

The Grep Family

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Grep Overview 🧐

The grep command searches for a pattern of characters in a file or multiple files. If the pattern contains whitespace, it must be quoted. The pattern is either a quoted string or a single word, and all other words following it are treated as filenames. Grep sends its output to the screen and does not change or affect the input file in any way.

Objectives 🎯

This tutorial will teach you how to write grep commands that will be used in your Linux server. Before getting started, make sure you know the filename and where it is in the Linux directory.


 `cd /directory/file`

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1: Print all lines containing the string "Lane"✓

i grep 'Lane' GrepLab

- grep is the command.
- 'Lane' is the word we want to print.
- GrepLab is the file we are searching in.

Since Lane is in quotes, the command will look through each line for the exact match.

```
Idave@localhost ~1$ ls
GrepLab
Idave@localhost ~1$ grep 'Lane' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300
Betty Boop:245-836-8357:635 Cutesy Lane, Hollywood, CA 91464:6/23/23:14500
Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Ephram Hardy:293-259-5395:235 CarltonLane, Joliet, IL 73858:8/12/20:56700
Dorothy Gale:923-835-8745:23 Wimp Lane, Kensington, DL 38758:8/31/69:126000
Molly Weasley:387-827-1095:13 Uno Lane, Ashville, NC 23556:7/1/29:57000
Idave@localhost ~1$ _
```

Example of command line code

2: Print all lines where the person's first name starts with "H".✓

i cat GrepLab

- The first thing we need to do is find out where the first name is on each line.
- The command cat will print all the lines in the file for viewing.
- In this case the first name is the very first word in the file.

grep '^H' GrepLab

- grep is the command.
- '^H' - The carrot in front of the H means the computer will only print the first letter of the word. In this case, the first name.
- GrepLab is the file we are searching in.

```
[dave@localhost ~]$ grep '^H' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300
Holly Golightly:397-857-2735:74 Pine Street, Dearborn, MI 23874:3/28/45:245700
Hester Prynne:408-253-3122:123 Park St., San Jose, CA 04086:7/25/53:85100
[dave@localhost ~]$ _
```

Example of command line code

3: Print all lines ending in 200.✓

grep '200\$' GrepLab

- grep is the command.
- '200\$; - \$ will only print lines that end in
- 200. GrepLab is the file we are searching in.

```
[dave@localhost ~]$ grep '200$' GrepLab
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Jo March:327-832-5728:3465 Mirlo Street, Peabody, MA 34756:10/2/65:35200
Daenerys Targaryen:408-724-0140:1222 Oxbow Court, Sunnyvale, CA 94087:5/19/66:34200
[dave@localhost ~]$
```

Example of command line code

4: Print all lines that don't contain 408.✓

grep -v '408' GrepLab

- grep is the command.
- -v is a grep option the excludes a certain expression.
- GrepLab is the file we are searching in.

```
ldave@localhost ~1$ grep -v '408' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300

Betty Boop:245-836-8357:635 Cutesy Lane, Hollywood, CA 91464:6/23/23:14500

Dorian Gray:385-375-8395:3567 Populus Place, Caldwell, NJ 23875:6/18/68:23400

Holly Golightly:397-857-2735:74 Pine Street, Dearborn, MI 23874:3/28/45:245700

Ebenezer Scrooge:548-834-2348:583 Laurel Ave., Kingsville, TX 83745:10/1/35:58900

Westley Pirate:284-758-2857:23 Edgecliff Place, Lincoln , NB 92743:7/25/53:85100
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200

Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900

Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900

Jo March:327-832-5728:3465 Mirlo Street, Peabody, MA 34756:10/2/65:35200

Victor Frankenstein:835-365-1284:454 Easy Street, Decatur, IL 75732:2/28/53:123500

Ephram Hardy:293-259-5395:235 CarltonLane, Joliet, IL 73858:8/12/20:56700

Meg Murry:834-938-8376:23445 Aster Ave., Allentown, NJ 83745:12/1/38:45000

Lucy Pevensie:385-573-8326:832 Ponce Drive, Gzary, IN 83756:12/1/46:268500
```

Example of command line code

```
Molly Weasley:387-827-1095:13 Uno Lane, Ashville, NC 23556:7/1/29:57000

Arya Stark:438-910-7449:8235 Maple Street, Wilmington, UM 29085:9/23/63:68900
ldave@localhost ~1$
```

Example of command line code

5: Print all lines where birthdays are in the year 1935.✓

cat GrepLab

- Use the cat command to find out what the date format. Formatting is very important!

