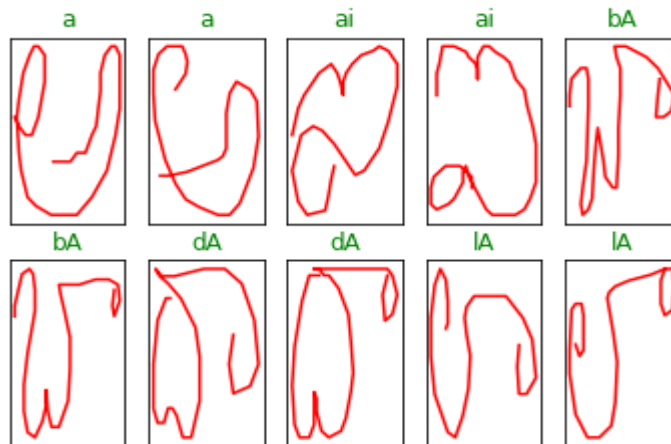


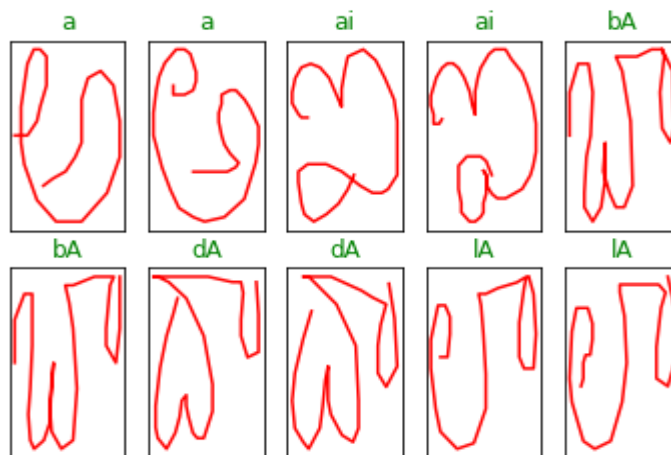
## 1. Handwritten character dataset

### Visualizing the dataset

- Train

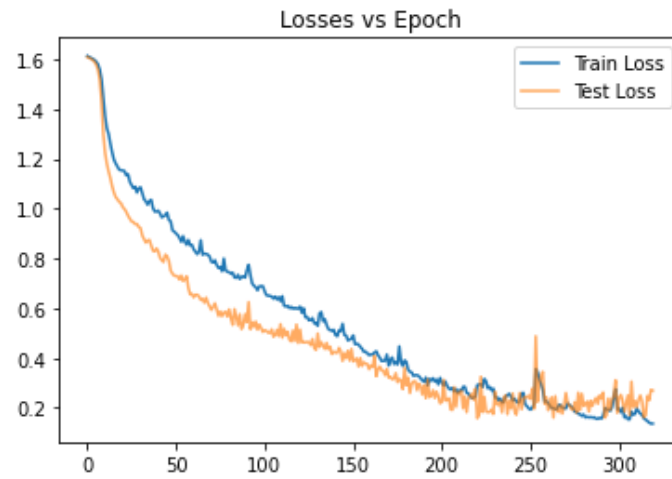


- Test



RNN Model

**a. Average training error (y-axis) vs. Epochs (x-axis)**



**Train Loss:** 0.1365766090072105

**Previous Training Loss:** 0.13657293705481482

**Test Loss:** 0.2691726195812225

Training continued till 320 number of epochs.

