

Lab 2

Shell Scripting!

SOME PEOPLE

BASH

IS THIS A DINOSAUR



See this file
over here!

student_details.csv

```
root@DESKTOP-4F95N0S:~/TA/ISS# cat courseid_4729_participants.csv
"First name","Last name","ID number","Email address",Groups
Pullepu,Abhiroop,2024117014,pullepu.abhiroop@research.iiit.ac.in,
Soham,Acharya,2024113012,soham.acharya@research.iiit.ac.in,
Dileepkumar,Adari,2022101007,dileepkumar.adari@students.iiit.ac.in,
AV,Aditya,2024111031,av.aditya@research.iiit.ac.in,
Ananya,Agarwal,2024114007,ananya.agarwal@research.iiit.ac.in,
Ayush,Agarwal,2024101026,ayush.aga@students.iiit.ac.in,
Priyanka,Agarwal,2024101016,priyanka.agarwal@students.iiit.ac.in,
Shreyas,Agarwal,2024101118,shreyas.agarwal@students.iiit.ac.in,
Tatva,Agarwal,2024117005,tatva.agarwal@research.iiit.ac.in,
Naman,Aggarwal,2024101018,naman.aggarwal@students.iiit.ac.in,
RakshitAggarwal,Aggarwal,2024101087,rakshitaggarwal.a@students.iiit.ac.in,
Arnav,Agnihotri,2024101103,arnav.agnihotri@students.iiit.ac.in,
Ananya,Agrawal,2024101036,ananya.agrawal@students.iiit.ac.in,
Aryan,Agrawal,2024117009,aryan.a@research.iiit.ac.in,
Keshvi,Agrawal,2024101109,keshvi.agrawal@students.iiit.ac.in,
Kushagra,Agrawal,2024101110,kushagra.agrawal@students.iiit.ac.in,
Shoaib,Ahmed,2024114014,shoaib.a@research.iiit.ac.in,
Vemulapalli,Akshay,2024113029,vemulapalli.akshay@research.iiit.ac.in,
Akshit,Akshit,2024101121,akshit.akshit@students.iiit.ac.in,
Kandagatla,Akshith,2024111004,kandagatla.akshith@research.iiit.ac.in,
Neel,Amrutia,2022101117,neel.amrutia@students.iiit.ac.in,
ChanakyaManikanta,Arumalla,2024101120,chanakyamanikanta.a@students.iiit.ac.in,
Divyansh,Atri,2024113001,divyansh.atri@research.iiit.ac.in,
Vaishnavi,Badhe,2024115003,vaishnavi.badhe@research.iiit.ac.in,
Havish,Balaga,2024101092,havish.balaga@students.iiit.ac.in,
Devansh,Bansal,2024111019,devansh.bansal@research.iiit.ac.in,
Ishan,Bansal,2024113017,ishan.b@research.iiit.ac.in,
Manik,Bansal,2024101084,manik.bansal@students.iiit.ac.in,
Sara,Bansal,2024101093,sara.bansal@students.iiit.ac.in,
```

Do you see a
problem in the
file?

student_details.txt

```
root@DESKTOP-4F95N0S:~/TA/ISS# cat courseid_4729_participants.csv
"First name","Last name","ID number","Email address",Groups
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Ishan,Bansal,2024113017,ishan.b@research.iiit.ac.in,
Manik,Bansal,2024101084,manik.bansal@students.iiit.ac.in,
Sara,Bansal,2024101093,sara.bansal@students.iiit.ac.in,
```

What is the main difference
between the TAs and the
students in this case?

The TAs are
imposters in
this list!

What can we do
about that?



```
grep "2024" student_details.csv
```

How do we
filter based
on the Roll
No.?

Let's come to
certain real
life use cases
of grep!

Do people actually take Kassis
like HP seriously?

Let's come to
certain real
life use cases
of grep

**According to me, AA
and IG (roomies) are
the best and most
loyal friends that u
should have in your
life, like they are not
those kind of people
who will talk behind
your back as some
do in our batch.
Wishes our
friendship will last
forever.💪🥰**

What if we want just
the names from the
file `student_details.csv`
(no email id, roll no., etc.)

