What are 4 examples of command line interface?

File system commands

CLI command	Windows	Linux
Create directory	mkdir	mkdir
Remove directory	rmdir	rmdir
Copy files	copy	cp
Move files	move	mv

Every operating system has a command line. The three most popular operating systems and their command-line interface names are:

- **Windows**: Command Prompt
- **Linux**: Bash (Bourne Again Shell)
- **MacOs**: Terminal

A text-based command line interface can have the following elements:

Command Prompt - It is text-based notify that is mostly shows the context in which the user is working. It is generated by the software system.

Cursor - It is a small horizontal line or a vertical bar of the height of line, to represent position of character while typing. Cursor is mostly found in blinking state. It moves as the user writes or deletes something.

Command - A command is an executable instruction. It may have one or more parameters. Output on command execution is shown inline on the screen. When output is produced, command prompt is displayed on the next line.

Graphical User Interface

Graphical User Interface provides the user graphical means to interact with the system. GUI can be combination of both hardware and software. Using GUI, user interprets the software.

Typically, GUI is more resource consuming than that of CLI. With advancing technology, the programmers and designers create complex GUI designs that work with more efficiency, accuracy and speed.

Window - An area where contents of application are displayed. Contents in a window can be displayed in the form of icons or lists, if the window represents file structure. It is easier for a user to navigate in the file system in an exploring window. Windows can be minimized, resized or maximized to the size of screen. They can be moved anywhere on the screen. A window may contain another window of the same application, called child window.

Tabs - If an application allows executing multiple instances of itself, they appear on the screen as separate windows. Tabbed Document Interface has come up to open multiple documents in the same window. This interface also helps in viewing preference panel in application. All modern web-browsers use this feature.

Menu - Menu is an array of standard commands, grouped together and placed at a visible place (usually top) inside the application window. The menu can be programmed to appear or hide on mouse clicks.

Icon - An icon is small picture representing an associated application. When these icons are clicked or double clicked, the application window is opened. Icon displays application and programs installed on a system in the form of small pictures.

Cursor - Interacting devices such as mouse, touch pad, digital pen are represented in GUI as cursors. On screen cursor follows the instructions from hardware in almost real-time. Cursors are also named pointers in GUI systems. They are used to select menus, windows and other

What is Python…?

Python is a general purpose programming language that is often applied in scripting roles.

So, Python is programming language as well as scripting language.

Python is also called as Interpreted language

Python is a cross-platform programming language, meaning, it runs on multiple platforms like Windows, MacOS, Linux and has even been ported to the Java and .NET virtual machines. It is free and open source.

The scripter designed the steps the computer will have to accomplish; the programmer tells it how to do it. One feeds parameters to a program, the other writes it

Web designer

does HTML/CSS and just enough JavaScript to run UI.

Web developer

does more programming; writing the more complex code required in a website, or writing web applications (which were more or less what we now call apps, with the UI mostly designed by a web designer.

- A web developer would differ from a programmer in that i would say a programmer makes something from scratch and a web developer modifies something. It’s almost the same job but a programmer doesn't have anything to start from. Also web programmer sounds more like it’s swinging towards a back end developer while a web developer swings more to a front end

Print Hello Kamaran!

IN C

```c
#include <stdio.h>
int main(){
    printf("Hello kamaran!");
    return 0;
}
```

IN JAVA

```java
public class HelloWorld{
    public static void main( String[] args ) {
        System.out.println( "Hello kamaran!" );
    }
}
```

IN PYTHON

```
print('Hello kamaran!')
```

Compiled As Well As Interpreted

Python uses both a **compiler** as well as **interpreter** for converting our source and running it

However , the compilation part is hidden from the programmer ,so mostly people say it is an **interpreted language**

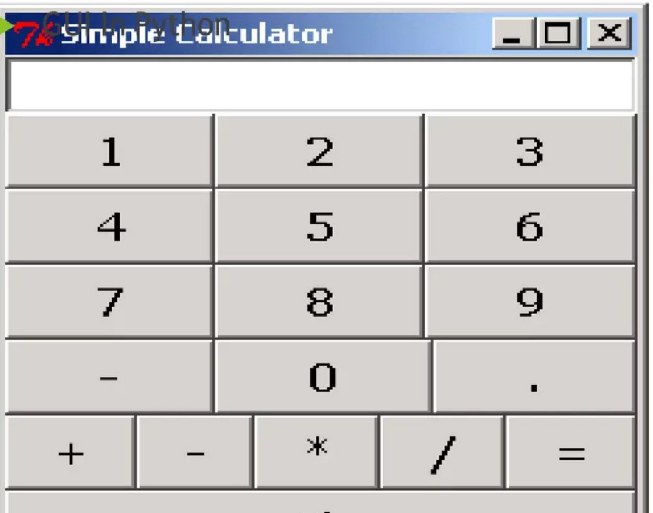
Cross Platform

Let's assume we've written a **Python** code for our **Windows machine.**

Now, if we want to run it on a **Mac**, we don't need to make changes to it for the same.

