**Experiment 1:**

For financial dataset:

**Model 1: Simple RNN**

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Layer (type) Output Shape Param #

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embedding\_13 (Embedding) (None, 1000, 32) 205120

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simple\_rnn\_18 (SimpleRNN) (None, 32) 2080

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dense\_11 (Dense) (None, 3) 99

=================================================================

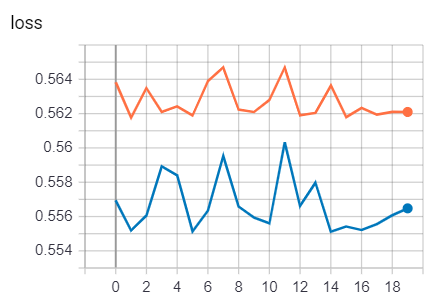
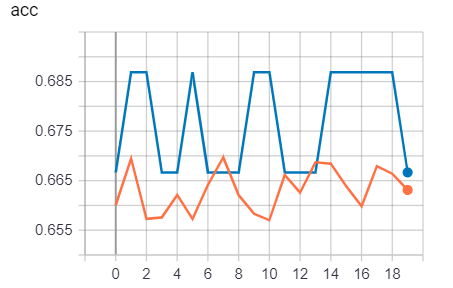
Total params: 207,299

Trainable params: 207,299

Non-trainable params: 0

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**Results After 20 Epochs:**

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**Model 2: 2 layer Simple RNN**

Layer (type) Output Shape Param #

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embedding\_14 (Embedding) (None, 1000, 32) 205120

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simple\_rnn\_19 (SimpleRNN) (None, 1000, 32) 2080

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simple\_rnn\_20 (SimpleRNN) (None, 32) 2080

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dense\_12 (Dense) (None, 3) 99

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Total params: 209,379

Trainable params: 209,379

Non-trainable params: 0

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**(more in Notebook)**

**Model 3: SIngle layer Simple LSTM**

Layer (type) Output Shape Param #

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embedding\_3 (Embedding) (None, 1000, 32) 205120

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lstm\_2 (LSTM) (None, 32) 8320

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dense\_3 (Dense) (None, 3) 99

=================================================================

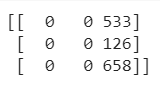
Total params: 213,539

Trainable params: 213,539

Non-trainable params: 0



Confusion Matrix:



Same for all the model build with rnn. This can be because most of the cases are of same class.

How to improve model?

1. Need more preprocessing and valid data.
2. Need to perform some smoothing techniques.