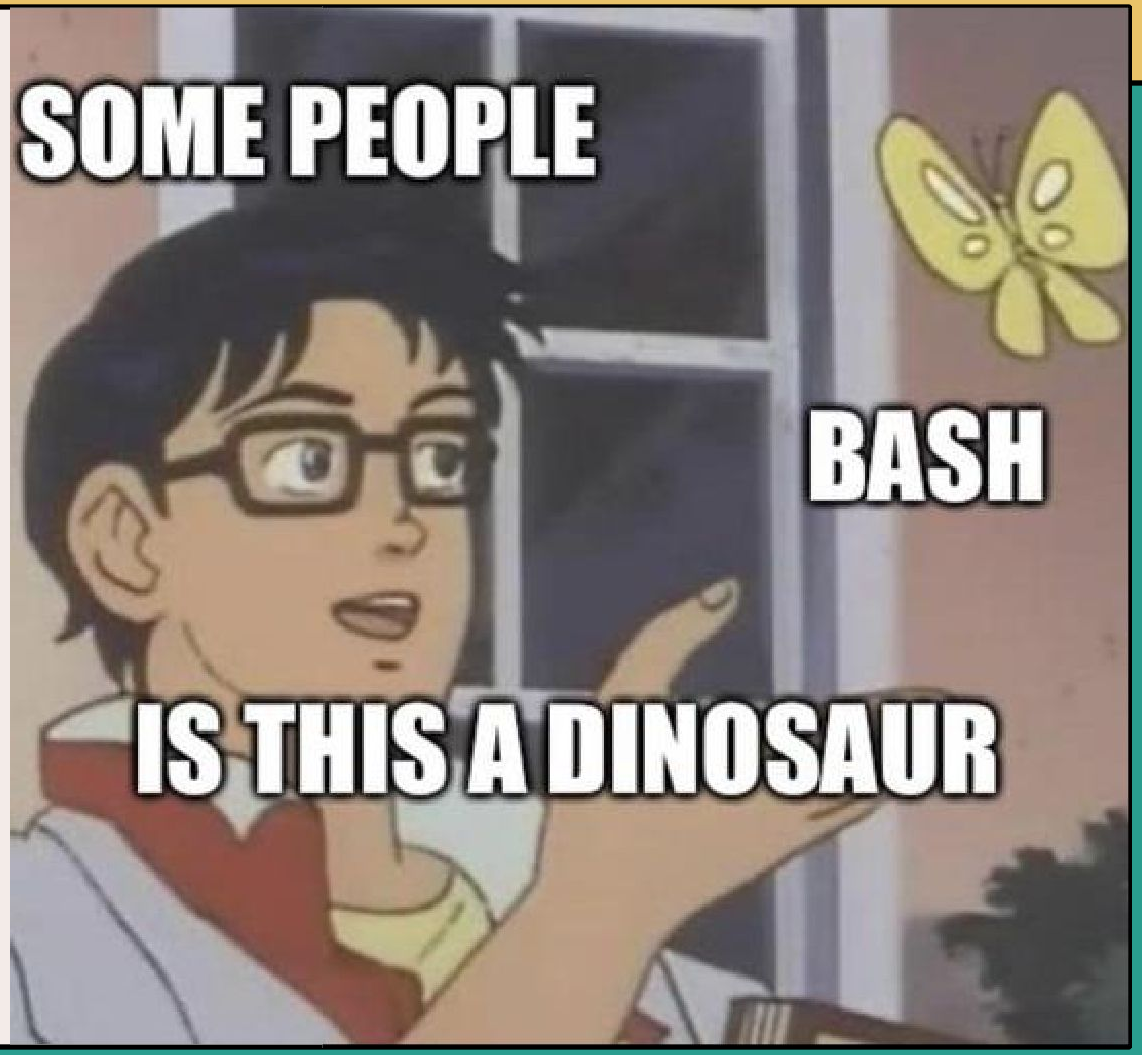
Lab

Shell Scripting!