We are trying to get
the first and the
second columns here



Welcome awk!



```
grep "2024" student_details.csv | awk -F, '{print $1}'  
grep "2024" student_details.csv | awk -F, '{print $1 " " " $2}'
```

Suppose we want
to change the
commas to spaces



Naman, Singhal, 2024114013, naman.s@research.iiit.ac.
Vishesh, Singhal, 2024117001, vishesh.singhal@research.
Samarth, Singla, 2024101020, samarth.singla@students.
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Avani, Sood, 2024111020, avani.sood@research.iiit.ac.
Pranav, Srivastava, 2024111023, pranav.srivastava@res
Ipsit, Subudhi, 2024101003, ipsit.subudhi@students.ii
Poluri, Suhas, 2024101064, poluri.suhas@students.iiit
Karthik, Sundram, 2024101130, karthik.sundram@student
Rishith, Sunil, 2024113027, rishith.sunil@research.ii
Sreevijay, Sunil, 2024101023, sreevijay.sunil@student
Arushi, Tandon, 2024111024, arushi.tandon@research.ii
SaiVeeksha, Tavva, 2024113021, saiveeksha.tavva@resea
Kevin, Thakkar, 2022101064, kevin.thakkar@students.ii
Eashaan, Thakur, 2024114006, eashaan.thakur@research.
Kartik, Thapa, 2024115009, kartik.thapa@research.iiit

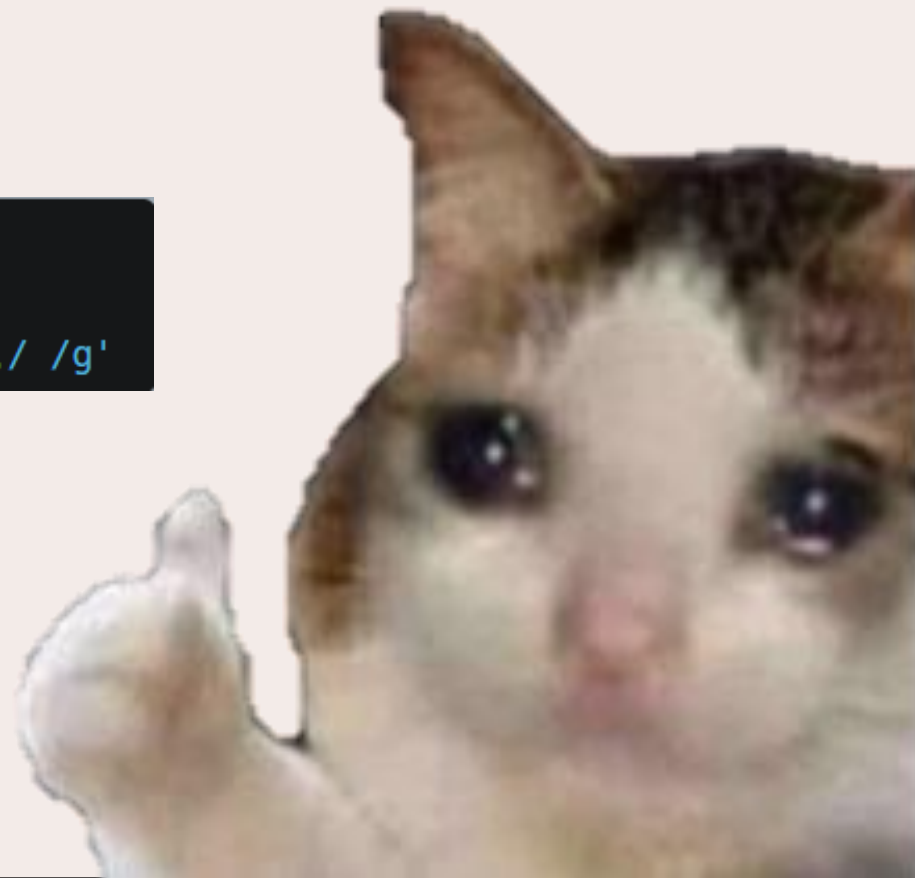
Naman Singhal 2024114013 naman.s@research.iiit.ac.
Vishesh Singhal 2024117001 vishesh.singhal@research.
Samarth Singla 2024101020 samarth.singla@students.
Anushka Sinha 2024101141 anushka.s@students.iiit.a
VineelSaiReddy Somannagari 2024101009 vineelsaired
Chaitanya Soni 2024117013 chaitanya.soni@research.
Harshil Soni 2024111016 harshil.soni@research.iiit
Aishani Sood 2024101083 aishani.sood@students.iiit
Avani Sood 2024111020 avani.sood@research.iiit.ac.
Pranav Srivastava 2024111023 pranav.srivastava@res
Ipsit Subudhi 2024101003 ipsit.subudhi@students.ii
Poluri Suhas 2024101064 poluri.suhas@students.iiit
Karthik Sundram 2024101130 karthik.sundram@student
Rishith Sunil 2024113027 rishith.sunil@research.ii
Sreevijay Sunil 2024101023 sreevijay.sunil@student
Arushi Tandon 2024111024 arushi.tandon@research.ii
SaiVeeksha Tavva 2024113021 saiveeksha.tavva@resea
Kevin Thakkar 2022101064 kevin.thakkar@students.ii
Eashaan Thakur 2024114006 eashaan.thakur@research.
Kartik Thapa 2024115009 kartik.thapa@research.iiit



```
cat courseid_4729_participants.csv | sed 's/,/ /g'
```



