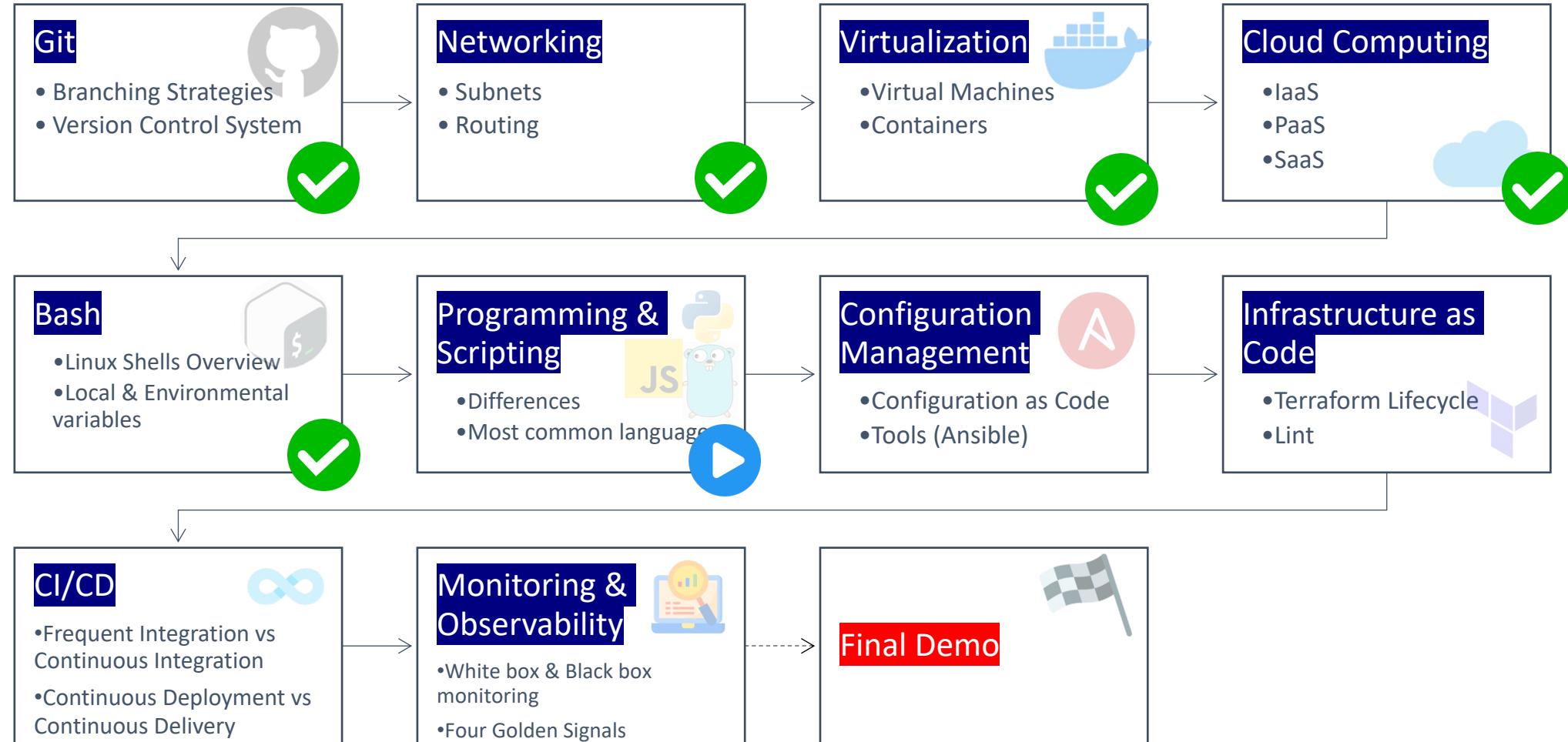


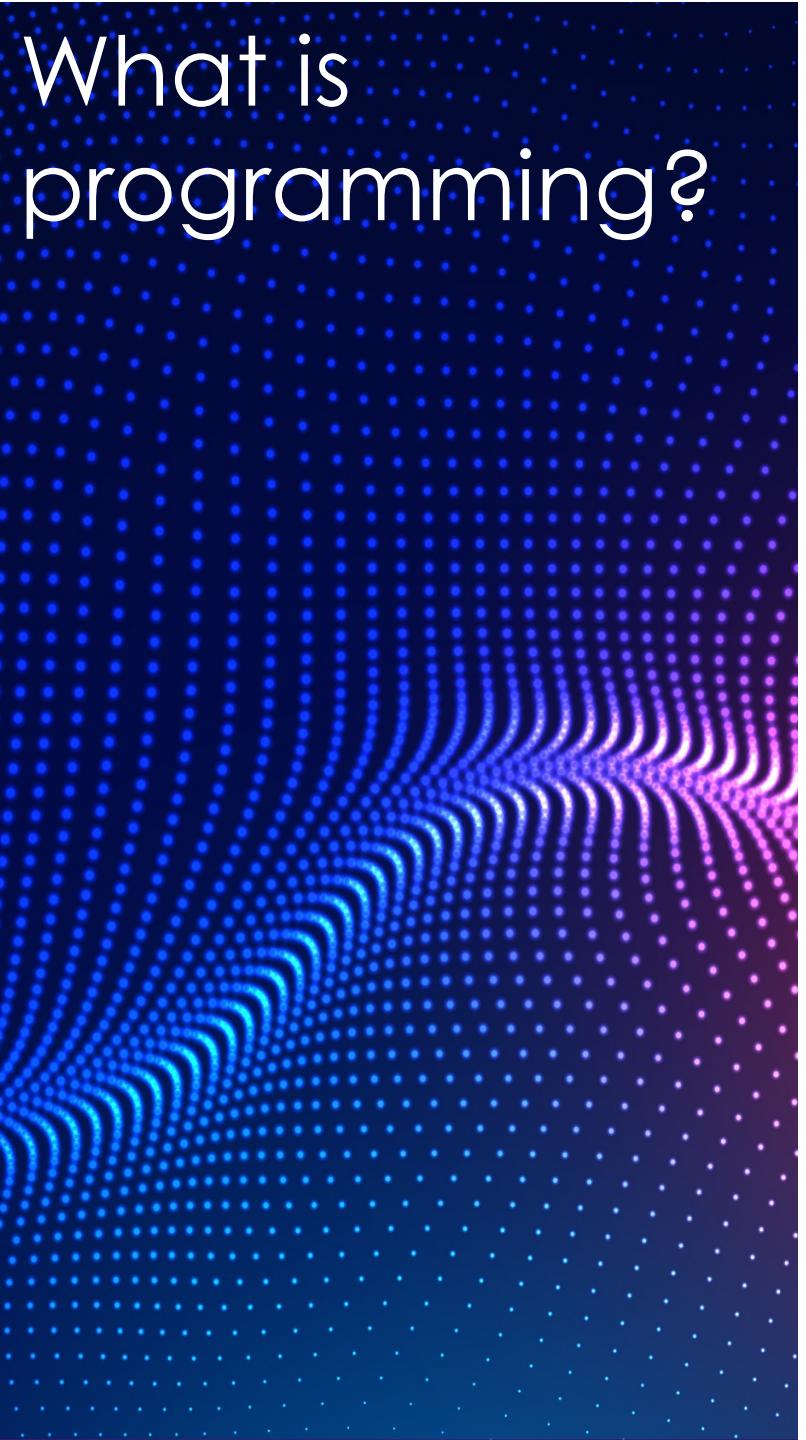
Crash Course Overview



DevOps Crash | Scripting &
course | Programming

What is programming? |

What is programming?



Programming is giving a set of instructions to a computer to execute.

A close-up, low-angle shot of Neo's face from the movie The Matrix. He is wearing his signature black sunglasses and has a serious, contemplative expression. His hands are clasped together in front of him. The background is dark and out of focus, showing some foliage or leaves.

The Matrix is everywhere.

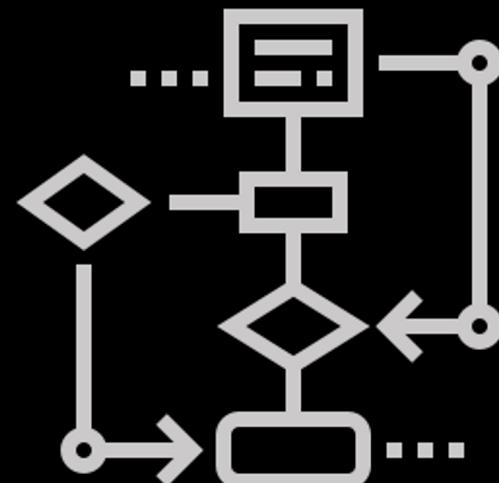
Programming The Matrix is everywhere.



