Introduction to Unix 2

Diego Useche - dh.useche@uniandes.edu.co

Metodos Computacionales I

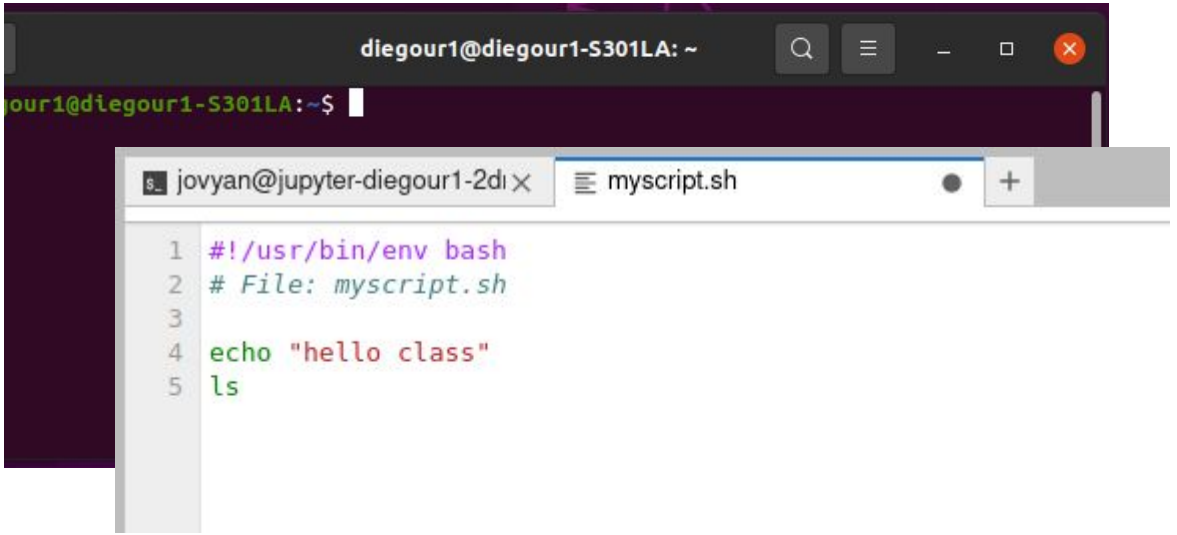
Physics Department, Universidad de los Andes, Bogotá

Shell scripting

We can create a .sh file to perform various Linux commands, start with,

#!/usr/bin/env bash

to connect to bash



some files are not executable use **chmod -x** to change the permission of the file to be executable

