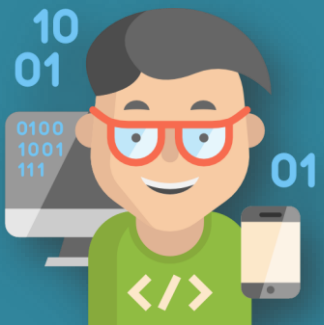




Face Recognition using Python

Sampriti Chatterjee (Great Learning)



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History of Opencv

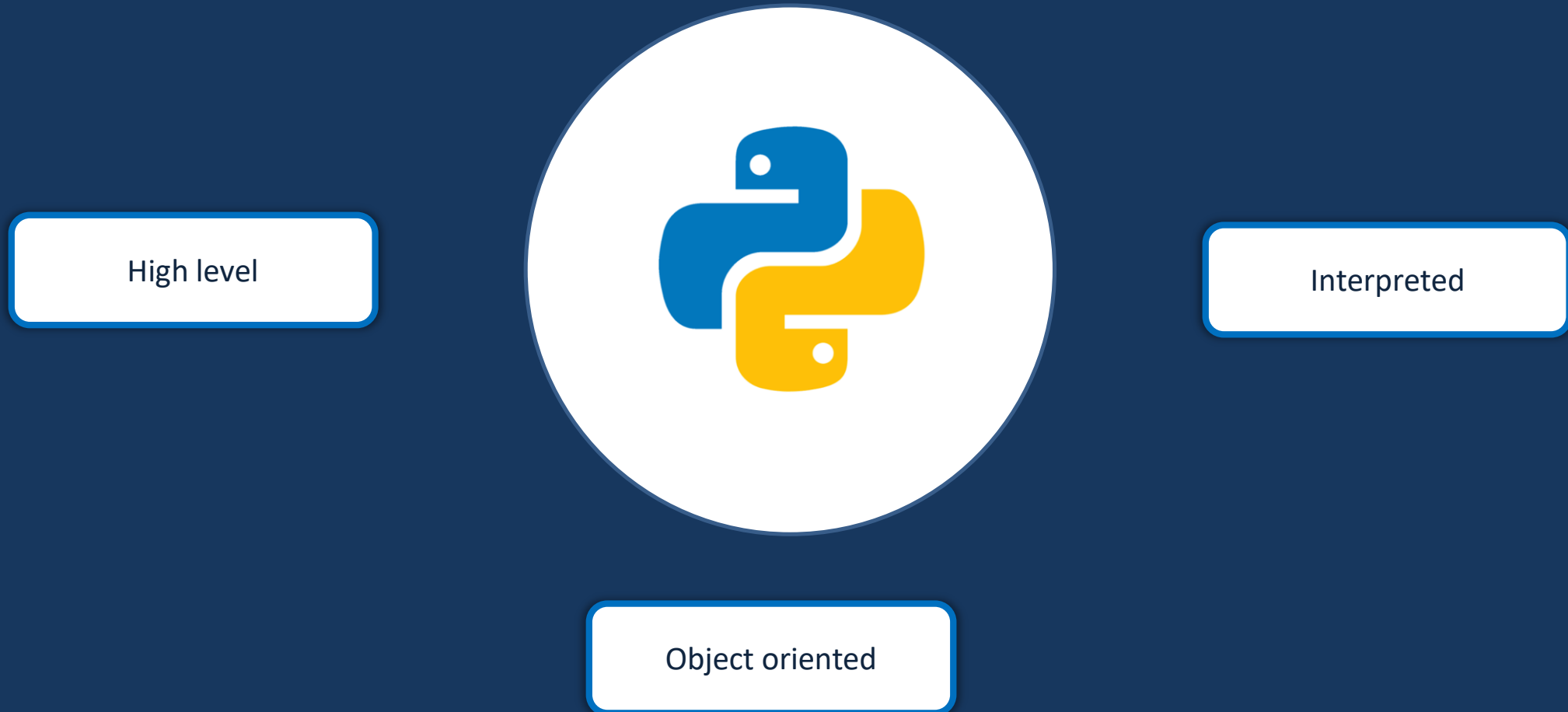
