Linux Assignment Part 2

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Task 1

q1.sh

```bash
#!/bin/bash
if [ $# -eq 2 ];then
        if [[ -f $1 && -f  $2 ]]; then
                echo The total number of lines is $(( $(wc -l < $1 ) + $( wc -l < $2 ) )).
        else
                if [[ -d $1 ]]; then
                        echo ERROR $1 is a directory
                elif [[ -d $2 ]]; then
                        echo ERROR $2 is a directory
                else
                        echo one of the argumnets is not a file
                fi
        fi
else
        echo You need exactly two arguments
fi
```

q2.sh

```bash
#!/bin/bash
counter0=0
counter1=0
while [ $# -gt 0 ]; do
        if [[ $1 =~ ^[0-9]+$ ]]; then
                if [ $1 -eq 0 ]; then
                        let counter0+=1
                elif [ $1 -eq 1 ]; then
                        let counter1+=1
                fi
```

```
        fi

        shift

done

if [ $counter0 -gt $counter1 ]; then

        echo The Winner is 0 with $counter0 votes

elif [ $counter1 -gt $counter0 ]; then

        echo The Winner is 1 with $counter1 votes

else

        echo Vote is a tie. Each obtained $counter0 votes

fi
```

q3.sh

```
#!/bin/bash

numOfFiles=0

currentDir=$(pwd)

if [ $# -gt 1 ]; then

        echo You have given me too many arguments, you should only give one argumnet.

else

        if [ $# -eq 0 ]; then

                echo -n Enter the file ending:\

                read fileEnd

        else

                fileEnd=$1

        fi


        for file in $currentDir/*$fileEnd; do

                filename=$(basename $file)

                if [[ -f $file ]]; then

                        echo match $filename

                        let numOfFiles+=1

                fi

        done
```

```
            echo Current directory $currentDir has $numOfFiles $fileEnd files

            numOfFiles=0


            for directory in $currentDir/*; do
                    if [ -d $directory ]; then
                            for file in $directory/*$fileEnd; do
                                    filename=$(basename $file)
                                    if [[ -f $file ]]; then
                                            echo match $filename
                                            let numOfFiles+=1
                                    fi
                            done
                            dirName=$(basename $directory)
                            echo $dirName has $numOfFiles $fileEnd files
                            numOfFiles=0
                    fi
            done
fi
```

Screenshot

```
disuqi@disuqi-PC:~/Assignment2$ seq 1 5 > 1.txt
disuqi@disuqi-PC:~/Assignment2$ seq 6 10 > 2.txt
disuqi@disuqi-PC:~/Assignment2$ bash q1.sh 1.txt 2.txt
The total number of lines is 10.
disuqi@disuqi-PC:~/Assignment2$ bash q2.sh 01101
Vote is a tie. Each obtained 0 votes
disuqi@disuqi-PC:~/Assignment2$ bash q2.sh 0 1 1 0 1
The Winner is 1 with 3 votes
disuqi@disuqi-PC:~/Assignment2$ bash q2.sh 0 0 1 1 0 1 1 0
Vote is a tie. Each obtained 4 votes
disuqi@disuqi-PC:~/Assignment2$ bash q2.sh 0 0 1 hello 1 a 0 1 1 x 0
Vote is a tie. Each obtained 4 votes
disuqi@disuqi-PC:~/Assignment2$ ls
1.txt  2.txt  dirOne  dirTwo  q1.sh  q2.sh  q3.sh  tester.txt
disuqi@disuqi-PC:~/Assignment2$ ls dirOne
2.txt  3.txt  4.txt  5.t
disuqi@disuqi-PC:~/Assignment2$ ls dirTwo
6.txt  7.xyz
disuqi@disuqi-PC:~/Assignment2$ bash q3.sh
Enter the file ending: .txt
match 1.txt
match 2.txt
match tester.txt
Current directory /home/disuqi/Assignment2 has 3 .txt files
match 2.txt
match 3.txt
match 4.txt
dirOne has 3 .txt files
match 6.txt
dirTwo has 1 .txt files
disuqi@disuqi-PC:~/Assignment2$ bash q3.sh .xyz
Current directory /home/disuqi/Assignment2 has 0 .xyz files
dirOne has 0 .xyz files
match 7.xyz
dirTwo has 1 .xyz files
disuqi@disuqi-PC:~/Assignment2$ bash q3.sh .a
Current directory /home/disuqi/Assignment2 has 0 .a files
dirOne has 0 .a files
dirTwo has 0 .a files
disuqi@disuqi-PC:~/Assignment2$ 
```

