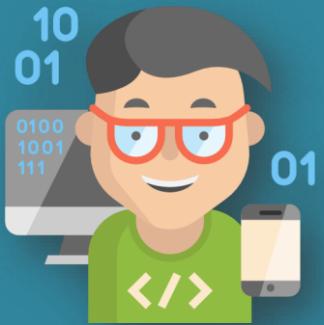


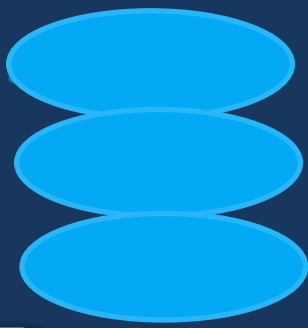


Face Recognition using Python

by MEGHWANT SINGH



Agenda



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What is Python?

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Face recognition using OpenCV

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

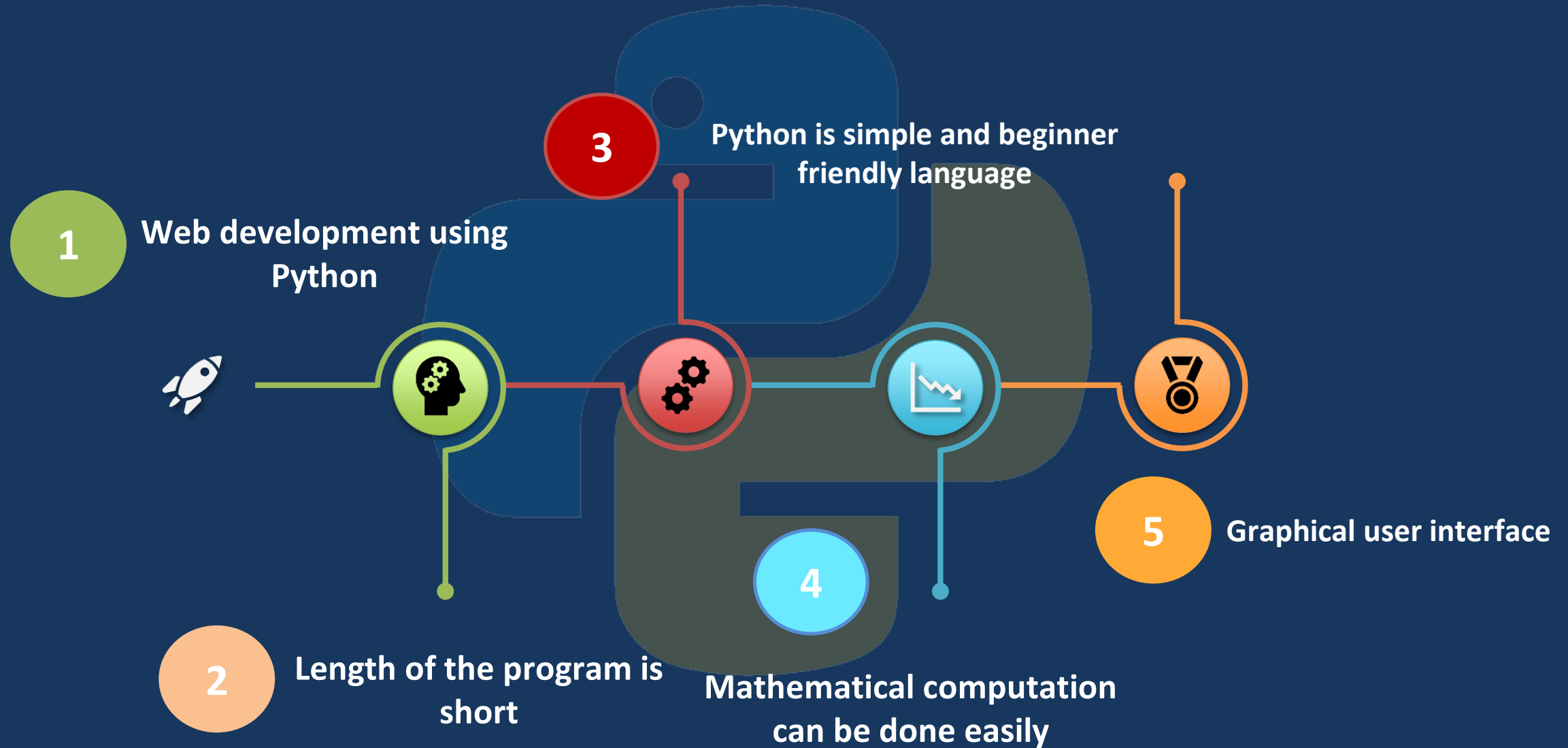
High level



Interpreted

Object oriented

Why should you learn Python?



