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# How to Install Libraries permanently in Google Colab?

Netra Prasad Neupane · [Follow](#)

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Most coders or developers use Google Colab for executing their prototypes very fast as it provides you access to faster GPUs like the T4 and P100. But sometimes your program requires a specific version of the libraries which are not installed in google colab to be installed. It becomes tedious and time-consuming to install dependencies in every run(installed dependencies are no longer available once runtime disconnects) of colab notebook.

Recently I got stuck on a similar problem. I have to install few large-sized libraries to run a program in colab, which takes too long to complete installation. But I want to run my program multiple times and thus need to avoid the installation of libraries in each run to decrease installation time. Which is not possible without installing dependencies permanently in google colab. So, In this blog, I will describe how I have successfully installed all the dependencies permanently in google colab.

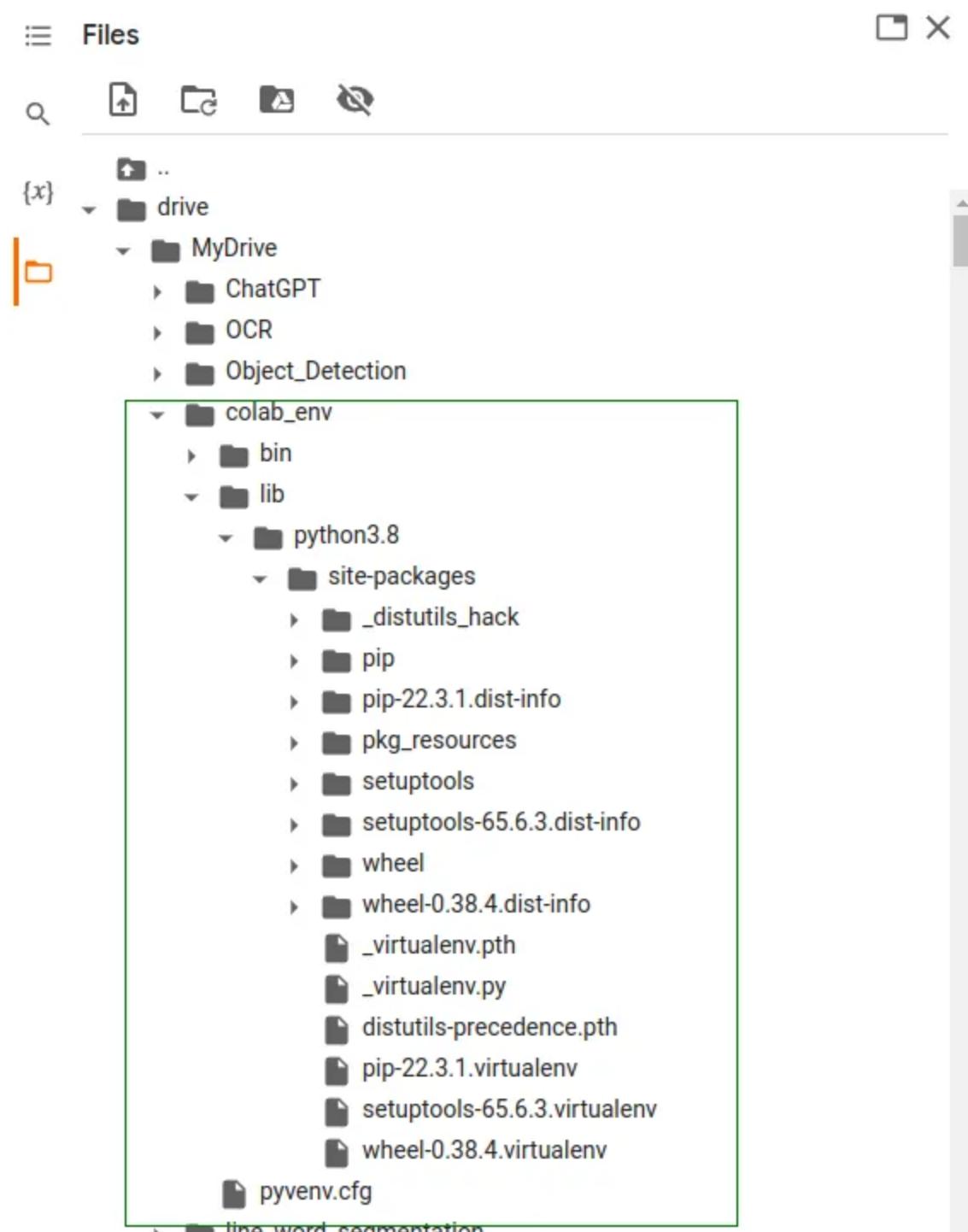
First, mount the google drive using the following two lines of code.

```
from google.colab import drive  
drive.mount("/content/drive")
```