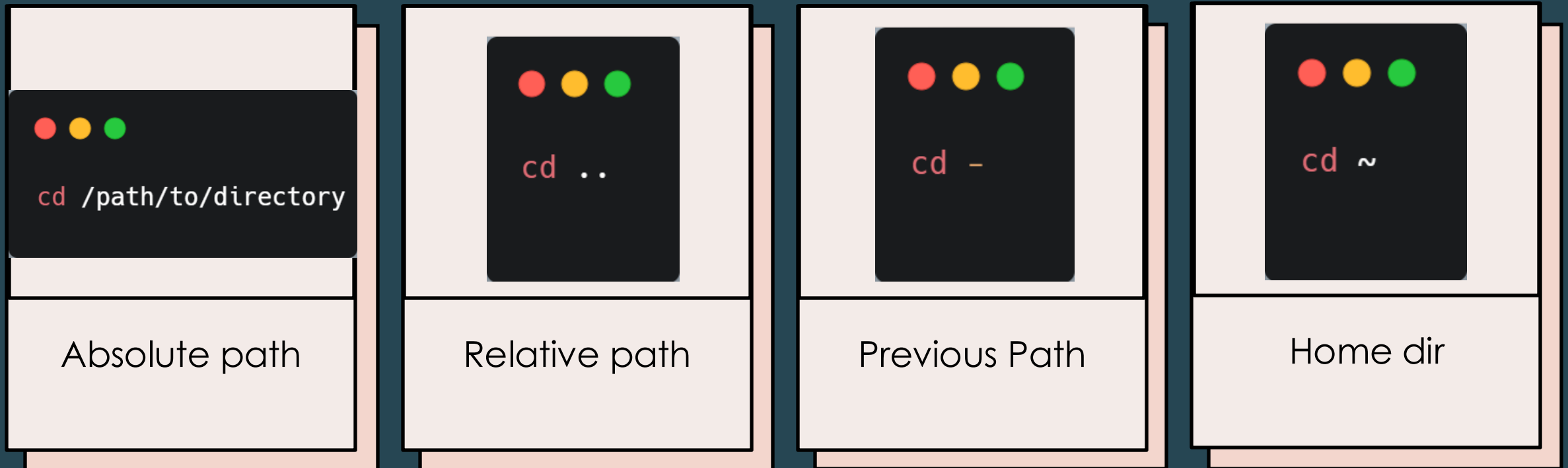

```
cat courseid_4729_participants.csv | sed 's/,/ /g'
```



File management using bash (cd)







File management using bash (cd)




File management using bash (ls)



File management using bash (ls)

 <pre>ls</pre>	 <pre>ls -l</pre>	 <pre>ls -a</pre>	 <pre>ls -al</pre>
List files	List with more information	List all files (including hidden)	Combination of all files and verbose.