9

Getting started with OpenCV

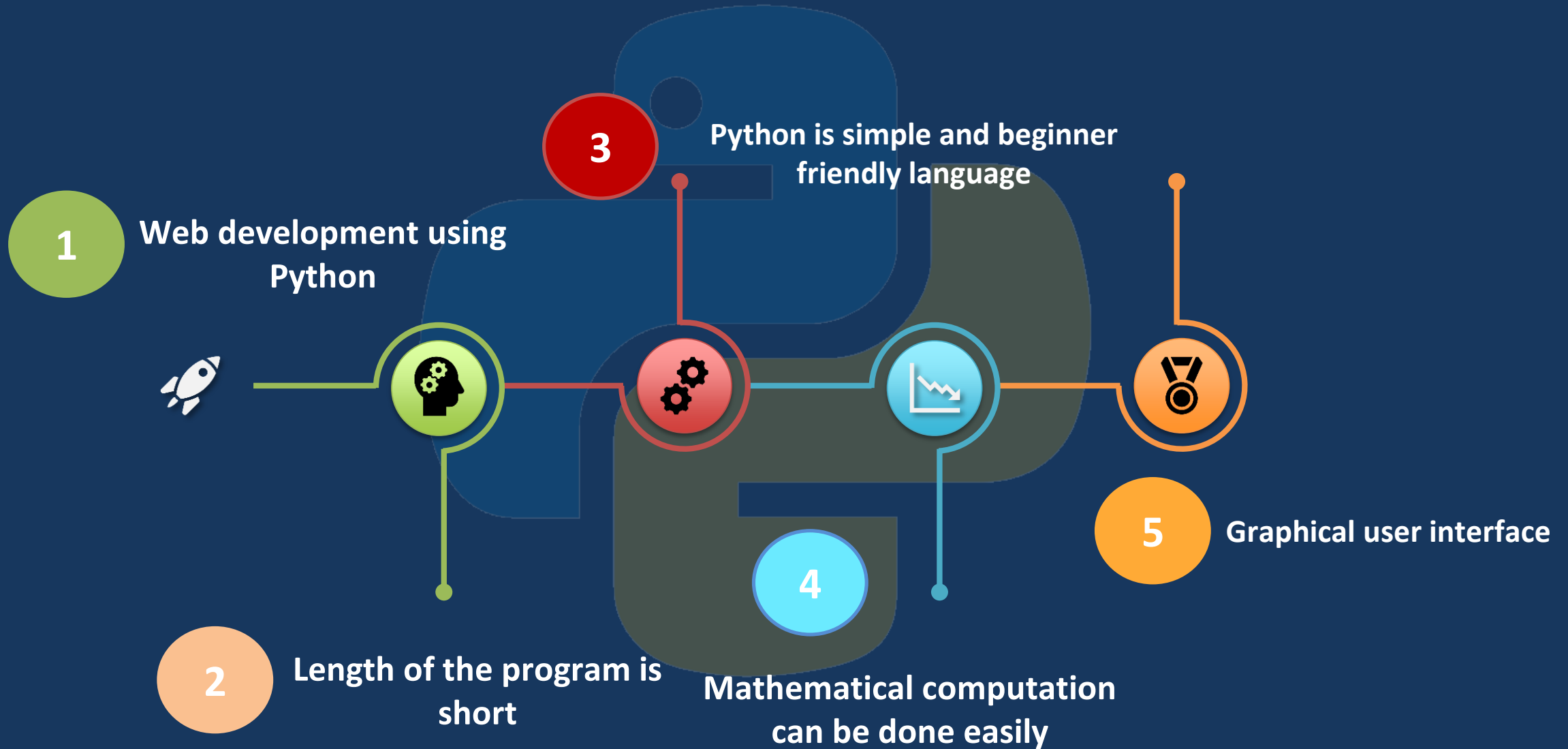
10

Face recognition using OpenCV

Python is a popular high level, object oriented and interpreted language



Why should you learn Python?



