

More materials about Shell script:

<http://www.tldp.org/LDP/abs/html/> (for advanced users, may take years to reach this level!)

Homework:

a) Again, Let's start with something simple. Write a bash shell script 'numbers.sh'. The script takes two integer numbers as arguments and then prints them in the order from the smallest to biggest:

***./compare.sh 55 33***

It should print:

***The numbers are: 33 55***

Think: what if the user enters the wrong type of argument, like './compare.sh aa 33', how to detect such user error and exit the program with a corresponding error message?

b) Rewrite 'numbers.sh' to make it also print the SUM of the two numbers, like this:

***The numbers are: 33 55***

***And the sum of the numbers is: 88***

Think: what if we want to add two real numbers, like 1.1 and 1.2, how to add them in a shell script? (Hint: use the command 'bc')

c) Go back to the 'files.sh' script from the last homework, modify the script if necessary. The script should take a command line argument (say 'aa') and test if files aa1.txt...aa100.txt exist, if those files do not exist, print a message and generate such files; if exist, print a message and rename them to be AA1.txt...AA100.txt (i.e. convert from lowercase to UPPERCASE in the filenames), like this:

***./files.sh aa***

It should print and generate files as the following:

***File aa1.txt exists, rename it to AA1.txt***

***...***

***File aa100.txt exists, rename it to AA100.txt***

d) Write 'system.sh' to show various system configurations like:

- 1) Currently logged user and username
- 2) Currently logged number of users (Hint: use 'who' command)
- 3) Current shell name
- 4) Home directory
- 5) Operating system type
- 6) Current path setting
- 7) Current working directory
- 8) Linux version ,release number , kernel version (for a Linux OS)
- 9) CPU information like processor type, speed etc
- 10) Memory information
- 11) File system (Mounted)

e) Change the default 'prompt' settings of your current shell environment

What's the 'prompt'? It's a set of string that 'prompts' on the screen before any command is typed in, please see the below screen shots for comparison:

```

-rw-r--r-- 1 root root      19211 Mar 19  2013 install.log
-rw-r--r-- 1 root root       8095 Mar 19  2013 install.log.syslog
drwxr-xr-x 2 root root       4096 May 17  2013 isus
drwxr-xr-x 4 root root       4096 Mar 16  2013 l_fcompxe_2013.3.163
-rw-r--r-- 1 root root  935211435 May 17  2013 l_fcompxe_2013.3.163.tgz
-rw-r--r-- 1 root root     292211 Apr  6  2013 report.log
-rwxr-xr-x 1 root root        81 Apr  6  2013 report.sh
-rw-r--r-- 1 root root       5010 Mar 19  2013 sl6_compat.txt
-rw-r--r-- 1 root root       8511 Mar 19  2013 sl6_rpm_list.txt
#

```

The above is the default 'prompt' for user 'root', it's simply the pound (#) sign. Now we can change it to be something else which is more useful and informative:

```

drwxr-xr-x 2 root root       4096 Nov 26  2013 .config
drwxr-xr-t 8 root root       4096 Nov 26  2013 .Mathematica
-rw----- 1 root root       1216 Dec  9 17:28 .sqlite_history
-rw----- 1 root root       1024 Jan 11 10:56 .rnd
-rw----- 1 root root         38 Apr  3 16:11 .lessht
-rw----- 1 root root        173 Apr  4 12:50 dead.letter
-rw----- 1 root root       7955 May 14 11:32 .viminfo
dr-xr-xr-x 30 root root       4096 May 26 10:30 ..
-rw----- 1 root root      12613 May 31 16:09 .bash_history
-rw----- 1 root root         720 May 31 16:15 .Xauthority
dr-xr-x--- 9 root root       4096 May 31 16:15 .
[root@bl-1-1 ~]#

```

See what's changed? Now the prompt changes to be "[\u@\h \W]#".

Please choose your favorite prompt settings under BASH (the most common Shell) and set it in such a way that it displays the following information: "[", current user, current machine, ":", current working directory (complete path) and ">".

Note: all you need to do is to change the PS1 variable in the environment settings and you should put the change in the BASH shell initialization file (.bash\_profile and/or .bashrc) so it's done automatically every time BASH is used.