After successfully mounting the google drive, Let's create a virtual environment using `virtualenv` library. One thing to keep in mind is that, create a virtual environment inside your google drive, which is mounted above.

```
!virtualenv /content/drive/MyDrive/colab_env
```

Here you can see that, a virtual environment named `colab_env` has been created in google drive.



Now let's install a library named `Pypdf` in virtual environment `colab_env`. To install a library in the virtual environment, we should activate the environment first, and install the library in the same cell.

```
!source /content/drive/MyDrive/colab_env/bin/activate; pip install Pypdf
```

In the above line of code `!source /content/drive/MyDrive/colab_env/bin/activate` activates our environment `colab_env`. And `pip install Pypdf` installs `Pypdf` library within the environment.

```
from pypdf import PdfReader  
  
reader = PdfReader("/content/Data science journey 3.pdf")  
number_of_pages = len(reader.pages)  
print(number_of_pages)
```

Here, I have tried to run some functionalities of our newly installed `Pypdf` library(a free and open-source pure-python PDF library capable of splitting, merging, cropping, and transforming the pages of PDF files).

But the above lines of codes throw an error i.e `ModuleNotFoundError: No module named 'pypdf'` .

```
[6] from pypdf import PdfReader
reader = PdfReader("/content/Data science journey 3.pdf")
number_of_pages = len(reader.pages)
print(number_of_pages)

ModuleNotFoundError: Traceback (most recent call last)
<ipython-input-6-dd9ce9d29fb6> in <module>
      1 from pypdf import PdfReader
      2
      3 reader = PdfReader("/content/Data science journey 3.pdf")
      4 number_of_pages = len(reader.pages)
      5 print(number_of_pages)

ModuleNotFoundError: No module named 'pypdf'

NOTE: If your import is failing due to a missing package, you can
manually install dependencies using either !pip or !apt.

To view examples of installing some common dependencies, click the
"Open Examples" button below.
```

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So, what do you think, why can't we import our newly installed library Pypdf ?. Here, we have installed pypdf in our virtual environment but our imported module search Python .g. Colab Ja. Libraries .1. Dependencies .ti. Virtual Environment on the virtual environment we should add the path of the virtual environment site-packages to colab system path.

```
import sys
sys.path.append("/content/drive/MyDrive/colab_env/lib/python3.8/site-packages")
```



These lines of code added the path of virtual environment packages to the system path. Now, let's again run the following script to test whether our installed dependencies are working or not.

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```
from pypdf import PdfReader
```