Why Python is so popular?

1 Largest community for Learners and Collaborators

2

Open source

3

Easy to learn and usable flexibility

4

**Huge numbers of Python libraries and
Frame work**

5

**Supports Big Data, Machine Learning
and Cloud computing**

6

Supports Automation

Installing Python

This is the site to install Python -> <https://www.python.org/downloads/>




Popular IDE for Python: Pycharm

Site to install Python ->

<https://www.jetbrains.com/pycharm/download/#section=mac>

PyCharm

Coming in 2020.2 What's New Features Learning Center Buy [Download](#)



Version: 2020.1.2
Build: 201.7846.77
3 June 2020

[System requirements](#)
[Installation Instructions](#)
[Other versions](#)

Download PyCharm

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Professional

For both Scientific and Web Python development. With HTML, JS, and SQL support.

[Download](#)


Free trial

Community

For pure Python development

[Download](#)

Free, open-source



Get the Toolbox App to download PyCharm and its future updates with ease

```
[X]
Cookies and IP addresses allow us to deliver and improve
our web content and to provide you with a personalized
experience. Our website uses cookies and collects your
IP address for these purposes.

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| JetBrains may use cookies and my IP address to
| collect individual statistics and to provide me with
| personalized offers and ads subject to the Privacy
| Policy and the Terms of Use. JetBrains may use
| third-party services for this purpose. I can revoke
| my consent at any time by visiting the Opt-Out page.
|
| [Y]es, I agree   [N]o, thanks
|
=====
~ root#
```