Why Python is so popular?

1 Largest community for Learners and Collaborators

2 Open source

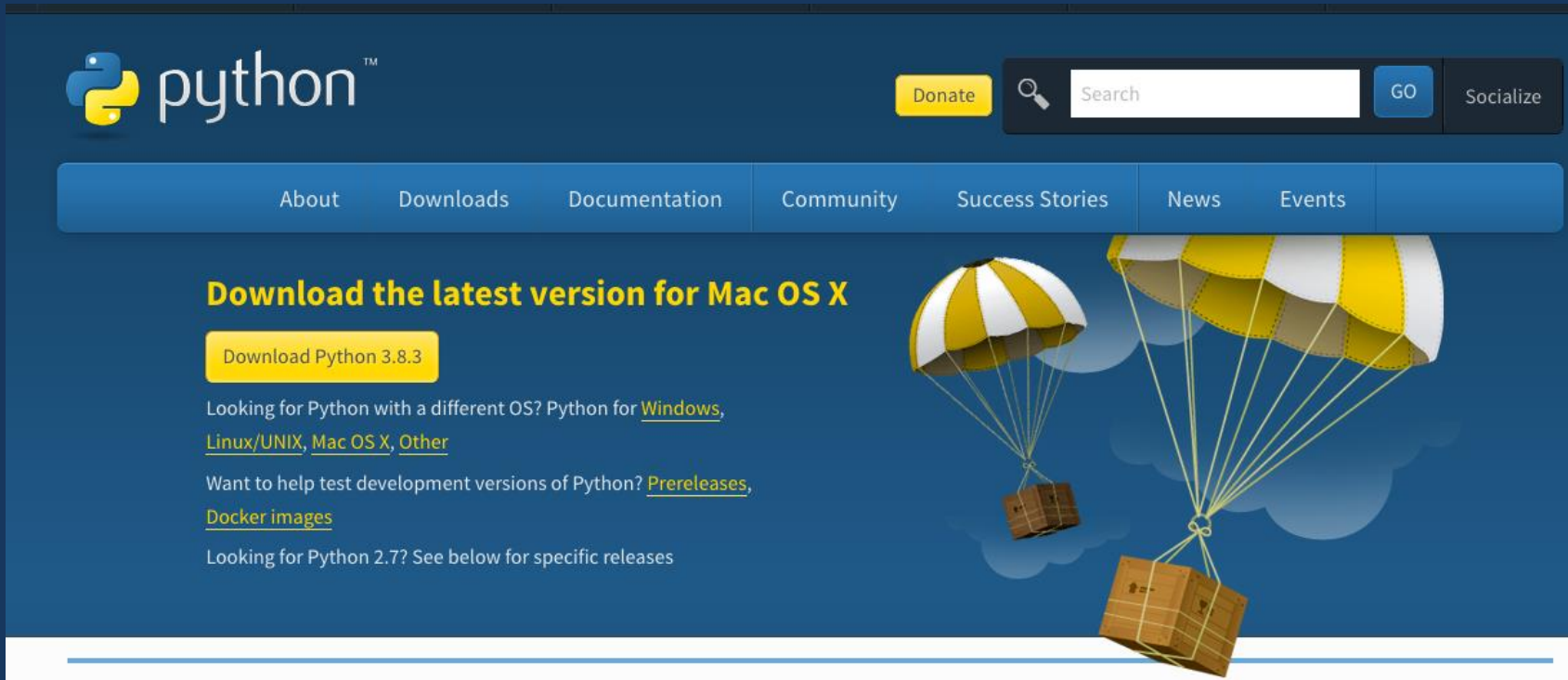
3 Easy to learn and usable flexibility

4 Huge numbers of Python libraries and Frame work

5 Supports Big Data, Machine Learning and Cloud computing

6 Supports Automation

Installing Python




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

Windows Mac Linux

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.

=====
|
| 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#
```

Popular IDE for Python: Anaconda

Anaconda installation site->

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



Individual Edition

Your data science toolkit

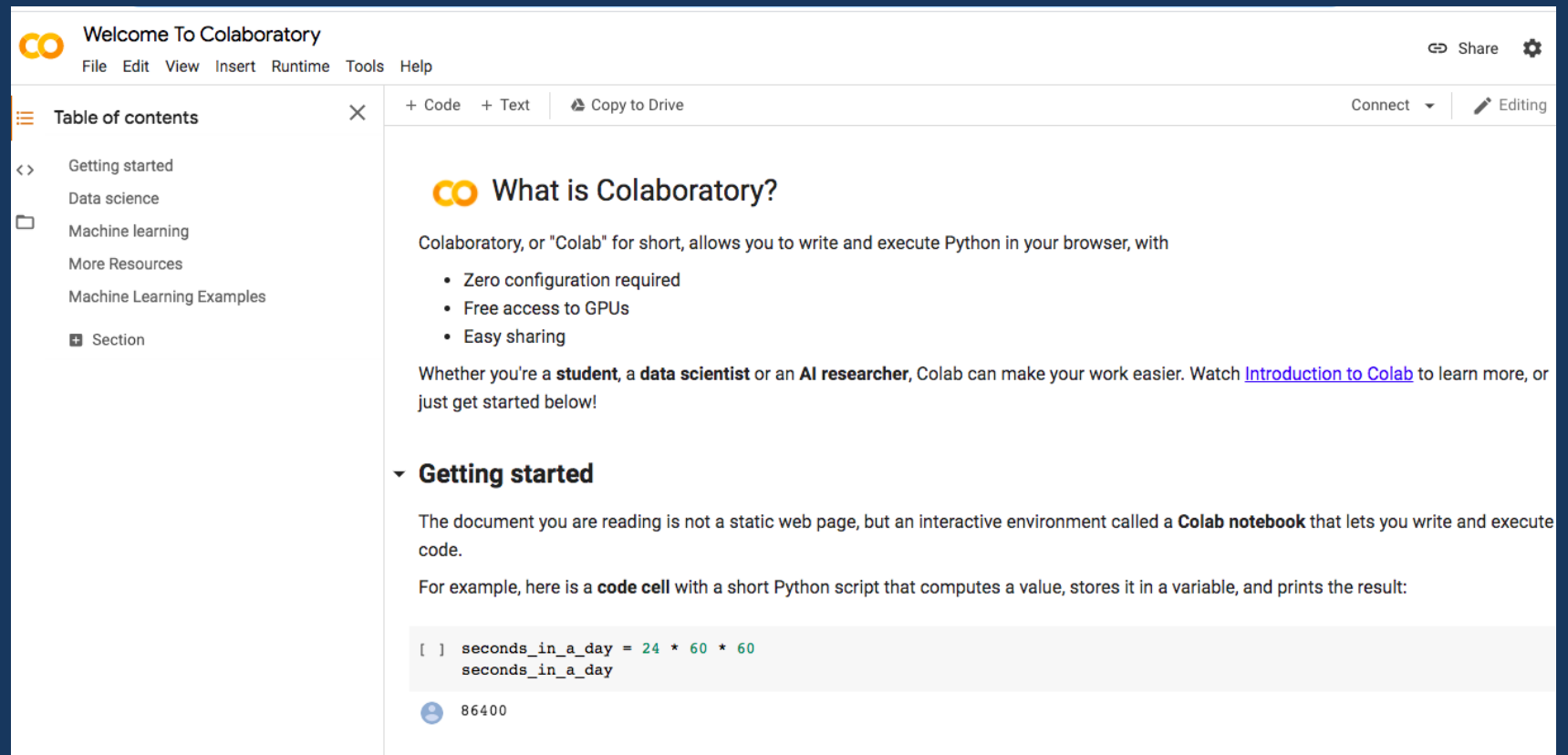
With over 20 million users worldwide, the open-source Individual Edition (Distribution) is the easiest way to perform Python/R data science and machine learning on a single machine. Developed for solo practitioners, it is the toolkit that equips you to work with thousands of open-source packages and 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 