CMPE597: HOMEWORK 2

[70 points] Implement a character-level vanilla RNN in Python. You should code this from scratch (backward pass, forward pass, sampling functions), do not use RNN functionalities of existing libraries. Recall hidden state and prediction definitions of vanilla RNNs: (see lecture slides for more information)

$$h_t = \tanh(W_{hh} h_{t-1} + W_{xh} x_t)$$
$$y_t = W_{hy} h_t$$

Note: You may look at the simple char-rnn code example we reviewed in the class in order to understand the concepts BUT DO NOT COPY any code. You must write your own code.

[30 points] Run your code on a data of your choice and share the results (within the same Jupyter notebook is fine). Some datasets you can use:

ABC music format

Donald Trump speeches

Webster dictionary

Jane Austen novels

Submission instructions: Submit all your work in a Jupyter notebook and send it to yanardag.pinar@gmail.com with "CMPE597: Homework 2" title.

Deadline of this homework is due April 22nd, Monday, 23:59PM. If you haven't used it in Homework 1, you have 1-day grace period.