Anaconda installation site->

<https://www.anaconda.com/products/individual>



Individual Edition

Your data science toolkit

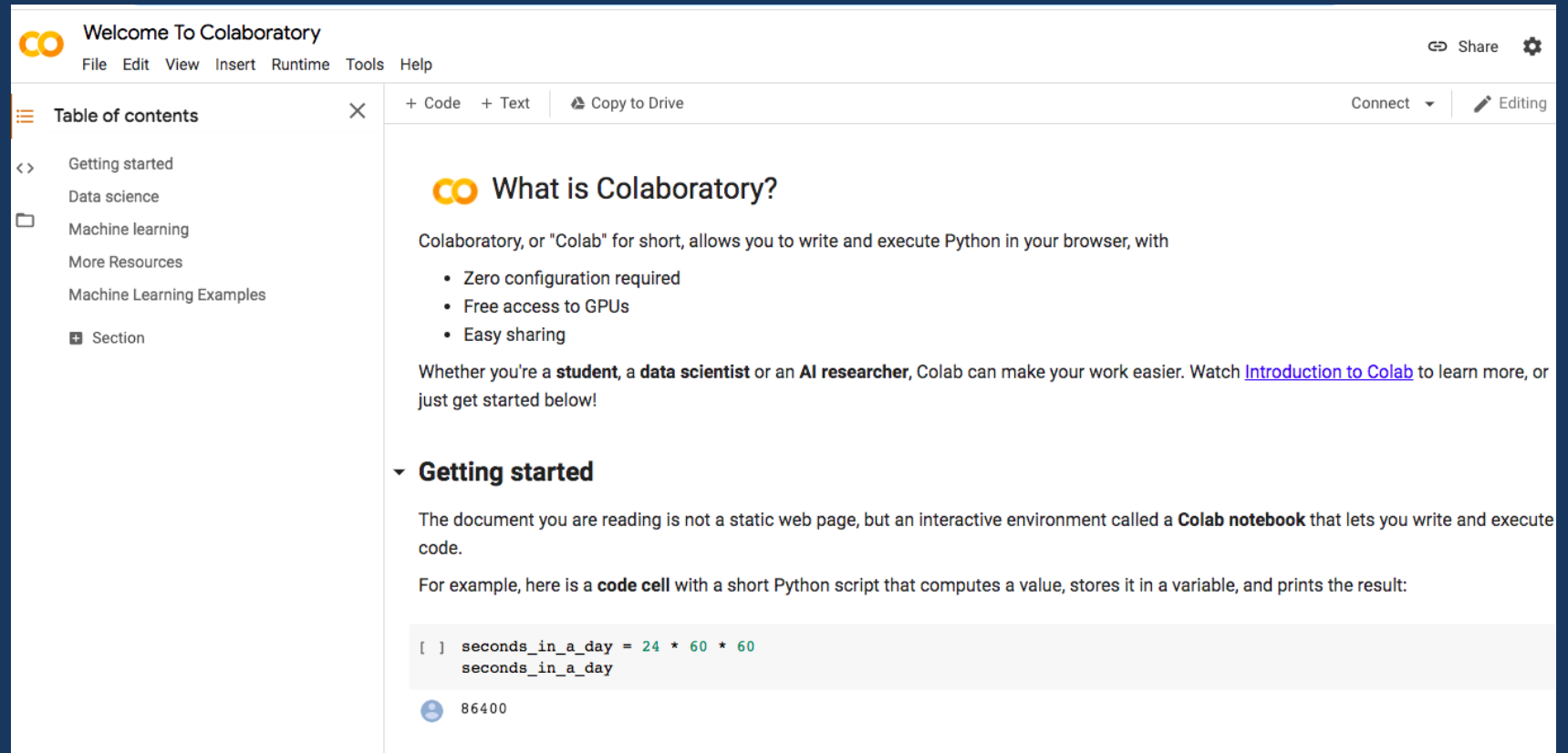
With over 20 million users worldwide, the open-source Individual Edition (Distribution) is the easiest way to perform Python/R data science and machine learning on a single machine. Developed for solo practitioners, it is the toolkit that equips you to work with thousands of open-source packages and libraries.

Download

Popular IDE for Python: Google colab

Google collaboratory link->

<https://colab.research.google.com/notebooks/intro.ipynb>



The screenshot displays the Google Colaboratory web interface. At the top, there's a header with the Colab logo, 'Welcome To Colaboratory', and a menu (File, Edit, View, Insert, Runtime, Tools, Help). On the left, a 'Table of contents' sidebar lists sections like 'Getting started', 'Data science', 'Machine learning', 'More Resources', 'Machine Learning Examples', and a 'Section' icon. The main content area is titled 'What is Colaboratory?' and explains that Colab allows writing and executing Python in a browser. It lists three benefits: 'Zero configuration required', 'Free access to GPUs', and 'Easy sharing'. Below this, it mentions that Colab is useful for students, data scientists, and AI researchers, and provides a link to 'Introduction to Colab'. A 'Getting started' section follows, stating that the document is an interactive 'Colab notebook'. It then shows a code cell with a Python script that calculates the number of seconds in a day (24 * 60 * 60) and prints the result, which is 86400.

CO Welcome To Colaboratory

File Edit View Insert Runtime Tools Help

Table of contents

- Getting started
- Data science
- Machine learning
- More Resources
- Machine Learning Examples
- Section

+ Code + Text Copy to Drive

Connect Editing

CO What is Colaboratory?

Colaboratory, or "Colab" for short, allows you to write and execute Python in your browser, with

- Zero configuration required
- Free access to GPUs
- Easy sharing

Whether you're a **student**, a **data scientist** or an **AI researcher**, Colab can make your work easier. Watch [Introduction to Colab](#) to learn more, or just get started below!

