wPractical File

On

**Natural Language Processing with Deep Learning**

Submitted to

Department of in Artificial Intelligence

Amity School of Engineering and Technology



In partial fulfilment of the requirements for the award of the degree of

**Bachelor of Technology**

**(Artificial Intelligence)**

By

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Under the guidance of

**Prof. (Dr.) Archana Singh**

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AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY

AMITY UNIVERSITY, UTTAR PRADESH

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| 1 | To perform classification with word vectors. | 18/07/2023 | 01/08/2023 |  |  |
| 2 | To implement Neural Network Bigram Model. | 01/08/2023 | 08/08/2023 |  |  |
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| 11 | Implement Recursive Neural Tensor Network using tensorflow. | 10/10/2023 | 17/10/2023 |  |  |

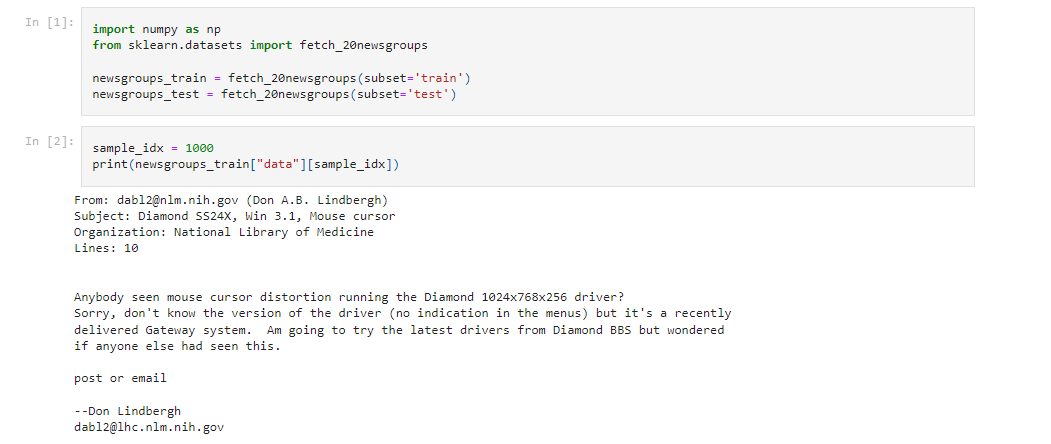
Experiment 1

Aim: Perform Classification with word vectors

Software used: Jupyter Notebook

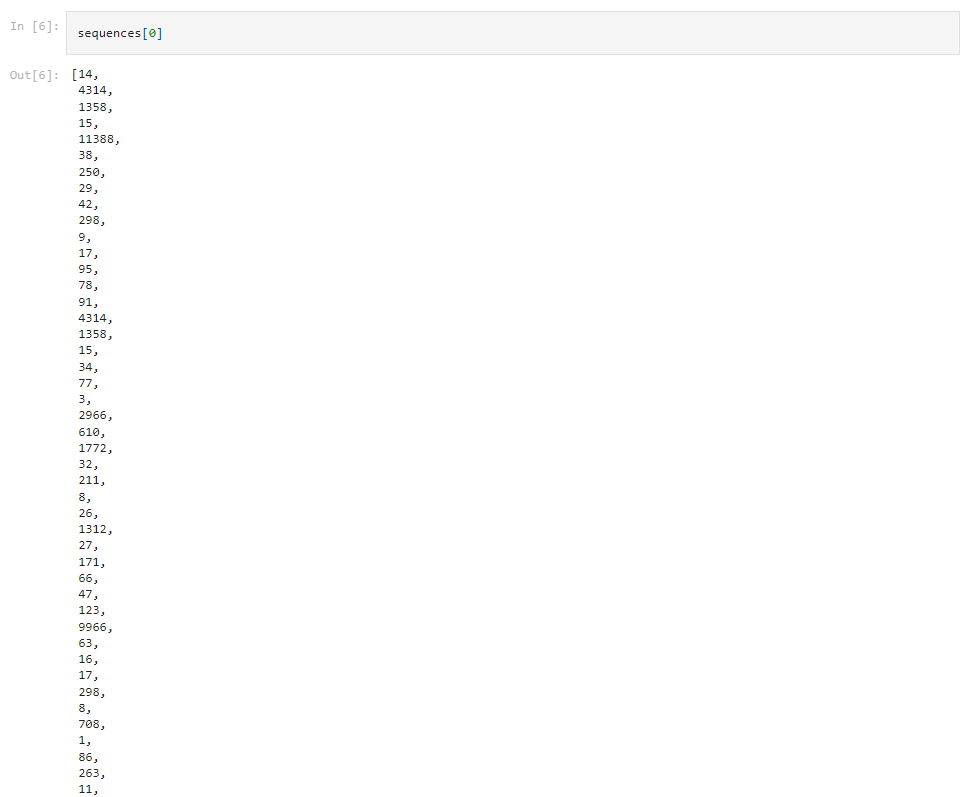
Dataset: <http://qwone.com/~jason/20Newsgroups/>

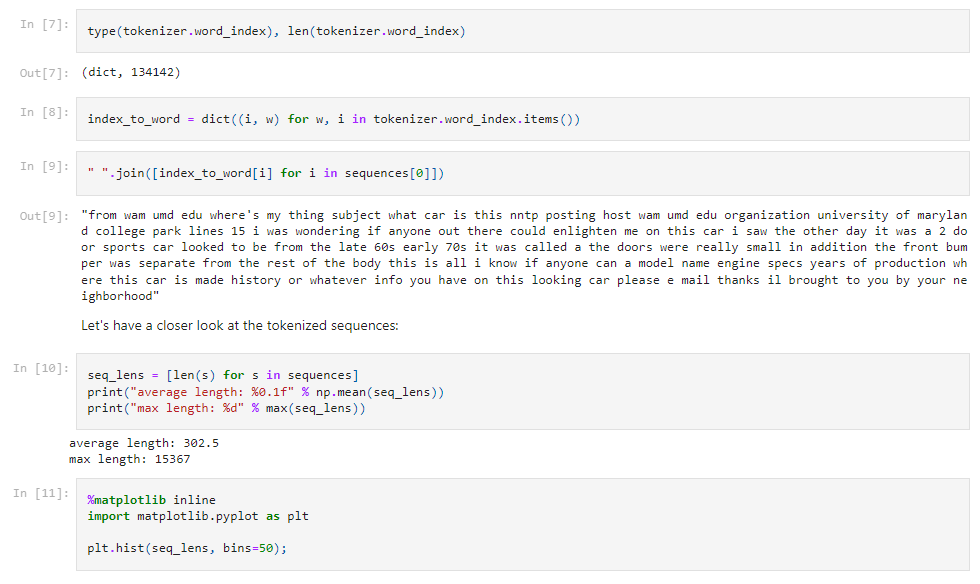
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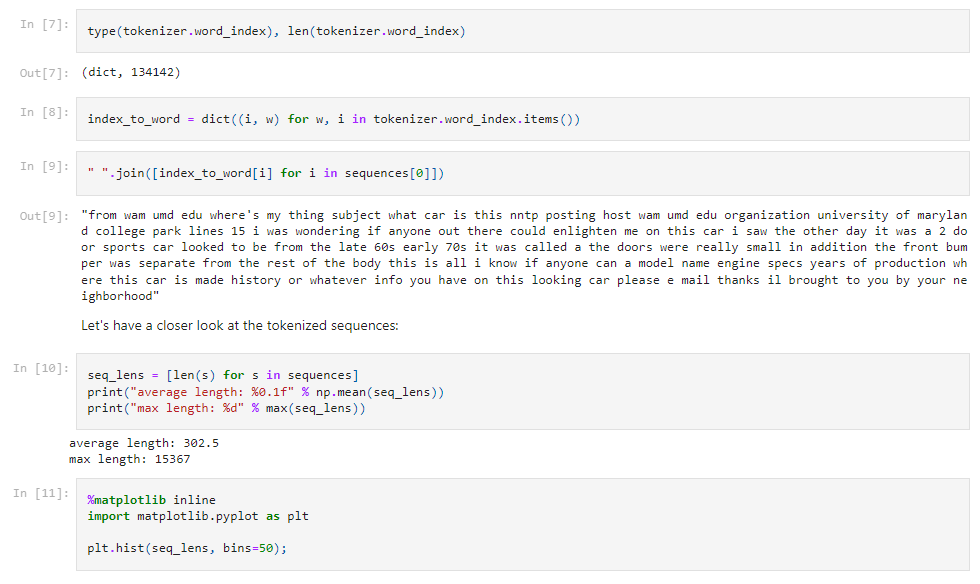
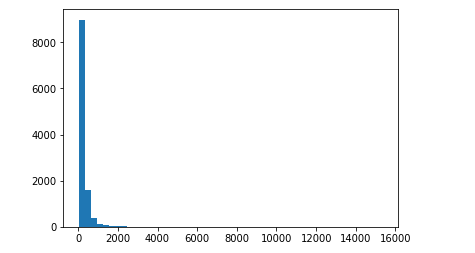
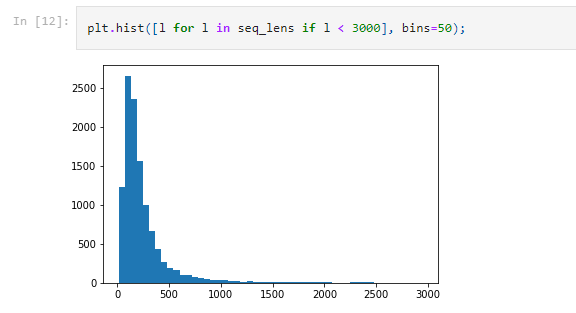


