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**Ahsanullah University of Science and Technology**

**Department of Computer Science and Engineering**

**Course No. :** CSE 4238

**Course Name :** Soft Computing Lab

**Assignment No. :** 03

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Section    :       A (A1)

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# 1. Dataset Creation

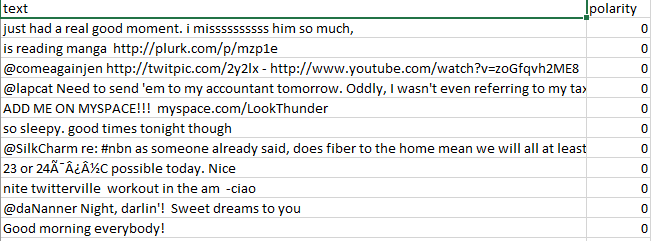
In this section, we know about the creation process of the dataset.

For the data creation process, we divide it into two different sub-processes.

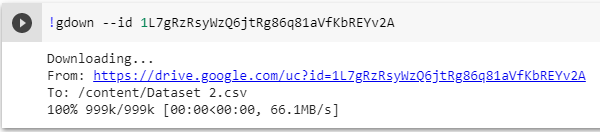
1. Data Download
2. Creating Own dataset
   1. Read the raw data
   2. Dataset splitting
   3. Text cleaning
   4. Saving the new data

## Data Downloading:

In the data downloading process, first, we need to download file based on my id. So, my id is 028. So, 28%3 = 1. So, my dataset number is 2. I need to download [Dataset 2](https://drive.google.com/file/d/1L7gRzRsyWzQ6jtRg86q81aVfKbREYv2A/view). The dataset looks like-



For download the dataset I used gdown package. Because this is google drive link. For downloading I used given code-



## 1.2. Creating Own Dataset

After Collecting the raw data. We need to generate and pre-process dataset.

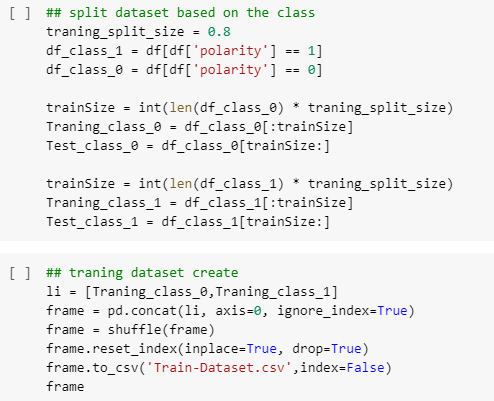
### 1.2.1. Read the raw data:

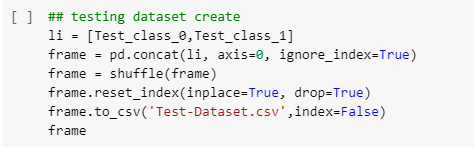
For read the csv file I use pandas dataframe. Because it is easy to use. For read data properly. I also need the encoding. For reading the raw data I use this code –



### 1.2.2. Dataset splitting

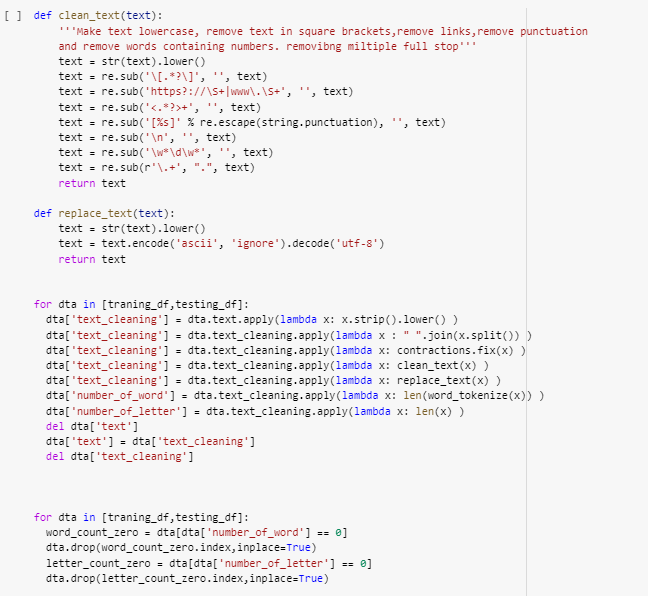
After reading data I need splitting data training and testing. Also, I will maintain 80% and 20% data. Also, I try to maintain positive and negative class properly. The code looks like –





### 1.2.3. Text cleaning

In our dataset we used text-based dataset. We know text preprocessing is an important part of data of NLP. That’s why we need to preprocess dataset properly. For text cleaning we used this code.



### 1.2.4. Saving the new data

After doing those process, we must need to save the data. For saving the data we used this code –



# Training Process

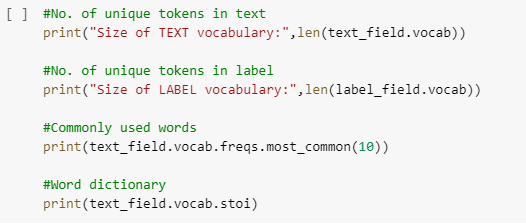
For training process, I follow those steps –

1. Load dataset
2. Model Creation

## Load Dataset

For loading the dataset I used TabularDataset and BucketIterator. TabularDataset is use to read data from saved and pre-processed. The dataset loaded code-

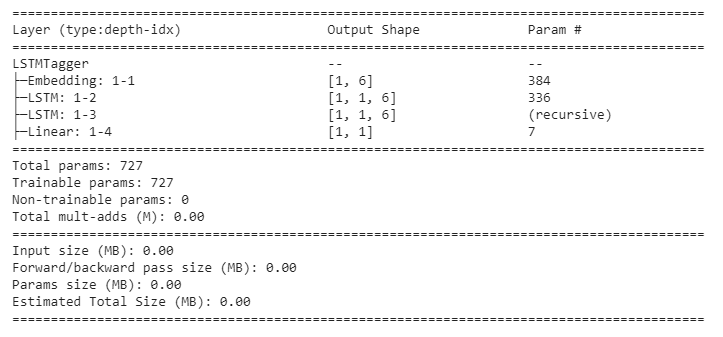




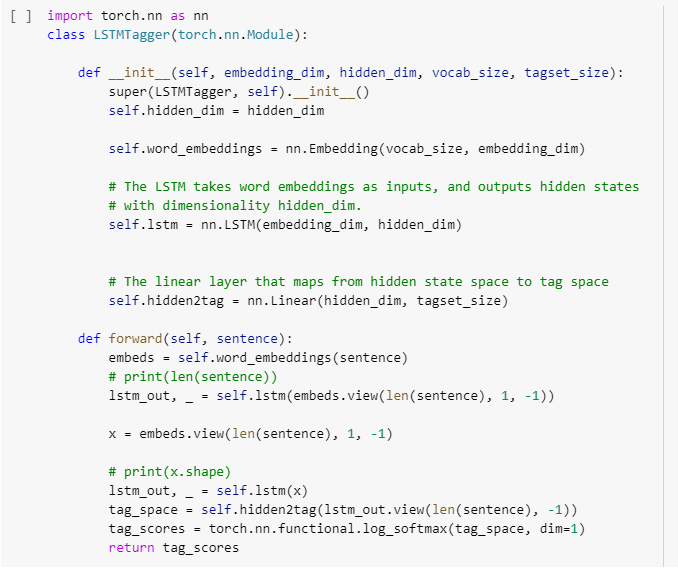
## Model Creation

For the question, I need to make the LSTM based model. My model architected look like.

The model parameter is –



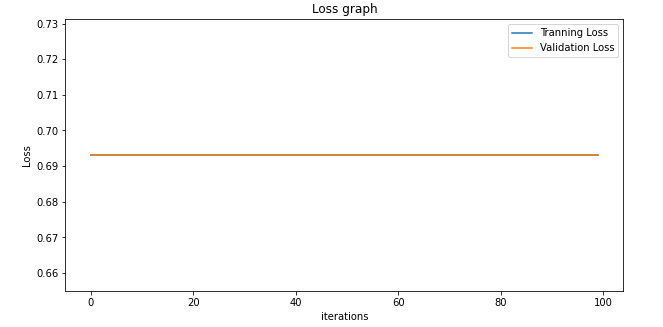
Also, the code of model is-



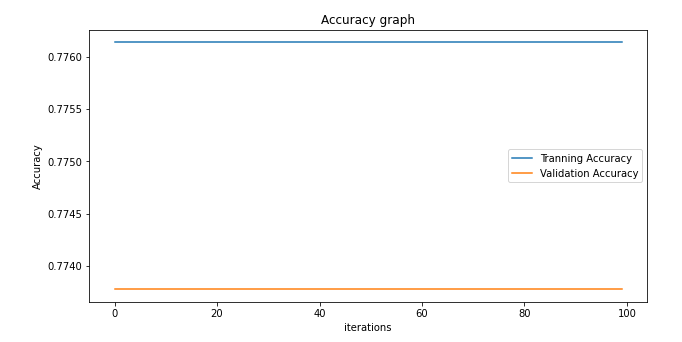
# Result

For training the data I will use Colab. Because my personal computer is not enough to load this high performance. Below I was showing all the training result.

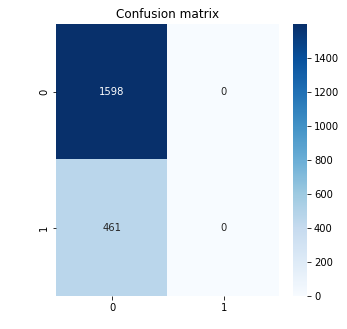
### 3.1.1. Loss graph plotting



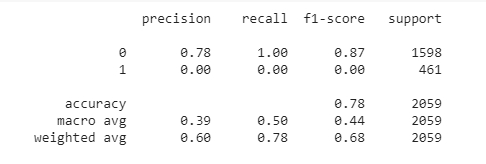
### 3.1.2. Accuracy graph plotting



### 3.1.3. Confusion matrices



### 3.1.4. Other’s performance matrices



# 4. References

Source code:

<https://colab.research.google.com/drive/1hrvUayXveJdaj_5ZuR8mT-3T8aQ3K-qj#scrollTo=_oF4NWmtDAEE>

GitHub Link:

<https://drive.google.com/drive/folders/1-PImfvx9IGyMHo7ryZoFXgCrfRLlKu9K?usp=sharing>