Getting started

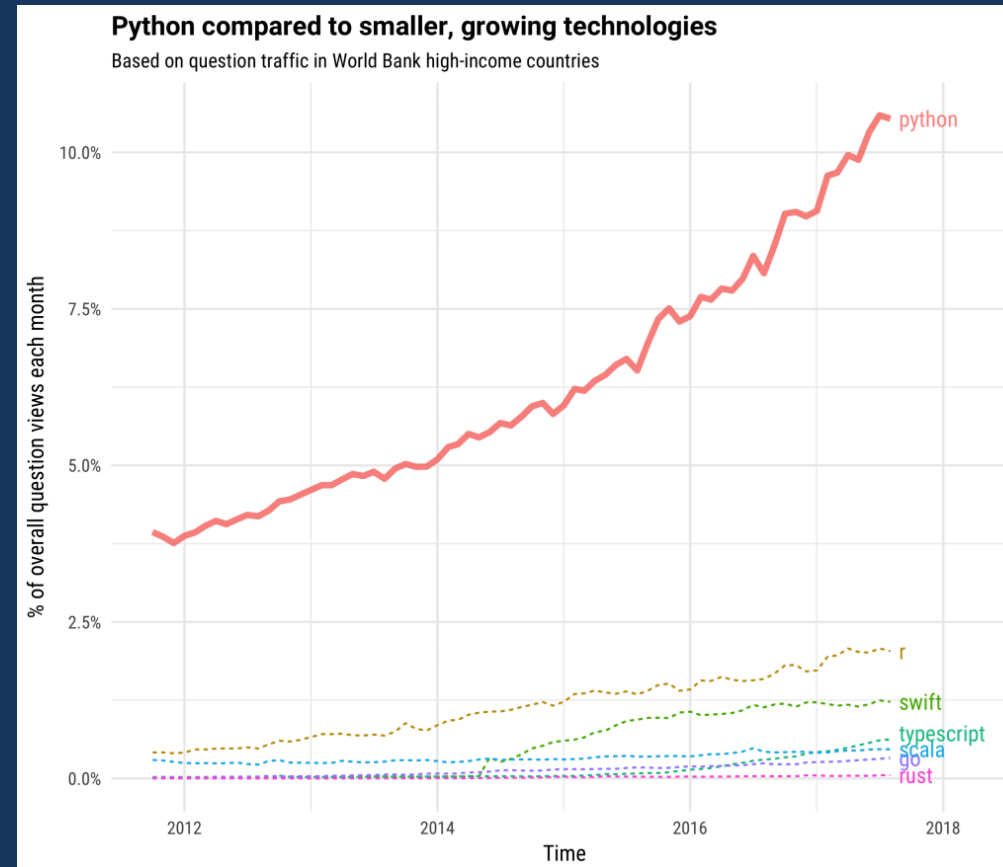
The document you are reading is not a static web page, but an interactive environment called a **Colab notebook** that lets you write and execute code.

For example, here is a **code cell** with a short Python script that computes a value, stores it in a variable, and prints the result:

```
[ ] seconds_in_a_day = 24 * 60 * 60
seconds_in_a_day
```