See this file over here!

student_details.csv

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9:~/Desktop/SEM 7 /SSD/BASH$ cat student_details.csv
"First name","Last name","ID number","Email address",Groups
K,Aasritha,2025204019,k.aasritha@students.iiit.ac.in,
Sangarsu,Abhijith,2025202032,sangarsu.abhijith@students.iiit.ac.in,
Sanket,Adlak,2024204005,sanket.adlak@students.iiit.ac.in,
Amal,Agarkar,2025202023,amal.agarkar@students.iiit.ac.in,
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Aryan,Aryan,2025201017,aryan.aryan@students.iiit.ac.in,
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Rahul,Chand,2025204037,rahul.chand@students.iiit.ac.in,
Maram,Charanteja,2025201010,maram.charanteja@students.iiit.ac.in,
Sankalp,Chaturvedi,2025201083,sankalp.chaturvedi@students.iiit.ac.in,
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Souradeep,Das,2025201004,souradeep.das@students.iiit.ac.in,
Chirag,Dhamija,2022101039,chirag.dhamija@students.iiit.ac.in,
Parth,Dhawale,2025201092,parth.dhawale@students.iiit.ac.in,
Keshav,Dubey,2025204041,keshav.dubey@students.iiit.ac.in,
Aditya,Dwivedi,2025201026,aditya.dwivedi@students.iiit.ac.in,
Anupam,Dwivedi,2025201032,anupam.dwivedi@students.iiit.ac.in,
```

Do you see a problem in the file?

student_details.csv

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9:~/Desktop/SEM 7 /SSD/BASH$ cat student_details.csv
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```

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?

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9
grep "2025" student_details.csv
```

How do we filter based on the Roll No.?

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!

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9:~/Desktop/SEM 7 /SSD/BASH$
 grep "2025" student_details.csv | awk -F, '{print $1}'
```

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9:~/Desktop/SEM 7 /SSD/BASH$
 grep "2025" student_details.csv | awk -F, '{print $1 " " $2}'
```

sed

Suppose we want to change the commas to spaces

```
"First name","Last name","ID number","Email address",Groups
K,Aasritha,2025204019,k.aasritha@students.iiit.ac.in,
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```

