# Advanced Methods in NLP – Assignment 1

* 1. Implemented in file ngram\_model.py.  
     run: python ngram\_model.py  
     Results:

#trigrams: 413540

#bigrams: 122930

#unigrams: 2000

#tokens: 1231340

#perplexity: 36.7114693392

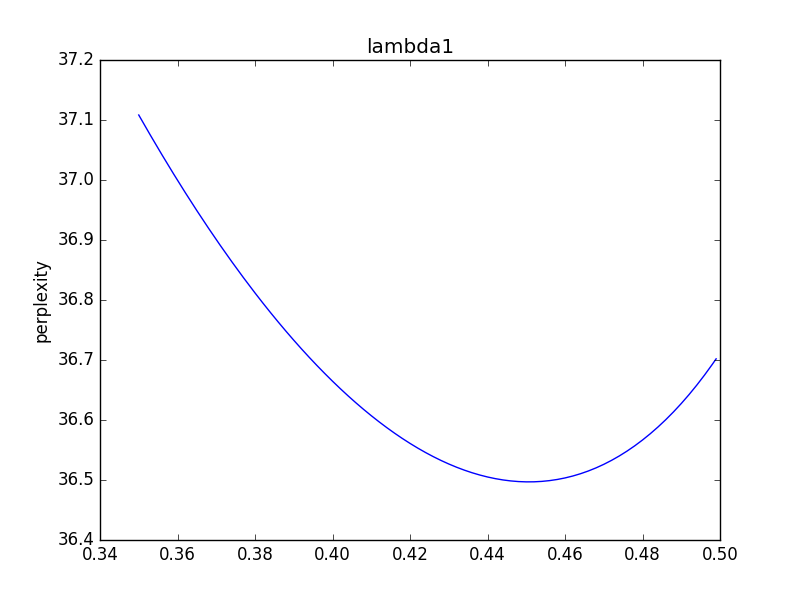
* 1. Implemented in file ngram model.py function lambda\_grid\_search()

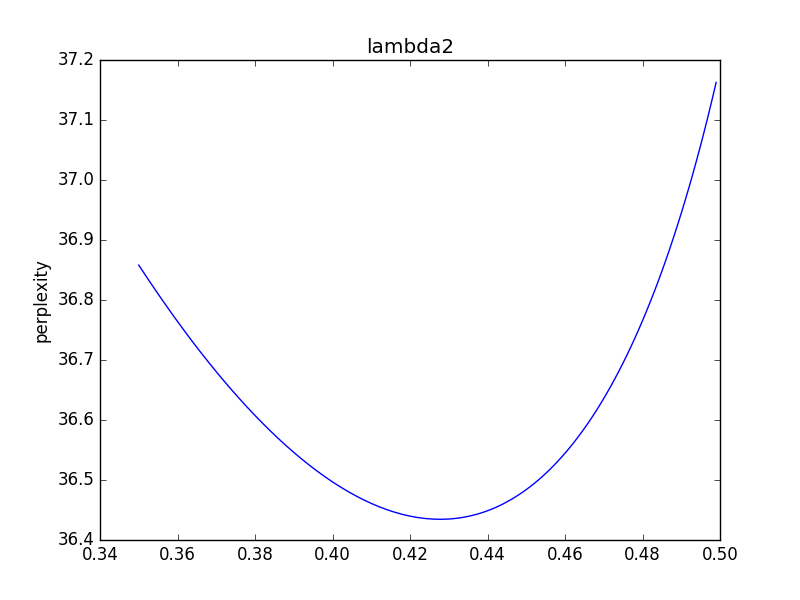
run: python ngram\_model.py

We preformed grid search:

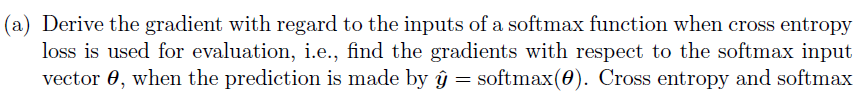
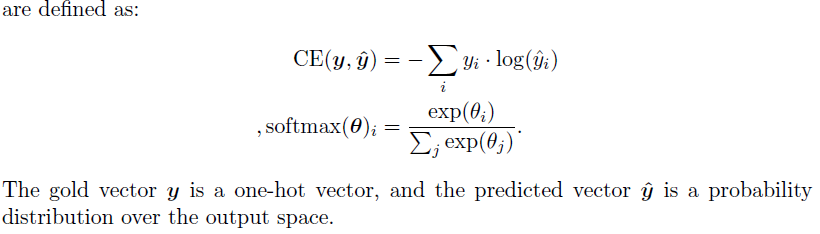
* First we set lambda2=0.4 and grid search lambda1 for minimum perplexity
* Then, we set lambda1 to the best found and grid search lambda2 for minimum perplexity.

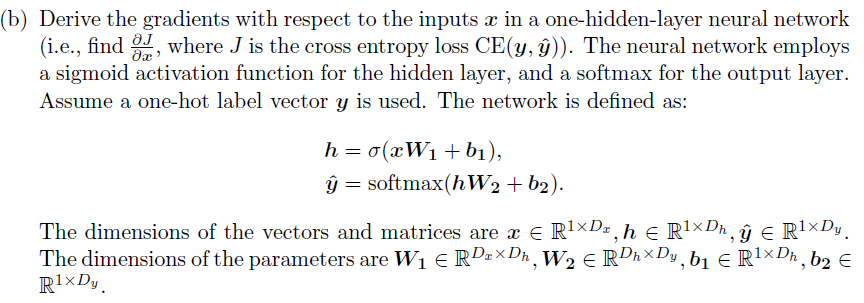
Results:  
 - best lambda1 is 0.451  
 - best lambda2 is 0.428  
 - best perplexity is 36.434527232





**Neural language model**





We have already calculated from previous section. In addition, we calculated (sigmoid derivative) in HW1.