Example1 (shell operations)(BEGINNER):

1. Learn which shell is default on your system

2. Learn which shell you are using currently

3. Learn the path to your current shell

4. Display all shells

5. Change your shell to `sh` shell

6. Change your shell to bash

7. Customize & Color your command prompt

1. $SHELL (Amazon Linux 2 AMI has $SHELL variable)

2. echo $0

3. which bash

4. cat /etc/shells

5. /bin/sh

6. /bin/bash

7a. PS1="\[\033[44m\]\u@\h:\w$\[\033[00m\]"

7b. PS1="\[\033[44m\]\[\033[1;37m\]john@clarusway\[\033[45m\]\[\033[1;37m\](\w)\[\033[44m\]:\[\033[00m\] "

Example2 (package managers)(BEGINNER):

1. Learn Which Linux Distribution You Are Using.

2. Determine your package manager

3. Get the latest package lists from the repositories

4. Be sure that the latest versions of your packages are installed.

5. Check if there is a game named "bastet" (For AWS EC2 search for Apache server: "httpd")

6. Install "bastet" (For AWS EC2 "httpd")

7. Uninstall "bastet" (For AWS EC2 "httpd")

1. cat /etc/os-release

2. APT (Advanced Package Tool) for debian

RPM (Red Hat Package Manager) for centos/fedora/redhat

- YUM (Yellowdog Updater Modified)

- DNF – Dandified Yum

3. sudo apt-get/yum update

sudo apt update

4. sudo apt-get upgrade

sudo apt upgrade

5. apt-cache search bastet

apt search bastet

yum search httpd

6. sudo apt install bastet

sudo yum instal httpd

7. sudo apt remove bastet

yum remove httpd

Example3 (control operators)(INTERMEDIATE):

1. Execute the pwd command twice.

2. Move to home directory. Execute ls after "cd /etc", but only if "cd /etc" did not error.

3. Move to home directory. Execute "cd /etc" after "cd etc", but only if "cd etc" fails.

4. Change directory to your home directory. Echo `it worked` when touch test1 works, and echo `it failed` when the touch failed.

5. Try step-4 within the /bin directory

6. Execute sleep 200 in background (do not wait for it to finish).

7. Remove the file test1. Your command line should print 'success' if test1 is removed, and print 'failed' if there was a problem.

8. Use echo to display:

"Hello "strange" 'characters' \a \* [ } ~ \"

1. pwd ; pwd

2. cd ~

cd /etc && ls

3. cd ~

cd etc || cd /etc

4. cd ~; touch test1 && echo it worked || echo it failed

5. cd /bin; touch test1 && echo it worked || echo it failed

6. sleep 200 &

7. rm test1 && echo success || echo failed

8. echo "Hello \"strange\" 'characters' \\a \* [ } ~ \\"

Example4 (shell variables)(INTERMEDIATE):

1. Use echo to display Hello followed by your username. (use a bash variable!)

2. Create a variable "myCase1" with a value of "Not exported".

3. Create a variable "myCase2" using export with a value of "Exported".

4. List all current shell variables and check if myCase1 and myCase2 exist

5. List all exported shell variables and check if myCase1 and myCase2 exist

6. Try to display myCase1 and myCase2 in a new interactive child shell.

7. Display your path vairable

8. Add ~/test/script directory to your path.

1. echo Hello $USER

2. myCase1="Not exported"

3. export myCase2="Exported"

4. set | grep myCase

5. env | grep myCase

6. bash

echo $myCase1

echo $myCase2

7. echo $PATH

8. export PATH=$PATH:~/test/script

Example-5 (Bash Scripting) (INTERMEDIATE):

Create a script which gets a number from the user and prints whether the value is bigger or smaller than/equal to 5.

nano my\_script.sh

chmod +x my\_script.sh

#! /bin/bash

clear

echo "enter a number:"

read st1

if [ $st1 -eq 5 ]

then

echo "$st1 is equal to 5"

elif (( $st1 < 5 ))

then

echo "$st1 is smaller than 5"

else

echo "$st1 is bigger than 5"

fi

Example-6 (User Management) (INTERMEDIATE):

1. Create a user account named clarus1, including a home directory and a description (or comment) that reads "Clarusway Account Number1" in one single command using "useradd"

2. Create a user named clarus2, including home directory, bash shell, a description that reads "Clarusway Account Number2" in one single command using "useradd"

3. Create a user named "clarus3" using "adduser"

4. Verify that both users have correct entries in /etc/passwd, /etc/shadow and /etc/group.

5. Verify that their home directory was created.

6. Create a file named welcome.txt and make sure every new user will see this file in their home directory. Create a new user clarus4, including a home directory using "useradd" and verify welcome.txt in the home directory.

7. Change the default login shell for the clarus4 user to any other shell. Verify before and after you make this change.

8. Set the password for clarus1 to 123.

9. Remove clarus1 user with its home directory.

1. sudo useradd -m -c 'Clarusway Account Number1' clarus1

2. sudo useradd -m -c 'Clarusway Account Number2' -s /bin/bash clarus2

3. sudo adduser clarus3

4. grep clarus /etc/passwd

grep clarus /etc/shadow

grep clarus /etc/group

5. ls -l /home | grep clarus

6. sudo su

echo "Welcome New User" > /etc/skel/welcome.txt

sudo adduser clarus4

sudo cat /home/clarus4/welcome.txt

7. grep clarus1 /etc/passwd

sudo usermod -s /bin/bash clarus1

grep clarus1 /etc/passwd

8. passwd clarus1

sudo!!

9. sudo userdel -r clarus1

Example-7 (filters)(HIGH-INTERMEDIATE):

1. Make a list of all filenames in /etc that contain the string conf in their filename.

2. Make a sorted list of all files in /etc that contain the case insensitive string conf in their filename.

3. Get bash users info and save it in a file in home directory

4. Write the number of bash users.

5. Only get bash usernames and sort them.

6. Find all files with .conf extension within maximum directory depth of 3. Case isn't important. View the results page by page with dynamic load.

1. ls /etc | grep conf

2. ls /etc | grep -i conf | sort

3. grep bash /etc/passwd > bash-users.txt

4. grep bash /etc/passwd | wc -l

5. cat bash-users.txt | cut -d: -f1 | sort

6. find / -maxdepth 3 -type f -iname \*.conf |less

numbers = [1, 3, 7, 4, 3, 0, 3, 6, 3]

max = 0

res = numbers[0]

for i in numbers:

freq = numbers.count(i)

if freq > max:

max = freq

res = i

print ("Most frequent number is : " + str(res) + "it was 4 times repeated")

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