching
-l	Displays list of a filenames only.
-n	Display the matched lines and their line numbers.
-v	This prints out all the lines that do not matches the pattern

Searching Files

grep	The grep searches the given file for lines containing a match to the given strings or words.

```
linuxuser@techproeducation:~/linux_lesson$ cat Techproeducation.txt
Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operating
 system that manages system resources and serves as an interface between software and hardware. While the term "Linux" is often used to refer to the
 entire operating system, it technically only represents the kernel.

The Linux operating system is known for its stability, security, and flexibility. It has become a popular choice for a wide range of computing platf
orms, from servers and mainframes to embedded systems and personal computers. Many distributions, or "distros," build upon the Linux kernel to creat
e complete operating systems that include additional software, libraries, and utilities.

Some well-known Linux distributions include Ubuntu, Debian, Fedora, CentOS, Arch Linux, and many more. Each distribution may have its own package ma
nagement system, desktop environment, and default configurations, providing users with a variety of options based on their preferences and needs.

One of the key features of Linux is its open-source nature, meaning that the source code is freely available for anyone to view, modify, and distrib
ute. This has contributed to the development of a large and active community of developers and users who collaborate on improving and expanding the
Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$ grep "linux" Techproeducation.txt
linuxuser@techproeducation:~/linux_lesson$ grep "Linux" Techproeducation.txt
Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operating
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ute. This has contributed to the development of a large and active community of developers and users who collaborate on improving and expanding the
Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$
```

Searching Files

grep -n Returns the result of lines matching the search string.

```
linuxuser@techproeducation:
linuxuser@techproeducation:~/linux_lesson$ cat Techproeducation.txt
Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operating
 system that manages system resources and serves as an interface between software and hardware. While the term "Linux" is often used to refer to the
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Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$ grep -n "Linux" Techproeducation.txt
1:Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operati
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3:The Linux operating system is known for its stability, security, and flexibility. It has become a popular choice for a wide range of computing pla
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5:Some well-known Linux distributions include Ubuntu, Debian, Fedora, CentOS, Arch Linux, and many more. Each distribution may have its own package
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7:One of the key features of Linux is its open-source nature, meaning that the source code is freely available for anyone to view, modify, and distr
ibute. This has contributed to the development of a large and active community of developers and users who collaborate on improving and expanding th
e Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$
```

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Searching Files

grep -c	Returns the number of lines in which the results matched the search string.

```
linuxuser@techproeducation:
linuxuser@techproeducation:~/linux_lesson$ cat Techproeducation.txt
Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operating
 system that manages system resources and serves as an interface between software and hardware. While the term "Linux" is often used to refer to the
 entire operating system, it technically only represents the kernel.

The Linux operating system is known for its stability, security, and flexibility. It has become a popular choice for a wide range of computing platf
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Some well-known Linux distributions include Ubuntu, Debian, Fedora, CentOS, Arch Linux, and many more. Each distribution may have its own package ma
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One of the key features of Linux is its open-source nature, meaning that the source code is freely available for anyone to view, modify, and distrib
ute. This has contributed to the development of a large and active community of developers and users who collaborate on improving and expanding the
Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$ grep -c "Linux" Techproeducation.txt
4
linuxuser@techproeducation:~/linux_lesson$
```

Searching Files

grep -v	Returns the result of lines not matching the search string.

```
linuxuser@techproeducation:
linuxuser@techproeducation:~/linux_lesson$ cat Techproeducation.txt
Linux is an open-source, Unix-like operating system kernel first created by Linus Torvalds in 1991. The kernel is the core component of an operating
 system that manages system resources and serves as an interface between software and hardware. While the term "Linux" is often used to refer to the
 entire operating system, it technically only represents the kernel.

The Linux operating system is known for its stability, security, and flexibility. It has become a popular choice for a wide range of computing platf
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e complete operating systems that include additional software, libraries, and utilities.

Some well-known Linux distributions include Ubuntu, Debian, Fedora, CentOS, Arch Linux, and many more. Each distribution may have its own package ma
nagement system, desktop environment, and default configurations, providing users with a variety of options based on their preferences and needs.

One of the key features of Linux is its open-source nature, meaning that the source code is freely available for anyone to view, modify, and distrib
ute. This has contributed to the development of a large and active community of developers and users who collaborate on improving and expanding the
Linux ecosystem.
linuxuser@techproeducation:~/linux_lesson$ grep -v "Linux" Techproeducation.txt



linuxuser@techproeducation:~/linux_lesson$
```

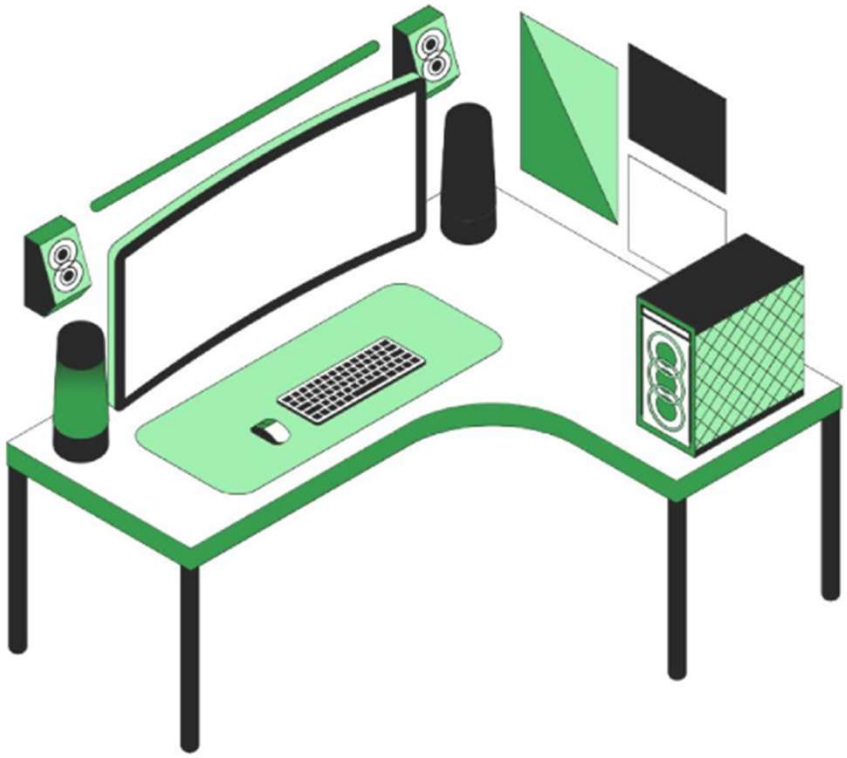

Do you have any questions?

Send it to us! We hope you learned something new.