Programming != Coding |

Programming != Coding |

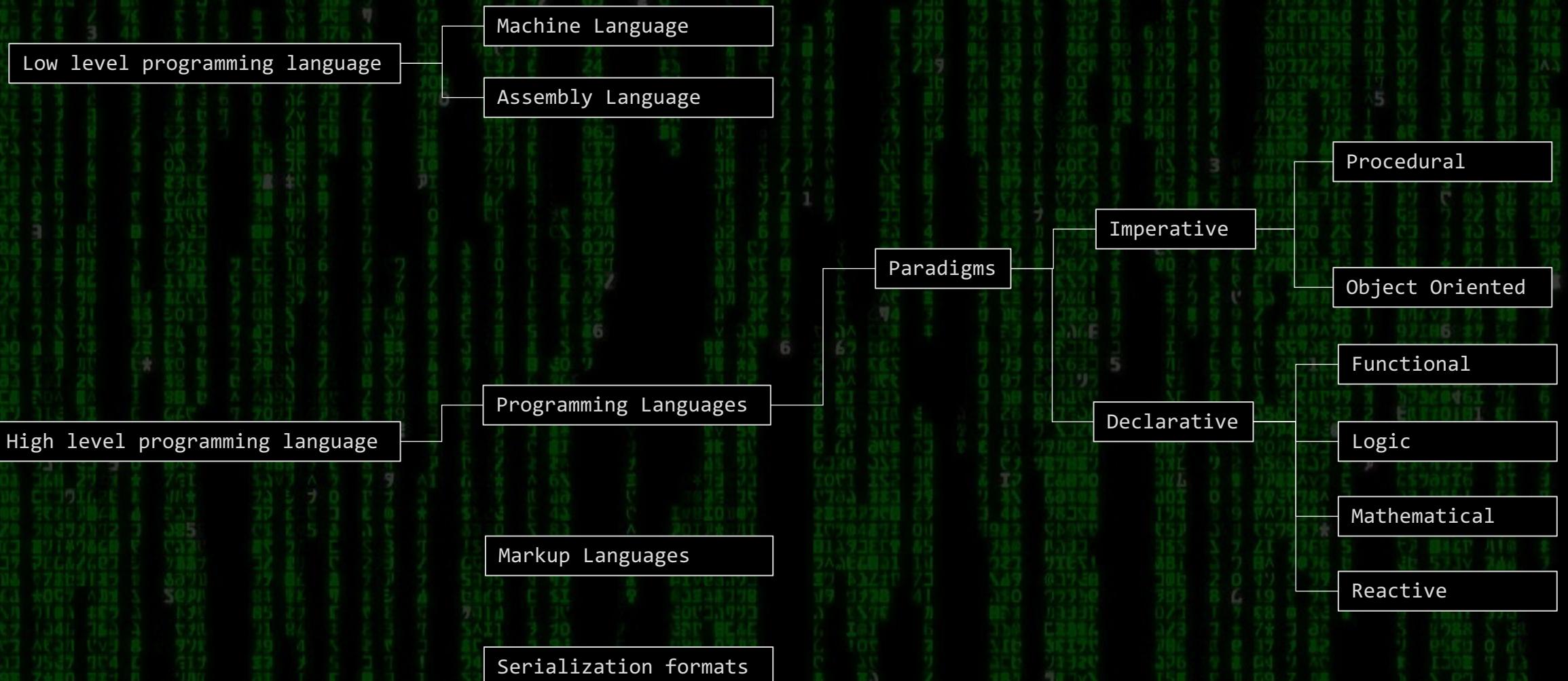
Programming is the mental process of thinking up instructions to give to a machine (like a computer).

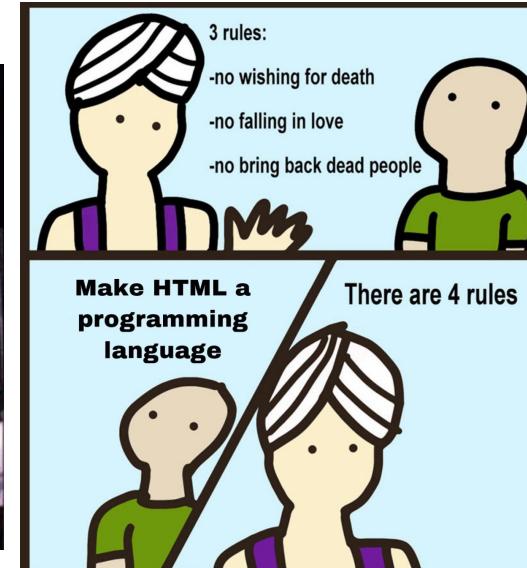
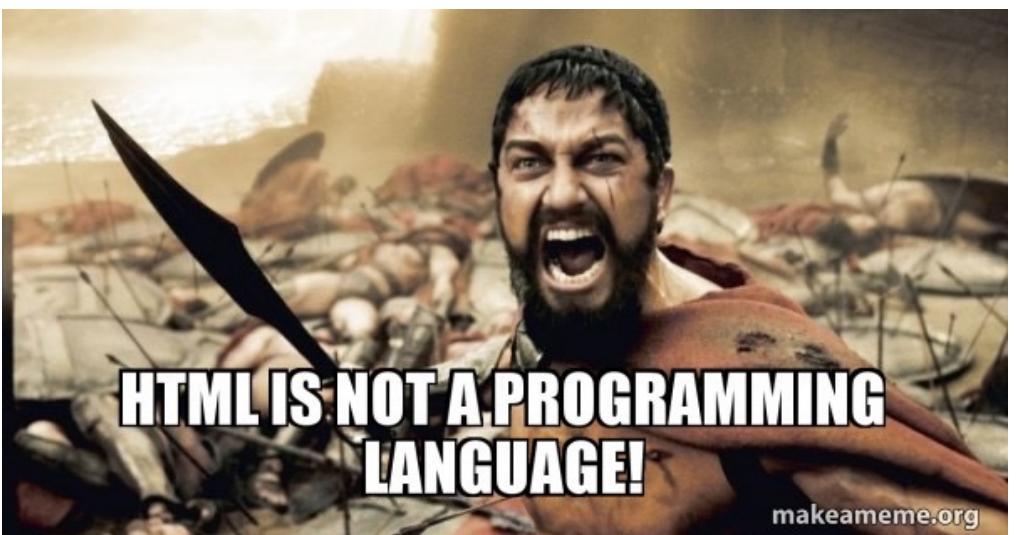
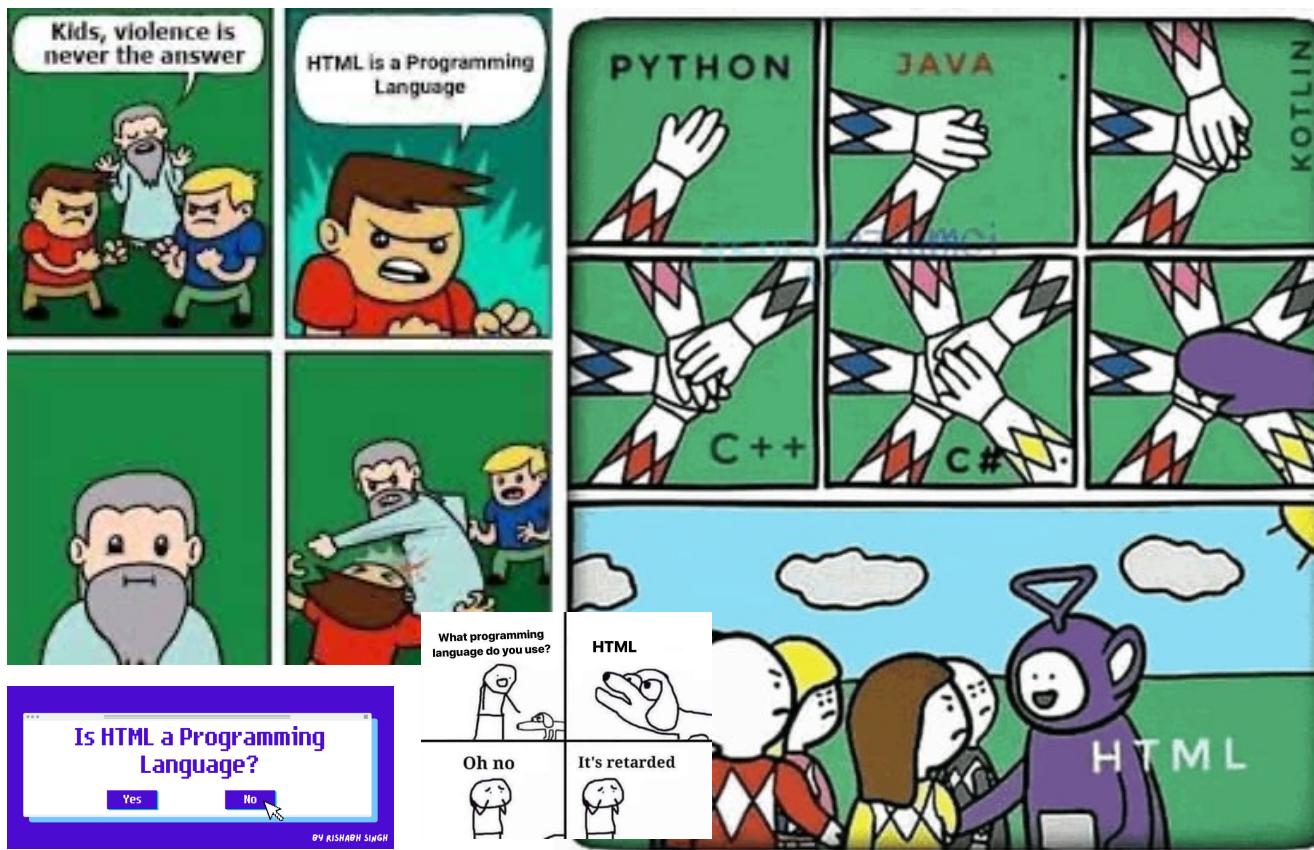