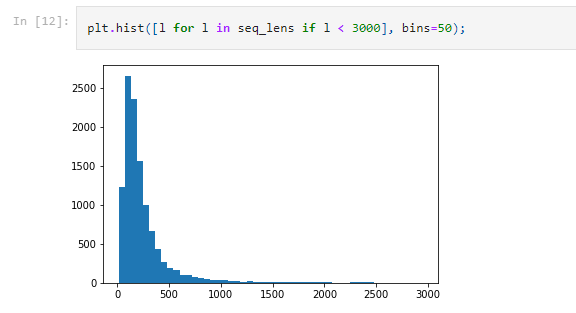


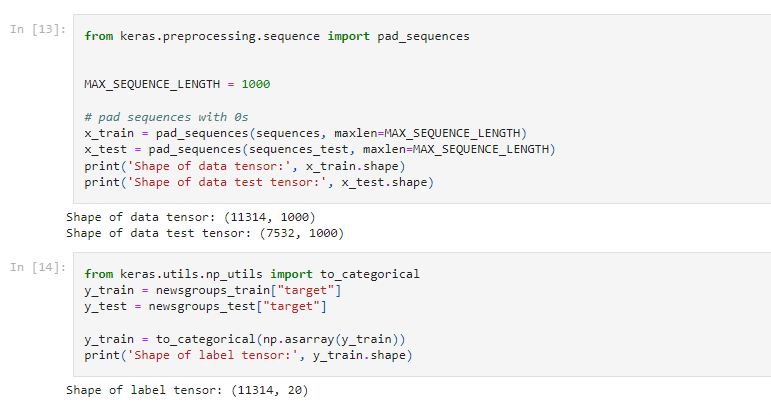




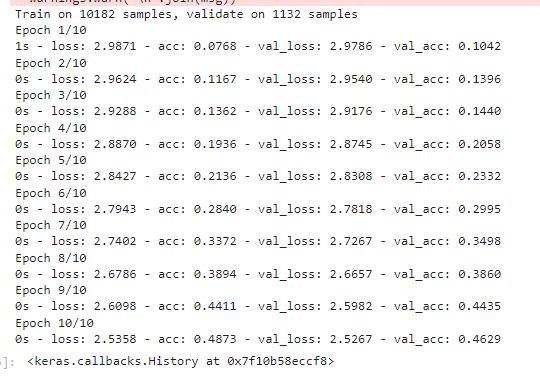


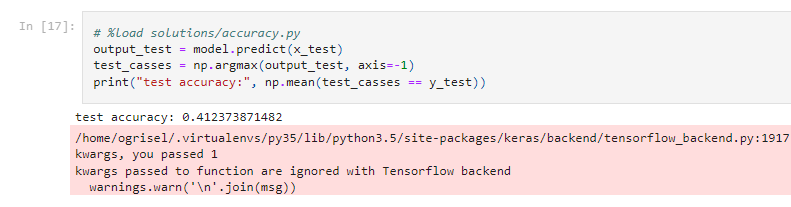


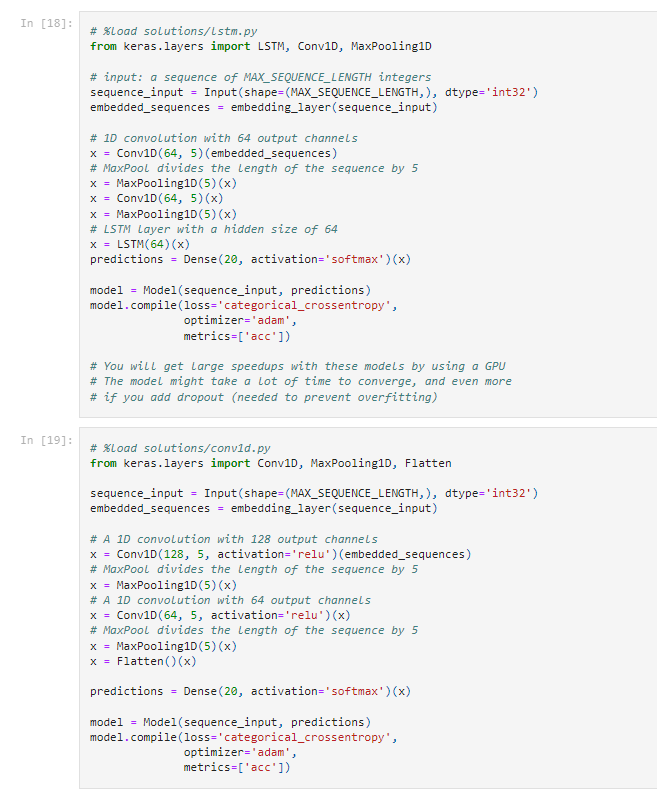


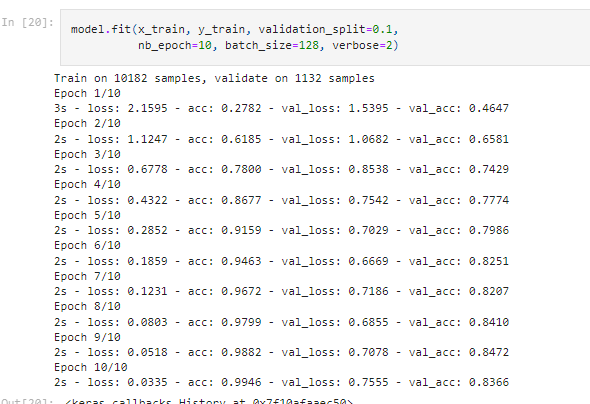


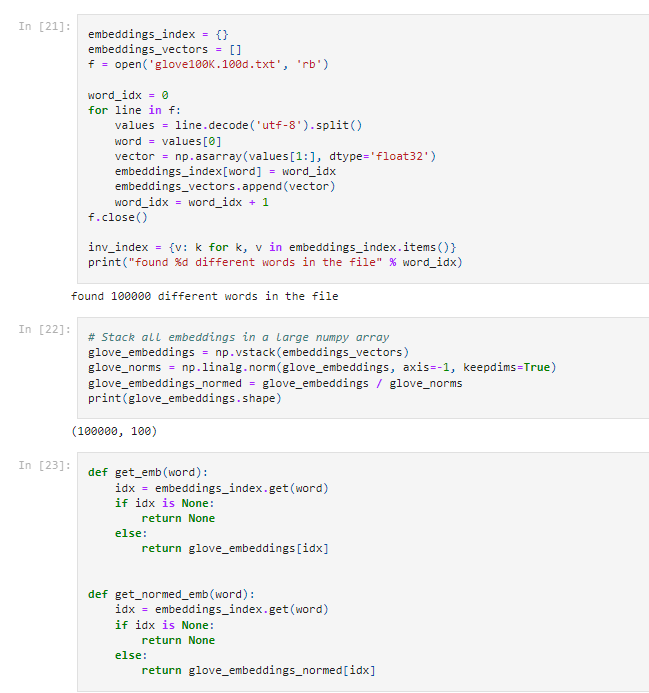


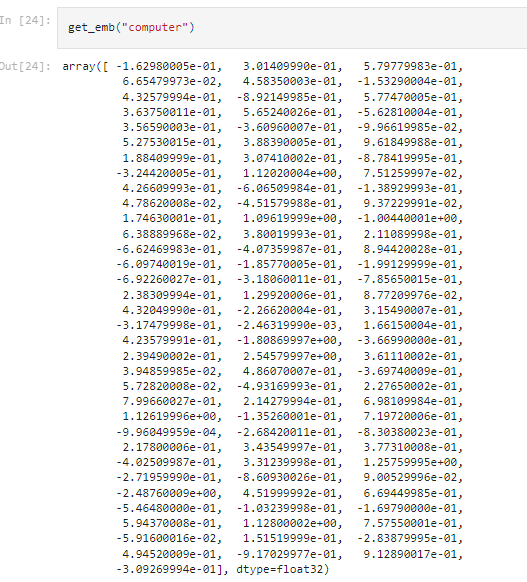












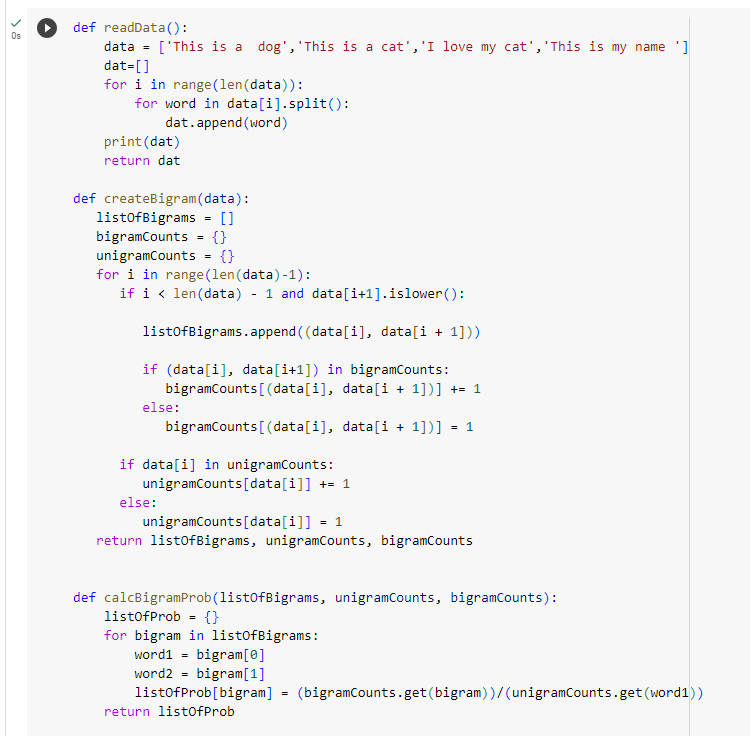
Conclusion: Implementation was successful.