```
"First name" "Last name" "ID number" "Email address" Groups
K Aasritha 2025204019 k.aasritha@students.iiit.ac.in
Sangarsu Abhijith 2025202032 sangarsu.abhijith@students.iiit.ac.in
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Subhash Dangeti 2025201007 subhash.dangeti@students.iiit.ac.in
Souradeep Das 2025201004 souradeep.das@students.iiit.ac.in
Chirag Dhamija 2022101039 chirag.dhamija@students.iiit.ac.in
Parth Dhawale 2025201092 parth.dhawale@students.iiit.ac.in
```
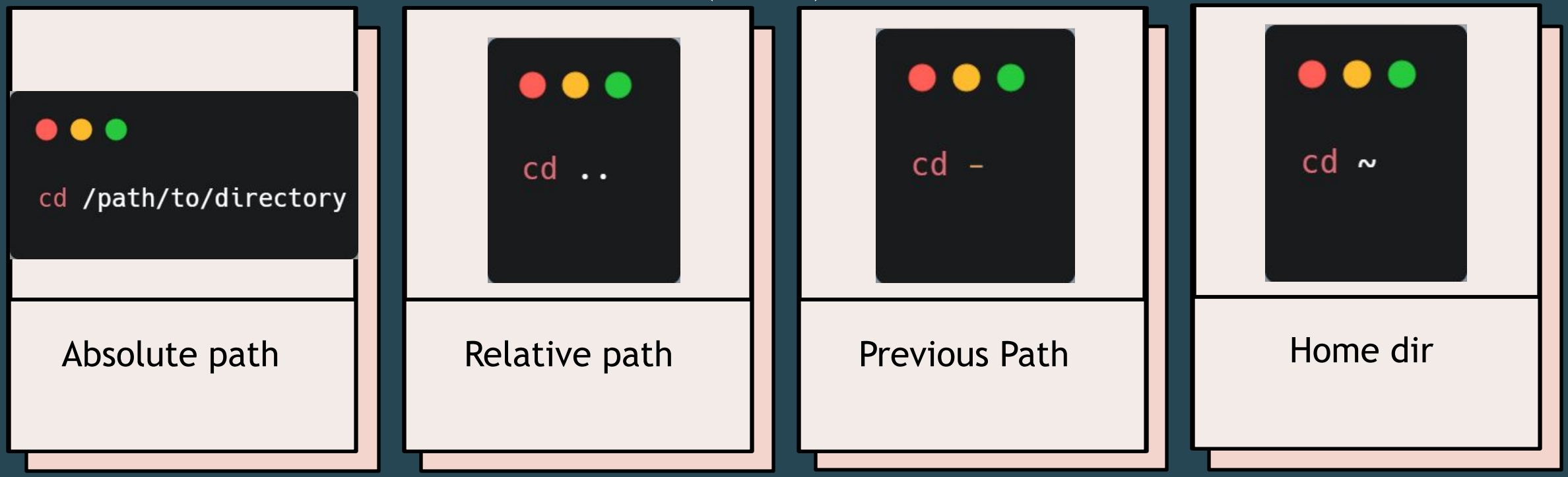
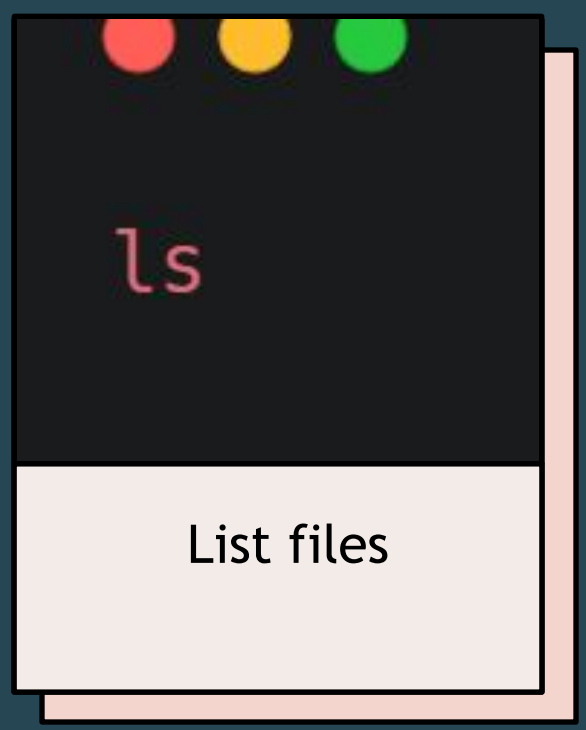

