README: Steps to Run the Code in Google Colab

1. Install Required Libraries

!pip install pyedflib tensorflow scipy numpy matplotlib PyWavelets

2. Import Libraries

import numpy as np

import pyedflib # For handling .edf files

import matplotlib.pyplot as plt

import tensorflow as tf

from tensorflow.keras.layers import Conv1D, MaxPooling1D, Bidirectional, LSTM, Dense, Dropout

from tensorflow.keras.models import Sequential

from sklearn.model_selection import train_test_split

from sklearn.metrics import roc_curve, auc

import pywt # For Discrete Wavelet Transform

import os

3. Download the EEG Dataset

Run the following command to download the EEG dataset from PhysioNet:

!wget -r -N -c -np https://physionet.org/files/eegmat/1.0.0/

- This command will download the dataset into the /content/physionet.org/files/eegmat/1.0.0/ directory.

Run the code

4. Load and Preprocess the Data

5. Apply Discrete Wavelet Transform (DWT)

6. Prepare Data for CNN Input

7. Build and Train the CNN-BLSTM Model

8. Evaluate the Model

9. Run All Cells