import tensorflow as tf

from tensorflow.keras.datasets import imdb

from tensorflow.keras.preprocessing.sequence import pad\_sequences

from tensorflow.keras.models import Sequential

from tensorflow.keras.layers import Embedding, LSTM, Dense, Dropout

vocab\_size = 10000 # Vocabulary size

max\_length = 200 # Maximum sequence length

(X\_train, y\_train), (X\_test, y\_test) = imdb.load\_data(num\_words=vocab\_size)

X\_train = pad\_sequences(X\_train, maxlen=max\_length)

X\_test = pad\_sequences(X\_test, maxlen=max\_length)

model = Sequential()

model.add(Embedding(vocab\_size, 128, input\_length=max\_length))

model.add(LSTM(64, dropout=0.2, recurrent\_dropout=0.2))

model.add(Dense(1, activation='sigmoid'))

model.compile(optimizer='adam', loss='binary\_crossentropy')

model.fit(X\_train, y\_train, epochs=3, batch\_size=128)

accuracy = model.evaluate(X\_test, y\_test)

print("Test Accuracy:", accuracy)