- The date format is (mm/dd/yy).

 `grep '[0-9]/[0-9]/35' GrepLab`

- `grep` is the command.
- `'[0-9]/[0-9]/35'`
 - Since we only want people born in 1935, the month and day can be any number 0-9.
- `GrepLab` is the file we are searching in.

```
[dave@localhost ~]$ grep '[0-9]/[0-9]/35' GrepLab
Ebenezer Scrooge:548-834-2348:583 Laurel Ave., Kingsville, TX 83745:10/1/35:58900
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
[dave@localhost ~]$ _
```

Example of command line code

6: Print all lines where the phone number is in an area code that starts with an 8. ✓

 `cat GrepLab`

- Use the `cat` command to find out what kind of phone numbers and how they're formatted. Formatting is very important!
- The format is `###-###-####`.


 `grep -E ':8[0-9]{2}-[0-9]{3}-[0-9]{4}:'`

- `grep` is the command.
- `-E` is a `grep` option to interpret patterns as extended regular expressions.
- Since there are multiple sets of numbers throughout the lines, we need to isolate the phone number.
 - By using `cat` previously, we know that the phone numbers are between two colons. One in front of the area code and one at the end. So include colons in your search.
- We want to search for area codes that start with 8.
 - 8 is the first number. `[0-9]{2}` will find the next two numbers from 0-9.
 - `[0-9]{3}` will find the next 3 numbers from 0-9.
 - `[0-9]{4}` will find the next 4 numbers from 0-9.
- `GrepLab` is the file we are searching in.

```
[dave@localhost ~]$ grep -E ':8[0-9]{2}-[0-9]{3}-[0-9]{4}:' GrepLab
Victor Frankenstein:835-365-1284:454 Easy Street, Decatur, IL 75732:2/28/53:123500
Meg Murry:834-938-8376:23445 Aster Ave., Allentown, NJ 83745:12/1/38:45000
Mary Poppins:846-836-2837:6937 Ware Road, Milton, PA 93756:9/21/46:43500
Sir Lancelot:837-835-8257:474 Camelot Boulevard, Bath, WY 28356:5/13/69:24500
Zippy Pinhead:834-823-8319:2356 Bizarro Ave., Farmount, IL 84357:1/1/67:89500
[dave@localhost ~]$ _
```

Example of command line code

7: Print all lines containing an uppercase letter, followed by 5 lowercase letters , a comma, and one uppercase letter.✓

 `grep '[A-Z][a-z]\{5\}, [A-Z]' GrepLab`

- `grep` is the command.
- `[A-Z]`
 - Finds and prints an uppercase letter in the first word
- `[a-z]\{5\},`
 - Finds and prints the next 5 lowercase letters in the word followed by a comma and space.
- `[A-Z]`
 - Finds and prints the next uppercase letter after a space.
- `GrepLab` is the file we are searching in.

```
[dave@localhost ~]$ grep '[A-Z][a-z]\{5\}, [A-Z]' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300
Holly Golightly:397-857-2735:74 Pine Street, Dearborn, MI 23874:3/28/45:245700
Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Jo March:327-832-5728:3465 Mirlo Street, Peabody, MA 34756:10/2/65:35200
Victor Frankenstein:835-365-1284:454 Easy Street, Decatur, IL 75732:2/28/53:123500
Ephram Hardy:293-259-5395:235 Carlton Lane, Joliet, IL 73858:8/12/20:56700
Hemione Granger:408-456-1234:4 Harvard Square, Boston, MA 02133:4/22/62:52600
Mary Poppins:846-836-2837:6937 Ware Road, Milton, PA 93756:9/21/46:43500
Popeye Sailor:156-454-3322:945 Bluto Street, NoWhere, USA 29358:3/19/35:22350
Arya Stark:438-910-7449:8235 Maple Street, Wilmington, UM 29085:9/23/63:68900
[dave@localhost ~]$
```