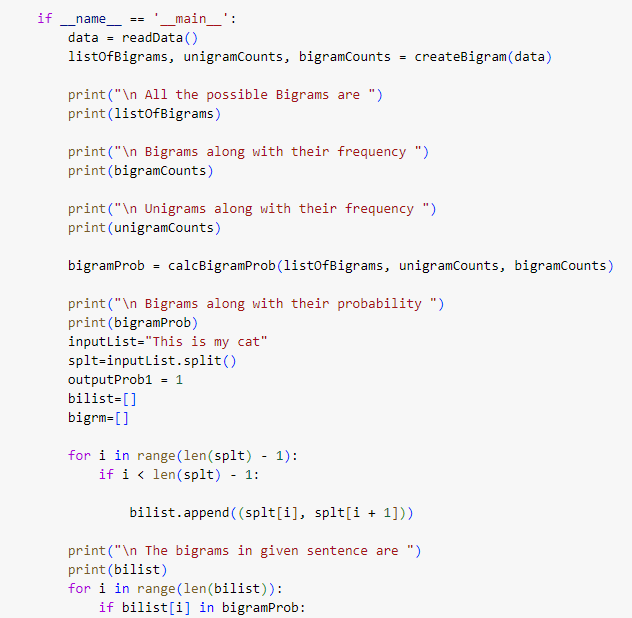
Experiment 2

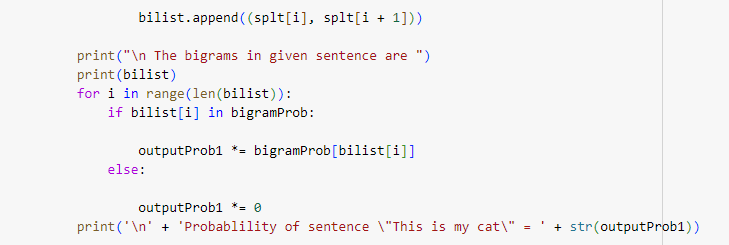
Aim: Implement Neural Network Bigram Model.

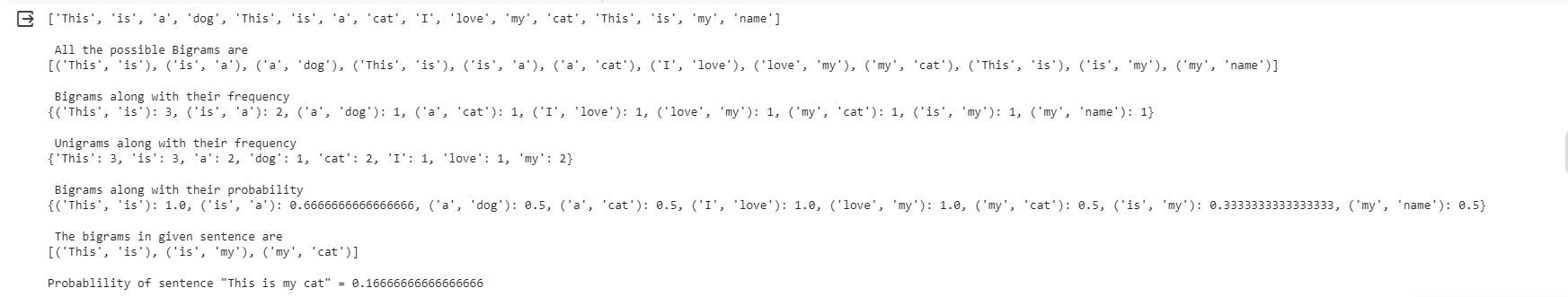
Software used: Google Colab

Output:









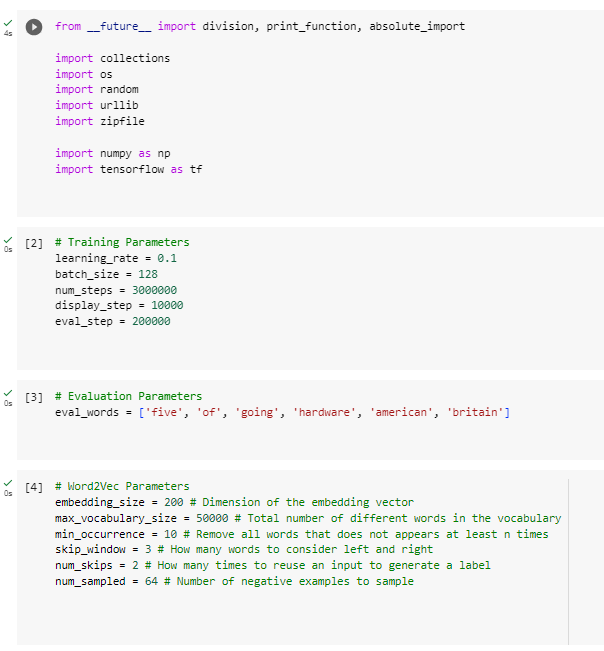
Conclusion: Implementation was successful.

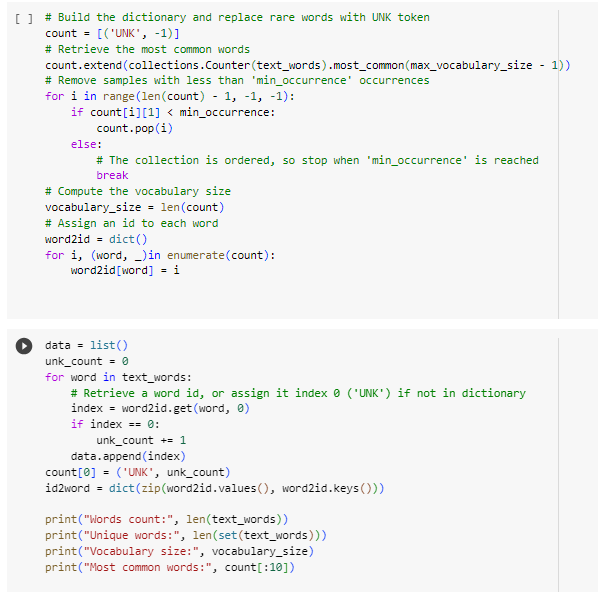
Experiment 3

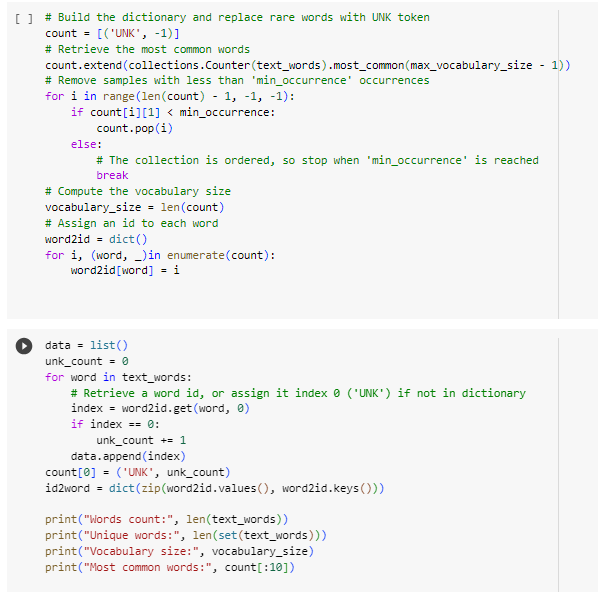
Aim: Implementation of word2vec using numpy.

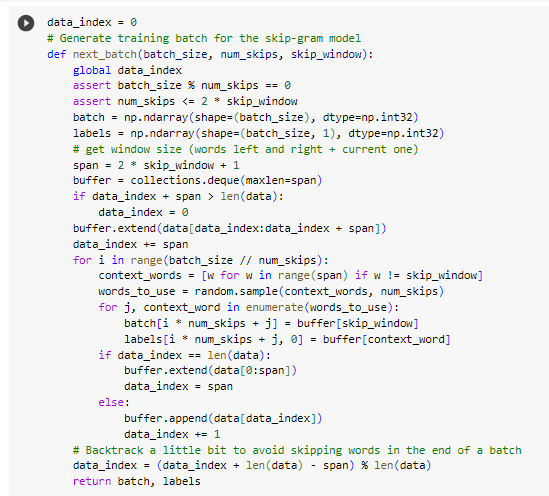
Software used: Google Colab, Jupyter Notebook

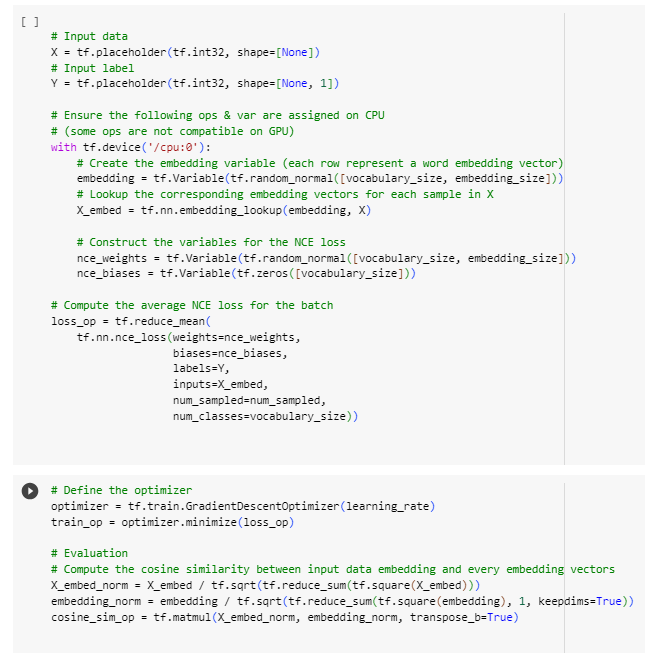
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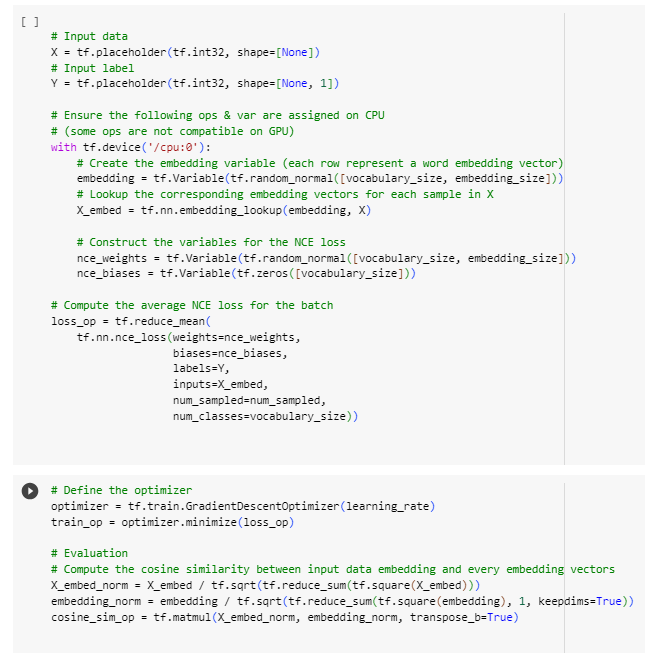