Coding is the process of transforming those ideas into a written language that a computer can understand.



Computer languages





Multiparadigm Programming Languages

Imperative (Object oriented) and Declarative (Functional)

- Golang
- JavaScript
- Python

Scripting Languages

Programming Languages

Scripting
Languages

JavaScript
PHP
Python
Ruby
Groovy
Perl
Lua
Bash
PowerShell
VBA

Anatomy of a Python program

```
#!/usr/bin/python

#example python script

import sys

argc = len(sys.argv)

if argc > 1:
    print ("Too many args")
else:
    where = "world"
    print ("Hello", where)

print("Goodbye from " + sys.argv[0])
```

->#! Line for UNIX/Linux (ignored on Windows)

-> Comment line

-> Load external module

-> Variable assignment and function call

-> Condition is terminated by a colon:
Limits within a conditional are by consistent
indentation

-> print inserts a space between parameters

-> Statements are terminated by a new-line
unless inside brackets note the **+** used to join
strings

Math Operations in Python

```
def multiply(a, b):
    return float(a) * float(b)

def main():
    a = input('Escriba un número: ')
    b = input('Escriba otro número: ')
    res = multiply(a, b)
    print(f'El resultado de la multiplicacion de los numeros
escritos es {res}')

if __name__ == '__main__':
    main()
```

Math Operations in Python – with arguments

```
def multiply(a, b):  
    return float(a) * float(b)  
  
def main():  
    a = input('Escriba un número: ')  
    b = input('Escriba otro número: ')  
    res = multiply(a, b)  
    print(f'El resultado de la multiplicacion de los numeros  
escritos es {res}')  
  
if __name__ == '__main__':  
    main()
```

*To use it, run the command, indicating also the arguments. In other words, the two numbers to be multiplied

Get computer resources usage (CPU, RAM)

```
import psutil

if __name__ == '__main__':
    perc_cpu = psutil.cpu_percent(interval=1,
percpu=True)
    mem_virt = int(psutil.virtual_memory().used / (1024 ** 2))
    avail_mem = int(psutil.virtual_memory().available * 100
/ psutil.virtual_memory().total)
    print(f'''Estado actual del PC:
La CPU está al {perc_cpu}%
Actualmente en uso {mem_virt} Mb de memoria
Disponibles {avail_mem}% memoria libre''')
```

Some Python Scripting Libraries

Argparse

<https://docs.python.org/es/3/howto/argparse.html>

Optparse

<https://docs.python.org/2.4/lib/optparse-tutorial.html>

Click

<https://click.palletsprojects.com/en/7.x/>

Psutil

<https://psutil.readthedocs.io/en/latest/>

Which one is the best scripting
programming language?



Scripting and Programming Laboratory Homework

Task	Deliverable
Deploy SFTP server by Bash in docker	Bash Script
Deploy docker with Cron (connection to sftp every 10 minutes)	Dockerfile
Separate all logs from connection and store them to a log file	Python Script

- All files should be uploaded to GitHub repo via PR
- Branch nomenclature: ScriptingLab_Name_LastName
- Deadline: July 12th 5pm

softserve

Questions?

softserve

Thanks