```
chirag-dhamija@chirag-dhamija-Legion-5-16IRX9:
 cat student_details.csv | sed 's/,/ /g'
```

File management using bash (cd)



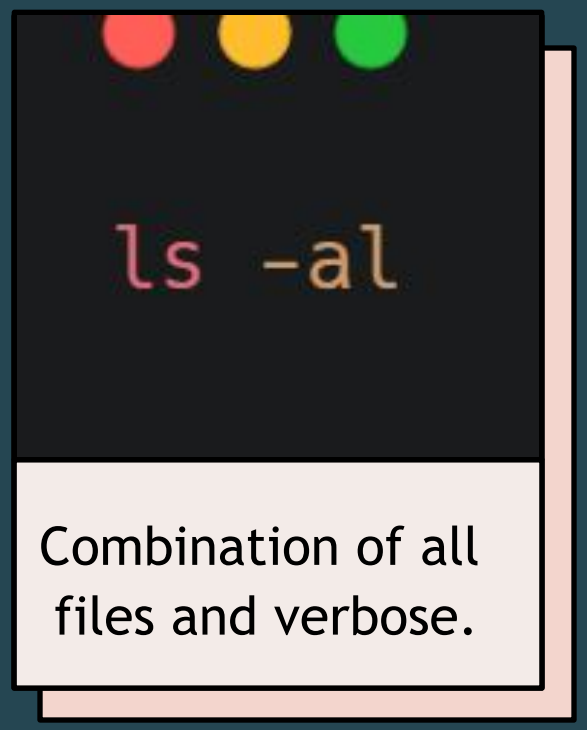
File management using bash (ls)



List files

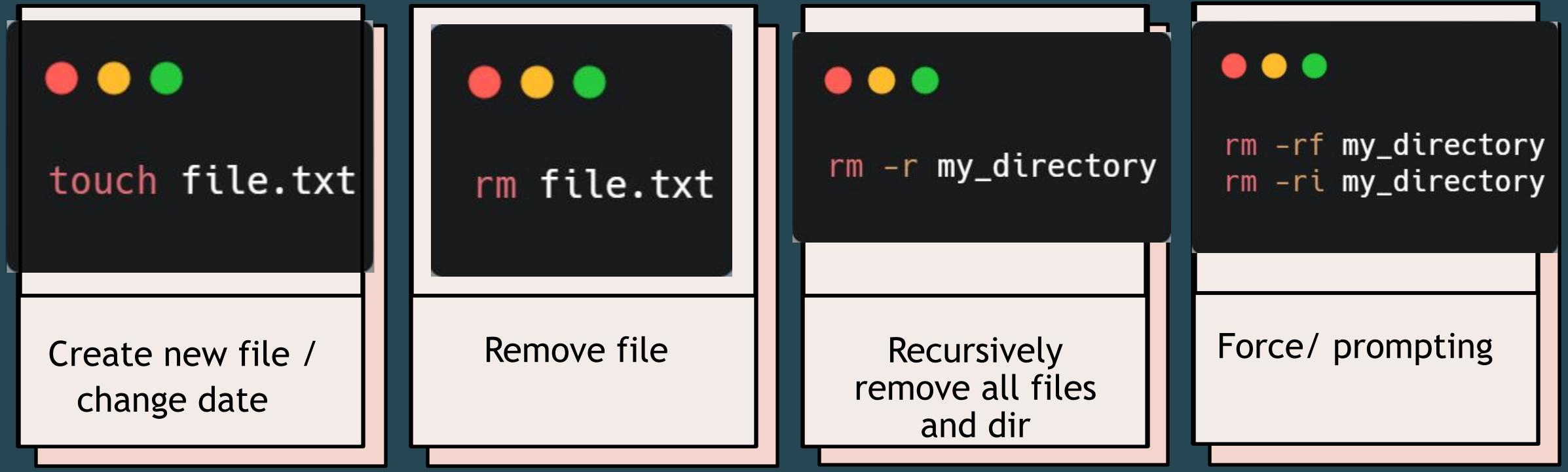
List with more information

List all files (including hidden)

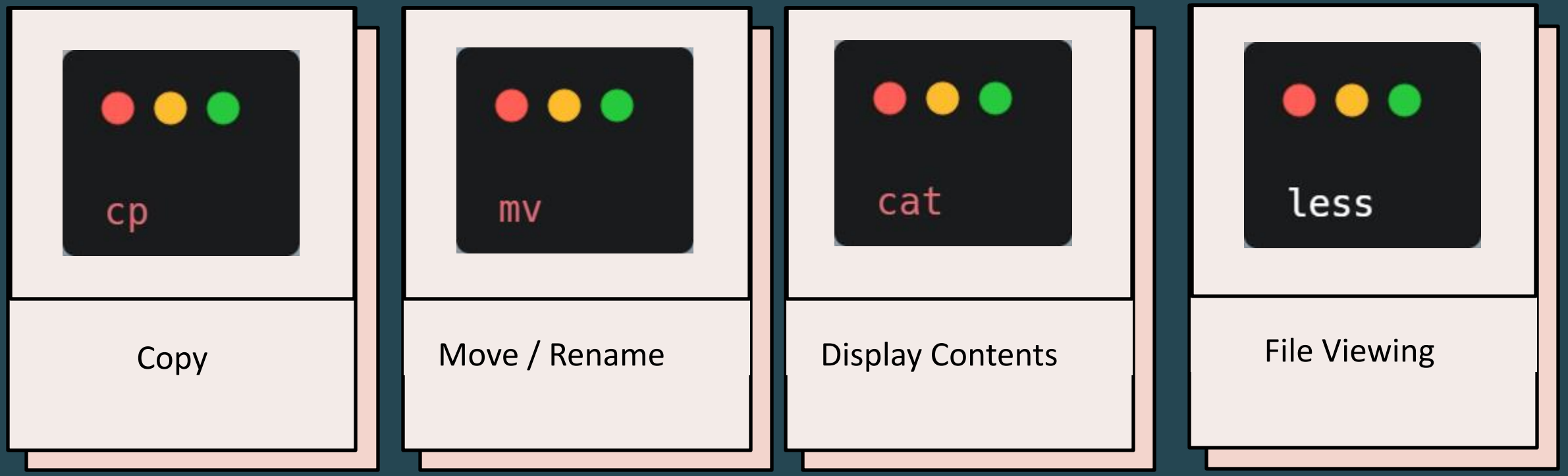


Combination of all files and verbose.

File management using bash



File management using bash



But there is more
that you can do!

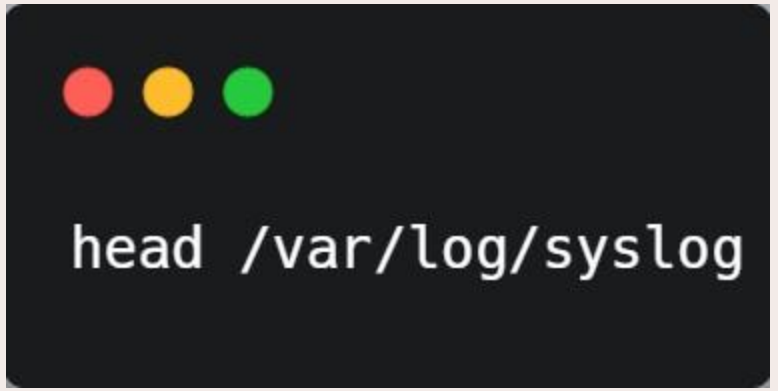
The find command!

Find is slow,

Please welcome the locate command.

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

Head and Tail commands



Shabang

Arrays

```bash
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

Iterating over Numbers

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

Using seq for range

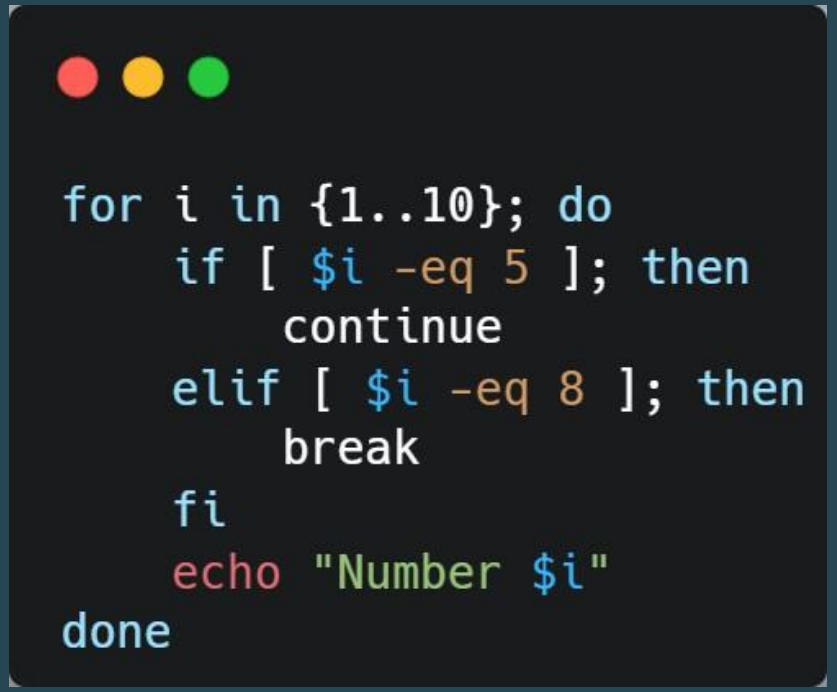
```
for i in $(seq 1 5); do
    echo "Number $i"
done
```