Task 2

Commands
Login is root
useradd -m disuqi
passwd disuqi
groupadd sudo
gpasswd -a disuqi sudo
visudo (uncomment line 81 / %sudo<>ALL=(ALL) ALL)

vi /home/disuqi/.bashrc (add PATH=$PATH:/sbin:/usr/sbin)
logout
login as disuqi
sudo -l
sudo vi /etc/skel/.bashrc (add aliasis; alias help="man")
sudo useradd -m test (to test the aliases)
sudo passwd test
logout
login as test
help
dir
touch 1.txt
rename 1.txt 2.txt
dir
logout
login as disuqi
sudo userdel -r test
sudo vi /etc/profile (edit umask to 002)
sudo useradd -m john
sudo useradd -m ed
sudo useradd -m myron
sudo useradd -m mel
sudo passwd john
sudo passwd ed
sudo passwd myron
sudo passwd mel
sudo chmod 700 /home/*
sudo groupadd team1
sudo groupadd team2
sudo gpasswd -a myron team1
sudo gpasswd -a mel team1
sudo gpasswd -a john team2
sudo gpasswd -a ed team2
sudo mkdir /home/team1
sudo mkdir /home/team2
sudo chown disuqi.team1 /home/team1/
sudo chown disuqi.team2 /home/team2/
sudo chmod 2575 /home/team1/
sudo chmod 2070 /home/team2/
ls -l /home/
logout
test everything works

Screenshots (not in order)

```
# For non-root users, add the current directory to the search path:
if [ ! "`id -u`" = "0" ]; then
 PATH="$PATH:."
"/etc/profile" 84L, 2283C written
disuqi@slax:~$ sudo useradd -m john
disuqi@slax:~$ sudo useradd -m ed
disuqi@slax:~$ sudo useradd -m myron
disuqi@slax:~$ sudo useradd -m mel
disuqi@slax:~$ sudo passwd john
Changing password for john
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd ed
Changing password for ed
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd myron
Changing password for myron
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd mel
Changing password for mel
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ _
```

```
if [ "$SHELL" = "/bin/pdksh" ]; then
 PS1='! $ '
elif [ "$SHELL" = "/bin/ksh" ]; then
 PS1='! ${PWD/#$HOME/~}$ '
elif [ "$SHELL" = "/bin/zsh" ]; then
 PS1='%n@%m:%~%# '
elif [ "$SHELL" = "/bin/ash" ]; then
 PS1='$ '
else
 PS1='\u@\h:\w\$ '
fi
PS2='█ '
export PATH DISPLAY LESS TERM PS1 PS2

# Default umask.  A umask of 022 prevents new files from being created group
# and world writable.
umask 002

# Notify user of incoming mail.  This can be overridden in the user's
# local startup file (~/.bash.login or whatever, depending on the shell)
if [ -x /usr/bin/biff ]; then
 biff y 2> /dev/null
fi

# Append any additional sh scripts found in /etc/profile.d/:
for profile_script in /etc/profile.d/*.sh ; do
  if [ -x $profile_script ]; then
    . $profile_script
  fi
done
unset profile_script

# For non-root users, add the current directory to the search path:
if [ ! "`id -u`" = "0" ]; then
 PATH="$PATH:."
"/etc/profile" 84L, 2283C written
disuqi@slax:~$
```

```
disuqi@slax:~$ sudo groupadd team1
disuqi@slax:~$ sudo groupadd team2
disuqi@slax:~$ sudo gpasswd myron team1
Usage: gpasswd [option] GROUP

Options:
  -a, --add USER                add USER to GROUP
  -d, --delete USER             remove USER from GROUP
  -h, --help                    display this help message and exit
  -r, --remove-password         remove the GROUP's password
  -R, --restrict                restrict access to GROUP to its members
  -M, --members USER,...        set the list of members of GROUP
  -A, --administrators ADMIN,...
                                set the list of administrators for GROUP
Except for the -A and -M options, the options cannot be combined.


disuqi@slax:~$ sudo gpasswd -a myron team1
Adding user myron to group team1
disuqi@slax:~$ sudo gpasswd -a mel team1
Adding user mel to group team1
disuqi@slax:~$ sudo gpasswd -a john team2
Adding user john to group team2
disuqi@slax:~$ sudo gpasswd -a ed team2
Adding user ed to group team2
disuqi@slax:~$ sudo mkdir /home/team1
disuqi@slax:~$ sudo mkdir /home/team2
disuqi@slax:~$ sudo chown disuqi.team1 /home/team1/
disuqi@slax:~$ sudo chown disuqi.team2 /home/team2/
disuqi@slax:~$ sudo chmod 2575 /home/team1/
disuqi@slax:~$ sudo chmod 2070 /home/team2/
disuqi@slax:~$ _
```