chmod +x myscript.sh

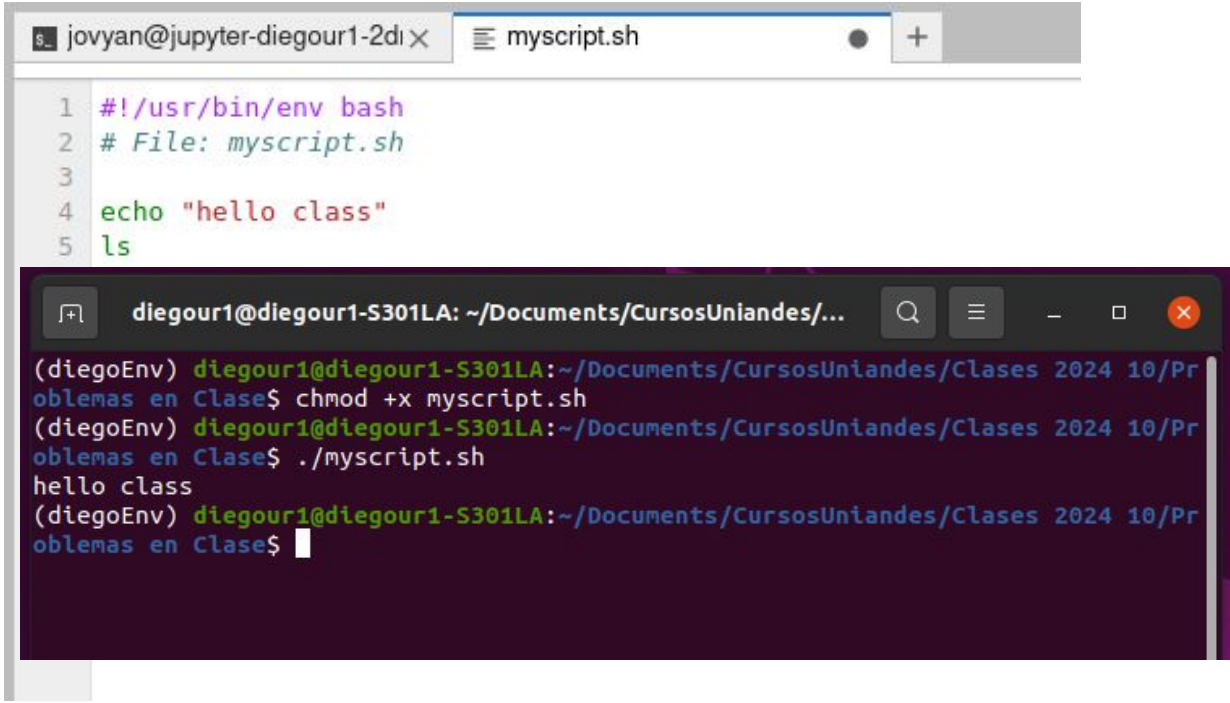
Compile the shell script

After changing the permission of the script

chmod +x myscript.sh

We compile the bash file with **./**

./myscript.sh

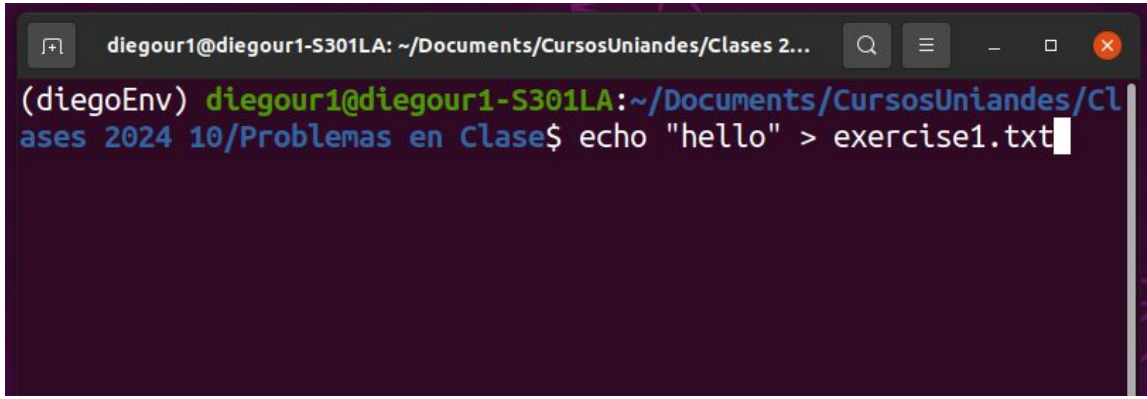


Redirecting output

Use **>** to redirect output

echo "hello" **>** exercise1.txt

creates a txt file with "hello"