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 ?

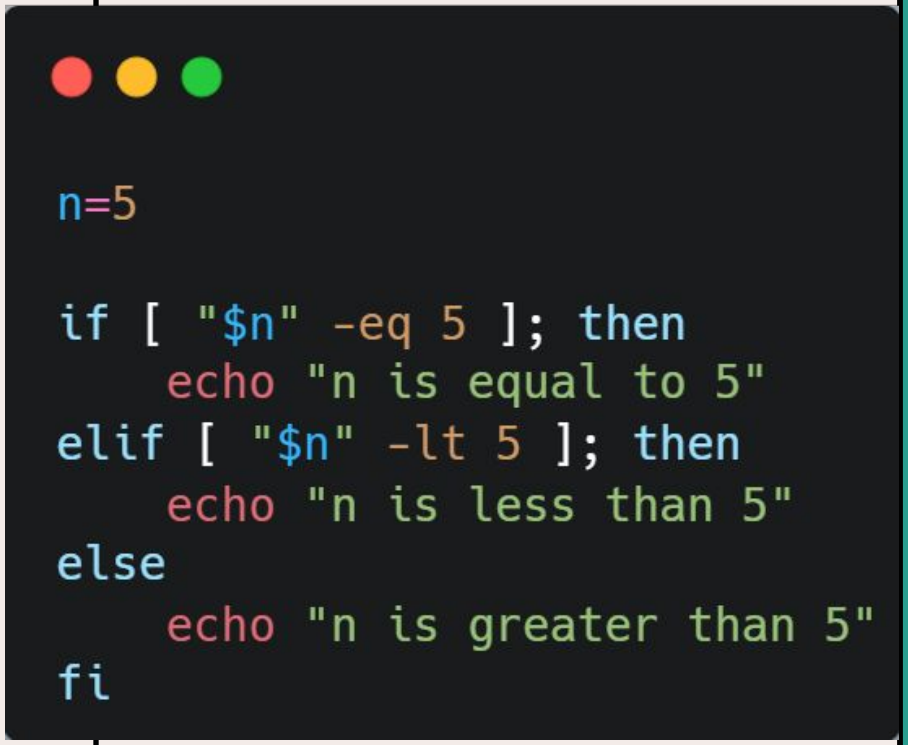


```
for i in {1..10}; do
    if [ $i -eq 5 ]; then
        continue
    elif [ $i -eq 8 ]; then
        break
    fi
    echo "Number $i"
done
```