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This file was made by Myron
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"/home/team1/myron.txt" [New] 4L, 31C written
myron@slax:~$
```
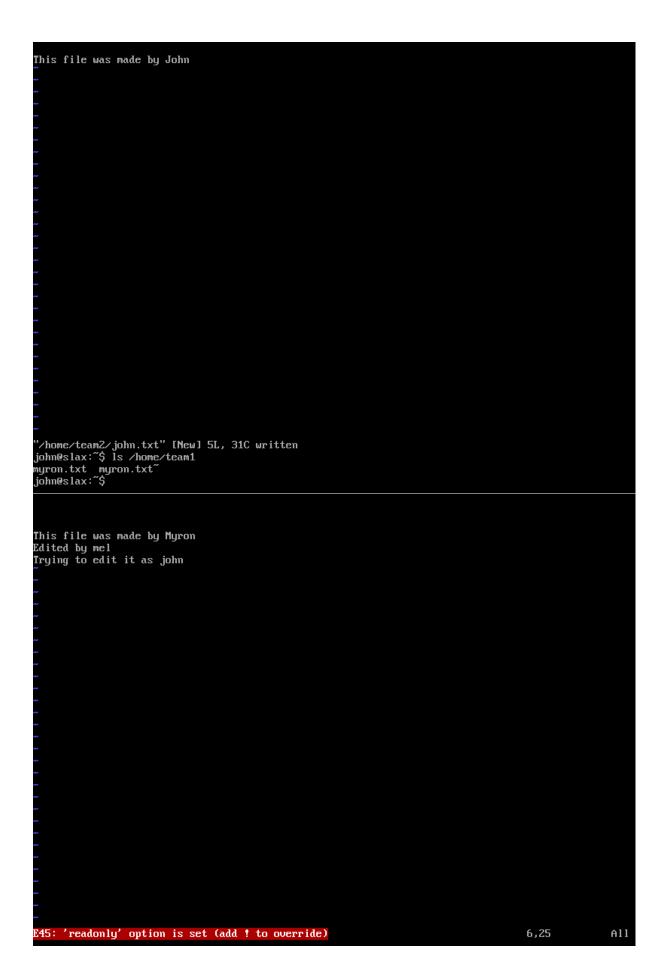
```
disuqi@slax:~$ sudo passwd john
Changing password for john
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd ed
Changing password for ed
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd myron
Changing password for myron
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo passwd mel
Changing password for mel
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
disuqi@slax:~$ sudo chmod 700 /home/*
disuqi@slax:~$ ls -l /home
total 0
drwx------ 11 disuqi disuqi 340 May 19 11:54 disuqi/
drwx------  2 ed     ed     140 May 19 12:02 ed/
drwx------  2 john   john   140 May 19 12:02 john/
drwx------  2 mel    mel    140 May 19 12:02 mel/
drwx------  2 myron  myron  140 May 19 12:02 myron/
disuqi@slax:~$ _
```