File management using bash




```
touch file.txt
```



```
rm file.txt
```




```
rm -r my_directory
```



```
rm -rf my_directory  
rm -ri my_directory
```

File management using bash




```
touch file.txt
```

Create new file /
change date




```
rm file.txt
```

Remove file



```
rm -r my_directory
```

Recursively
remove all files
and dir



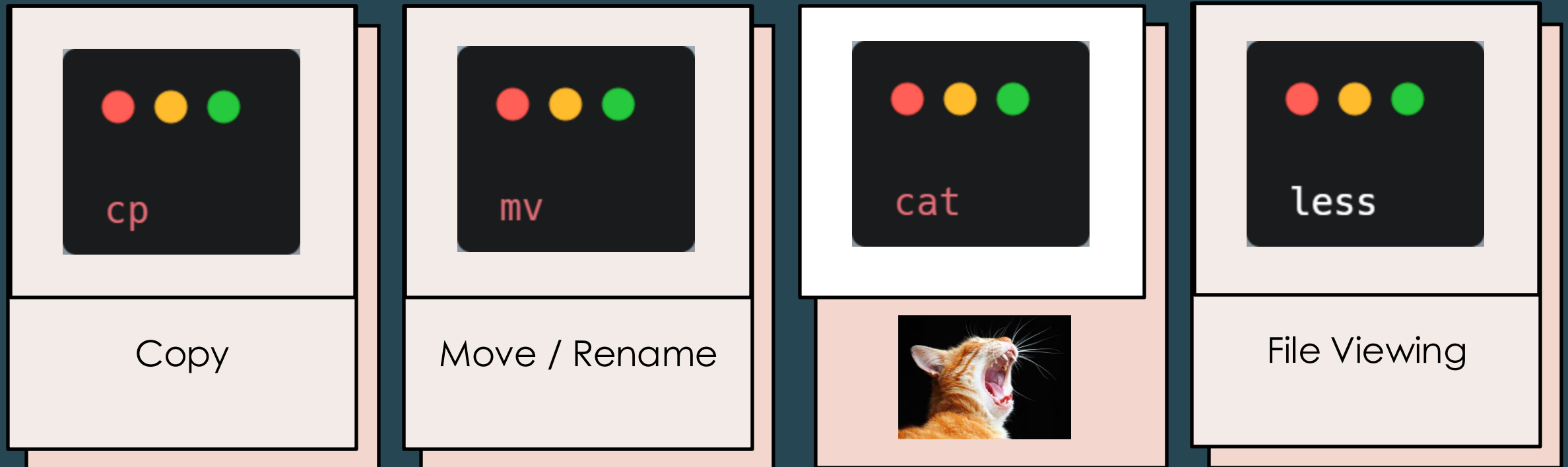
```
rm -rf my_directory  
rm -ri my_directory
```

