



# TeachEngineering

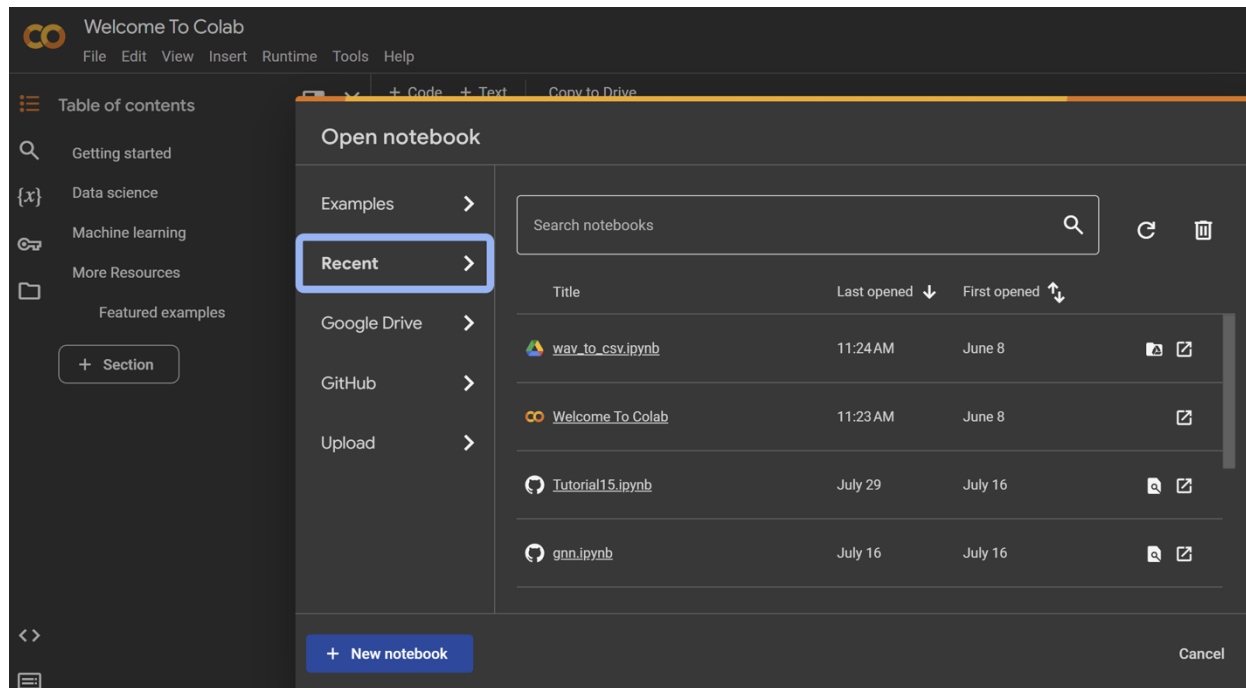
Google Colab Setup Images



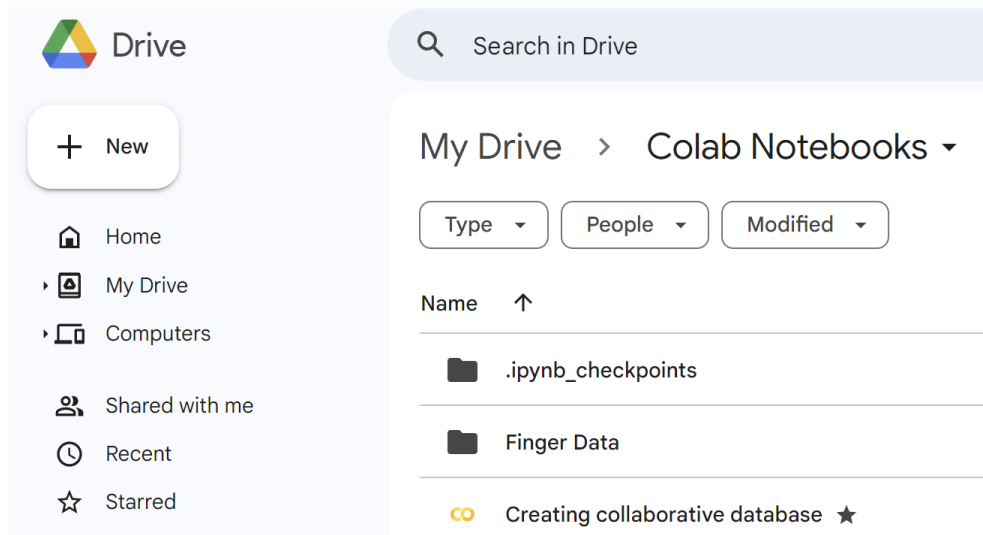
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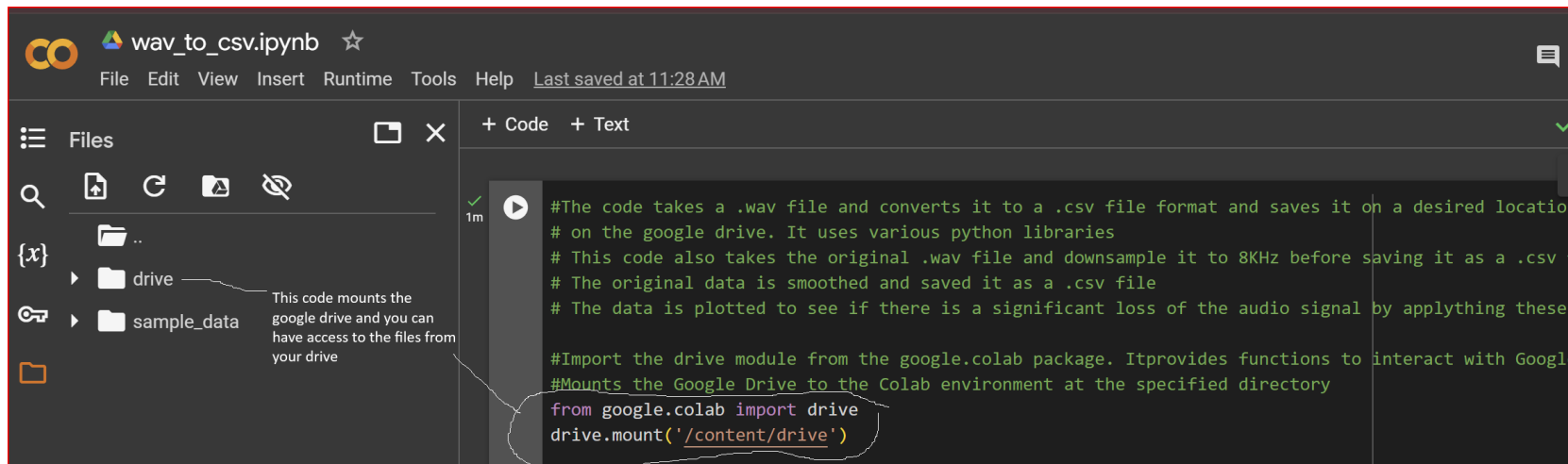
# Google Colab Setup #1



# Google Colab Setup #2



# Google Colab Setup #3



The screenshot displays the Google Colab interface for a notebook titled "wav\_to\_csv.ipynb". The top menu bar includes "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help", with a status message "Last saved at 11:28 AM".