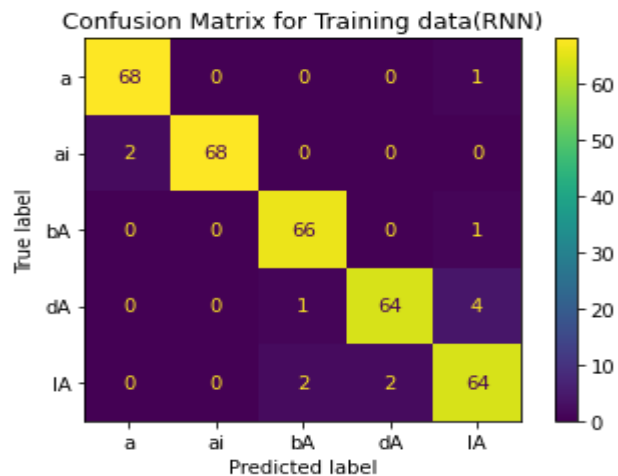
The final training loss being 0.1365766090072105 and test loss being 0.2691726195812225

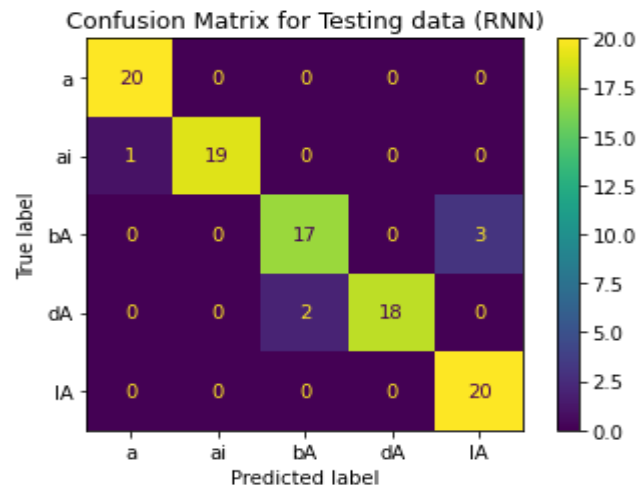
**b. The training accuracy and test accuracy :-**

**Accuracy on Train Set:** 0.96

**Accuracy on Test Set:** 0.94

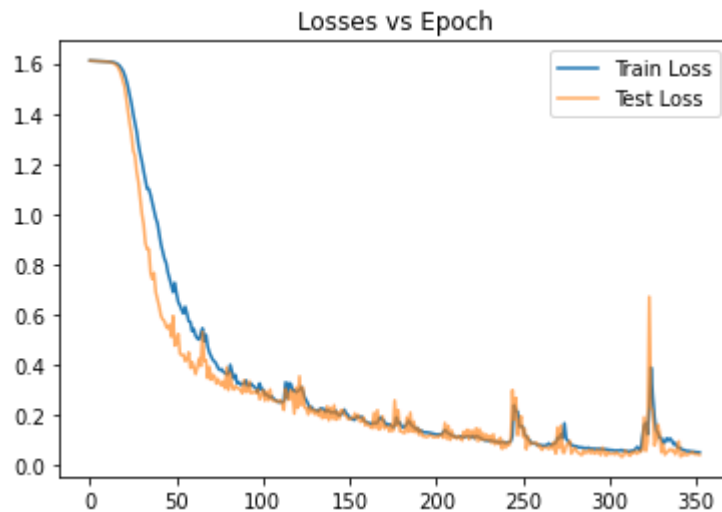
**c. The training accuracy, test accuracy and confusion matrix for the model with best hyperparameter set**





### LSTM Model

#### a. Average training error (y-axis) vs. Epochs (x-axis)



**Train Loss:** 0.05259930950646498

**Previous Training Loss:** 0.05260342988117704

**Test Loss:** 0.0421609428524971

Training continued till **353 number of epochs**.

The final training loss being 0.05259930950646498 and test loss being 0.0421609428524971.

