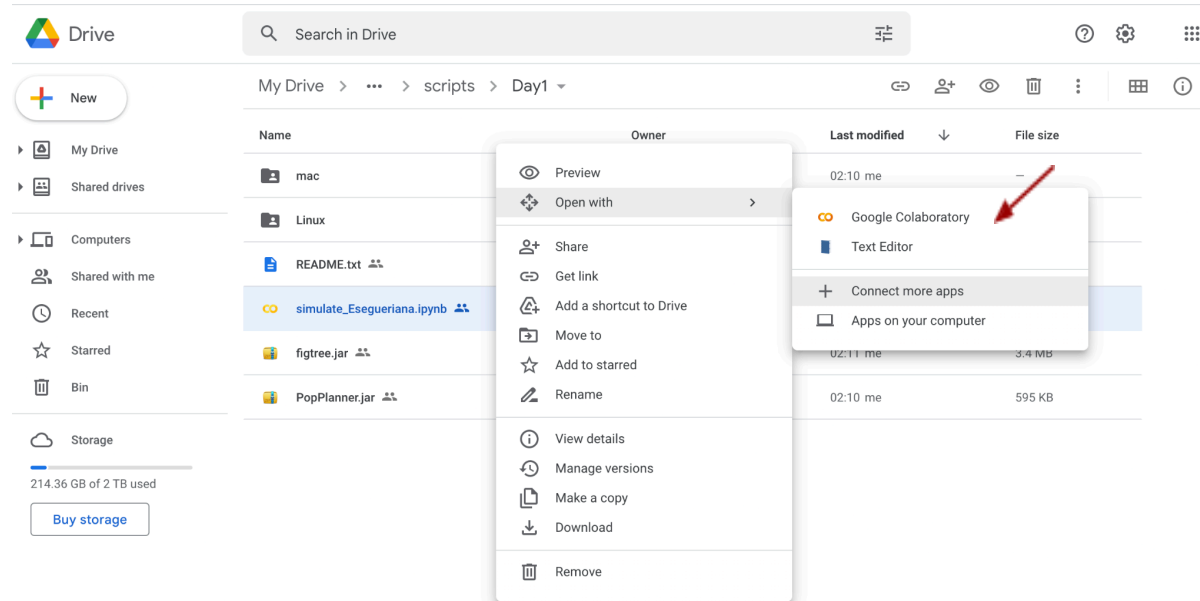
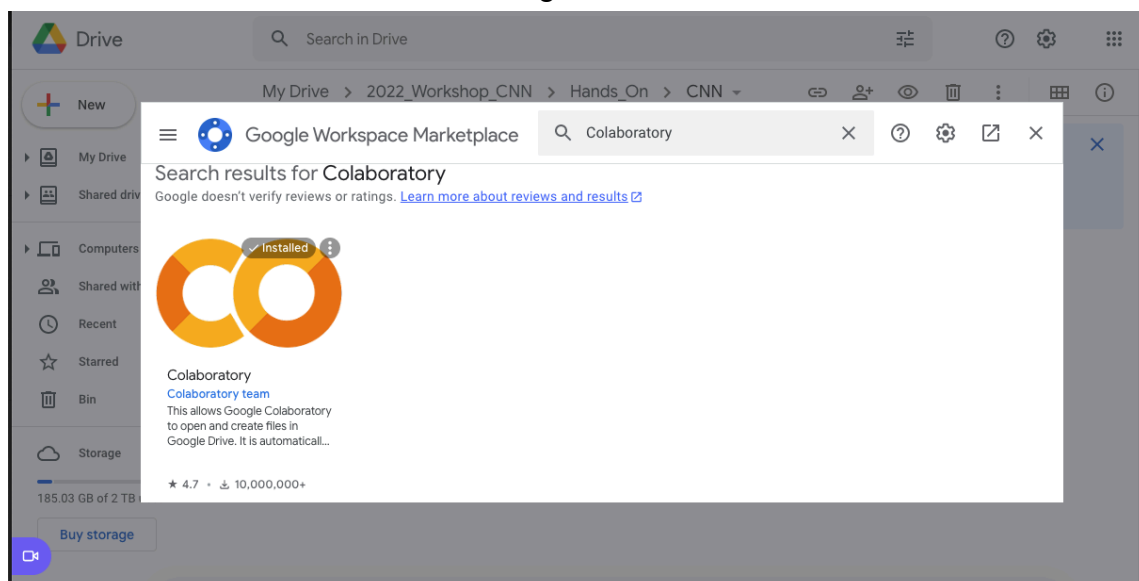


Before we start, please follow the next steps to have everything ready for our practice on using Convolutional Neural Networks for demographic model selection.

1. Download the contents of the SharedFolder **to your computer**.
2. Upload the contents of the downloaded SharedFolder folder **to your Google Drive**, to make it editable (the original shared folder is read only).
3. Find the file **Part1\_DemModels\_Esegueriana.ipynb**
4. Right click on the file and select **Open with -> Connect more apps**.



5. Search for the app **Colaboratory** and install it.
6. Now open the file **Part1\_DemModels\_Esegueriana.ipynb** with the Colaboratory. You should see text and code in a nice graphical interface, similar to in the image below:



The screenshot shows a Jupyter Notebook titled "simulate\_Esegueriana.ipynb". The interface includes a top menu bar with options like "Arquivo", "Editar", "Ver", "Inserir", "Ambiente de execução", "Ferramentas", "Ajuda", and "Salvo pela última vez às 02:07". On the right, there are buttons for "Comentário" and "Compartilhar". The notebook has two tabs: "+ Código" (selected) and "+ Texto". The code cell contains the following text:

**Script to simulate data for one of the species in the Kirschner et al. (2022) Nat. Comm. paper.**

in order to use this code you have to have ms installed on your computer ms can be freely downloaded from:  
<http://home.uchicago.edu/rhudson1/source/mksamples.html>

First, import all required modules and define useful functions.

```
[ ] ## import all required modules.
import random
import os
import math
import shlex, subprocess
import numpy as np

##define a function to read ms' simulations and transform then into a NumPy array.
def ms2nparray(xfile):
    g = list(xfile)
    k = [idx for idx,i in enumerate(g) if len(i) > 0 and i.startswith(b'//')]
    f = []
    for i in k:
```

7. Now you are good to go!

Please do not hesitate to contact me at [manolofperez@gmail.com](mailto:manolofperez@gmail.com) if you have any questions.

All the Best,

Manolo and Matteo