**Advanced nlp – exercise 1**

* 1. We will show:
  2. Implemented
  3. Implemented
  4. implemented

2)

a.

b.

c.

d. The change is just a summation over the results of the previous parts:

h. Image - As can be seen from the code, the plot is the projection of the results onto the two principal dimensions were the cross-correlation is the highest. In the visualization, proximity between two words represents proximity in the results (or at least in the 2 represented dimentions).

from training:

## iter 40000: 9.577164

## sanity check: cost at convergence should be around or below 10

## training took 6745 seconds

## Words related to "the": ['the', 'if', 'that', 'comedy\\/thriller', 'or', 'a', '.', 'is', 'derek', 'bolt', 'decide']

## Words related to "unique": ['unique', '1979', 'puns', 'ba', 'realized', 'succumb', 'chabrolian', 'dares', 'regardless', 'imaginative', 'lunar']

## Words related to "superb": ['superb', 'mine', 'gold', 'zingers', 'moppets', 'roussillon', 'best', 'ghoulish', 'industry', 'pool', 'transporter']

## Words related to "comedy": ['comedy', 'sensation', 'observation', 'fast', 'first-timer', 'singing', 'cleaving', 'longest', 'cute', 'mature', 'often-funny']

## Words related to "surprisingly": ['surprisingly', 'either', 'hundred', '20-car', 'philandering', 'unusually', 'protective', 'dogs', 'bollywood', 'thinking', 'soderbergh']

The word visualization:

