Hello, **Technometrics**

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Here short description are given below about the assignment and what I applied.

**Deep Neural Network (DNN):**

I applied Bi-Directional LSTM for model architecture, There are two different variation set I tried to get better result.

In **first** variation gives Train Accuracy 81.96 % , Train Loss 0.614 and Validation Accuracy 85.11 % , Validation Loss 0.478. **(Bi-LSTM\_V1.ipynb)** for better understanding and **Graph of Performance.**

In **second** variation gives Train Accuracy 90.34 % , Train Loss 0.288 and Validation Accuracy 90.56 % , Validation Loss 0.279. **(Bi-LSTM\_V2.ipynb)** for better understanding and **Graph of Performance.**

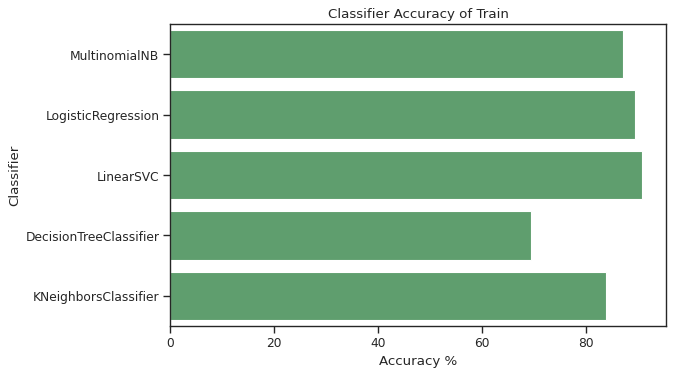
For preprocessing I applied Remove Stop Word, Tokenizing, Remove Outlier, Reshaping, Word Embedding, Apply Word2Vec with fastText model, One hot encoding.

Final input shape to feed the model was : X\_Train (90118, 350, 20) and Y\_Train (90118, 7)

**Sk-Learn Classification Algorithm:**

I also tried various Classification algorithm as like MultinomialNB, LinearSVC, DecisionTreeClassifier, KNeighborsClassifier.

To feed those model I preprocess data with Remove Stop Word, Tokenizing, Remove Outlier, Reshaping, TF-IDF, Label Encoding.

**(Classification\_Algo.ipynb)** for better understanding and **Graph of Performance and Matrix scores (F1, Precession, Recall).**

**File Description :**

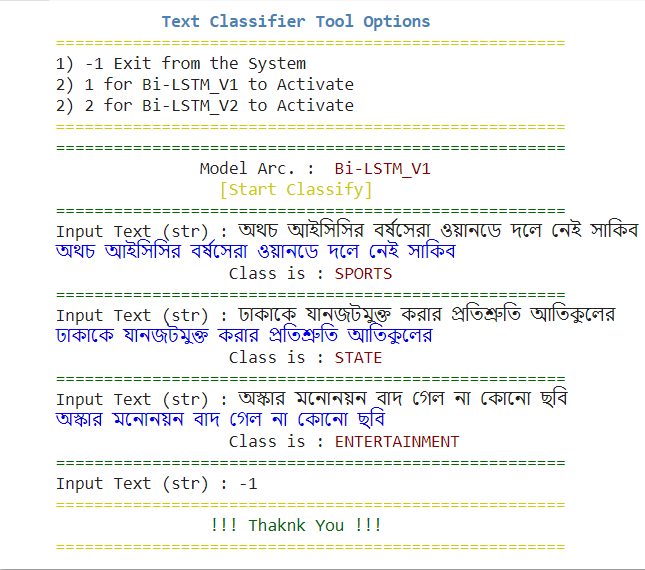
* **Text\_Data\_Preprocessing**.ipynb : Most of preprocessing task done in this ipynb file.
* **Bi-LSTM\_V1.**ipynb : DNN with Bi-LSTM architecture implemented in this ipynb file.
* **Bi-LSTM\_V2**.ipynb : DNN with Bi-LSTM (different combination) done in this ipynb file.
* **Classification\_Algo**.ipynb : Classification algorithm implemented using Sk-Learn.
* **Predict\_Your\_Text**.ipynb : Here you can check the saved model by giving your input.

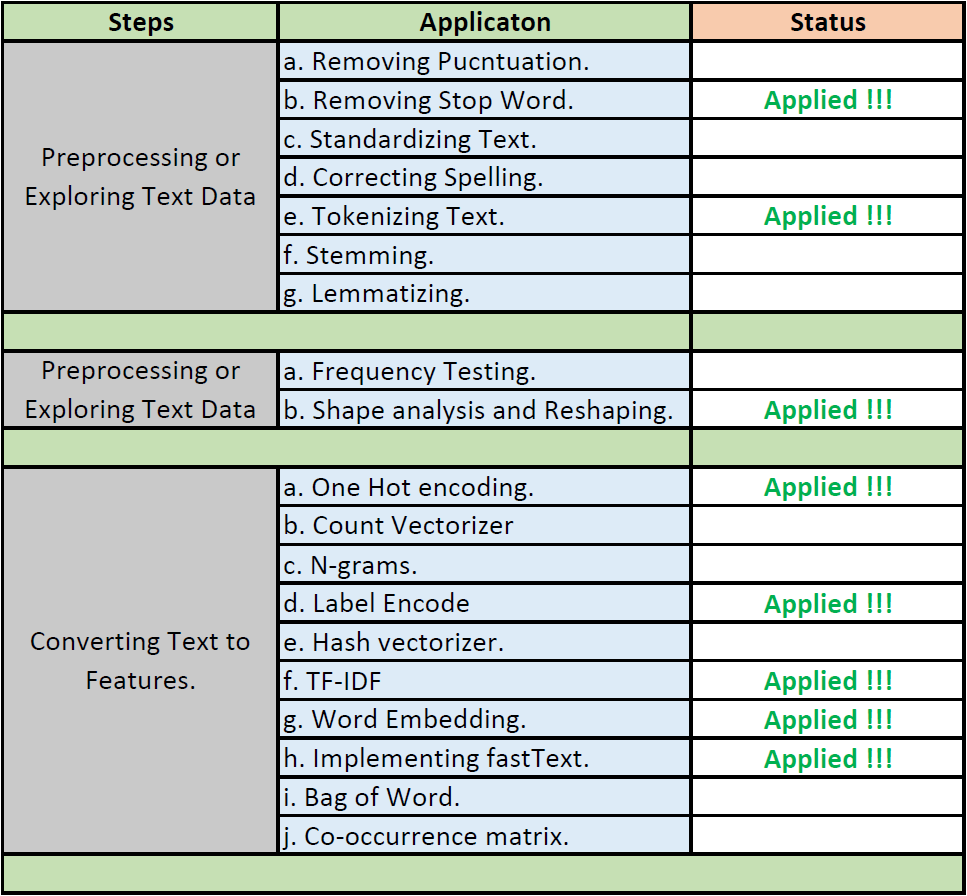
**\*\*\* Some file can’t be uploaded because of file size and some of my personal Model are used which is not in Public \*\*\***

**What else can do :**

For classification we can apply Transformer based architecture as like BERT, GPT also Spacy, CNN and many more.

Preview of **Predict\_Your\_Text :**





**Personal Resources (Not be uploaded):**

* fasttext\_model.model
* bangla\_stop\_word\_471.csv

\*\*\* For this fasttext\_model.model and bangla\_stop\_word\_471.csv you cant able to run those file properly, So if you want to please feel free to contact me \*\*\*

Contact,

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