Example of command line code

8: Print lines where the address begins with a two or three digit number (so this would be 12 main st or 123 main street but not 1234 main street).



! cat GrepLab

- Use the cat command to find out how to pinpoint where the street addresses start.
- We now know they start after a colon and before a space.
- :## or :###

i grep -E ':[0-9]{2,3}' GrepLab

- grep is the command.
- -E is a grep option to interpret patterns as extended regular expressions.
- ':[0-9]' is any number from 0-9.
- '{2,3}' after the 0-9 tells the computer it can be a set of 2 or 3 numbers.
- GrepLab is the file we are searching in.

```
ldave@localhost ~1$ grep -E ':[0-9]{2,3}' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300
Betty Boop:245-836-8357:635 Cutesy Lane, Hollywood, CA 91464:6/23/23:14500
Holly Golightly:397-857-2735:74 Pine Street, Dearborn, MI 23874:3/28/45:245700
Ebenezer Scrooge:548-834-2348:583 Laurel Ave., Kingsville, TX 83745:10/1/35:58900
Hester Prynne:408-253-3122:123 Park St., San Jose, CA 04086:7/25/53:85100
Westley Pirate:284-758-2857:23 Edgecliff Place, Lincoln , NB 92743:7/25/53:85100
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Victor Frankenstein:835-365-1284:454 Easy Street, Decatur, IL 75732:2/28/53:123500
Ephram Hardy:293-259-5395:235 Carlton Lane, Joliet, IL 73858:8/12/20:56700
Lucy Pevensie:385-573-8326:832 Ponce Drive, Gzary, IN 83756:12/1/46:268500
Sir Lancelot:837-835-8257:474 Camelot Boulevard, Bath, WY 28356:5/13/69:24500
Minerva McGonagall:408-233-8971:45 Rose Terrace, San Francisco, CA 92303:2/3/36:25000
Dorothy Gale:923-835-8745:23 Wimp Lane, Kensington, DL 38758:8/31/69:126000
Popeye Sailor:156-454-3322:945 Bluto Street, NoWhere, USA 29358:3/19/35:22350
Luna Lovegood:385-898-8357:38 Fife Way, Abilene, TX 39673:1/5/58:95600
Molly Weasley:387-827-1095:13 Uno Lane, Ashville, NC 23556:7/1/29:57000
ldave@localhost ~1$ _
```

Example of command line code

9: Print lines where the person lives in Mass or Illinois ✓

! cat GrepLab

- Use the cat command to find out how to pinpoint where the states are and how they're formatted.
- We now know the states are just two uppercase letters.

 `grep 'MA' GrepLab && grep 'IL' GrepLab`


The reason we have the grep commands in-between && is because we are doing two commands on one line of code therefore need to declare grep twice.

- grep is the command.
- 'MA' is the first state we are looking for.
- && isolates the first command as it's own and allows us to type a second command.
- 'IL' is the second state we are looking for.
- GrepLab is the file we are searching in.


```
[dave@localhost ~]$ grep 'MA' GrepLab && grep 'IL' GrepLab
Jo March:327-832-5728:3465 Mirlo Street, Peabody, MA 34756:10/2/65:35200
Hemione Granger:408-456-1234:4 Harvard Square, Boston, MA 02133:4/22/62:52600
Victor Frankenstein:835-365-1284:454 Easy Street, Decatur, IL 75732:2/28/53:123500
Ephram Hardy:293-259-5395:235 CarltonLane, Joliet, IL 73858:8/12/20:56700
Zippy Pinhead:834-823-8319:2356 Bizarro Ave., Farmount, IL 84357:1/1/67:89500
[dave@localhost ~]$
```

Example of command line code

10: Print lines containing the addresses that aren't on a street. ✓

 `cat GrepLab`

- Use the cat command to find out how to pinpoint streets and how they are portrayed.
- We now know street is either "Street" or "St."