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
```

```bash
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
```

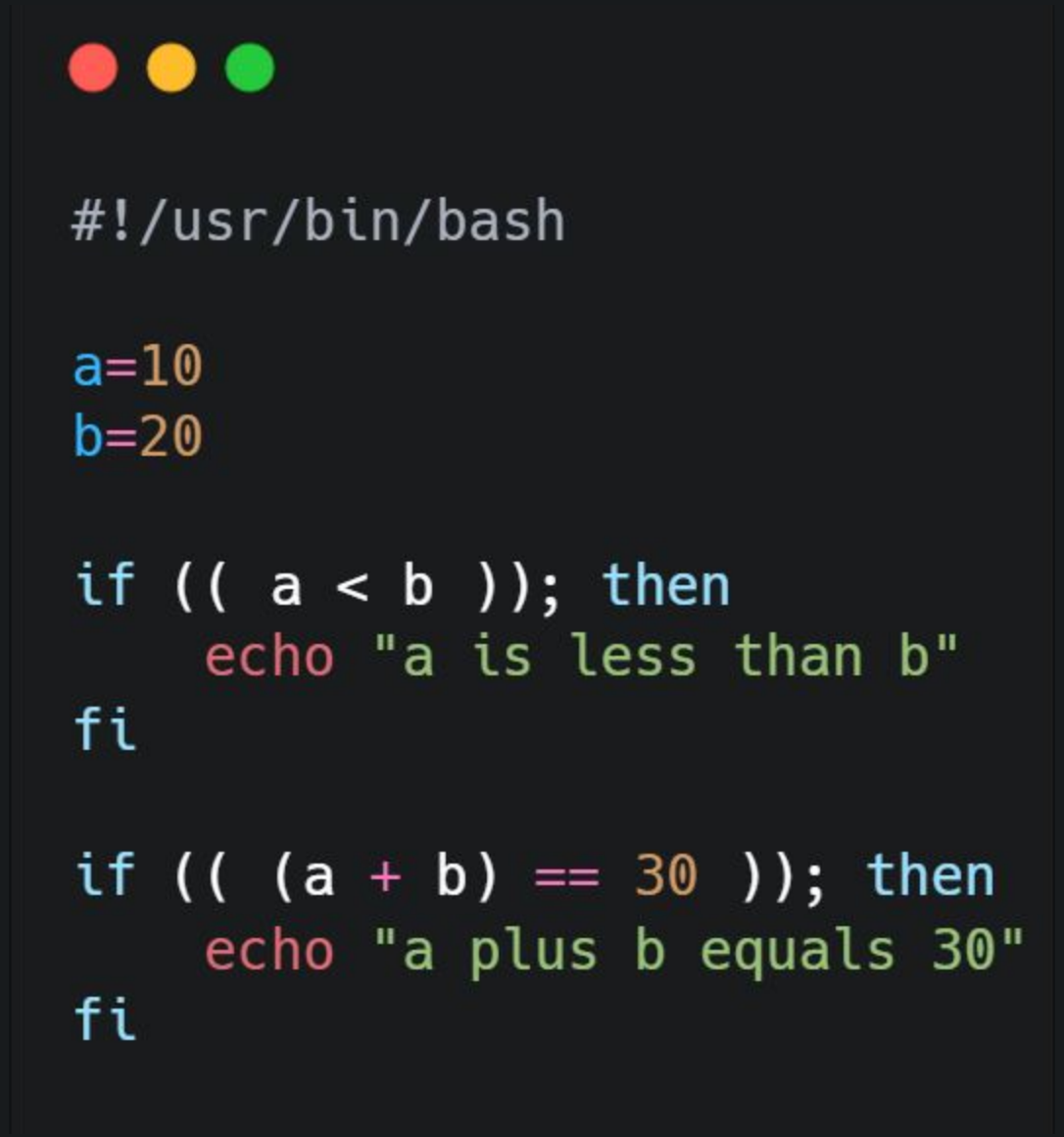
Strings