In other words, we can take one code and run it on any machine, **there is no need to write different code for different machines.**

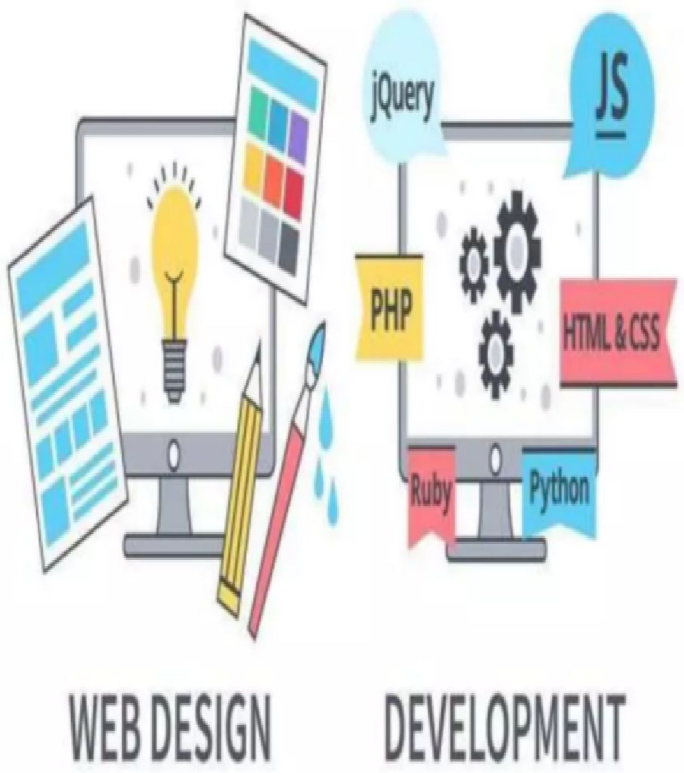
This makes **Python** a **cross platform language**



Python is used for GUI apps all the time.

It has famous libraries like PyQT , Tkinter to build desktop apps.

Web application in python



use Python to create web applications on many levels of complexity

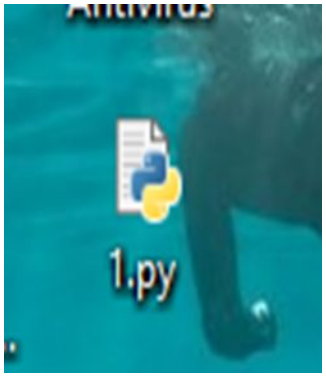
There are many excellent Python frameworks like **Django**, **Pyramid**

Flask for this purposez

Python

Even though most of today's Linux and Mac have Python preinstalled in it, the version might be out-of-date. So, it is always a good idea to install the most current version.

Differences between



PYTHON BASIC MODES

What are the basic modes of python?

Python has two basic modes:

1) **Script:**

The normal mode is the mode where the scripted and finished .py files are run in the Python interpreter.

2) **Interactive.**

Interactive mode is a command line shell which gives immediate feedback for each statement, while running previously fed statements in active memory.

Python

https://www.python.org › downloads

- Python is a cross-platform programming language, meaning, it runs on multiple platforms like Windows, MacOS, Linux and has even been ported to the Java and .NET virtual machines. It is free and open source.
- Even though most of today's Linux and Mac have Python preinstalled in it, the version might be out-of-date. So, it is always a good idea to install the most current version.

