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Date:

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\*\*\*\*\*\*\*\*\*\*\* **\*\*\*\***\*\*\*\*\*\*\*\*\*\*\* Lab WOEK # 12 Aim :- Study of use of Jupyter Motebook & open CV. Objective -> The objective of this lab block is. 1] students will be able to list use of Jupytor notebook. 2] configure Jupyter notebook & execute simple functions. 3] Students will be able to list use of opency. Outcomes - After completing the Lab Hock #12 student able to 1) Configure & use Jupyter notebook. 2] Understand use of opency and its applications. topical source of the open source project Proe-Requisites: -> 100 por sent platerano em 2400 de folt 1] Basic Syntax of python: What is Jupyter Hotebook? The Jupyter Notebook is an incredibly powerful tool for interactively developing & presenting data science projects. This acticle will walk you through how to use Jupyter Notebooks for data science projects of how to set it up to on your local machine First , though: What is a 66 notebook ??? the bigget types libraries included in Browndo todade Humby, Landas & Materials decode to loss

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A notebook integrates code and its output into a single document that combiner visualizations, narrative text, mathematical equations, and other eich media. In other words: It's a single document where you can tun code, display the \* Output and also add explanations, formulas, charts & make your work more transparent, understandable, repeatable & shareable. Using Notebooks Is now a major part of the data science workflow at companies across the globe - It your globe goal is to work with data, using a Notebook will speed up your workflow & make it easier to communicate & share your results and of home va Best of all , as part of the open source project supyter, supyter Notehooks are completely free. You can download the software on its own, or as part of the Anacondo relata science toolkit. Although it is possible to use many different programming languages in Jupyter Notehooks, this article will focus on python as it is the most common use case to Installation is the mail and a part The easiest way for a heginner to get started with supplier Notehook is by installing [Anaconda] Anaconda is the most widely used python distribution for duta science and comes pre-loaded with all the most popular

Some of the biggest python libraries included in Anaconda include Numpy, pandas & Matplotlib though the full looot list

libraries & tools.

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Anaconda thus lets us hit the ground running with a fully stocked data science weekshop without the hassle of managing countless installations or excrying about dependencies and os-specific (read: Windows-specific) installation issues.

To get Anacondo, simply?

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- 1 Download the latest version of Anaconda for python 3.8
- 1 Install Anaconda by following Instructions on downloads

If you are a more advanced user with python already installed of prefer to manage your packages manually, you can just on use Pip:

Pips install Jupytex. 1 1

Open CV

Open cv was stouted an Intel in 1999 by Glary Bradsky

4 the flest release came out in 2000. Vandim pisarevsky

Joined Gary DARPA branch Bradsky to manage Intel's Russian

Software Open cv team. In 2005, Open cv was used on Stanley,

the vehicle that won the 2005 DARPA Grand challenge. Later

1th active development continued under the support of

Willow Garage with Gary Bradsky and Vadim pisarevsky

Jeading the project. Open cv now supports a multitude of

algorithms related to computer vision of Machine Learning

and is expanding day by day.

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Open CV supposts a wide variety of programming languages

Such as C++ , python, Java etc and is available on different

platforms including windows, linux, os x, Android & los, Interface

for high-speed Gipu operations hased on cond and open ct wee

also under active development.

Open ev-python is the python API, for open cv combining the hest qualities of the open CV ctt API & the python langua-

OpenCV-Python.

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openicy-python is a library of python bindings designed to solve computer vision problems.

By Guido Van Rossum that became very popular very quickly mounty because of its simplicity of code readability. It enables the programmer to express ideas in fewer lines of code without reducing readability.