 `grep -v -e 'Street' -e 'St,' GrepLab`

The reason we have the grep commands in-between && is because we are doing two commands on one line of code therefore need to declare grep twice.

- grep is the command.
- -v is a grep option the excludes a certain expression.
- -e searches for certain patterns.
- 'Street' is what we want to exclude in the search.

- 'St.,' is what we want to exclude in the search.
- GrepLab is the file we are searching in.

```
ldave@localhost ~1$ grep -v -e 'Street' -e 'St.,' GrepLab
Huckleberry Finn:238-923-7366:95 Latham Lane, Easton, PA 83755:11/12/56:20300

Betty Boop:245-836-8357:635 Cutesy Lane, Hollywood, CA 91464:6/23/23:14500

Dorian Gray:385-375-8395:3567 Populus Place, Caldwell, NJ 23875:6/18/68:23400

Ebenezer Scrooge:548-834-2348:583 Laurel Ave., Kingsville, TX 83745:10/1/35:58900

Westley Pirate:284-758-2857:23 Edgecliff Place, Lincoln , NB 92743:7/25/53:85100
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900

Ephram Hardy:293-259-5395:235 CarltonLane, Joliet, IL 73858:8/12/20:56700
Meg Murry:834-938-8376:23445 Aster Ave., Allentown, NJ 83745:12/1/38:45000
Lucy Pevensie:385-573-8326:832 Ponce Drive, Gzary, IN 83756:12/1/46:268500
Hemione Granger:408-456-1234:4 Harvard Square, Boston, MA 02133:4/22/62:52600
```

Example of command line code

```
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Westley Pirate:284-758-2867:23 Edgecliff Place, Lincoln, NB 92743:11/3/35:58200
Lizzie Bennett:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900
Nancy Drew:674-843-1385:20 Parak Lane, Duluth, MN 23850:4/12/23:780900

Ephram Hardy:293-259-5395:235 CarltonLane, Joliet, IL 73858:8/12/20:56700
Meg Murry:834-938-8376:23445 Aster Ave., Allentown, NJ 83745:12/1/38:45000
Lucy Pevensie:385-573-8326:832 Ponce Drive, Gzary, IN 83756:12/1/46:268500
Hemione Granger:408-456-1234:4 Harvard Square, Boston, MA 02133:4/22/62:52600
Mary Poppins:846-836-2837:6937 Ware Road, Milton, PA 93756:9/21/46:43500
Sir Lancelot:837-835-8257:474 Camelot Boulevard, Bath, WY 28356:5/13/69:24500
Minerva McGonagall:408-233-8971:45 Rose Terrace, San Francisco, CA 92303:2/3/36:25000
Zippy Pinhead:834-823-8319:2356 Bizarro Ave., Farmount, IL 84357:1/1/67:89500
Dorothy Gale:923-835-8745:23 Wimp Lane, Kensington, DL 38758:8/31/69:126000

Luna Lovegood:385-898-8357:38 Fife Way, Abilene, TX 39673:1/5/58:95600
Daenerys Targaryen:408-724-0140:1222 Oxbow Court, Sunnyvale, CA 94087:5/19/66:34200
Molly Weasley:387-827-1095:13 Uno Lane, Ashville, NC 23556:7/1/29:57000

[dave@localhost ~]$
```

Example of command line code

Citations

Grep Overview

<https://flylib.com/books/en/4.356.1.26/1/>

4.1.2

Grep Commands

https://linuxcommand.org/lc3_man_pages/grep1.html

PDF Template

slite.com

Technical Support Contact Information

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