```
[8] from pypdf import PdfReader  
  
reader = PdfReader("/content/Data science journey 3.pdf")  
number_of_pages = len(reader.pages)  
print(number_of_pages)
```

41



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*Here, I have tested our installation in the first run only, but my requirement is to avoid the installation of the dependencies in future runs. To use previously installed packages of the Most of the coders or developers use Google Colab for executing their prototypes very fast as it provides you access to faster GPUs like...*

*colab\_env site-packages to colab system path using sys.path.append("/content/drive /MyDrive/colab\_env/lib/python3.8/site-packages"). After adding the path, just import and use the packages which were installed in the virtual environment colab\_env.*



In conclusion, It is possible to install dependencies permanently to google colab using a virtual environment. One thing to take care of is, don't forget to add the path of the virtual environment site-packages to colab system path. I hope that this tutorial is helpful for you. Thank you!



Netra Prasad Neupane

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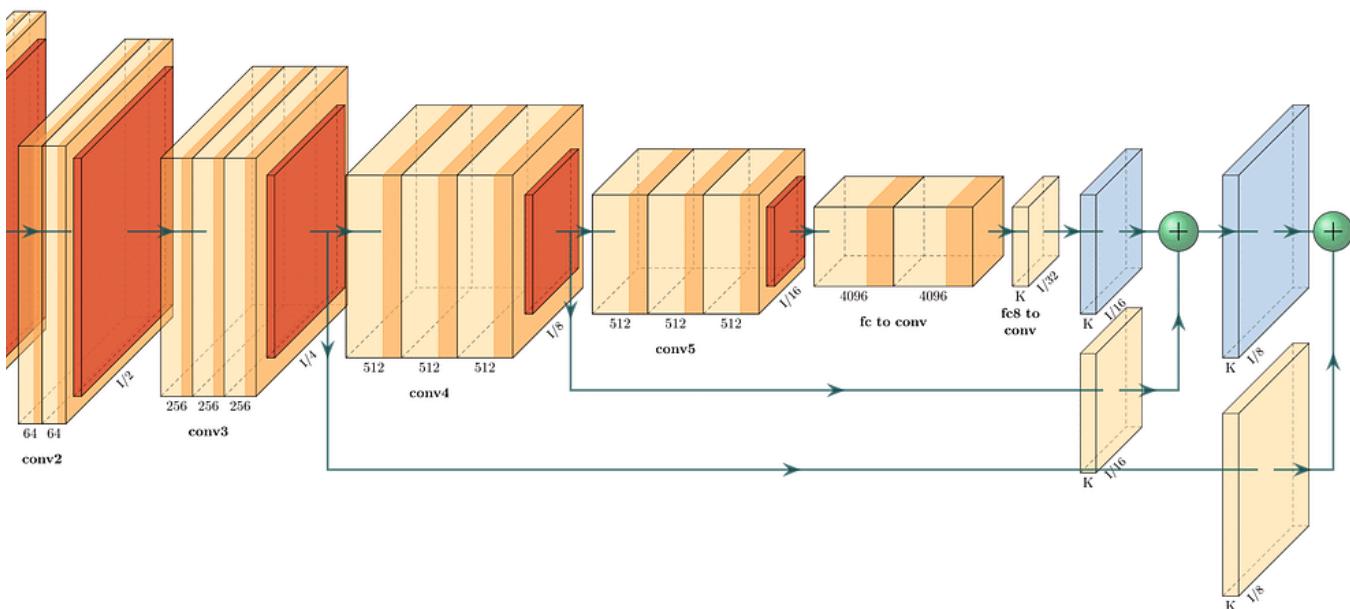


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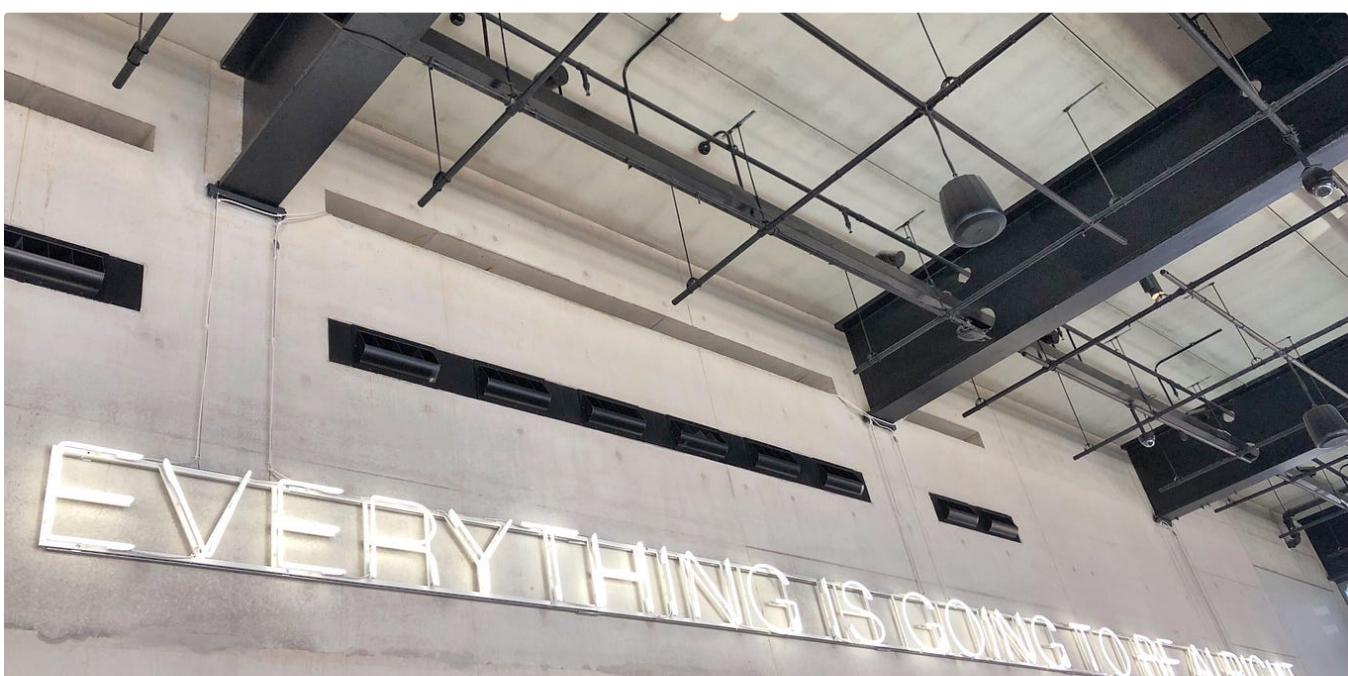
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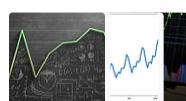
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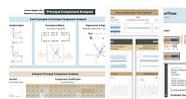
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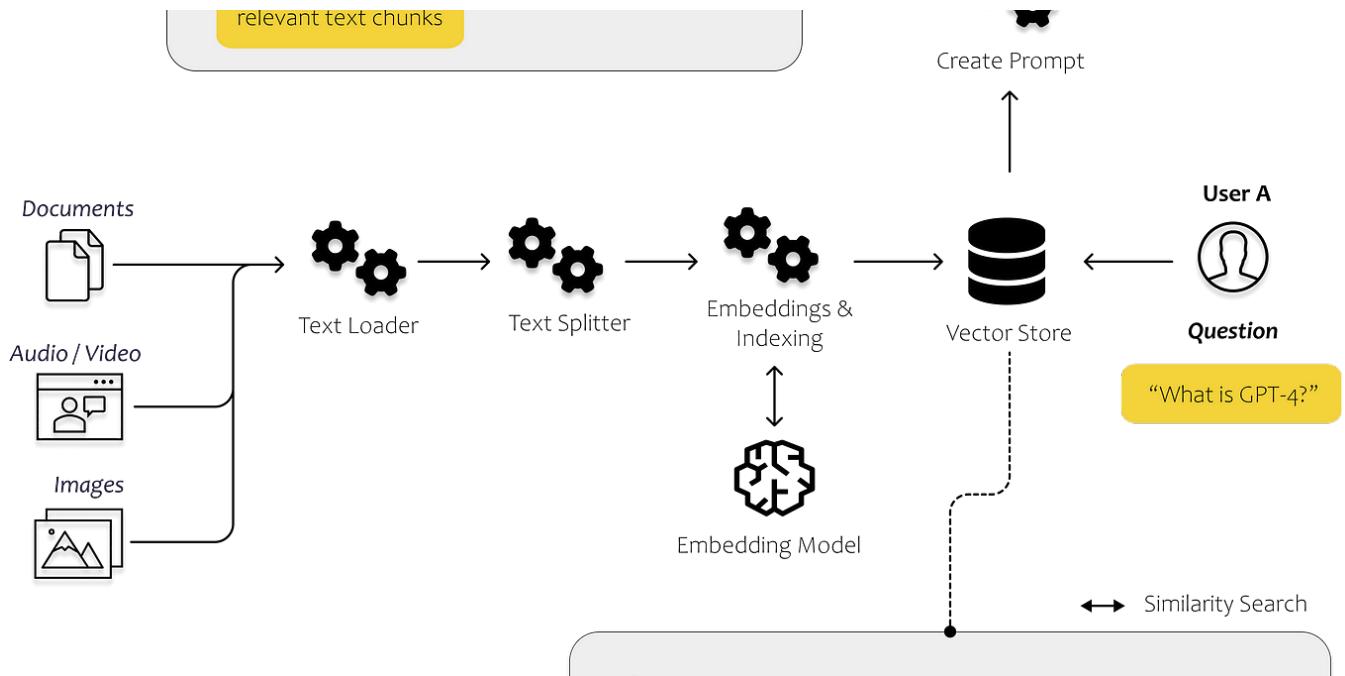
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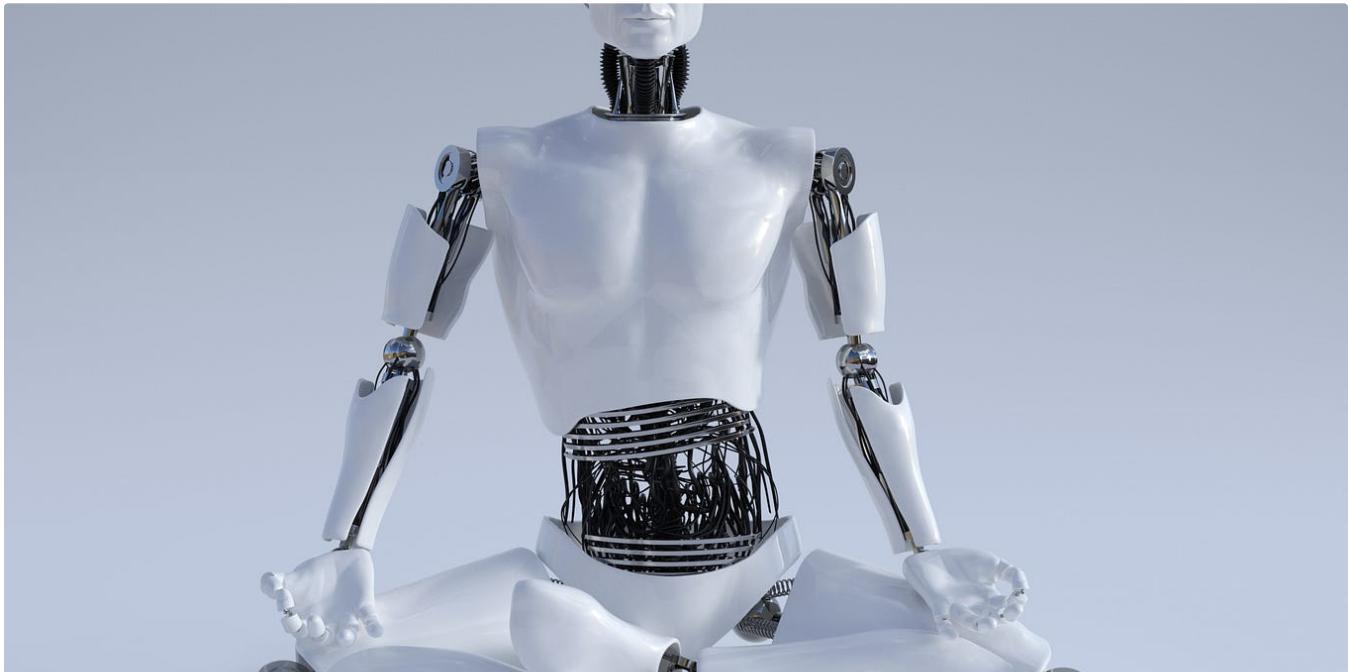
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