86400

Statistical measurement on Python user



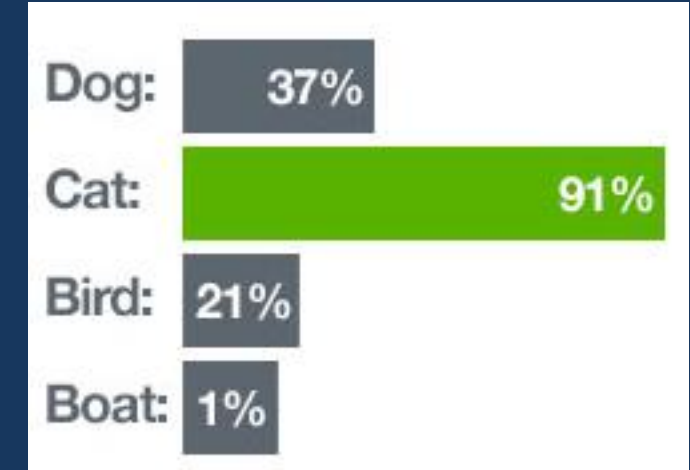
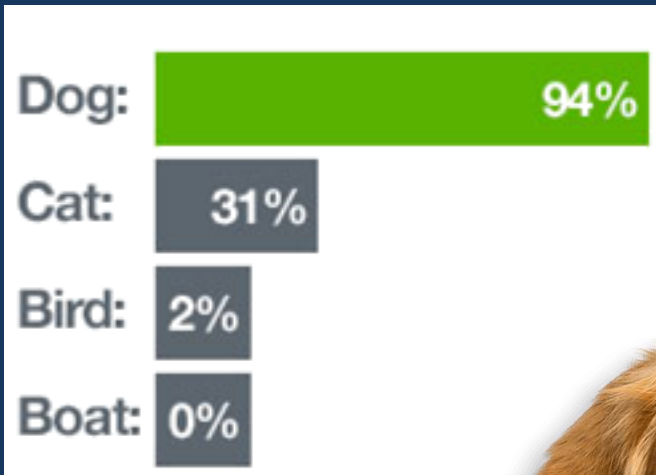
In recent time it is prominent that Python is one of the most popular language because of it's simplicity

Image processing is a method to perform some important operations on an image. In order to get an enhanced high Quality image or to extract the most useful information from that

- It is a one type of signal processing
- In this processing input is an image and output may be image or characteristics/features associated with that image



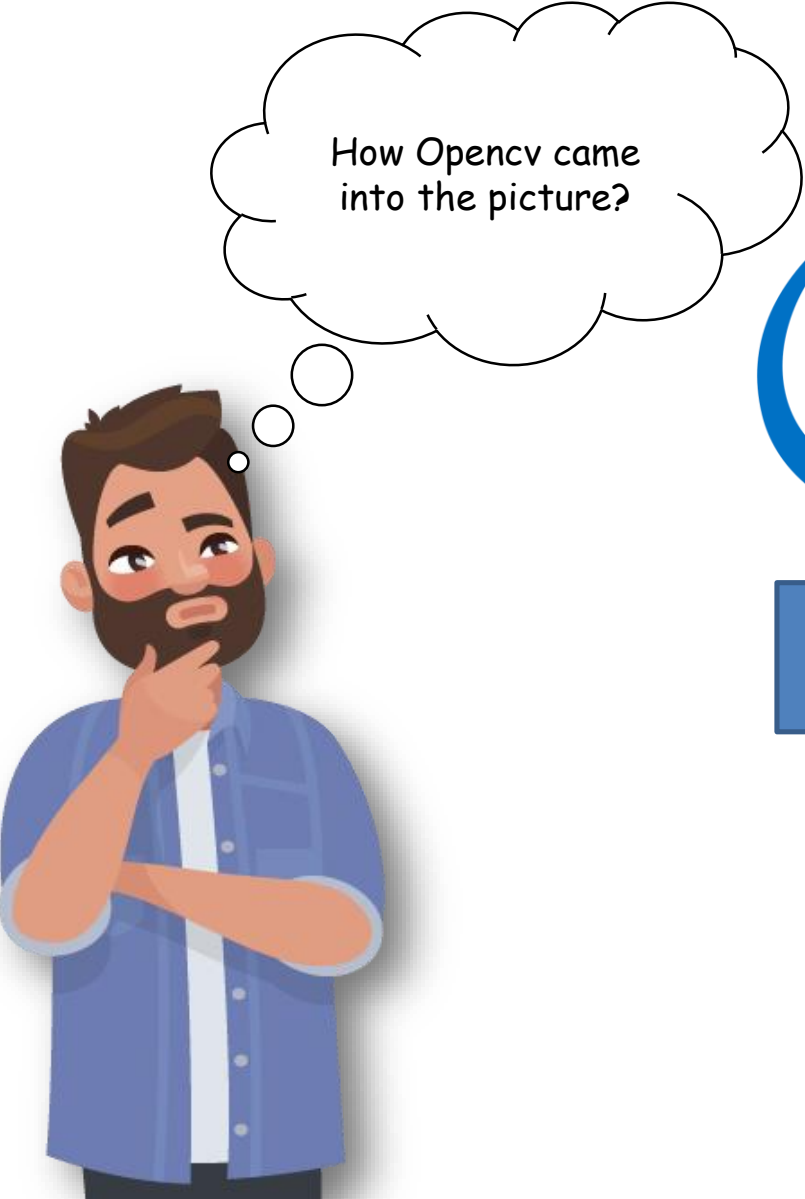
Is It A Cat Or A Dog?