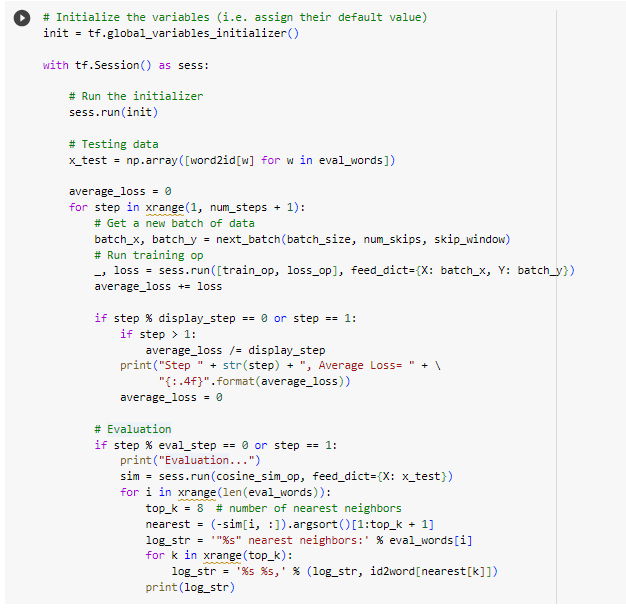
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Conclusion: Implementation was successful.

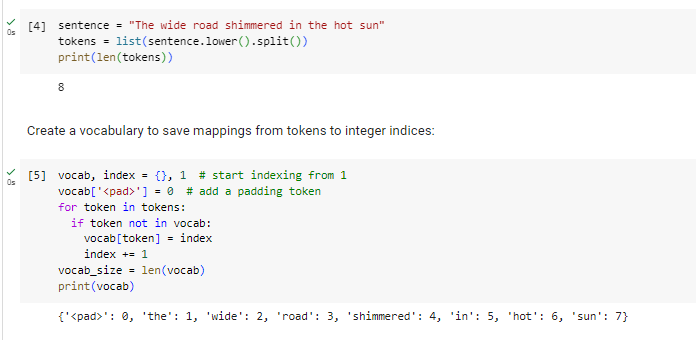
Experiment 4

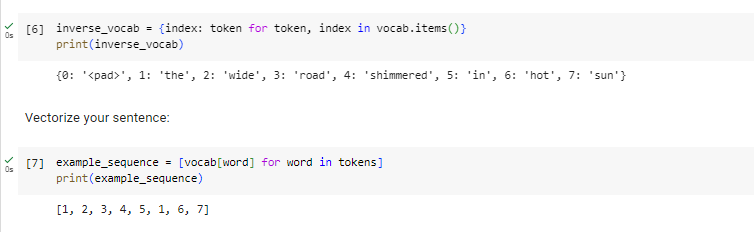
Aim: Implementation of word2vec using tensorflow.

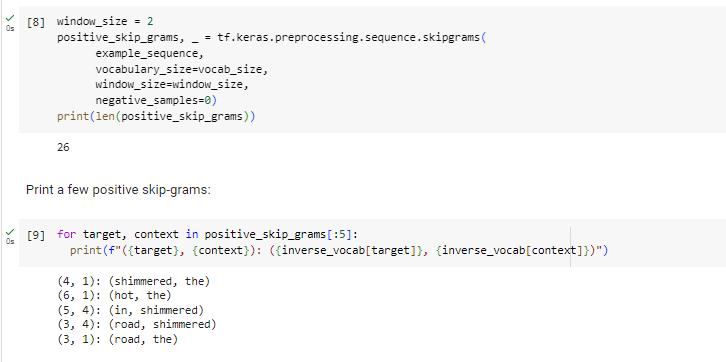
Software used: Google Colab

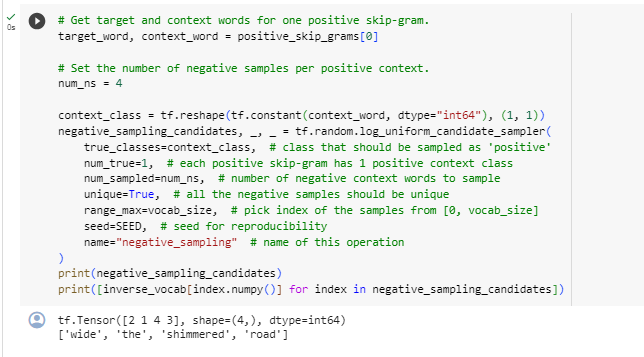
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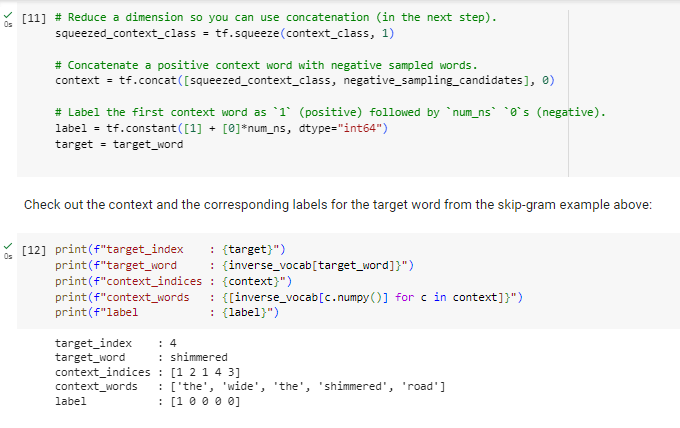