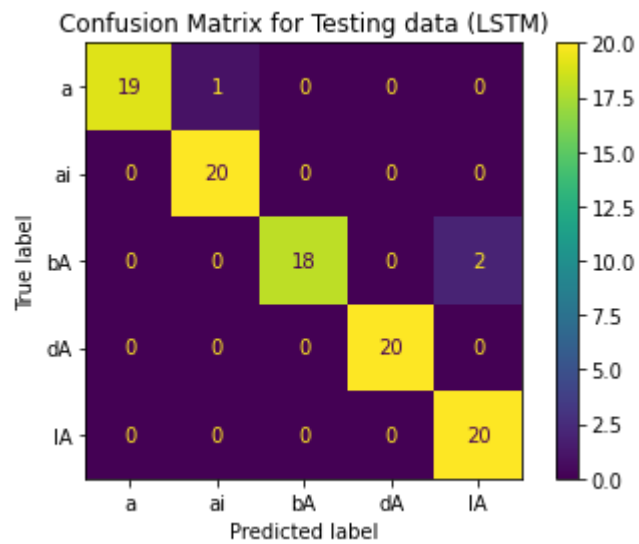
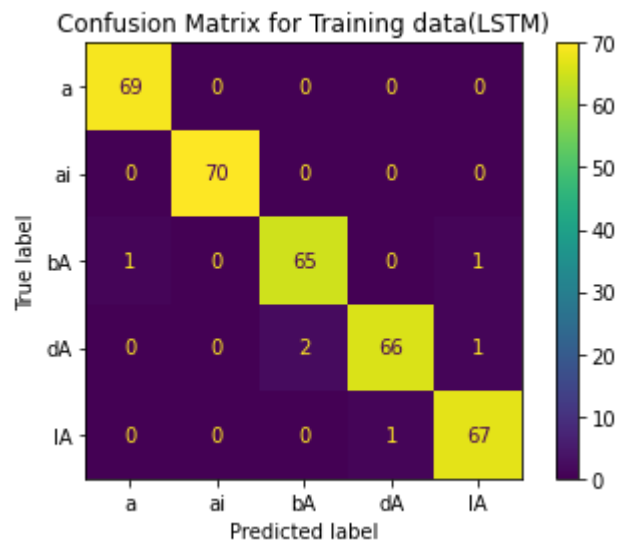
#### b. The training accuracy and test accuracy :-

**Accuracy on Train Set:** 0.98

**Accuracy on Test Set:** 0.97

#### c. The training accuracy, test accuracy and confusion matrix for the model with best

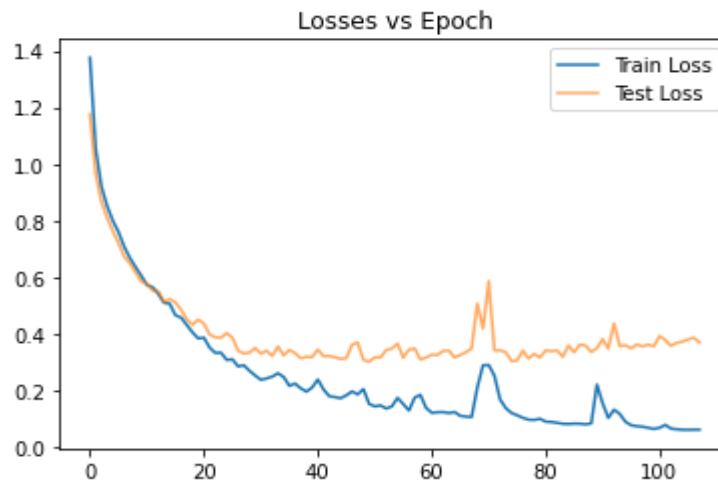
## hyperparameter set



## 2. Consonant Vowel (CV) segment dataset

### RNN Model

#### a. Average training error (y-axis) vs. Epochs (x-axis)



**Train Loss:** 0.06154731717525107

**Previous Training Loss:** 0.06163276204290831

**Test Loss:** 0.36958049982930796

Training continued till **108 number of epochs**.