The Easiest Way to Run Python

1) The easiest way to run Python is by using **Thonny IDE**

Run Python in Immediate mode

2) Install Python Separately

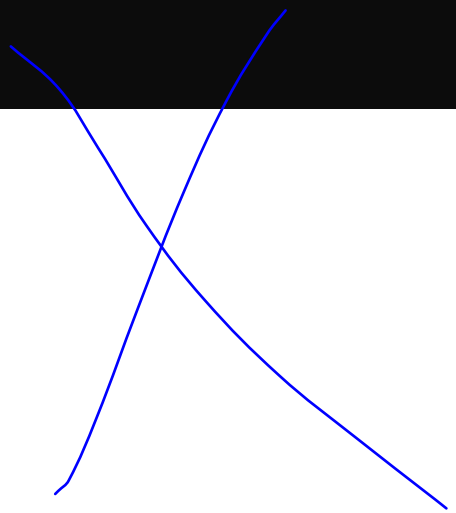
Run Python in the Integrated Development Environment (IDE)

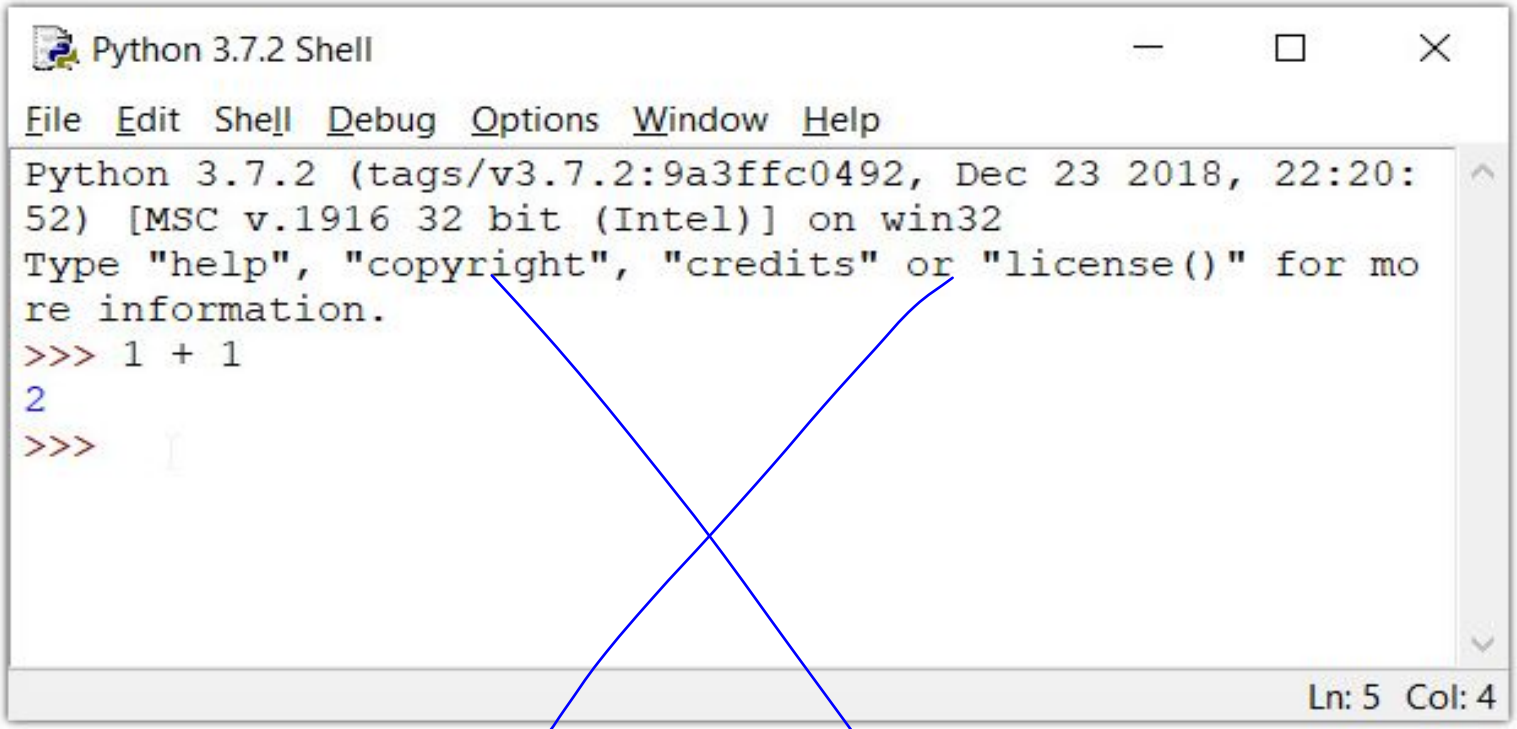
If you don't want to use Thonny, here's how you can install and run Python on your computer.