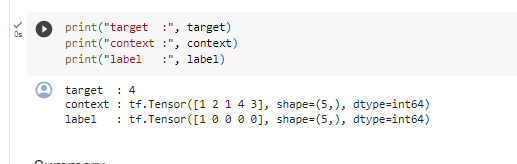


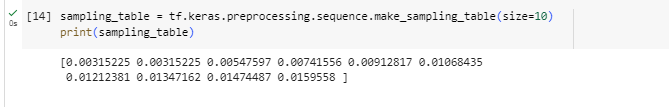


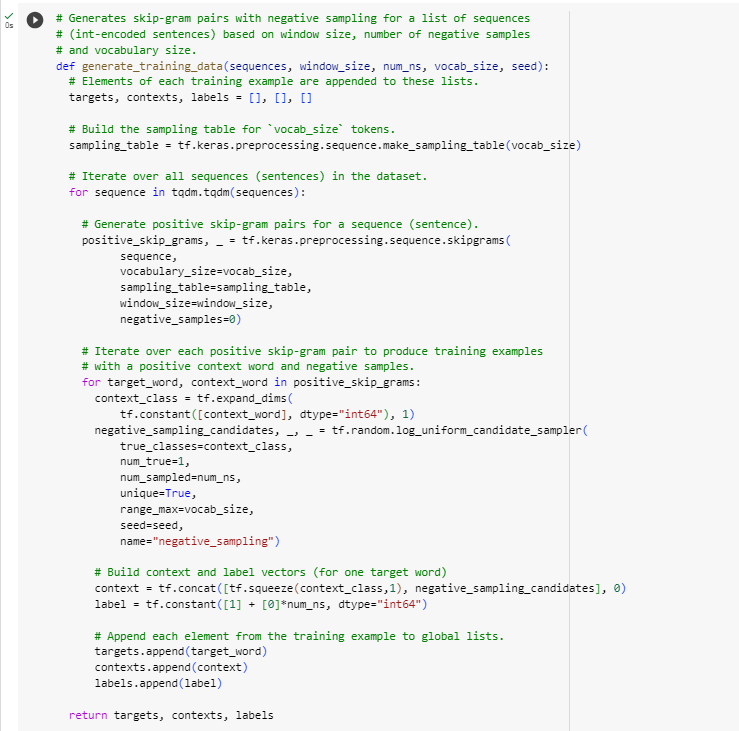


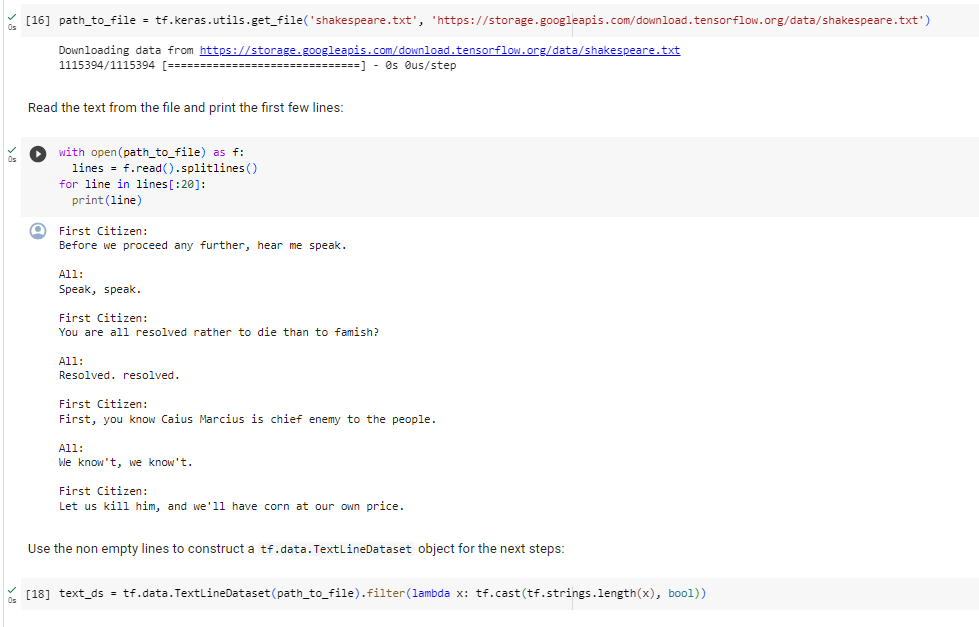


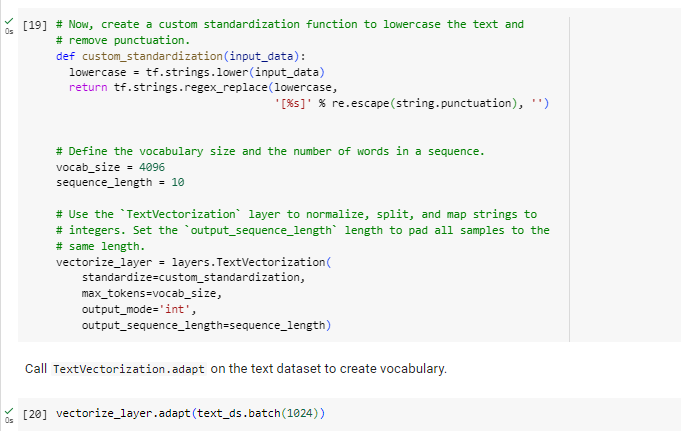


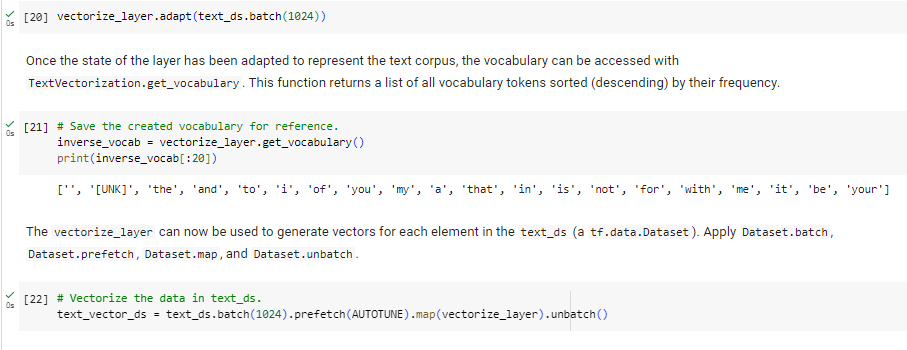


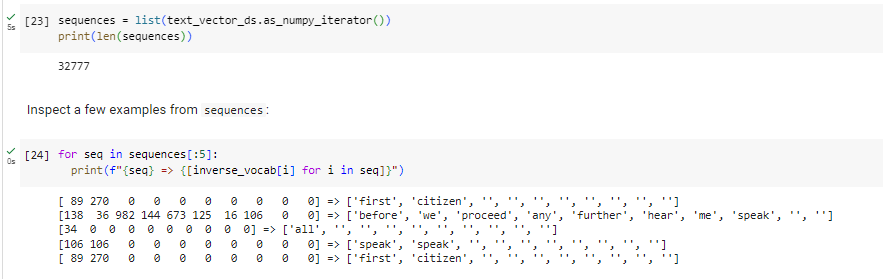


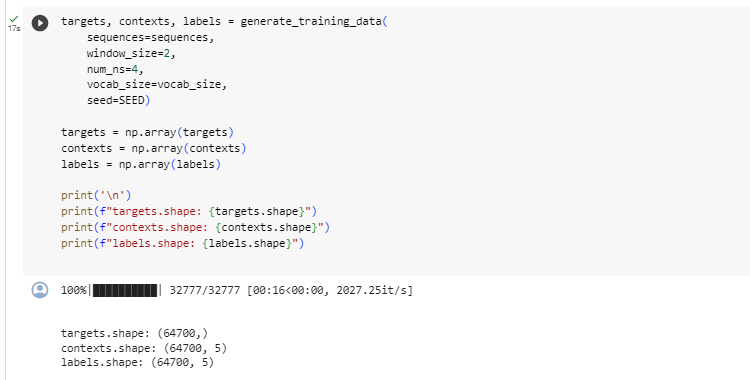


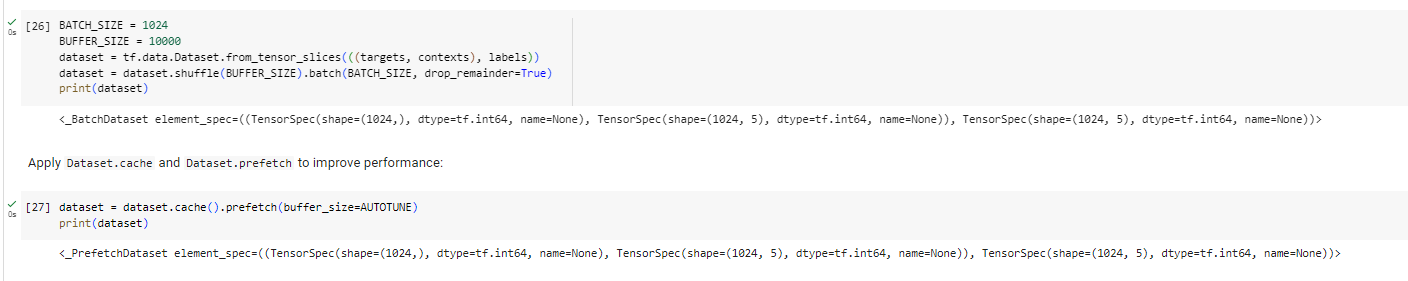


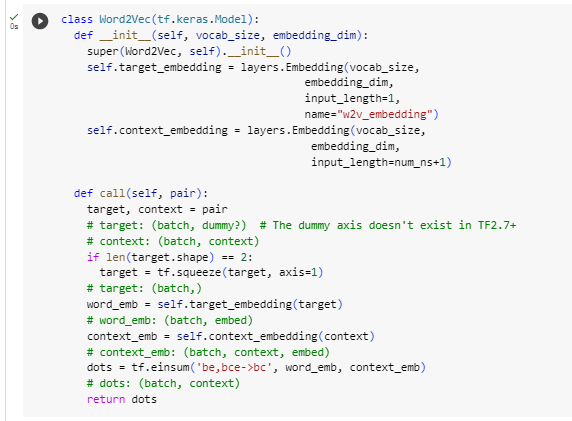


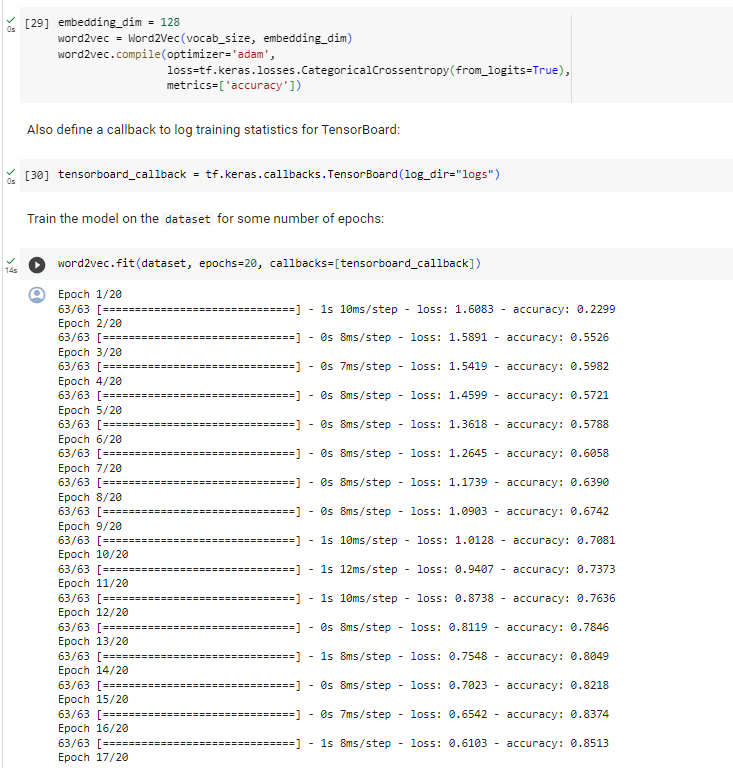












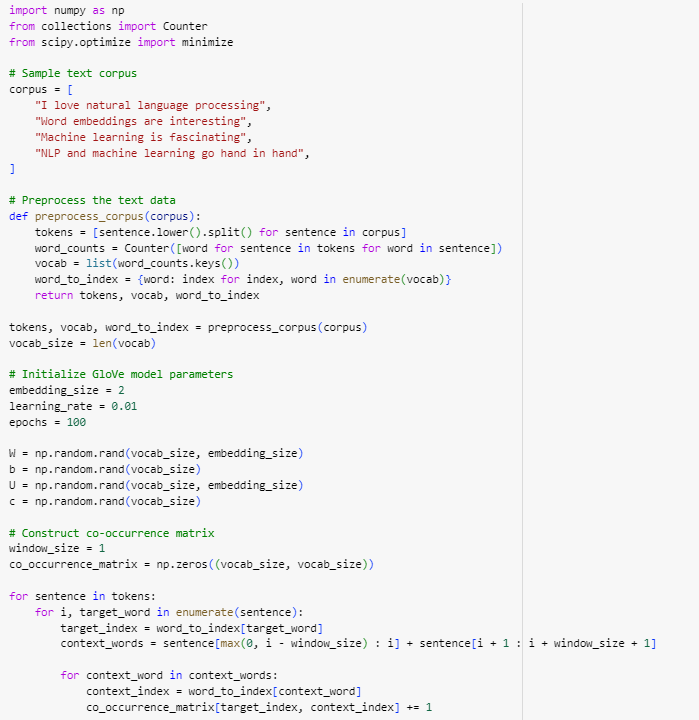
CONCLUSION: Implementation was successful.

