Roldán Sanchis Martínez

Computer Systems 1st Term Assessable Activity

Exercise 1:

Section a:

First of all, to go to home directory use the command:

cd /home

Inside home we can create the full structure with just one command:

mkdir -p ../tmp/"My Files"/{"Cook
Recipes"/{"Salty","Sweet"},"Comics","Movies"/{"Superheroes","Comedy"}}

But we will follow the activity statement and create the structure using one command for each hierarchical level as follows.

This will create the first level:

mkdir ../tmp/"My Files"

The second level will be created with this one:

mkdir ../tmp/"My Files"/{"Cook Recipes","Comics","Movies"}

And, finally, with this command we will create the last hierarchical level:

mkdir ../tmp/"My Files"/{"Cook
Recipes"/{"Salty","Sweet"},"Movies"/{"Superheroes","Comedy"}}

Now we need the touch command to create the files inside folders:

touch ../tmp/"My Files"/"Cook Recipes"/"Salty"/"Doughnut.jpg"

The first one to create de image and then this one to create the remaining files:

touch ../tmp/"My Files"/"Comics"/"Man of Steel.txt" ../tmp/"My Files"/"Comics"/"Wonder Woman.txt"

Section b

First, to change to personal folder use the command:

cd ~

1. We can create the file directly by using pipes or redirection to enter the text, but first of all we will create the file by using:

touch /tmp/"My Files"/"Cook Recipes"/"Salty"/"Mac and cheese.txt"

And using pipes to put the text inside the file:

echo "To make macaroni and cheese, you must first buy macaroni and cheese" > /tmp/"My Files"/"Cook Recipes"/"Salty"/"Mac and cheese.txt"

2. To delete the Sweet directory we can use the "rmdir" or "rm -r" command:

rmdir /tmp/"My Files"/"Cook Recipes"/"Sweet"

3. To copy the file into Movies/Superheroes and enter the text we will use the following commands:

cp /tmp/"My Files"/"Comics"/"Man of Steel.txt" /tmp/"My Files"/"Movies"/"Superheroes"/"Man of Steel_copy.txt"

And then, to enter the text:

echo "Up up and away!" » /tmp/"My Files"/"Movies"/"Superheroes"/"Man of Steel_copy.txt"

Section c

To create a hard link we use the "ln" command with an absolute path:

ln /tmp/"My Files"/"Comics"/"Man of Steel.txt" /tmp/"My Files"/"Comics"/"Man of Steel_hard.txt"

To create a symbolic link we use the "ln -s" command with an absolute path:

ln -s /tmp/"My Files"/"Comics"/"Wonder Woman.txt" /tmp/"My Files"/"Comics"/"Wonder Woman_soft.txt"

2. Modifying the content of "Man of Steel_copy.txt" will not modify "Man of Steel.txt" nor "Man of Steel_hard.txt" because it's just a copy of "Man of Steel.txt" and "Man of Steel_hard.txt" it's a hard link of "Man of Steel.txt". So, if you modify a copy, the changes will affect just the copy.

3. As the copy it's just a copy, deleting the "original" won't affect the copy. And in a similar way, deleting the "original" won't affect the hard link. So nothing will happen to the other files.

4. If you delete the directory the "Wonder Woman.txt" file will also be delete, so the soft link will be broken.

Exercise 2

Section a

The following command creates a user in a non-interactive way with a home/user_name and a /bin/sh and a user_name_password as a password (-m creates de directory if not exists, and -d defines the directory as home):

sudo useradd -m -d /home/gru -s /bin/sh -p gru_password gru

Also, with this command you can change the password:

sudo passwd gru

To create the remaining users:

sudo useradd -m -d /home/kevin -s /bin/sh -p kevin_password kevin

sudo useradd -m -d /home/stuart -s /bin/sh -p stuart_password stuart

sudo useradd -m -d /home/nefario -s /bin/sh -p nefario_password nefario

sudo useradd -m -d /home/agnes -s /bin/sh -p agnes_password agnes

sudo useradd -m -d /home/supermegavillain -s /bin/sh -p supermegavillain_password supermegavillain

Section b

To create a group we use the "groupadd" command as it follows:

sudo groupadd masteroftheuniverse

sudo groupadd minions

sudo groupadd kids

sudo groupadd researchanddevelopment

Now we can add users to groups with the following command:

sudo usermod -a -G masteroftheuniverse gru supermegavillain

sudo usermod -a -G minions stuart kevin

sudo usermod -a -G kids agnes

sudo usermod -a -G researchanddevelopment nefario

After that, we assign ownership with:

sudo chown -R gru:masteroftheuniverse /home/evilplans /home/science

sudo chown agnes:kids /home/operation_birthday

sudo chown nefario:researchanddevelopment /home/science

sudo chown stuart:minions /home/science/bananas

sudo chown kevin:minions /home/science/bananas

sudo chown supermegavillain:masteroftheuniverse /home/evilplans

And finally, we assign the permissions with:

sudo chmod 750 /home/evilplans

sudo chmod 700 /home/operation_birthday

sudo chmod -R 750 /home/science