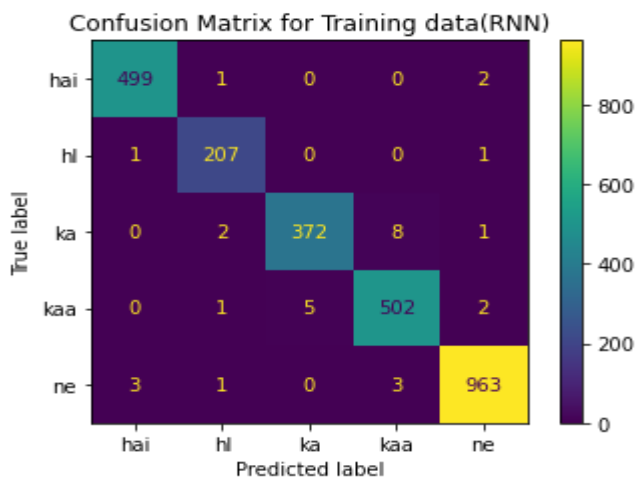
The final training loss being 0.06154731717525107 and test loss being 0.36958049982930796

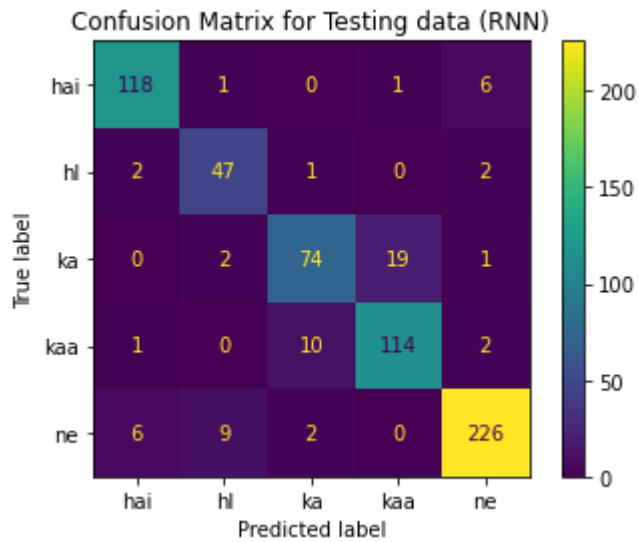
#### b. The training accuracy and test accuracy :-

**Accuracy on Train Set:** 0.988

**Accuracy on Test Set:** 0.899

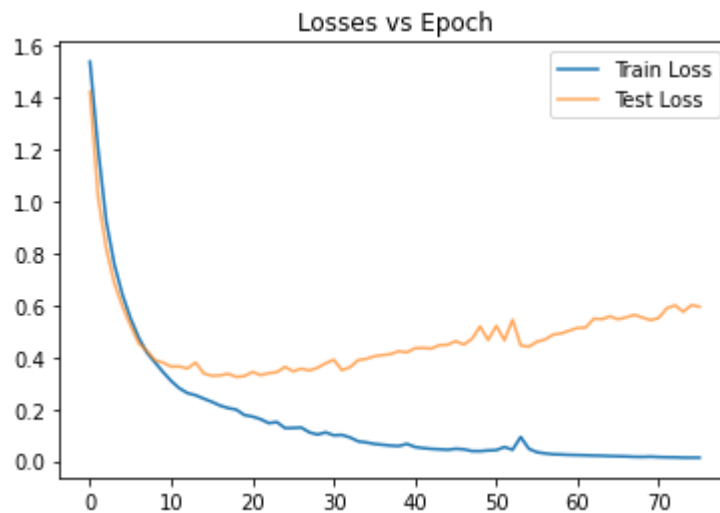
#### c. The training accuracy, test accuracy and confusion matrix for the model with best hyperparameter set:-





### LSTM Model

#### a. Average training error (y-axis) vs. Epochs (x-axis)



**Train Loss:** 0.013203446008699202

**Previous Training Loss:** 0.013298815327045951

**Test Loss:** 0.594350555045053

Training continued till **76 number of epochs**.

The final training loss being 0.013203446008699202 and test loss being 0.594350555045053.

**b. The training accuracy and test accuracy :-**

**Accuracy on Train Set: 0.997**

**Accuracy on Test Set: 0.879**

**c. The training accuracy, test accuracy and confusion matrix for the model with best hyperparameter set:-**