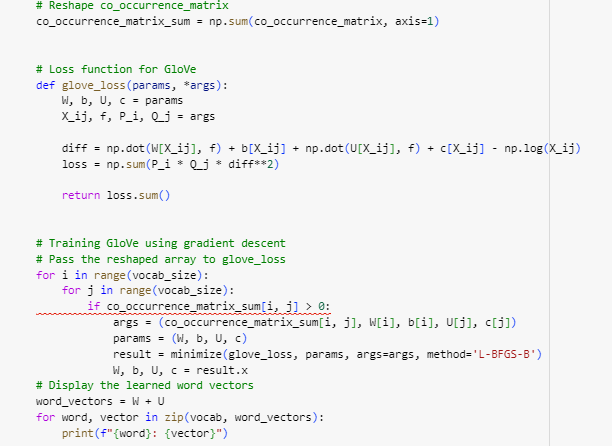
Experiment 5

Aim: Implement GloVe using numpy gradient descent.

Software used: Google Colab, Jupyter Notebook

Output:





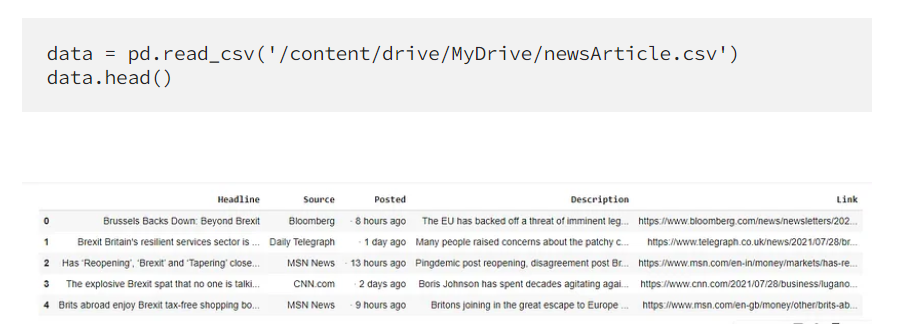
CONCLUSION: Implementation was successful.

Experiment 9

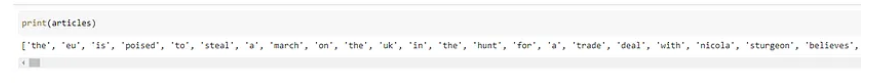
Aim: Implement GloVe using tensorflow gradient descent.

Software used: Google Colab, Jupyter Notebook

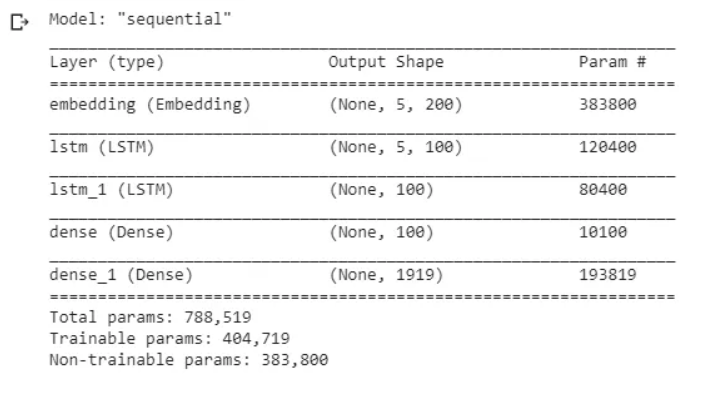
Output:

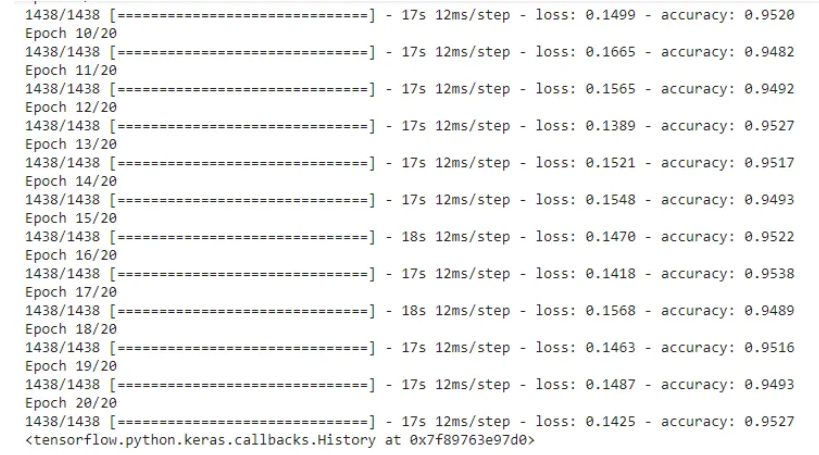


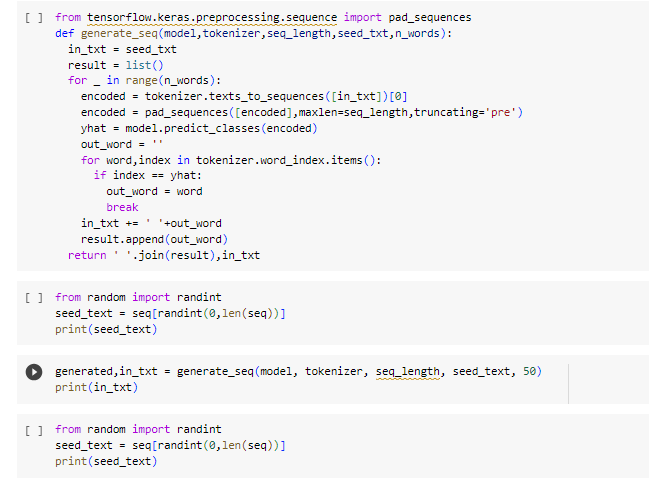






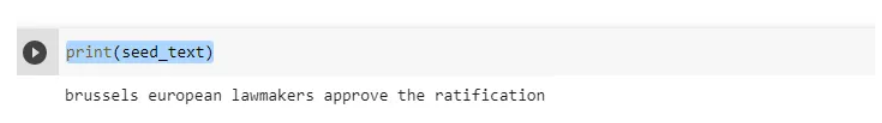












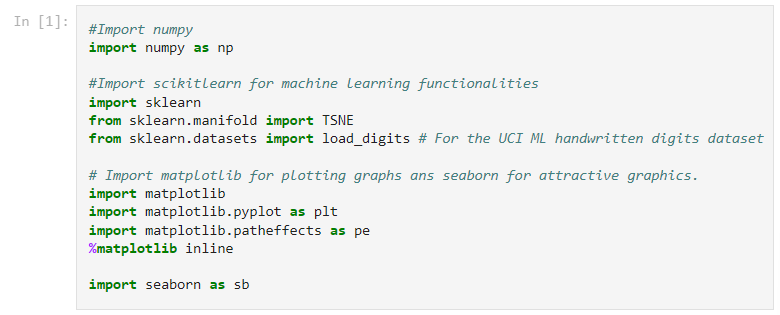
CONCLUSION: Implementation was successful.

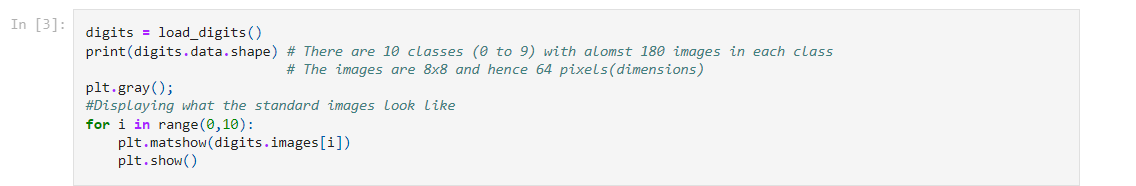
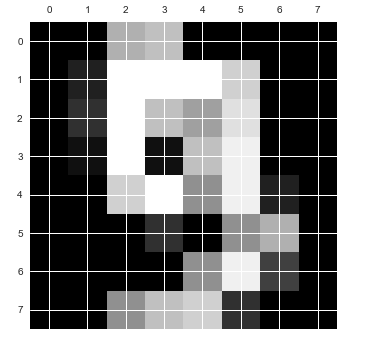
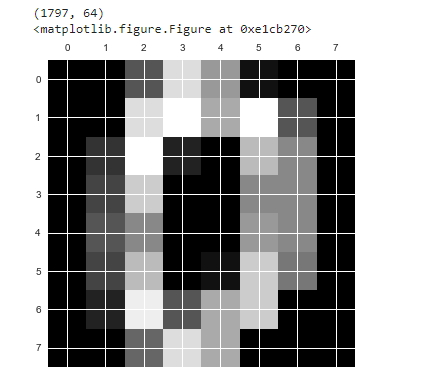
Experiment 7