```bash
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
```

File
s

```
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



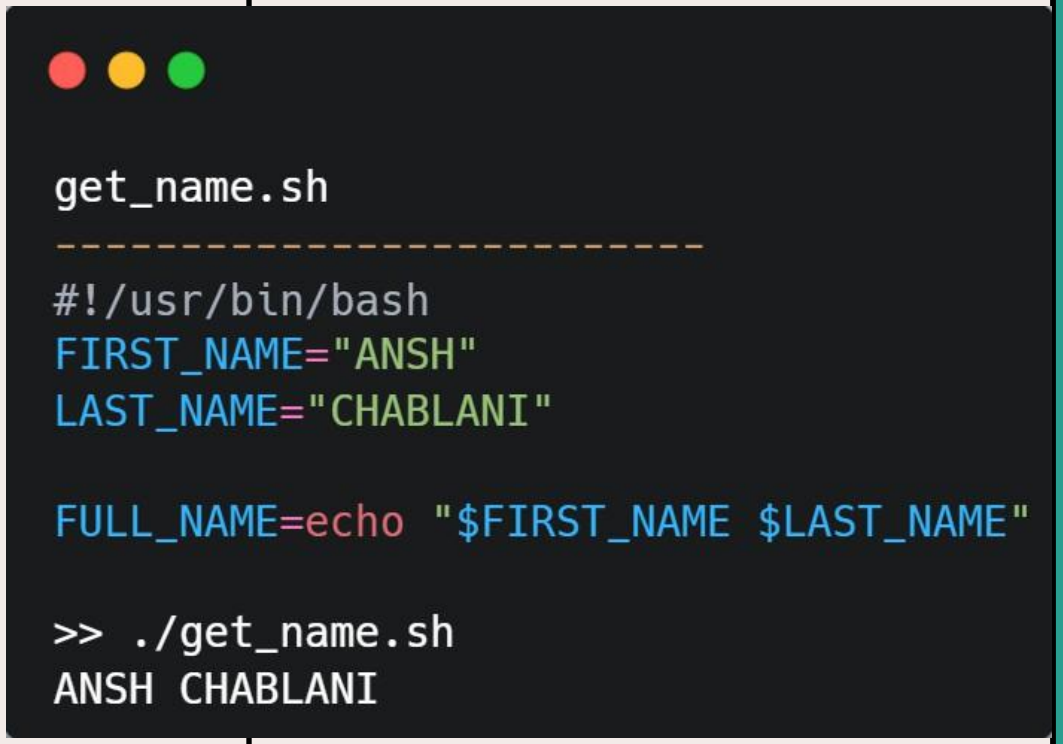
```
#!/usr/bin/bash

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
```

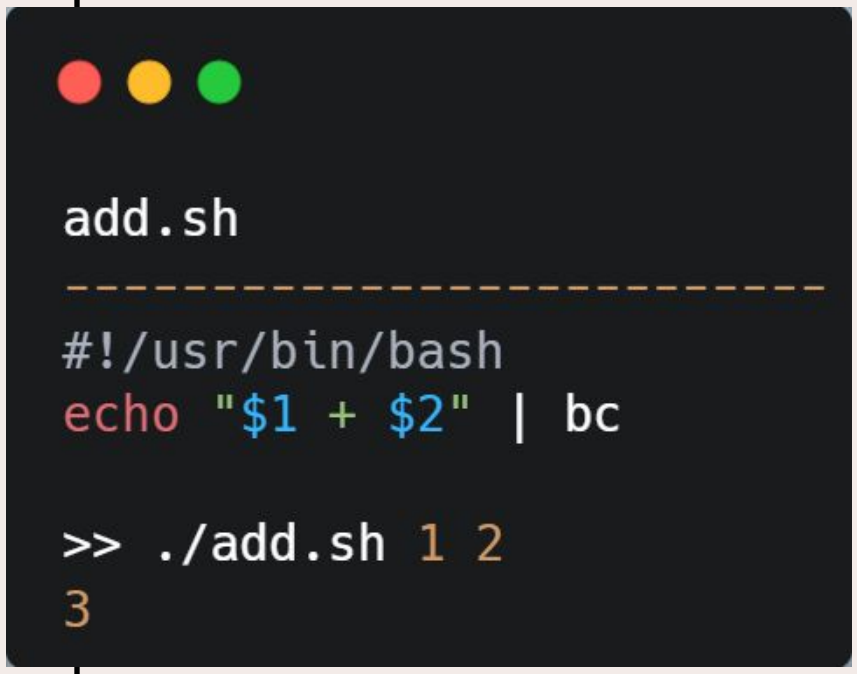
Variables


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

Command Line Arguments



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?

bc

WC

piping

Thank you