and the text 'Welcome To Colaboratory'. Below this is a menu bar with options: File, Edit, View, Insert, Runtime, Tools, and Help. On the right side of the header, there are links for 'Share' and a settings gear icon. A left sidebar contains a 'Table of contents' section with links to 'Getting started', 'Data science', 'Machine learning', 'More Resources', 'Machine Learning Examples', and a 'Section' button. The main content area is titled 'What is Colaboratory?' and includes a brief description of Colab, a list of features (Zero configuration required, Free access to GPUs, Easy sharing), and a 'Getting started' section. The 'Getting started' section explains that the document is an interactive Colab notebook and provides an example of a code cell with a Python script that calculates the number of seconds in a day (24 * 60 * 60), resulting in 86400.

CO Welcome To Colaboratory

File Edit View Insert Runtime Tools Help

Share

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

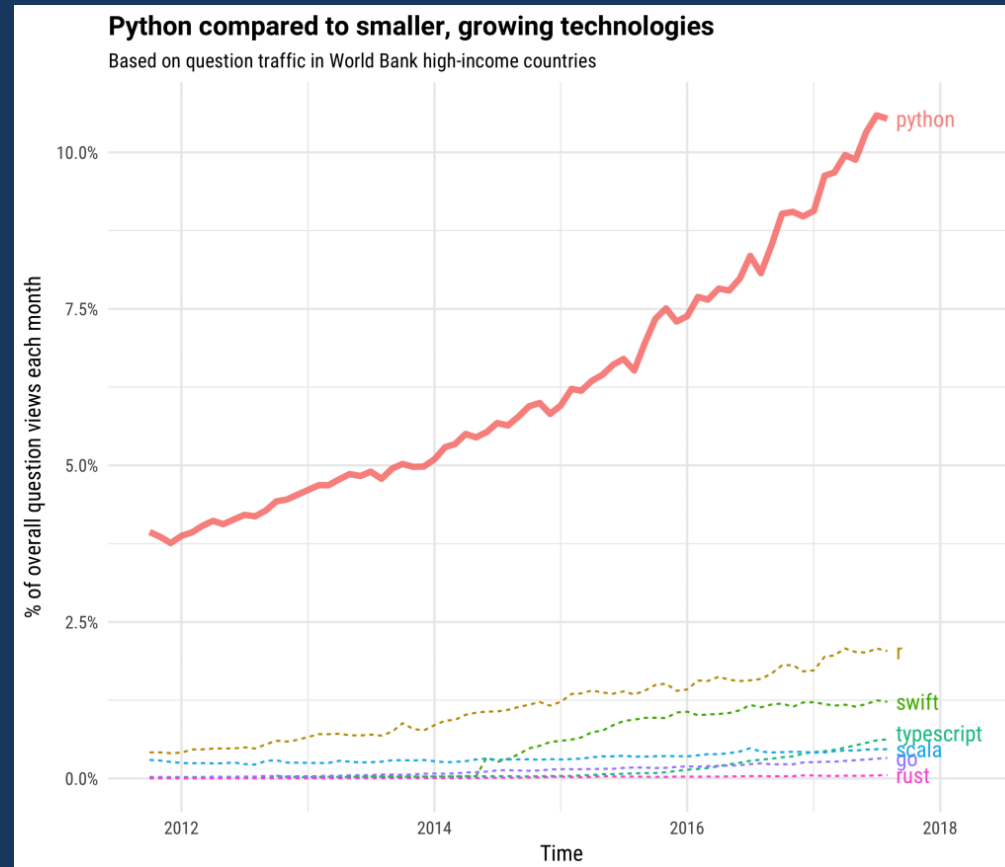
The document you are reading is not a static web page, but an interactive environment called a **Colab notebook** that lets you write and execute code.

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

