

OUTPUT FILE

Output1 -

Downloading the data set.


Data Description- This is a public domain speech data-set consisting of 13,100 short audio clips of a single speaker reading passages from 7 non-fiction books. A transcription is provided for each clip. Clips vary in length from 1 to 10 seconds and have a total length of approximately 24 hours. The texts were published between 1884 and 1964, and are in the public domain. The audio was recorded in 2016-17 by the LibriVox project and is also in the public domain.

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➤ Downloading data from https://data.keithito.com/data/speech/LJSpeech-1.1.tar.bz2
2748579840/2748572632 [=====] - 61s 0us/step
2748588032/2748572632 [=====] - 61s 0us/step
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Output 2-

Vocabulary size-

Total Clips 13,100
Total Words 225,715
Total Characters 1,308,678
Mean Words per Clip 17.23
Distinct Words 13,821

 vocab size 34

Output 3-

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203/203 [=====] - ETA: 0s - loss: 1.7495 target: <darius, who besieged the rebellious city twice, weakened it by destroying some of its walls.>
prediction: <a t i n t t o t o e onhe in or t othe t t t e is ae t t t onhe athe the t ton t e theirs in a p en int t arae t ie s t e t a t t t inthd ca a e ar int d t e int tonhe t ors t t t uto tong t or
target: <at no elevation affords the only drop, strangulation would seldom supervene but for the resolution of the miserable felo de se.>
prediction: <a t i n t t o t o e onhe in or t othe t t t e is ae t t t onhe athe the t ton t e theirs s in a p en int t arae t ie s t e t a t t t inthd ca a e ar int d t e int tonhe t ors t t t uto tong t ot
target: <ould meet our specific criteria, none of them alone. but, it is when you begin adding them up to some degree that you begin to get criteria that, are meaningful.>
prediction: <a t i n t t o t o e onhe in or t othe t t t e is ae t t t onhe athe the t ton t e theirs s in a p en int t arae t ie s t e t a t t t inthd ca a e ar int d t e int tonhe t ors t t t uto tong t ot
target: <throughout april, the commission asked marina oswald whether she might have misunderstood the object of her husband's threat. she stated, quote,>
prediction: <a t i n t t o t o e onhe in or t othe t t t e is ae t t t onhe athe the t ton t e theirs s in a p en int t arae t ie s t e t a t t t inthd ca a e ar int d t e int tonhe t ors t t t uto tong t ot
203/203 [=====] - 4306s 21s/step - loss: 1.7495 - val_loss: 1.4848

History = model.fit(ds, validation_data=val_ds, callbacks=[display_cb], epochs=10)

Epoch 1/10
203/203 [=====] - ETA: 0s - loss: 1.7864 target: <the mannings were arraigned together# the husband standing at one of the front corners of the dock, his wife at the other end.>
prediction: <athele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie a l d t has tr t t a t aths
target: <and the windows of the opposite houses, which commanded a good view, as usual fetched high prices.>
prediction: <athele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie a l d t has tr t t a t aths
target: <at present, federal agencies participate only upon the sufferance of the local authorities.>
prediction: <athele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie a l d t has tr t t a t aths
target: <he probably walked east on elm street for seven blocks to the corner of elm and murphy>
prediction: <athele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie a l d t has tr t t a t aths
203/203 [=====] - 3995s 20s/step - loss: 1.7864 - val_loss: 1.5996
Epoch 2/10
203/203 [=====] - 3978s 20s/step - loss: 1.4007 - val_loss: 1.3658
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Epoch 1/10
203/203 [=====] - ETA: 0s - loss: 1.7864 target: <the mannings were arraigned together# the husband standing at one of the front corners of the dock, his wife at the other end.>
prediction: <thele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie ai d t haa tr t t a t aths

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prediction: <thele o the the ie t a the ow or the a t t a e the the on t the o owe athe oie t an ththe t or ee oie ate the t olore a own t thethe h re eon the t t e oie ai d t haa tr t t a t aths

203/203 [=====] - 3995s 20s/step - loss: 1.7864 - val_loss: 1.5996
Epoch 2/10
203/203 [=====] - 3978s 20s/step - loss: 1.4007 - val_loss: 1.3658
Epoch 3/10
93/203 [=====] - ETA: 35:51 - loss: 1.3298

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The Final Output-

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Epoch 1/5
203/203 [=====] - ETA: 0s - loss: 1.7553 target: <the mannings were arraigned together# the husband standing at one of the front corners of the dock, his wife at the other end.>
prediction: <the t the t l se a aao at th t t to th the nao assis t t teed an ao ai no s s tie a to the se tte st no aao the tee ao n lnthed the se ano the ir th ned see is the th l ith thee phe pthe faonir t

target: <and the windous of the opposite houses, which commanded a good view, as usual fetched high prices.>
prediction: <the t the t l se a aao ate th t t to th the nao assis t t teed an ao ai no s s tie a to the se tte st no aao the tee ao n lnthed the se ano the ir th ned see is the th l ith thee phe pthe faonir t

target: <at present, federal agencies participate only upon the sufferance of the local authorities.>
prediction: <the t the t l se a aao ate th t t to th the nao assis t t teed an ao ai no s s tie a to the se tte st no aao the tee ao n lnthed the se ano the ir th ned see is the th l ith thee phe pthe faonir t

target: <he probably walked east on elm street for seven blocks to the corner of elm and murphy>
prediction: <the t the t l se a aao ate th t t to th the nao assis t t teed an ao ai no s s tie a to the se tte st no aao the tee ao n lnthed the se ano the ir th ned see is the th l ith thee phe pthe faonir t

203/203 [=====] - 4250s 21s/step - loss: 1.7553 - val_loss: 1.5853
Epoch 2/5
203/203 [=====] - 4320s 21s/step - loss: 1.3931 - val_loss: 1.3611
Epoch 3/5
203/203 [=====] - 4276s 21s/step - loss: 1.3207 - val_loss: 1.3330
Epoch 4/5
203/203 [=====] - 4362s 21s/step - loss: 1.3066 - val_loss: 1.3231
Epoch 5/5
203/203 [=====] - 4318s 21s/step - loss: 1.2962 - val_loss: 1.3091

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The loss attained is 1.2 after using the transformer encoder-decoder model with the best optimizer Adam and have used relu activation function for better accuracy . The observation is here is, if we increase the number of epochs the loss value is decreasing, but the model training is taking more time hence have limited the epochs value to 5.