Compared to languages like clott python is slower. That said, \*

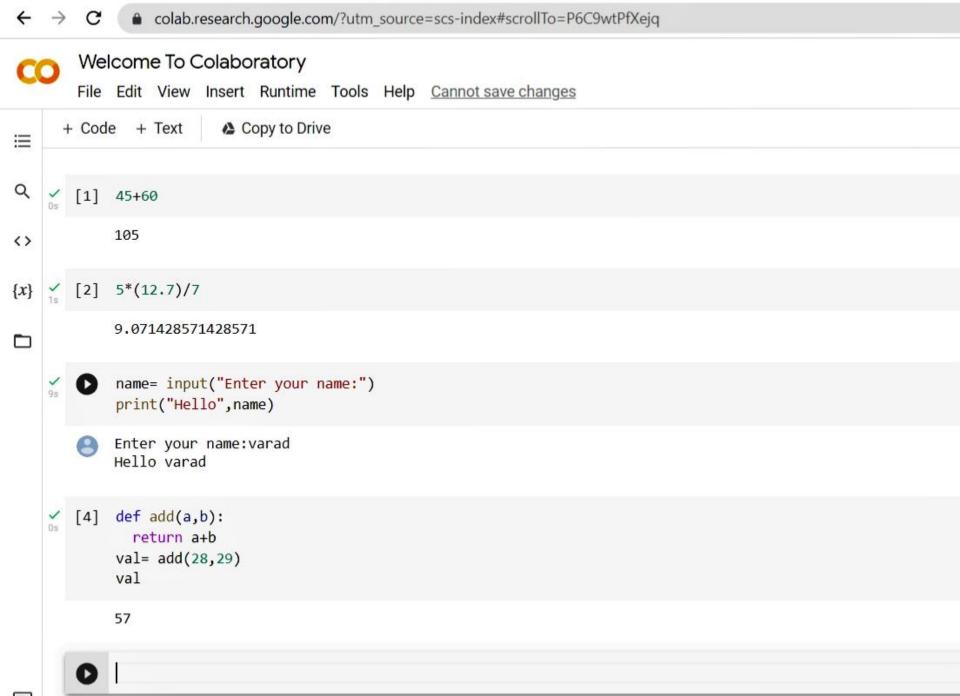
Python can be easily extended with clott which allows to \*

write computationally intensive code in clott of create python \*

weappers that can be used as python modules. This given as \*

two advantages: first, the code is as fast as the original \*

clott code (since it is the actual oft code working in backgrount of second, it easier to code in python than clott-open cv-python to a python weapper for the original open cv of implementation.\*



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    * Maharashtra Institue of Technology
    * Poly
-India
    * Pune
    * Mumbai
    * Aurangabad
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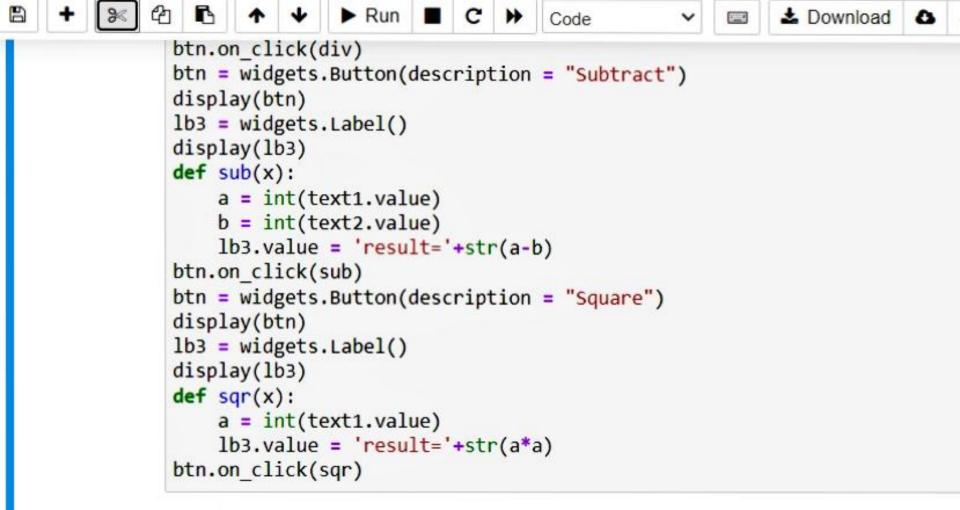
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In [7]: from ipywidgets import widgets
        lb1 = widgets.Label('Enter the First number')
        display(lb1)
        text1 = widgets.Text()
        display(text1)
        lb2 = widgets.Label('Enter the Second number')
        display(lb2)
        text2 = widgets.Text()
        display(text2)
        btn = widgets.Button(description = "add")
        display(btn)
        lb3 = widgets.Label()
        display(lb3)
        def add(x):
            a = int(text1.value)
            b = int(text2.value)
            lb3.value = 'result='+str(a+b)
        btn.on click(add)
         Enter the First number
          28
         Enter the Second number
          29
                 add
```

result=57



```
lb3 = widgets.Label()
display(lb3)
def sqr(x):
    a = int(text1.value)
    lb3.value = 'result='+str(a*a)
btn.on_click(sqr)
Enter the First number
 3
Enter the Second number
 5
       Multiply
         add
        divide
       Subtract
        Square
result=9
```

In [7]. from invwidgets import widgets