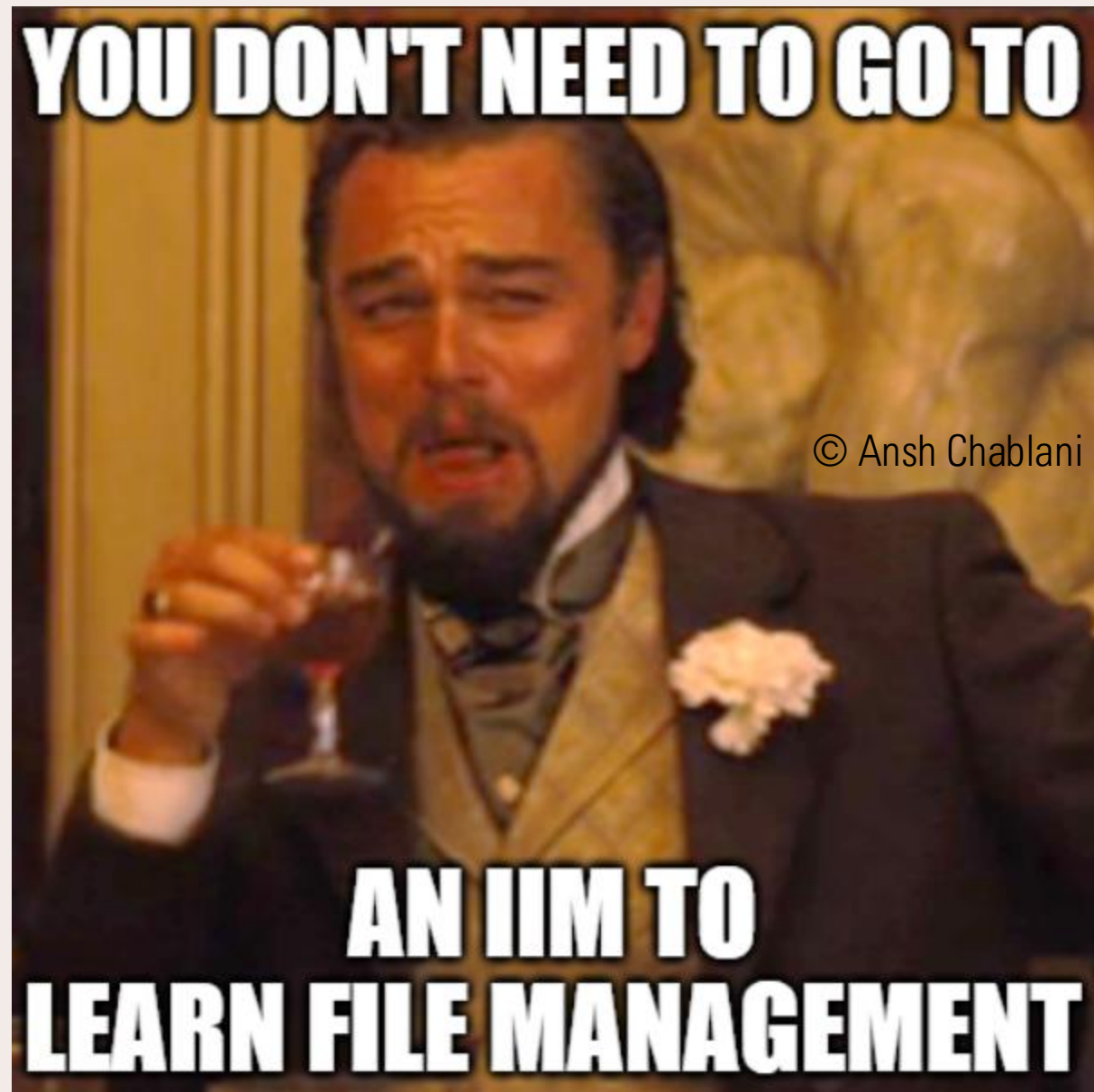
Force/ prompting

File management using bash



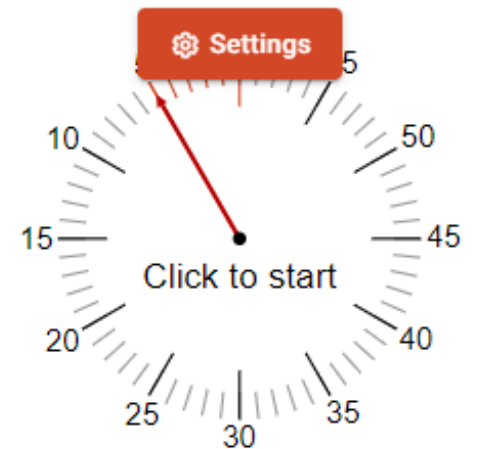
File management using bash





A fun activity!

Using just **grep** and one out of (**cd**, **ls**, **cp**, **mv**), find all the files in the current directory that have .txt in the name.



See, you
already know
how to find
something
somewhere!

But there is more
that you can do!

The find command!



```
find ~ -name secrets.txt
```

Ways to search using the find command

Have a look in the terminal.

Find is slow,
isn't it?

Please welcome the
locate command.