```
*************************************************************************
*   University of Salford                                               *
*    School of Computing, Science and Engineering                       *
*      Computer Science and Software Engineering                        *
*                                                                       *
*   Customised "Live Distro" for the following modules:                 *
*    - CSI-Linux (first year)                                           *
*    - Networking (second year)                                         *
*                                                                       *
*   The Live CD is based on SLAX 7.0.5 (http://www.slax.org)            *
*    SLAX is based on the Slackware distribution version 14.0           *
*            and on the Linux kernel version 3.6.11                     *
*                                                                       *
*   Customisation version 1.3a (build date 2020-02-20)                  *
*    - customised by Andrew Young                                       *
*                                                                       *
*   Please refer to the "Live CD acceptable use policy", which you      *
*    will find in "/etc/aup" on this CD                                 *
*************************************************************************

slax login: test
Password:
Linux 3.6.11.
test@slax:~$ help
What manual page do you want?
test@slax:~$ dir
Desktop/  Documents/  Downloads/  Music/  Pictures/  Public/  Templates/  Videos/
test@slax:~$ touch 1.txt
test@slax:~$ rename 1.txt 2.txt
test@slax:~$ dit
-bash: dit: command not found
test@slax:~$ dir
2.txt  Desktop/  Documents/  Downloads/  Music/  Pictures/  Public/  Templates/  Videos/
test@slax:~$ _
```

```
##
## Uncomment to enable logging of a command's output, except for
## sudoreplay and reboot.  Use sudoreplay to play back logged sessions.
# Defaults log_output
# Defaults!/usr/bin/sudoreplay !log_output
# Defaults!/usr/local/bin/sudoreplay !log_output
# Defaults!/sbin/reboot !log_output


##
## Runas alias specification
##


##
## User privilege specification
##
root ALL=(ALL) ALL

## Uncomment to allow members of group wheel to execute any command
# %wheel ALL=(ALL) ALL

## Same thing without a password
# %wheel ALL=(ALL) NOPASSWD: ALL

## Uncomment to allow members of group sudo to execute any command
_%sudo<>ALL=(ALL) ALL

## Uncomment to allow any user to run sudo if they know the password
## of the user they are running the command as (root by default).
# Defaults targetpw  # Ask for the password of the target user
# ALL ALL=(ALL) ALL  # WARNING: only use this together with 'Defaults targetpw'

## Read drop-in files from /etc/sudoers.d
## (the '#' here does not indicate a comment)
#includedir /etc/sudoers.d
```

`1Help   2Save   3Mark   4Replac  5Copy   6Move   7Search  8Delete  9PullDn  10Quit`

```
*                                                     *
*   Customised "Live Distro" for the following modules: *
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*                                                     *
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*    SLAX is based on the Slackware distribution version 14.0 *
*           and on the Linux kernel version 3.6.11    *
*                                                     *
*   Customisation version 1.3a (build date 2020-02-20) *
*    - customised by Andrew Young                      *
*                                                     *
*   Please refer to the "Live CD acceptable use policy", which you *
*    will find in "/etc/aup" on this CD                *
*******************************************************

slax login: root
Password:
Linux 3.6.11.
root@slax:~# useradd -m disuqi
root@slax:~# passwd disuqi
Changing password for disuqi
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
passwd: password changed.
root@slax:~# groupadd sudo
root@slax:~# gpasswd -a disuqi sudo
Adding user disuqi to group sudo
root@slax:~# visudo

root@slax:~#
```

```
****************************************************************************
*  University of Salford                                                  *
*    School of Computing, Science and Engineering                         *
*     Computer Science and Software Engineering                           *
*                                                                         *
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*                                                                         *
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*                                                                         *
*  Customisation version 1.3a (build date 2020-02-20)                     *
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*                                                                         *
*  Please refer to the "Live CD acceptable use policy", which you         *
*    will find in "/etc/aup" on this CD                                   *
****************************************************************************

slax login: disuqi
Password:
Linux 3.6.11.
disuqi@slax:~$ sudo -l

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

Password:
User disuqi may run the following commands on this host:
    (ALL) ALL
disuqi@slax:~$ _
```

```
# .bashrc

# Put your user specific aliases and functions here
alias help="man"
alias rename="mv"
alias dir="ls"




# Source global definitions
if [ -f /etc/bashrc ]; then
        . /etc/bashrc
fi
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~
-- INSERT --                                              6,15          All
```

```
# Put your user specific aliases and functions here
alias help="man"
alias rename="mv"
alias dir="ls"