Download the latest version of Python.

Python 3.12 (64-bit)

```
Python 3.12.1 (tags/v3.12.1:2305ca5, Dec  7 2023, 22:03:25) [MSC v.1937 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```





Now you can create a new file and save it with **.py** extension. For example, **hello.py**

Write Python code in the file, save it. To run the file go to **Run** > **Run Module** or simply click **F5**.

Which of the following is the correct extension of the Python file?

a) .py b) .pl c) .python d) .p

Is Python code compiled or interpreted?

a) Python code is both compiled and interpreted

b) Python code is neither compiled nor interpreted

c) Python code is only compiled d) Python code is only interpreted

Explanation: Many languages have been implemented using both compilers and interpreters, including C, Pascal, and Python.

Which of the following character is used to give single-line comments in Python?

a) # b) // c) ! d) /*

Compiled Languages

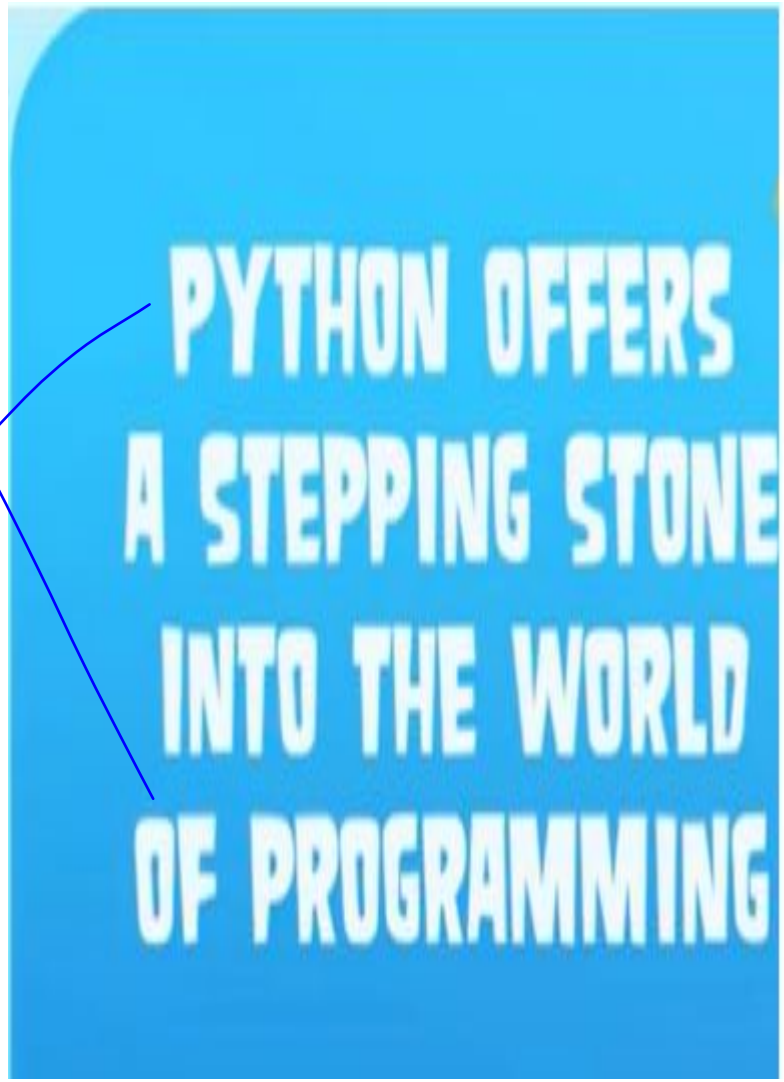
Compiled languages are converted directly into machine code that the processor can execute. As a result, they tend to be faster and more efficient to execute than interpreted languages. They also give the developer more control over hardware aspects, like memory management and CPU usage.

Interpreted Languages

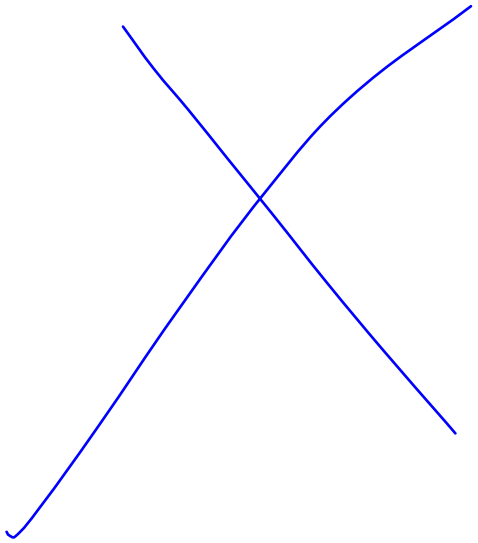
Interpreters run through a program line by line and execute each command.

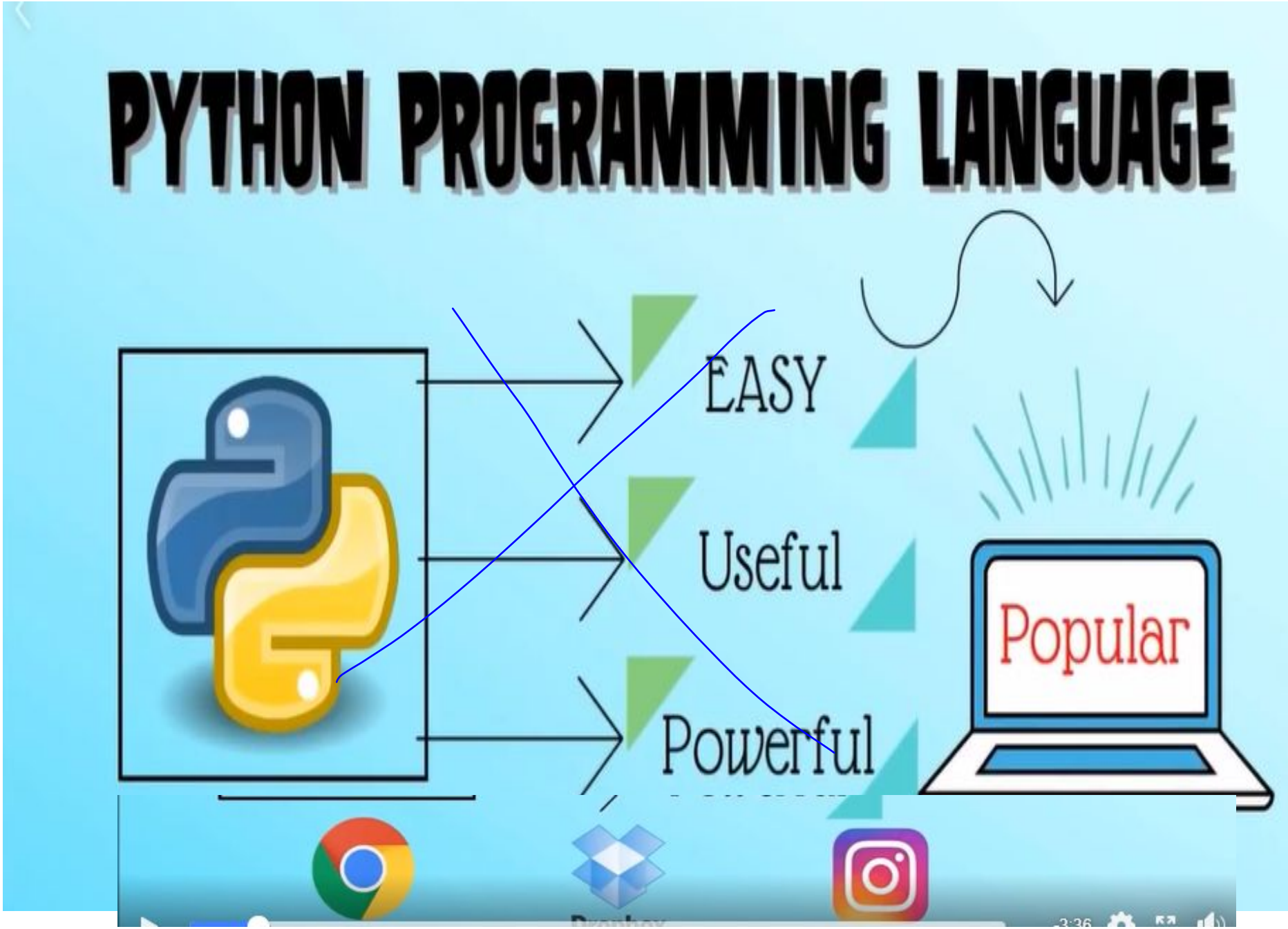
Interpreted languages were once significantly slower than compiled languages.


WHY !
You Should
Learn
PYTHON ?


PYTHON OFFERS
A STEPPING STONE
INTO THE WORLD
OF PROGRAMMING

- Python programming language is been around for more than 30 years….
- Its still rising for popularity of python is return to




PYTHON PROGRAMMING LANGUAGE
EASY
Useful
Powerful
Popular

REASONS TO LEARN PYTHON

EASY TO READ
&
