What is Linux Shell & Shell Script?

Linux shell is the user interface to communicate with Linux operating system. Shell interprets the user requests, executes them. Shell may use kernel to execute certain programs. Shell Script: A shell script is a program file in which certain Linux commands are placed to execute one after another. A shell script is a flat text file. Shell scripts are useful to accept inputs and provide output to the user. Everyday automation process can be simplified by a shell script.

|  |  |
| --- | --- |
| Instruction | Function |
| [apt-get](http://ss64.com/bash/apt-get.html) | Search for and install software packages (Debian/Ubuntu) |
| [awk](http://ss64.com/bash/awk.html) | Find and Replace text, database sort/validate/index |
| [cat](http://ss64.com/bash/cat.html) | Concatenate and print (display) the content of files |
| [cd](http://ss64.com/bash/cd.html) | Change Directory |
| [chmod](http://ss64.com/bash/chmod.html) | Change access permissions |
| [date](http://ss64.com/bash/date.html) | Display or change the date & time |
| [echo](http://ss64.com/bash/echo.html) | Display message on screen |
| [expr](http://ss64.com/bash/expr.html) | Evaluate expressions |
| [gawk](http://ss64.com/bash/awk.html) | Find and Replace text within file(s) |
| grep | Search file(s) for lines that match a given pattern |
| help | Display help for a built-in command |
| [ls](http://ss64.com/bash/ls.html) | List information about file(s) |
| [man](http://ss64.com/bash/man.html) | Help manual |
| [pwd](http://ss64.com/bash/pwd.html) | Print Working Directory |
| [sudo](http://ss64.com/bash/sudo.html) | Execute a command as another user |
| [vi](http://ss64.com/vi.html) | Text Editor |

Addition of 2 numbers

a=1

b=2

sum=$((a+b))

echo "sum=$sum"

sum=`expr $a+$b`

echo "sum=$sum"

output:

bash filename

sum=3

If...Else

a=2

b=3

if ["$a" -gt "$b"]

then

echo "a greater then b"

else

echo "b greater than a"

fi

output:

bash filename

b greater than a

Commands

1. CHANGE PRIVELEGES

student@student-HP-ProOne-400-G1-AiO:~$ chmod 777 niki.sh

student@student-HP-ProOne-400-G1-AiO:~$ ls -l

total 238732

-rwxrwxrwx 1 student student 48 Sep 27 08:30 niki.sh

-rw-rw-r-- 1 student student 46 Sep 27 08:30 niki.sh~

drwxr-xr-x 14 student student 4096 Nov 4 2011 ns-allinone-2.35

-rw-rw-r-- 1 student student 1715 Apr 25 11:02 ns-simple.tcl

-rw-rw-r-- 1 student student 1633 Apr 25 11:01 ns-simple.tcl~

-rw-rw-r-- 1 student student 73 Feb 20 2016 open.py

2. MAKE DIRECTORY

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ mkdir shell

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ ls

search~

search.c~

shell

simple.tcl~

sssp.c~

star1.tcl~

3. PRINT WORKING DIRECTORY

student@student-HP-ProOne-400-G1-AiO:~$ pwd

/home/student

4. CREATE FILE

student@student-HP-ProOne-400-G1-AiO:~$ touch test

student@student-HP-ProOne-400-G1-AiO:~$ ls

24 Desktop Documents examples.desktop hello1 hello.odt Music Public shift.java test Videos

achieve.tar devstack Downloads hello helloexit hello.tar Pictures Release.key Templates test.txt

5. REMOVE FILE

student@student-HP-ProOne-400-G1-AiO:~$ rm test.txt

student@student-HP-ProOne-400-G1-AiO:~$ ls

24 Desktop Documents examples.desktop hello1 hello.odt Music Public shift.java test

achieve.tar devstack Downloads hello helloexit hello.tar Pictures Release.key Templates Videos

6. COPY FILE

student@student-HP-ProOne-400-G1-AiO:~$ cp test Desktop/

student@student-HP-ProOne-400-G1-AiO:~$ cd Desktop/

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ ls

adhoc.tcl~ Astar Astar.cpp hrj\_shell.txt hrj\_shell.txt~ jdk1.7.0\_79 PPPP.odt ring.tcl~ shreya1~ simwrls.tcl~ test wire.tcl~

7. MOVE FILE

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ sudo mv test /home/

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ cd

student@student-HP-ProOne-400-G1-AiO:~$ ls

24 Desktop Documents examples.desktop hello1 hello.odt Music Public shift.java test

achieve.tar devstack Downloads hello helloexit hello.tar Pictures Release.key Templates Videos

8. COPY FOLDER (cp -r)

student@student-HP-ProOne-400-G1-AiO:~$ mkdir folder

student@student-HP-ProOne-400-G1-AiO:~$ cd folder

student@student-HP-ProOne-400-G1-AiO:~/folder$ touch t1

student@student-HP-ProOne-400-G1-AiO:~/folder$ touch t2

student@student-HP-ProOne-400-G1-AiO:~/folder$ touch t3

student@student-HP-ProOne-400-G1-AiO:~/folder$ cd

student@student-HP-ProOne-400-G1-AiO:~$ cp -r folder/ Desktop/

student@student-HP-ProOne-400-G1-AiO:~$ cd Desktop/

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ ls

adhoc.tcl~ Astar Astar.cpp folder hrj\_shell.txt hrj\_shell.txt~ jdk1.7.0\_79 PPPP.odt ring.tcl~ shreya1~ simwrls.tcl~ wire.tcl~

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ cd folder/

student@student-HP-ProOne-400-G1-AiO:~/Desktop/folder$ ls

t1 t2 t3

student@student-HP-ProOne-400-G1-AiO:~/Desktop/folder$

9. REMOVE FOLDER

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ rm -r folder

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ ls

adhoc.tcl~ Astar Astar.cpp hrj\_shell.txt hrj\_shell.txt~ jdk1.7.0\_79 PPPP.odt ring.tcl~ shreya1~ simwrls.tcl~ wire.tcl~

10. MOVE FOLDER

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ mkdir folder

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ sudo mv folder/ /home/

student@student-HP-ProOne-400-G1-AiO:~/Desktop$ cd

student@student-HP-ProOne-400-G1-AiO:~$ ls

24 Desktop Documents examples.desktop hello helloexit hello.tar Pictures Release.key Templates Videos

achieve.tar devstack Downloads folder hello1 hello.odt Music Public shift.java test

11. FILE HANDLING

touch file

gedit file //in desktop, filename=file

file contents:

hello from the other side

see you on the other side

orange

blue

yellow

OS

A. GREP (search string)

//print lines with string

student@student-HP-ProOne-400-G1-AiO:~$ grep hello Desktop/file

**hello** from the other side

student@student-HP-ProOne-400-G1-AiO:~$ grep -v hello Desktop/file

//print lines that dont contain string

see you on the other side

orange

blue

yellow

OS

B. AWK (print)

student@student-HP-ProOne-400-G1-AiO:~$ awk '{ print }' Desktop/file

hello from the other side

see you on the other side

orange

blue

yellow

OS

C. SORT (sort lines)

student@student-HP-ProOne-400-G1-AiO:~$ sort Desktop/file

blue

hello from the other side

orange

OS

see you on the other side

yellow