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Following are two classes of sequences that the RNN cannot distinguish. We have tried to run each one of them by different kinds of inputs as well as by dozens of iterations but one of them did not returned us a successful distinction.

Palindrom regex

- Alphabet : {0-9,a-z}
- Form: {w#w' | such that w is a sequence from the Alphabet and w' is the reversed w}
- Output file: regex_poly_examples.txt

In the light of the fact the LSTM acceptor only moves forward so it cannot learns the part after the # namely w', therefore this regex cannot be distinguished by our model. While running the model with train data set of 5000, 500 sequences (number of examples), 1 epoch and 1 layers we got accuracy rate of 47% approximately. We of course were running it by different data sizes, layers and epochs.

Double-word regex

- Alphabet : {0-9,a-z}
- Form: {ww | such that w is a sequence from the Albabet}
- Output: regex_ww_examples.txt

In the light of the fact the LSTM does not have the ability to check the entire sequence because it check only 3 characters each time. Therefore, it don't have the ability to break the word into two parts and verified the regex. While running the model with train data set of 5000, 500 sequences (number of examples), 1 epoch and 1 layers we got accuracy rate of 52% approximately. We of course were running it by different data sizes, layers and epochs.

[Note: Both aforementioned outputs will be created within the main directory of the project]