The locate command searches the File System Database (FSDB) and is hence faster



Head and Tail commands



```
head /var/log/syslog
```



```
history | tail -n 10
```



Arrays



```
fruits=( "apple" "banana" "cherry" )
```

```
# Accessing elements
```

```
echo "First fruit: ${fruits[0]}"
```

```
echo "Second fruit: ${fruits[1]}"
```

```
echo "Third fruit: ${fruits[2]}"
```

```
# Iterate over the array
```

```
for fruit in "${fruits[@]}; do
```

```
    echo "Fruit: $fruit"
```

```
done
```

Loops



```
for course in ssd aos dsaps; do  
    echo "I like $course"  
done
```

Iterating over Numbers



```
for i in {1..5}; do  
    echo "Number $i"  
done
```

Using seq for range



```
for i in $(seq 1 5); do  
    echo "Number $i"  
done
```

The while loop




```
count=1
```

```
while [ $count -le 5 ]; do  
    echo "Count is $count"  
    ((count++))  
done
```

Using break and continue

What would be the output of this code?
(Open the linktree and attempt the quiz)



```
for i in {1..10}; do
    if [ $i -eq 5 ]; then
        continue
    elif [ $i -eq 8 ]; then
        break
    fi
    echo "Number $i"
done
```


Nested Loops



```
for i in {1..3}; do
  for j in {A..C}; do
    echo "i=$i, j=$j"
  done
done
```

Conditionals



```
n=5
```

```
if [ "$n" -eq 5 ]; then  
    echo "n is equal to 5"  
elif [ "$n" -lt 5 ]; then  
    echo "n is less than 5"  
else  
    echo "n is greater than 5"  
fi
```



```
str="Hello"
```

```
if [ "$str" = "Hello" ]; then
    echo "String is Hello"
elif [ "$str" != "Hello" ]; then
    echo "String is not Hello"
fi
```

```
if [ -z "$str" ]; then
    echo "String is empty"
else
    echo "String is not empty"
fi
```

Strings



```
file="top_secret_file"
```

```
if [ -e "$file" ]; then
    echo "File exists"
    if [ -f "$file" ]; then
        echo "It's a regular file"
    elif [ -d "$file" ]; then
        echo "It's a directory"
    fi
else
    echo "File does not exist"
fi
```

Files



```
a=10
```

```
b=20
```

```
if [ "$a" -lt 15 ] && [ "$b" -gt 15 ]; then  
    echo "a is less than 15 AND b is greater than 15"  
fi
```

```
if [ "$a" -lt 15 ] || [ "$b" -gt 25 ]; then  
    echo "Either a is less than 15 OR b is greater than 25"  
fi
```

```
if ! [ "$a" -eq 5 ]; then  
    echo "a is NOT equal to 5"  
fi
```

Logical Operators



```
#!/usr/bin/bash
```

```
a=10
```

```
b=20
```

```
if (( a < b )); then  
    echo "a is less than b"  
fi
```

```
if (( (a + b) == 30 )); then  
    echo "a plus b equals 30"  
fi
```

Arithmetic Operators

Cases

```
#!/usr/bin/bash

n=3

case $n in
    3 )
        echo "Equals 3";;
    * )
        echo "Not equal to 3";;
esac
```

Variables

get_name.sh

#!/usr/bin/bash

FIRST_NAME="ANSH"

LAST_NAME="CHABLANI"

FULL_NAME=echo "\$FIRST_NAME \$LAST_NAME"

>> ./get_name.sh

ANSH CHABLANI

Export

Used to set variables



```
export A=3  
echo $A  
>> 3
```


Command Line Arguments



add.sh

```
#!/usr/bin/bash  
echo "$1 + $2" | bc
```

```
>> ./add.sh 1 2  
3
```



take_arguments.sh

```
#!/usr/bin/bash
```

```
echo "Number of Arguments: "$#
```

```
echo "All arguments: "$@
```

```
echo "Command Name: "$0
```

```
>> ./take_arguments.sh arg1 arg2 arg3 arg4
```

```
Number of Arguments: 4
```

```
All arguments: arg1 arg2 arg3 arg4
```

```
Command Name: ./take_arguments.sh
```

read

How do you take input?





Elon Musk  @elonmusk · Feb 19

I finally found how to take user input in bash

 2.5K  10K  142K 



Elon Musk 

@elonmusk

Following

```
● ● ●  
  
echo "Enter your name:"  
read name  
  
echo "Hello, $name!"
```

8:41 PM - 19 Feb 2019

1,810 Retweets 50,996 Likes



 1.6K  1.8K  51K 

Regular Expressions

Let's see this live in the terminal.



bc

WC

Thank you