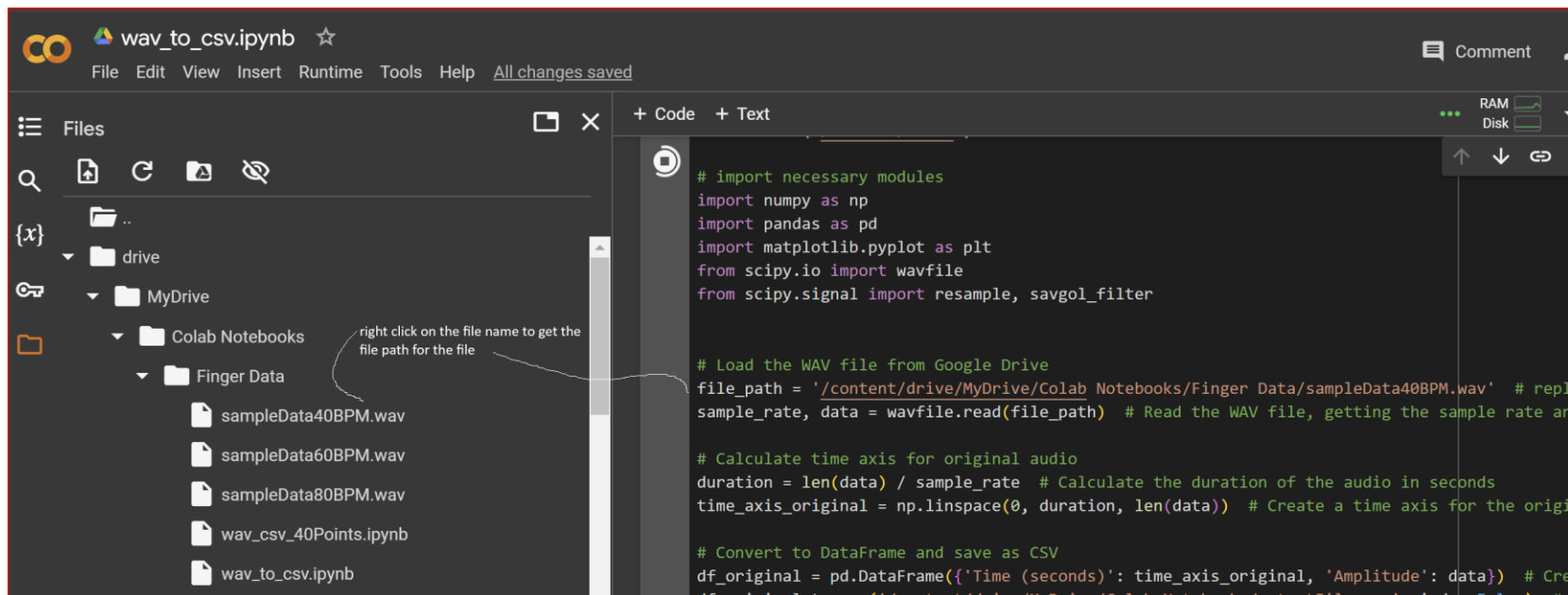
On the left, the "Files" sidebar shows a directory structure with folders named "drive" and "sample\_data". A tooltip points to the "drive" folder, stating: "This code mounts the google drive and you can have access to the files from your drive".

The main code area contains the following Python code:

```
#The code takes a .wav file and converts it to a .csv file format and saves it on a desired location  
# on the google drive. It uses various python libraries  
# This code also takes the original .wav file and downsample it to 8KHz before saving it as a .csv  
# The original data is smoothed and saved it as a .csv file  
# The data is plotted to see if there is a significant loss of the audio signal by applything these  
  
#Import the drive module from the google.colab package. Itprovides functions to interact with Googl  
#Mounts the Google Drive to the Colab environment at the specified directory  
from google.colab import drive  
drive.mount('/content/drive')
```

A play button icon and a "1m" timer are visible next to the code cell, indicating it has been executed.

# Google Colab Setup #4



The screenshot displays the Google Colab interface. The top bar shows the notebook title "wav\_to\_csv.ipynb" and a star icon. Below the title bar is a menu with "File", "Edit", "View", "Insert", "Runtime", "Tools", "Help", and a link "All changes saved".

The left sidebar, titled "Files", shows a file explorer. It includes a search icon, a refresh icon, and a trash icon. The file structure is as follows:

- drive
  - MyDrive
    - Colab Notebooks
      - Finger Data
        - sampleData40BPM.wav
        - sampleData60BPM.wav
        - sampleData80BPM.wav
        - wav\_csv\_40Points.ipynb
        - wav\_to\_csv.ipynb

A white arrow points from the text "right click on the file name to get the file path for the file" to the file "sampleData40BPM.wav" in the "Finger Data" folder.

The main area shows a code cell with the following Python code:

```
# import necessary modules
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from scipy.io import wavfile
from scipy.signal import resample, savgol_filter

# Load the WAV file from Google Drive
file_path = '/content/drive/MyDrive/Colab Notebooks/Finger Data/sampleData40BPM.wav' # repl
sample_rate, data = wavfile.read(file_path) # Read the WAV file, getting the sample rate an

# Calculate time axis for original audio
duration = len(data) / sample_rate # Calculate the duration of the audio in seconds
time_axis_original = np.linspace(0, duration, len(data)) # Create a time axis for the origi

# Convert to DataFrame and save as CSV
df_original = pd.DataFrame({'Time (seconds)': time_axis_original, 'Amplitude': data}) # Cre
df_original.to_csv('/content/drive/MyDrive/Colab Notebooks/output5/5file.csv', index=False) #
```