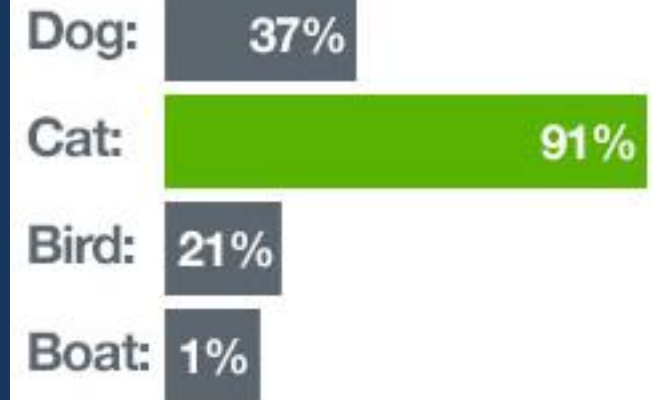
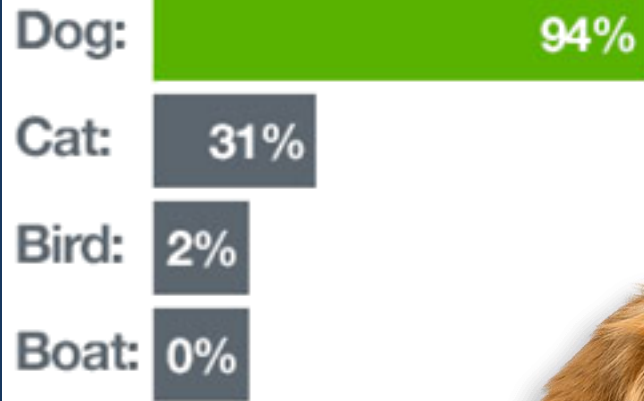
What is Image Processing

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?

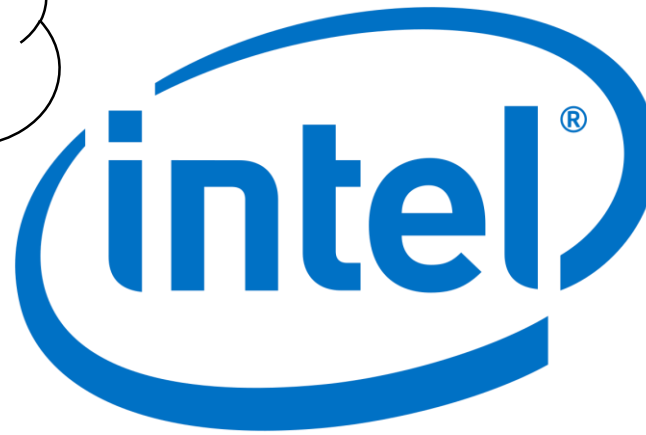
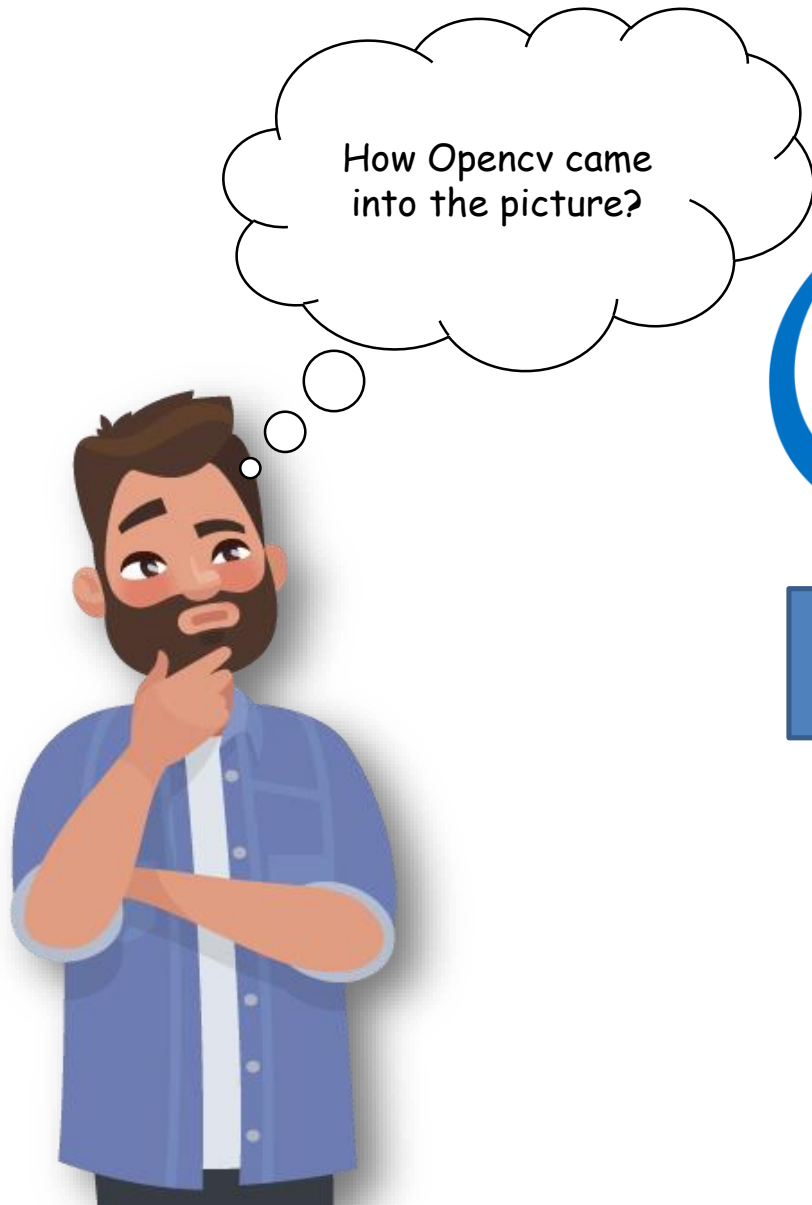


What is OpenCV?

OpenCV is a 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.





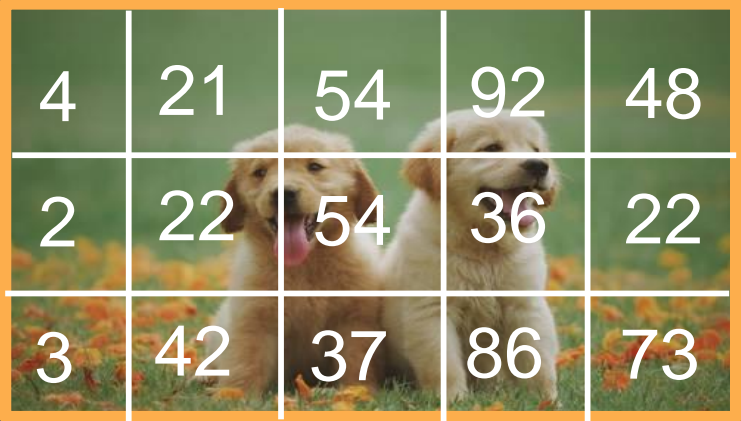
Opencv was invented
by Intel

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.

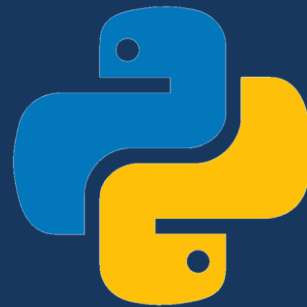
How Image Input Works In Computer?

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

