**Find Command in Unix and Linux Examples**

Find is one of the powerful utility of Unix (or Linux) used for searching the files in a directory hierarchy. The syntax of find command is

find [pathnames] [conditions]

Let see some practical exercises on using find command.  
  
**1.** How to run the last executed find command?

!find

This will execute the last find command. It also displays the last find command executed along with the result on the terminal.  
  
**2.** How to find for a file using name?

find -name "sum.java"

./bkp/sum.java

./sum.java

This will find all the files with name "sum.java" in the current directory and sub-directories.  
  
**3.** How to find for files using name and ignoring case?

find -iname "sum.java"

./SUM.java

./bkp/sum.java

./sum.java

This will find all the files with name "sum.java" while ignoring the case in the current directory and sub-directories.  
  
**4.** How to find for a file in the current directory only?

find -maxdepth 1 -name "sum.java"

./sum.java

This will find for the file "sum.java" in the current directory only  
  
**5.** How to find for files containing a specific word in its name?

find -name "\*java\*"

./SUM.java

./bkp/sum.java

./sum.java

./multiply.java

It displayed all the files which have the word "java" in the filename  
  
**6.** How to find for files in a specific directory?

find /etc -name "\*java\*"

This will look for the files in the /etc directory with "java" in the filename  
  
**7.** How to find the files whose name are not "sum.java"?

find -not -name "sum.java"

.

./SUM.java

./bkp

./multiply.java

This is like inverting the match. It prints all the files except the given file "sum.java".  
  
**8.** How to limit the file searches to specific directories?

find -name "sum.java"

./tmp/sum.java

./bkp/var/tmp/files/sum.java

./bkp/var/tmp/sum.java

./bkp/var/sum.java

./bkp/sum.java

./sum.java

You can see here the find command displayed all the files with name "sum.java" in the current directory and sub-directories.  
  
**a.** How to print the files in the current directory and one level down to the current directory?

find -maxdepth 2 -name "sum.java"

./tmp/sum.java

./bkp/sum.java

./sum.java

**b.** How to print the files in the current directory and two levels down to the current directory?

find -maxdepth 3 -name "sum.java"

./tmp/sum.java

./bkp/var/sum.java

./bkp/sum.java

./sum.java

**c.** How to print the files in the subdirectories between level 1 and 4?

find -mindepth 2 -maxdepth 5 -name "sum.java"

./tmp/sum.java

./bkp/var/tmp/files/sum.java

./bkp/var/tmp/sum.java

./bkp/var/sum.java

./bkp/sum.java

**9.** How to find the empty files in a directory?

find . -maxdepth 1 -empty

./empty\_file

**10.** How to find the largest file in the current directory and sub directories

find . -type f -exec ls -s {} \; | sort -n -r | head -1

The find command "find . -type f -exec ls -s {} \;" will list all the files along with the size of the file. Then the sort command will sort the files based on the size. The head command will pick only the first line from the output of sort.  
  
**11.** How to find the smallest file in the current directory and sub directories

find . -type f -exec ls -s {} \; | sort -n -r | tail -1

Another method using find is

find . -type f -exec ls -s {} \; | sort -n | head -1

**12.** How to find files based on the file type?  
  
**a.** Finding socket files

find . -type s

**b.** Finding directories

find . -type d

**c.** Finding hidden directories

find -type d -name ".\*"

**d.** Finding regular files

find . -type f

**e.** Finding hidden files

find . -type f -name ".\*"

**13.** How to find files based on the size?  
  
**a.** Finding files whose size is exactly 10M

find . -size 10M

**b.** Finding files larger than 10M size

find . -size +10M

**c.** Finding files smaller than 10M size

find . -size -10M

**14.** How to find the files which are modified after the modification of a give file.

find -newer "sum.java"

This will display all the files which are modified after the file "sum.java"  
  
**15.** Display the files which are accessed after the modification of a give file.

find -anewer "sum.java"

**16.** Display the files which are changed after the modification of a give file.

find -cnewer "sum.java"

**17.** How to find the files based on the file permissions?

find . -perm 777

This will display the files which have read, write, and execute permissions. To know the permissions of files and directories use the command "ls -l".  
  
**18.** Find the files which are modified within 30 minutes.

find . -mmin -30

**19.** Find the files which are modified within 1 day.

find . -mtime -1

**20.** How to find the files which are modified 30 minutes back

find . -not -mmin -30

**21.** How to find the files which are modified 1 day back.

find . -not -mtime -1

**22.** Print the files which are accessed within 1 hour.

find . -amin -60

**23.** Print the files which are accessed within 1 day.

find . -atime -1

**24.** Display the files which are changed within 2 hours.

find . -cmin -120

**25.** Display the files which are changed within 2 days.

find . -ctime -2

**26.** How to find the files which are created between two files.

find . -cnewer f1 -and ! -cnewer f2

So far we have just find the files and displayed on the terminal. Now we will see how to perform some operations on the files.  
  
**1.** How to find the permissions of the files which contain the name "java"?

find -name "\*java\*"|xargs ls -l

Alternate method is

find -name "\*java\*" -exec ls -l {} \;

**2.** Find the files which have the name "java" in it and then display only the files which have "class" word in them?

find -name "\*java\*" -exec grep -H class {} \;

**3.** How to remove files which contain the name "java".

find -name "\*java\*" -exec rm -r {} \;