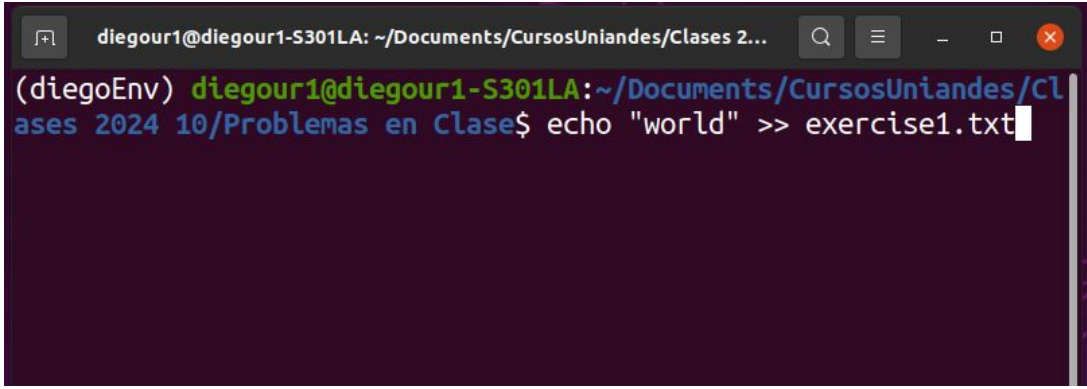
Redirecting output

Use **>>** to redirect output to the next line of .txt file

echo "world" **>>** exercise1.txt

write the next line of the txt file with "world"

