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Sentimental LIAR: Extended Corpus and Deep Learning Models for Fake Claim Classification

Deliverable - 2

Environment Setup

Tools and Technologies :

IDE used to run the code : Visual Studio Code – 1.63.0 (ipykernel)

Import Using pandas, numpy.

Dataset : LIAR dataset

Data

Data is preprocessed.

CODE :

```
train_size = 1
train_dataset=df.sample(frac=train_size,random_state=200).reset_index
(drop=True)
test_dataset=df_test.sample(frac=train_size,random_state=200).reset_index
(drop=True)
valid_dataset=df_valid.sample(frac=1,random_state=200).reset_index
(drop=True)
```

OUTPUT :

```
FULL Dataset: (10232, 33)
TRAIN Dataset: (10232, 33)
TEST Dataset: (1264, 32)
VALID Dataset: (1280, 33)
```

Below demonstrates a sample record in Sentimental LIAR for a short claim in the LIAR dataset :

```
statement="McCain opposed a requirement that the government
buy American-made motorcycles. And he said all buy-American
```

```
provisions were quote 'disgraceful.' "
subject: federal-budget
speaker id: 2
speaker job: President
state info: Illinois
party affiliation: democrat
sentiment: NEGATIVE
anger: 0.1353
disgust: 0.8253
sad: 0.1419
fear: 0.0157
joy: 0.0236
barely true counts: 70
false counts: 71
half true counts: 160
mostly true counts: 163
pants on fire counts: 9
SEN sentiment score: -0.7
```

Experiment

This includes the training details (epochs, learning rate, dropout etc.)

```
Epoch: 0  is Started:
   Epoch: 0 Train loss is :0.6337657139998474
   Epoch 0 took: 0:06:17

Epoch: 0 - Accuracy on Testing Data Score = 0.6693037974683544
Epoch: 0 - F1 Score on Testing Data (Micro) = 0.6708860759493671
Epoch: 0 - F1 Score on Testing Data (Macro) = 0.6011597099211216

      Epoch 0 : Train Loss (Training Data):0.6337657139998474, Validatio
n Loss (Testing Data): 0.5962660192693554

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      Epoch: 1  is Started:
   Epoch: 1 Train loss is :0.5931087791849804
   Epoch 1 took: 0:06:16

Epoch: 1 - Accuracy on Testing Data Score = 0.6914556962025317
Epoch: 1 - F1 Score on Testing Data (Micro) = 0.6958579881656805
Epoch: 1 - F1 Score on Testing Data (Macro) = 0.6538011695906432

      Epoch 1 : Train Loss (Training Data):0.5931087791849804, Validatio
n Loss (Testing Data): 0.5924532325387751

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```
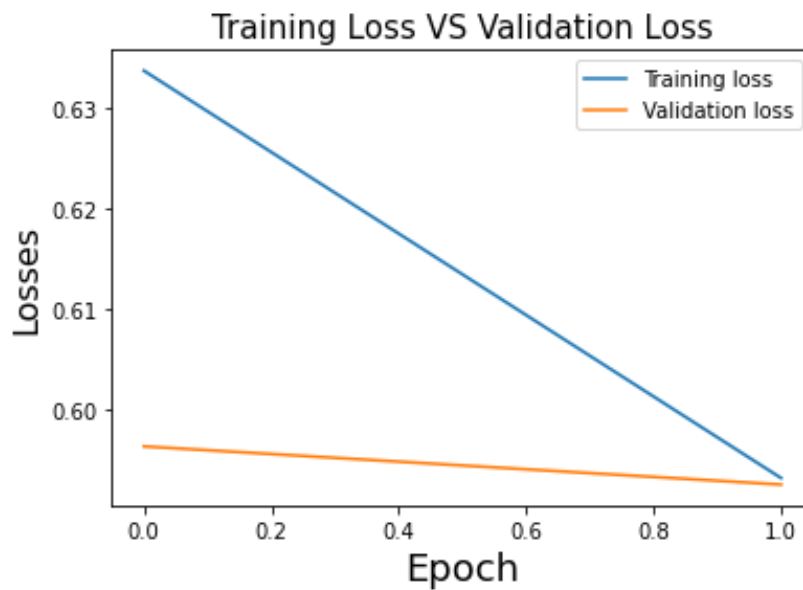
Result

The plot between Losses and Epoch.


```
Epoch:  1, Accuracy Score on validation data = 0.69921875
Epoch:  1, F1 Score on Validation Data (Macro) = 0.6430236972753443
```

Problems / Issues

Issues were faced when deploying certain packages and importing packages. It threw various exceptions.