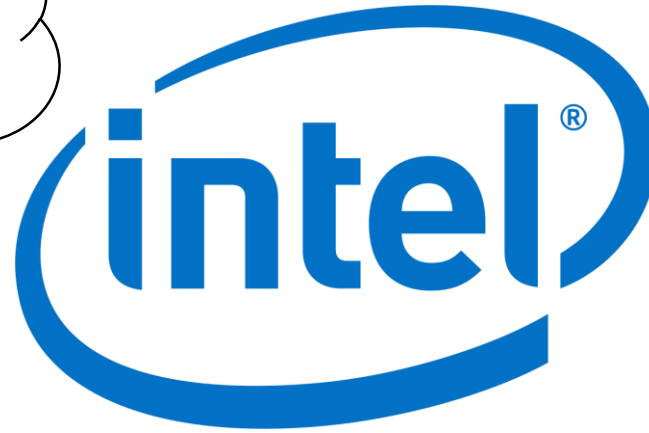
OpenCV is an open source library which is widely used for computer vision purpose

- It helps us to develop a system which can process images and real-time video using computer vision
- OpenCv focused on image processing, real-time video capturing to detect faces and objects.





How Opencv came into the picture?



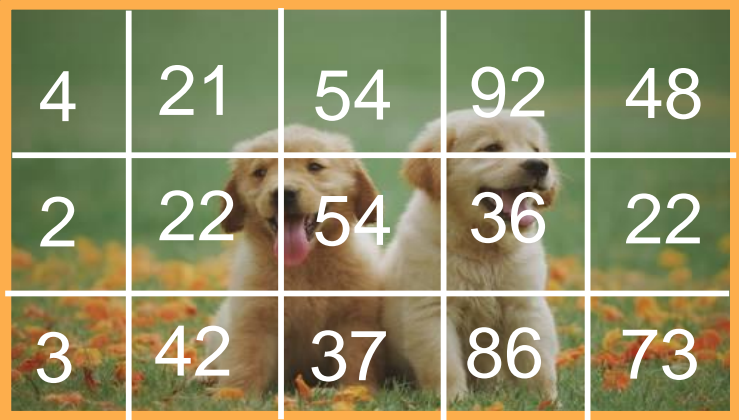
Opencv was invented by Intel

Important Facts

- [OpenCV](#) was invented by Intel in 1999 by Gary Bradsky.
- The first release was in the year 2000.
- OpenCV stands for Open Source Computer Vision Library.
- This Library is based on optimized C/C++ and it supports Java and Python along with C++ through interfaces.

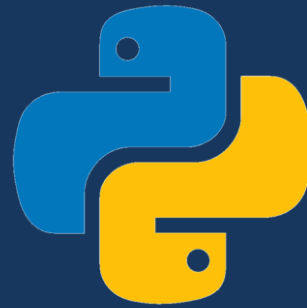
How Image Input Works In Computer?

Converts the image into an array of pixel values where the dimension of array depends on the resolution of the image



4	21	54	92	48
2	22	54	36	22
3	42	37	86	73

Array of dimension 32 X 32 X 3 (The 3 refers to RGB values)



Getting started with Opencv



Face Recognition using Python

Thank You