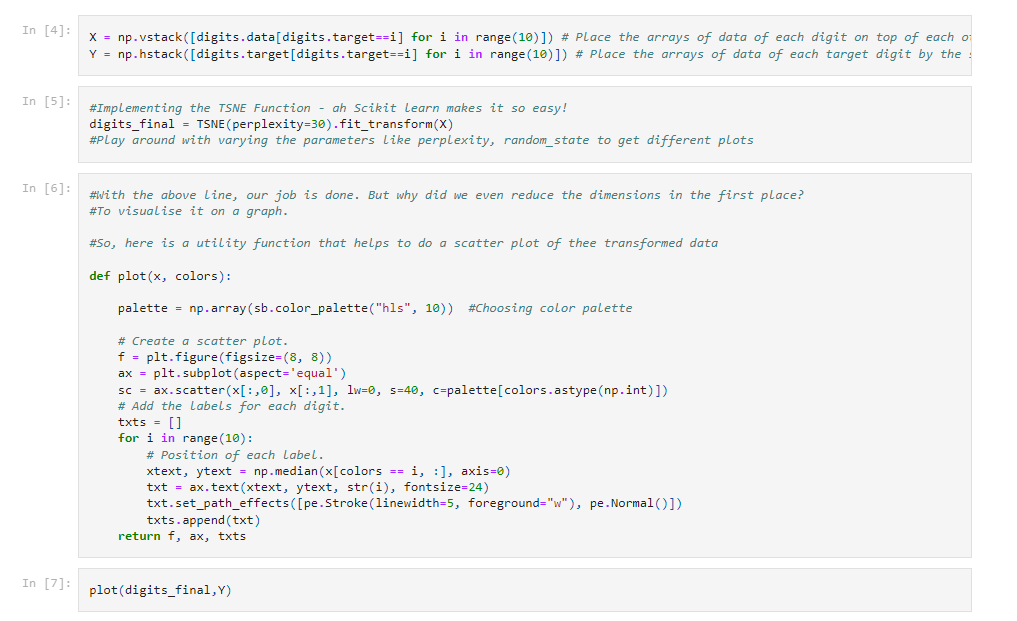
Aim: Visualizing data with analogies with t-SNE.

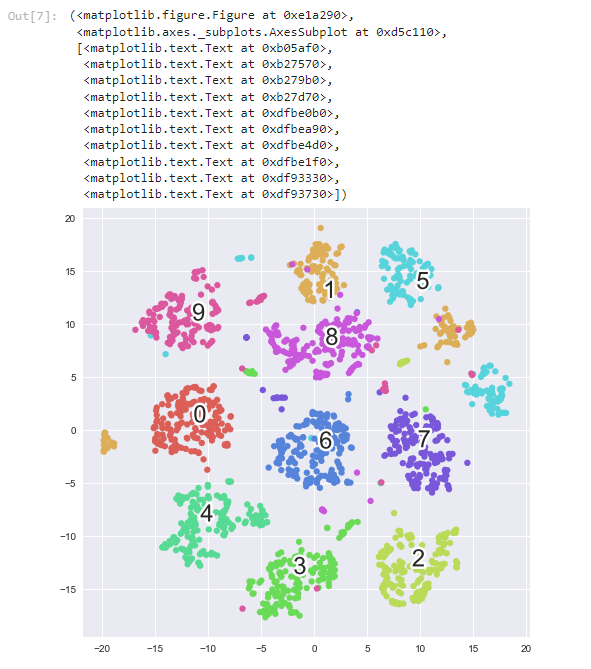
Software used: Google Colab

Output:









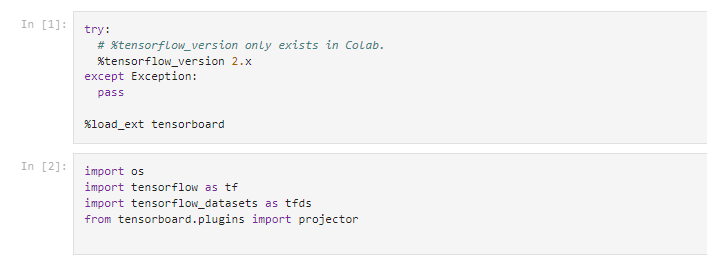
CONCLUSION: Implementation was successful.

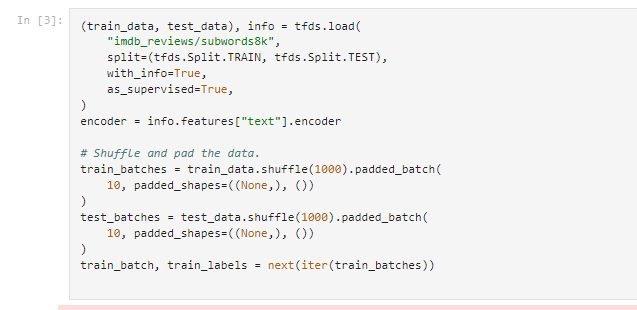
Experiment 8

Aim: Visualizing country analogies using embedding projectors.

Software used: Google Colab, Jupyter Notebook

Output:









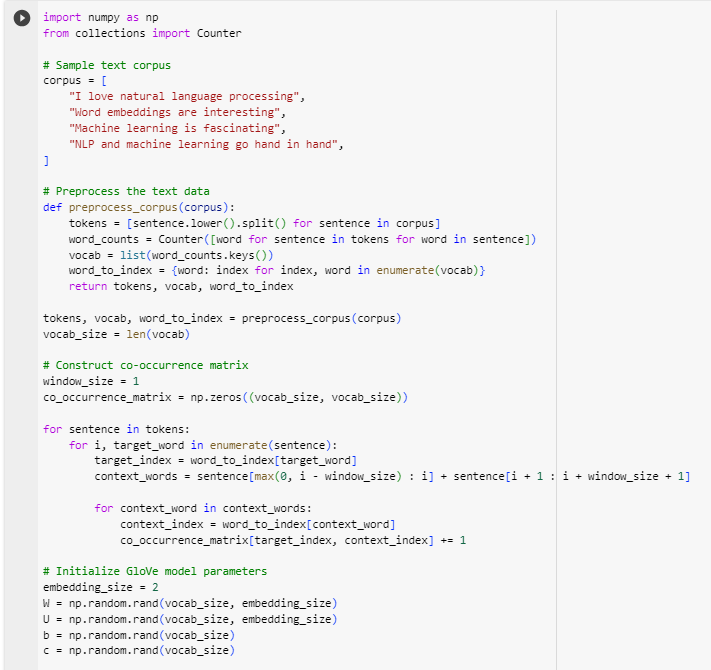
CONCLUSION: Implementation was successful.

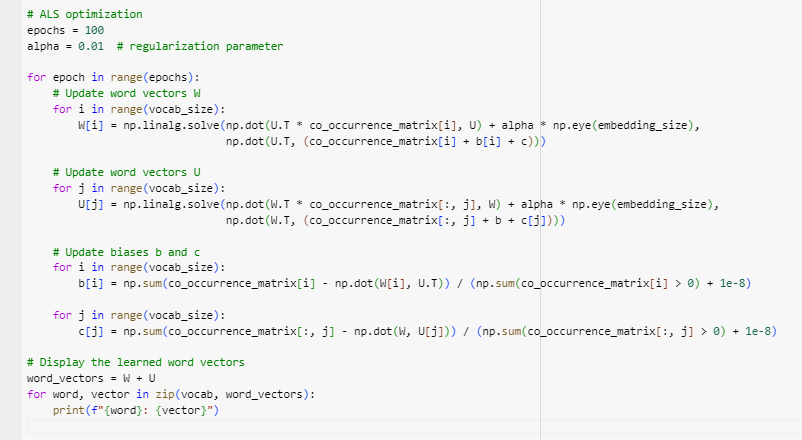
Experiment 6

Aim: Implement GloVe using Alternating Least Squares

Software used: Google Colab, Jupyter Notebook

Output:





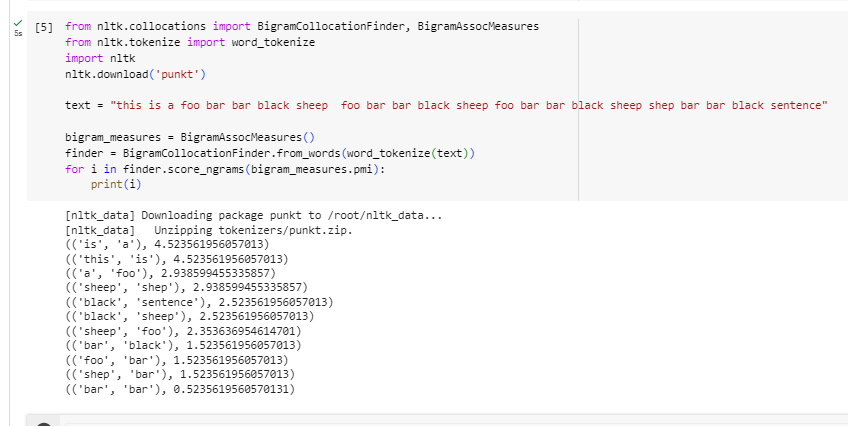
CONCLUSION: Implementation was successful.

Experiment 10

Aim: Perform Pointwise Mutual Information.

Software used: Google Colab, Jupyter Notebook

Output:



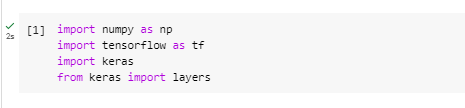
CONCLUSION: Implementation was successful.

