## Dataset

**The dataset consists of Irish song lyrics. The text data is preprocessed to create sequences of words that the model will use to learn patterns and generate new text.**

## Model Architecture

* Embedding Layer: Converts input tokens (words) into dense vectors of fixed size.
* LSTM Layer: Processes the sequences of vectors, capturing temporal dependencies.
* Dense Layer: Outputs a probability distribution over the vocabulary for the next word prediction.

## Key Parameters

* Embedding Dimension: 100
* LSTM Units: 150
* Learning Rate: 0.01

## The model

model = tf.keras.models.Sequential([

tf.keras.Input(shape=(max\_sequence\_len-1,)),

tf.keras.layers.Embedding(vocab\_size, embedding\_dim),

tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(lstm\_units)),

tf.keras.layers.Dense(vocab\_size, activation='softmax')

])

model.compile(

loss='categorical\_crossentropy',

optimizer=tf.keras.optimizers.Adam(learning\_rate=learning\_rate),

metrics=['accuracy']

)

## Training

The model is trained on sequences of words from the lyrics. The training process involves:

* Loss Function: Categorical Crossentropy
* Optimizer: Adam

## Results

After training, the model can generate new lines of poetry by predicting the next word in a sequence based on the learned patterns from the Irish lyrics.

## Conclusion

This lab demonstrates how to use RNNs and LSTMs for text generation tasks. By training on a specific dataset, the model can create new, coherent text that mimics the style and structure of the original data.

**Note: This project is not for sharing with people and making them do like it , but instead it can be used for training in making beneficial projects to help other people (as in healthcare,agriculture,…etc)**