EASY TO LEARN

NO
PROGRAMMING
SKILL REQUIRED

BEGINNER OR
EXPERT

REASONS TO LEARN PYTHON

4

BIG OPEN SOURCE

&

NEWEST TRENDS

5

BIG LIBRALIES

FOR

MANY THINGS

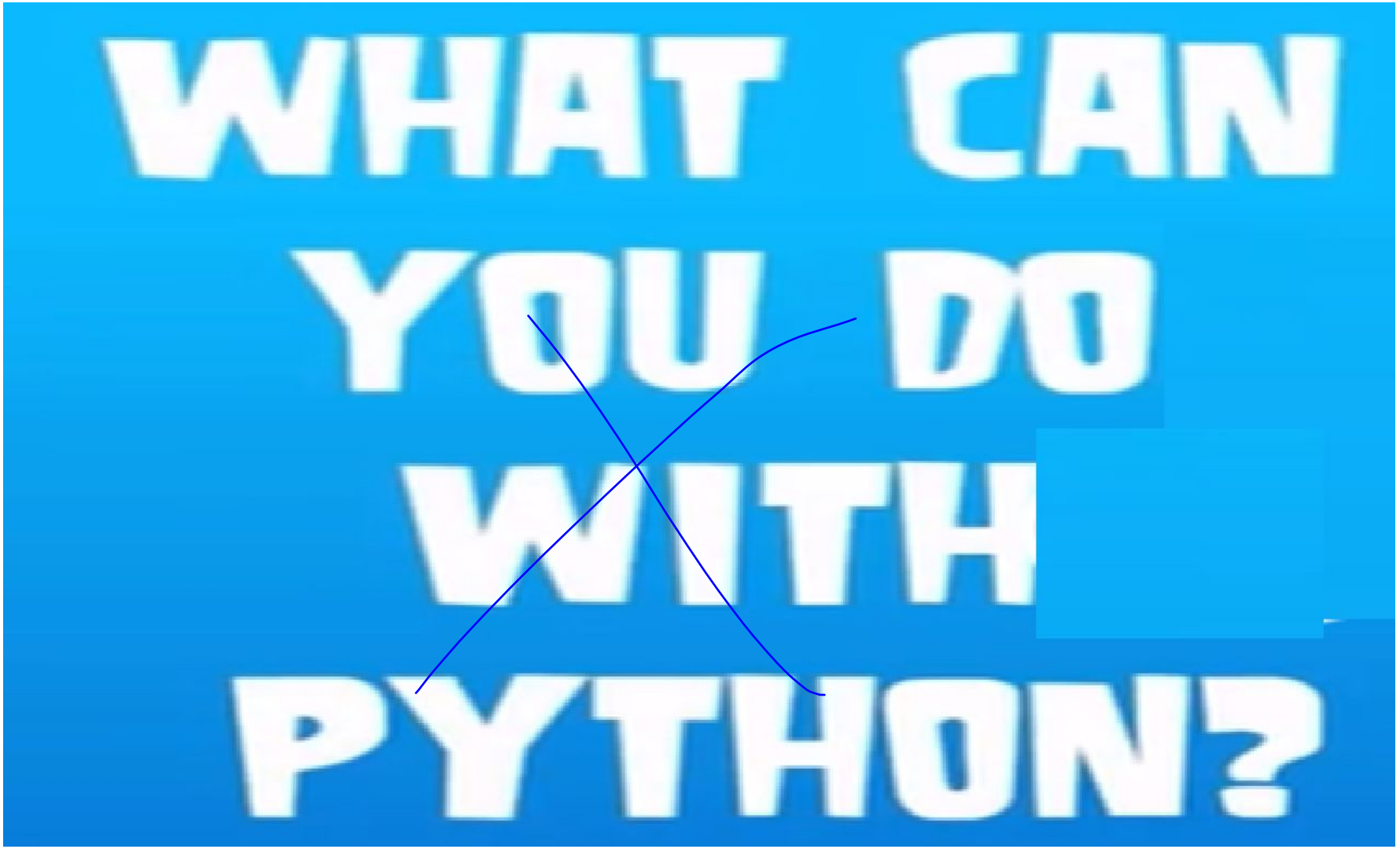
6

GREAT FOR

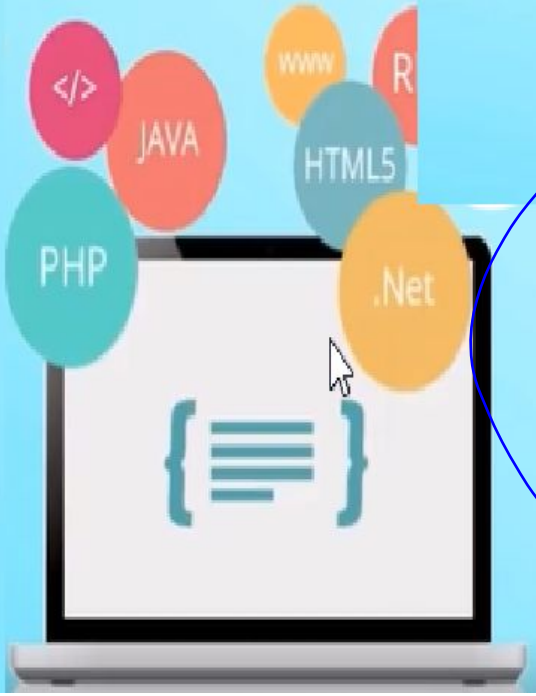
VALIDATING IDEAS FOR

YOUR COMPANY'S

PRODUCTS


WHAT CAN
YOU DO
WITH
PYTHON?

Web Development



You can use Python to create web applications on many levels of complexity.

There are many excellent Python web frameworks including, Pyramid, Django and Flask, to name a few.

Data Analysis

Python is the leading language of choice for many data scientists.

Python has grown in popularity, within this field, due to its excellent libraries including; NumPy and Pandas and its superb libraries for data visualization like Matplotlib and Seaborn.

Machine Learning

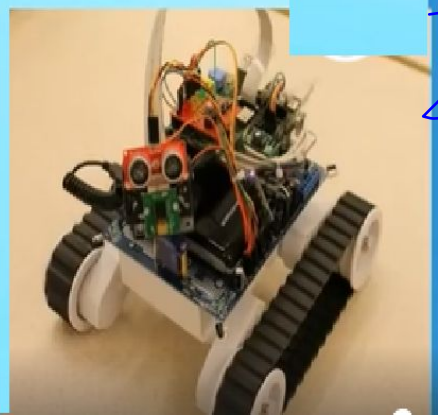
