# # Basic libraries

import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

from sklearn.model\_selection import train\_test\_split

from sklearn.tree import DecisionTreeClassifier

from sklearn.metrics import accuracy\_score

from sklearn import tree

import os

# # import of data

balance\_data = pd.read\_csv('/content/drive/MyDrive/DATA ANAS TEST 100.csv',sep= ',', header= 1)

balance\_data2 = pd.read\_csv('/content/drive/MyDrive/الداتا من قياسنا تعديل 5(تم الاسترداد تلقائياً).CSV',sep= ',', header= 1)

# # each data file length , shape and columns

print ("Dataset Lenght:: "), len(balance\_data)

print ("Dataset Shape:: "), balance\_data.shape

print ("Dataset Lenght2:: "), len(balance\_data2)

print ("Dataset Shape2:: "), balance\_data2.shape

print ("Dataset:: ")

balance\_data.head()

print ("Dataset2:: ")

balance\_data2.head()

# # the algorithm

# classification of parameters

X\_train = balance\_data.values[:, 0:16]

y\_train = balance\_data.values[:,16]

X\_test = balance\_data2.values[:, 0:16]

y\_test = balance\_data2.values[:,16]

clf\_entropy = DecisionTreeClassifier(criterion = "entropy", random\_state =10000,

max\_depth=30, min\_samples\_leaf=3)

clf\_entropy.fit(X\_test,y\_test)

y\_pred\_en = clf\_entropy.predict(X\_test)

## # the output

y\_pred\_en

print ("Accuracy is "), accuracy\_score(y\_test,y\_pred\_en)\*100

# #convert the gesture into speech and text

print(y\_pred\_en[0])

!pip install gTTS

from gtts import gTTS

from IPython.display import Audio

tts = gTTS(y\_pred\_en[0])

tts.save('1.wav')

sound\_file = '1.wav'

Audio(sound\_file, autoplay=True)

print(y\_pred\_en[17])

!pip install gTTS

from gtts import gTTS

from IPython.display import Audio

tts = gTTS(y\_pred\_en[17])

tts.save('2.wav')

sound\_file = '2.wav'

Audio(sound\_file, autoplay=True)