GENERALITAT VALENCIANA
Conselleria d'Educació, Cultura i Esport

ceedcv CENTRE ESPECÍFIC D'EDUCACIÓ A DISTÀNCIA DE LA COMUNITAT VALENCIANA

Assessable Task 1st Term

Computer Systems 23/24

Desarrollo de Aplicaciones Web

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Cicles Formatius

License

Nomenclature

Throughout this unit different symbols will be used to distinguish important elements within the content. These symbols are:

ÍNDICE

INSTRUCTIONS TO DELIVER

Follow the next instructions to deliver your solution to this assessable activity:

- The file to deliver must be in **PDF format**
- The delivered file must be in english.
- The name of it should follow the next format: “Surname1_Surname2_Name_CS_1stTerm.pdf” where Surname1 is your first surname, Surname2 is your second surname and Name Is your name.
- The delivered file must have a cover with, at least, your name, surnames and as title it should say “Computer Systems 1st Term Assessable Activity”.
- Inside the delivered file remember specifying to which exercise and section you are answering.
- Read thoroughly the statement of each exercise.
- You must write all the commands **as text**. All the **screenshots** attached **will be removed** before grading the exercise.

As a reminder on the general instructions on assessable activities that are specified on the student’s guide:

- The delivered solution must be individual and original.
- Any copies or frauds detected will be graded with a 0.
- If there’s a suspicion about copies or frauds, the student can be summoned to a revision meeting where the teacher will ask questions to verify the authenticity of the solution.

1. Exercise 1

Section a

Using the terminal, go to your home directory and from there create the following directory and files structure in `/tmp` directory. You must use only one command for each hierarchical level and use relative paths:

```
My Files
| -- Cook Recipes
      | -- Salty
      | -- Sweet
            | -- Doughnut.jpg
| -- Comics
      | -- Man of Steel.txt
      | -- Wonder Woman.txt
| -- Movies
      | -- Superheroes
      | -- Comedy
```

Section b

From your personal folder, using absolute paths, perform the following 3 tasks:

1. Use a command to create a file called `Mac and cheese.txt` inside the `Cook Recipes/Salty` directory and using pipes or redirection, enter "To make macaroni and cheese, you must first buy macaroni and cheese".
2. Delete the `Sweet` directory.
3. Now copy the file `Man of Steel.txt` into the Movies/Superheroes directory with the name `Man of Steel_copy.txt` and enter the text `Up up and away!`.

Section c

Now, you can use absolute or relative paths as you like it. But comment what are you using and perform the following tasks:

1. Create a hard link to `Man of Steel.txt` inside the Comics directory and name it `Man of Steel_hard.txt`. Create also, a symbolic link to `Wonder Woman.txt` and place it in Movies/Superheroes with the name `Wonder Woman_soft.txt`.
2. Modify the contents of the file `Man of Steel_copy.txt`. Are the files `Man of Steel.txt` and `Man of Steel_hard.txt` modified? Why?

3. If you delete the file `Man of Steel.txt`, what will happen to `Man of Steel_hard.txt` and `Man of Steel_copy.txt`?
4. Delete the `Comics` directory. What happens to the file `Wonder Woman_soft.txt`?

2. Exercise 2

Specify the command/s to achieve the next requirements:

Section a

Create the next users in a **non-interactive way**. Each one must accomplish the next requirements:

- Must have a home folder.
- Their shell must be **`/bin/sh`**
- Their password must be their user followed by `_password`
- The user name is **case-sensitive**:

The users to create are:

- `gru`
- `kevin`
- `stuart`
- `nefario`
- `agnes`
- `supermegavillain`

Explain the command/s you use for both creating the user and achieving the requirements (home, shell, password) and why you chose that way. Think it thoroughly.

Section b

Only the next groups can exist, specify the command to create them:

- `masteroftheuniverse`
- `minions`
- `kids`
- `researchanddevelopment`

Given the next folder and files structure (which you don't need to create, because it already exists):

```
├── evilplans
│   └── steal_computer_systems_exam.txt
├── operation_birthday
│   └── grus_birthday_plan.txt
└── science
    ├── bananas
    └── evilserum
        └── recipe.txt
```

Accomplish the next requirements:

- `Gru` can access anything anywhere besides from the folder `operation_birthday`, which cannot see anything (not even listing the files).
- `Agnes` can only access to `operation_birthday` and she's the only one able to write inside of it.
- `Nefario` can access to `operation_birthday`, but can't delete anything.
- The minions `stuart` and `kevin` cannot access anything besides from the folder `bananas`.
- `Nefario` should only access to the science folder and should be the only one able to write in that folder.
- The `supermegavillain`, because of a silly `Gru`'s mistake, can access to the `evilplans`.

Specify the commands to define the permissions on the folders and file structure and the belongings to each of the groups. Explain why you chose those commands.

3. EXERCISE 3

On a computer with Ubuntu 22.04 installed you have a directory named `/user/important_data` with important information, and you want to copy the data each day on a different hard disk in case the main system disk fails. The directory is on a ext4 file system.

In the copy, you must preserve the attributes: permissions, timestamps, and ownership.

It will not create historical data: each day, the directory should have the same data as the original directory.

Explain how you would do this. Indicate:

- How you should prepare the system: which commands you would run, which user should run them, and which configuration files you would modify, how and why.
- The command(s) you should run daily for the backup, who should run it and why.