What if you could predict customer satisfaction or analyze what factors will affect household pricing or to predict stocks over the next few days, based on previous years data?

There are many wonderful libraries implementing machine learning algorithms such as Scikit-Learn, NLTK and TensorFlow.

Computer Vision

You can do many interesting things such as Face detection, Color detection while using Opencv and Python.

Raspberry Pi



Raspberry Pi is a very tiny and affordable computer which was developed for education and has gained enormous popularity among hobbyistswith do-it-yourself hardware and automation.

You can even build a robot and automate your home

Raspberry Pi can be used as the brain for your robot in order to perform various actions and/or react to the environment.

The coding on a Raspberry Pi can be performed using Python. The Possibilities are endless!

Game Development

Create a video game using module Pygame.

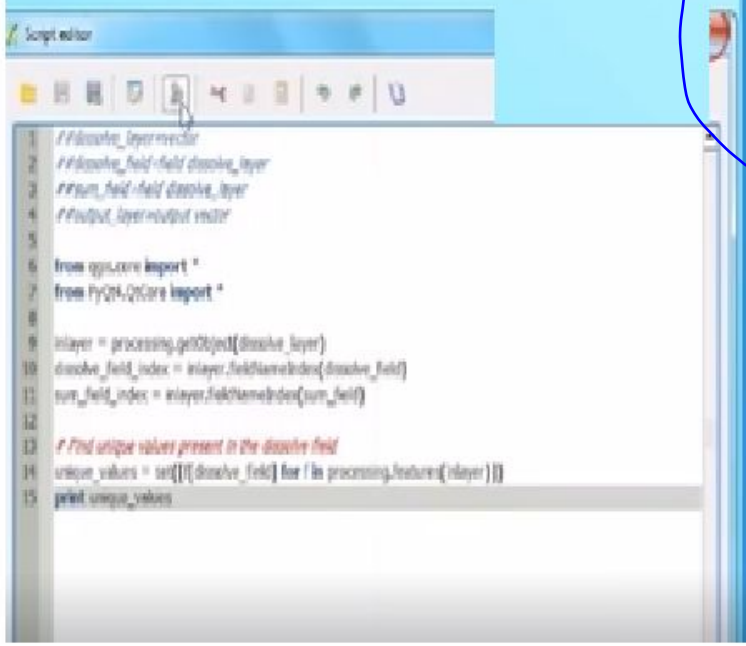