if we used **>** this command would overwrite the .txt file



Example

pipe

Structure

command 1 | command 2 | … | command n | …

Use the output of command 1 as the input of Command 2

pipe example

Recall

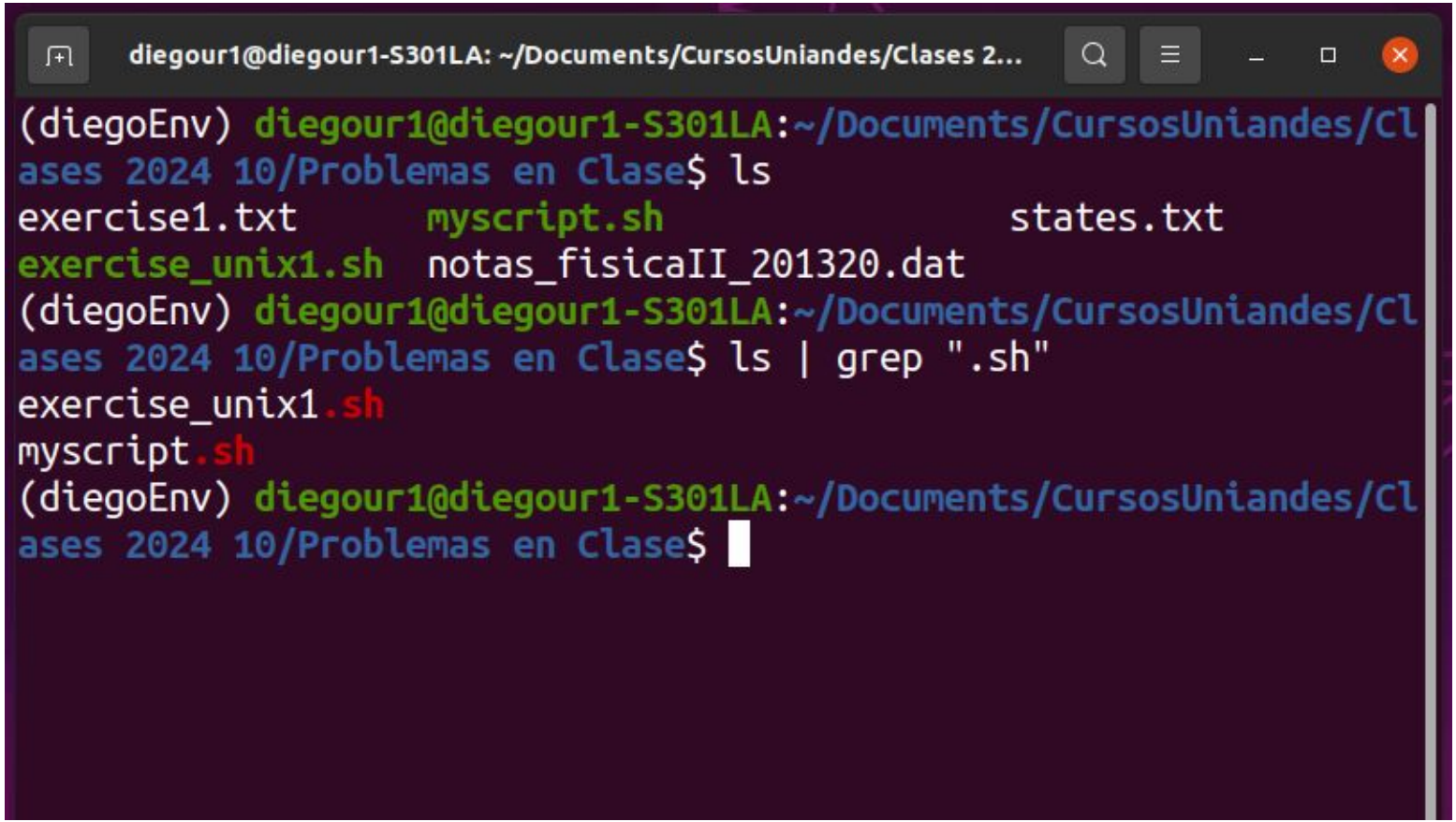
grep ".sh" file_list.txt

We may search for .sh files in a directory by

ls | grep ".sh"

The output of list is taken as the input of grep

pipe example



pipe example

Recall

grep ".sh" file_list.txt

We may search for .sh files in a directory by

ls | grep ".sh"

The output of list is taken as the input of grep

Example

Other commands

sudo apt-get install emacs

use sudo to install new programs in linux

wget https://raw.githubusercontent.com/ComputoCienciasUniandes/HerramientasComputacionalesDatos/master/Homework/hw1/01_notas.tsv

this command retrieves information from the web

awk example

After retrieving data from the web

wget https://raw.githubusercontent.com/ComputoCiencias Uniandes/HerramientasComputacionalesDatos/master/Hom ework/hw1/01_notas.tsv

We use awk to do operations of the text

awk '{if($4 >= 4.0) print $0}' 01_notas.tsv

$4 indicates column 4 and $0 indicates all columns of the file

awk example

```
jovyan@jupyter-diegour1-2dmetodoscomputacionales1-2dffmabu98:~$ awk '{if($4 >= 4.0) print $0}' 01_notas.tsv
#Nombres        Apellidos       Carrera P1      P2      P3
Felipe  Gómez   BIOLOG  4.3     2.1     3.0
Diana   Cubillos        GEOFIS  4.5     2.6     1.4
Fabio   Lora    INGELE  4.8     4.7     4.9
José    Ishitsuka       INGCIV  4.7     4.3     4.3
Christian       Sarmiento       INGSIS  5.0     4.8     4.8
Mauricio        Suárez  INGMEC  4.1     3.2     4.6
Mario   Higuera INGCIV  4.7     3.2     1.9
Farid   Char    INGELE  4.3     2.7     1.4
Oscar   Martínez        BIOLOG  4.4     1.0     2.2
Jonathan        Quirola GEOFIS  4.9     3.2     3.9
Rigoberto       Casas   GEOFIS  4.6     2.8     4.2
Yesid   Molina  GEOFIS  4.7     2.2     2.7
Jair    Riaño   INGMEC  4.7     2.9     2.4
Guillermo       González        INGMEC  4.9     3.3     2.6
Juan    Buitrago        INGIND  4.8     3.6     4.5
Jorge   Garcia  BIOLOG  4.6     3.8     4.4
Mauricio        Vinasco INGMEC  4.8     3.4     4.0
Lina    Benitez MATEMA  4.8     2.1     4.7
Germán  Fajardo FISICA  4.2     1.9     1.7
Julián  Corzo   INGIND  4.4     4.1     3.2
Christian       Moreno  INGIND  4.2     3.6     2.8
Oscar   Restrepo        INGCIV  4.8     1.3     2.7
William Medina  GEOFIS  4.4     3.9     1.1
Lorena  Jiménez FISICA  4.5     1.2     2.8
Ingrid  Blanco  INGMEC  4.7     2.4     3.6
```

Example

Conditionals in bash

```
m = 4
n = 2

if [ $n -lt $m ]
      then
            echo "n is less than m"
fi
```

Loops in bash

```
for i in {1..20}
    do
        echo "number: $i"
    done
```

Example

References

https://www.redswitches.com/blog/if-else-in-shell-script/
https://www.freecodecamp.org/espanol/news/condicional-if-en-bash/