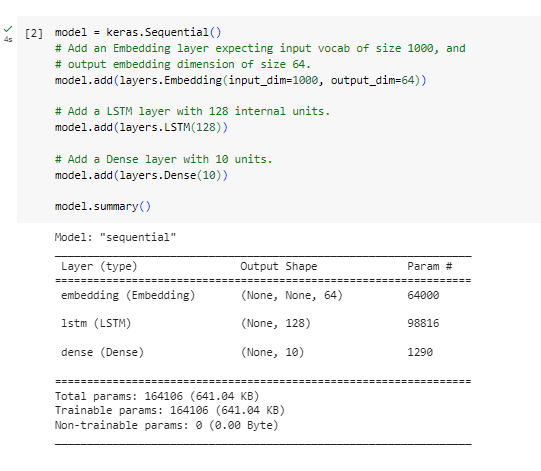
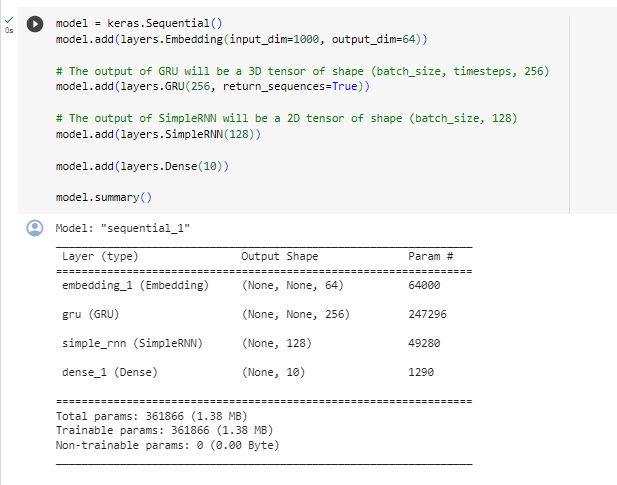
Experiment 11

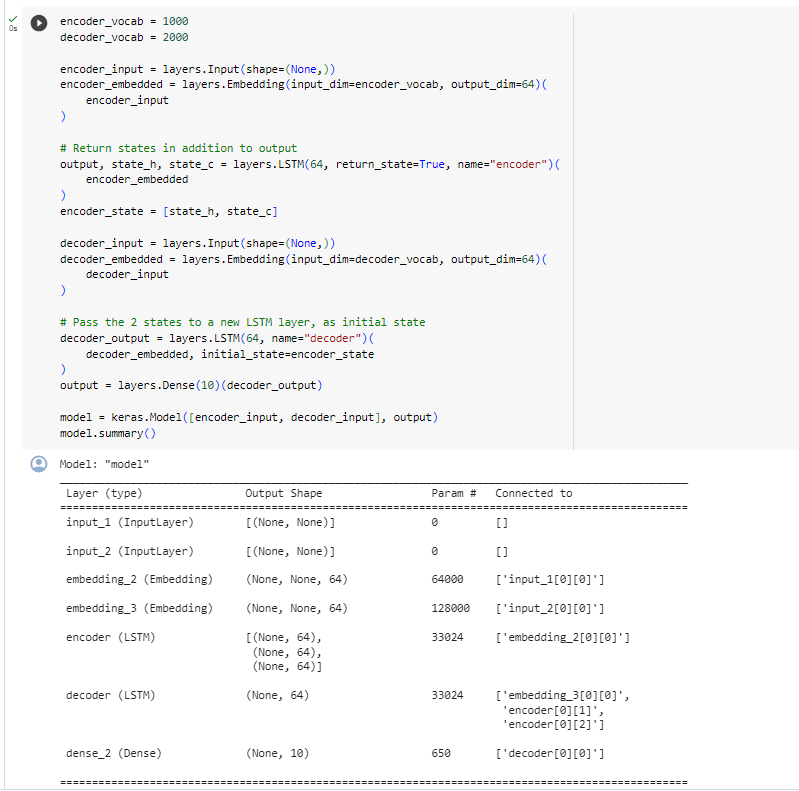
Aim: Implement Recursive Neural Tensor Network using tensorflow.

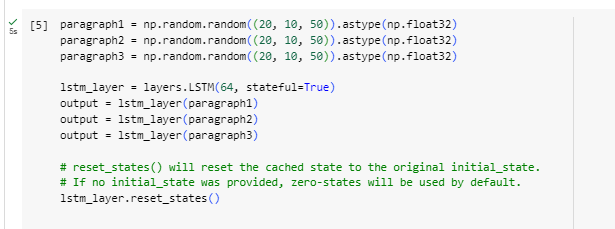
Software used: Google Colab, Jupyter Notebook

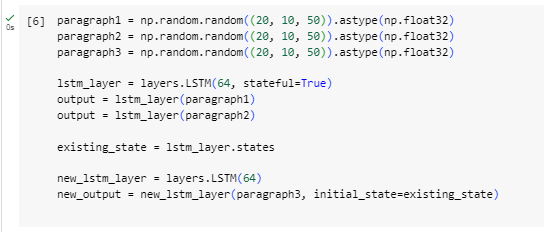
Output:

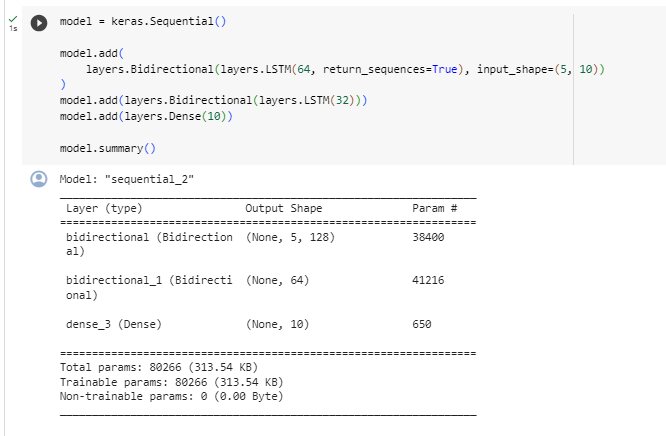


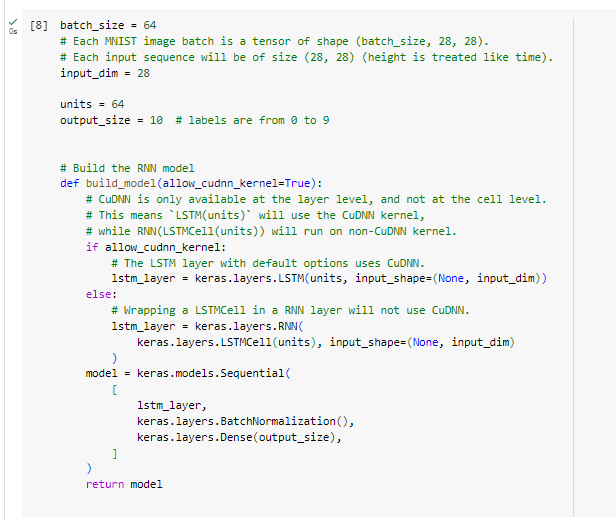


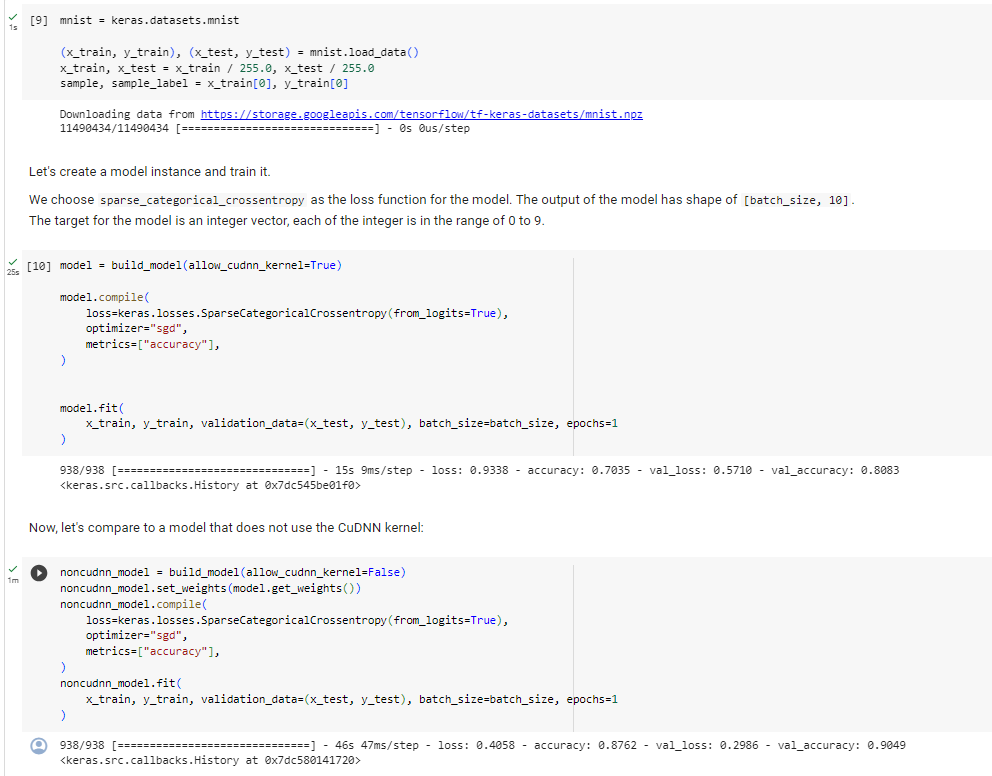


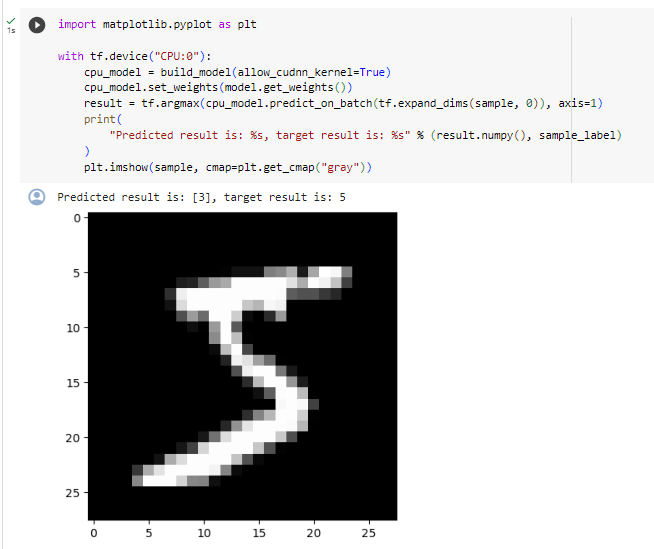












CONCLUSION: Implementation was successful.