Basically, you use Python to write the logic of the game.

PyGame applications can run on Android devices.

Web Scraping

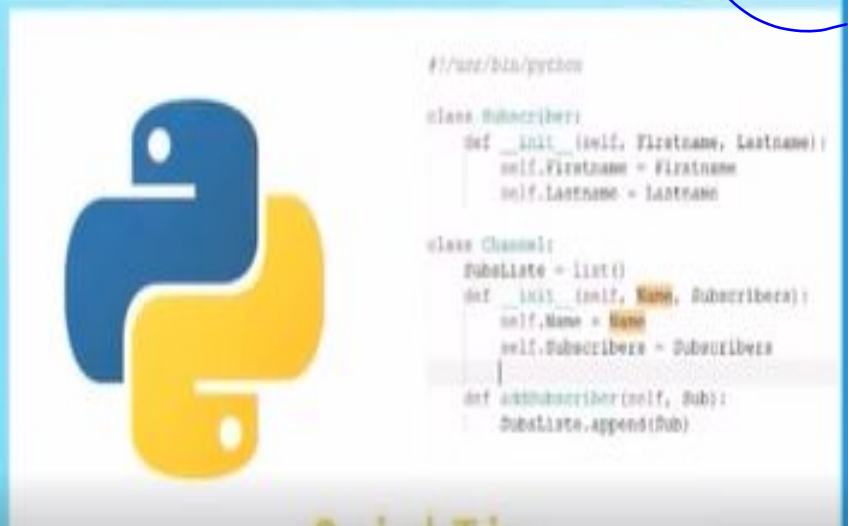
If you need to grab data from a website but the site does not have an API to expose data, you can use Python to scraping data.

Writing Scripts



If you're doing something manually and want to automate repetitive stuff, such as emails, it's not difficult to automate once you know the basics of this language.

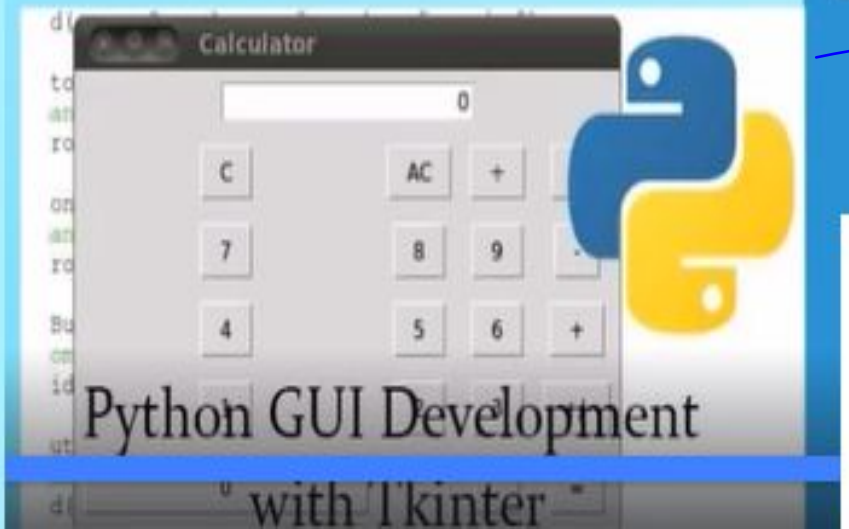
Browser Automation



Perform some neat things such as opening a browser and posting a Facebook status, you can do it with Selenium with Python.

GUI Development

Build a GUI application (desktop app) using Python modules Tkinter, PyQt to support it.



Many PCs and Macs will have python already installed.

To check if you have python installed on a Windows PC, search in the start bar for Python or run the following on the Command Line (cmd.exe):