# Source global definitions
if [ -f /etc/bashrc ]; then
        . /etc/bashrc
fi
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"/etc/skel/.bashrc" 13L, 190C written
disuqi@slax:~$
```

```
Options:
  -a, --add USER                add USER to GROUP
  -d, --delete USER             remove USER from GROUP
  -h, --help                    display this help message and exit
  -r, --remove-password         remove the GROUP's password
  -R, --restrict                restrict access to GROUP to its members
  -M, --members USER,...        set the list of members of GROUP
  -A, --administrators ADMIN,...
                                set the list of administrators for GROUP
Except for the -A and -M options, the options cannot be combined.


disuqi@slax:~$ sudo gpasswd -a myron team1
Adding user myron to group team1
disuqi@slax:~$ sudo gpasswd -a mel team1
Adding user mel to group team1
disuqi@slax:~$ sudo gpasswd -a john team2
Adding user john to group team2
disuqi@slax:~$ sudo gpasswd -a ed team2
Adding user ed to group team2
disuqi@slax:~$ sudo mkdir /home/team1
disuqi@slax:~$ sudo mkdir /home/team2
disuqi@slax:~$ sudo chown disuqi.team1 /home/team1/
disuqi@slax:~$ sudo chown disuqi.team2 /home/team2/
disuqi@slax:~$ sudo chmod 2575 /home/team1/
disuqi@slax:~$ sudo chmod 2070 /home/team2/
disuqi@slax:~$ ls -l /home
total 0
drwx------ 11 disuqi disuqi 340 May 19 11:54 disuqi/
drwx------  2 ed     ed     140 May 19 12:02 ed/
drwx------  2 john   john   140 May 19 12:02 john/
drwx------  2 mel    mel    140 May 19 12:02 mel/
drwx------  2 myron  myron  140 May 19 12:02 myron/
dr-xrwsr-x  2 disuqi team1   40 May 19 12:06 team1/
d---rws---  2 disuqi team2   40 May 19 12:06 team2/
disuqi@slax:~$
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"/home/team1/myron.txt" [New] 4L, 31C written
myron@slax:~$ ls home/team2
/bin/ls: cannot access home/team2: No such file or directory
myron@slax:~$ touch /home/team2/myron.txt
touch: cannot touch ■/home/team2/myron.txt■: Permission denied
myron@slax:~$ _
```
```
This file was made by Myron
Edited by mel
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"/home/team1/myron.txt" 5L, 45C written
mel@slax:~$ touch /home/team2/mel.txt
touch: cannot touch ■/home/team2/mel.txt■: Permission denied
mel@slax:~$
```

```
This file was made by John
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"/home/team2/john.txt" [New] 5L, 31C written
john@slax:~$ ls /home/team1
myron.txt  myron.txt~
john@slax:~$
```

```
This file was made by Myron
Edited by mel
Trying to edit it as john
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This file was made by John
Edited by Ed
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"/home/team2/john.txt" 6L, 44C written
ed@slax:~$ ls /home/team1
myron.txt  myron.txt~
ed@slax:~$ _
```

```
******************************************************************
*  University of Salford                                          *
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*     Computer Science and Software Engineering                   *
*                                                                  *
*  Customised "Live Distro" for the following modules:            *
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*   SLAX is based on the Slackware distribution version 14.0       *
*            and on the Linux kernel version 3.6.11                *
*                                                                  *
*  Customisation version 1.3a (build date 2020-02-20)             *
*   - customised by Andrew Young                                   *
*                                                                  *
*  Please refer to the "Live CD acceptable use policy", which you  *
*   will find in "/etc/aup" on this CD                             *
******************************************************************

slax login: disuqi
Password:
Linux 3.6.11.
Last login: Wed May 19 11:58:14 +0000 2021 on /dev/tty1.
disuqi@slax:~$ ls home/team2
/bin/ls: cannot access home/team2: No such file or directory
disuqi@slax:~$ ls /home/team1
myron.txt  myron.txt~
disuqi@slax:~$ _
```

```
This file was made by Myron
Edited by mel
Trying to edit it as disuqi
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E45: 'readonly' option is set (add ! to override)                    6,27        All
```