

Libraries Used

Only common inbuilt python libraries were used:

```
import os
```

```
import random
```

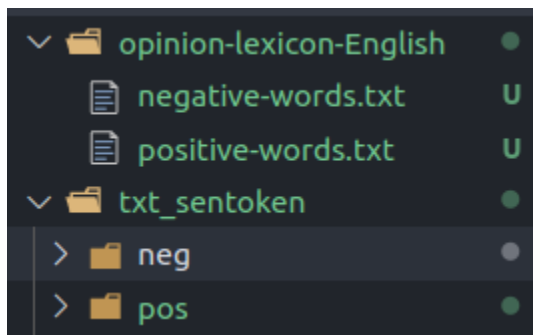
```
import string
```

```
import re
```

```
import numpy as np → This was an exception
```

Running the code / Dependencies

1. Python Version: 3.8
2. The following needs to be the directory structure (folder names need to be exact):



3. The “neg” and “pos” directories contain the respective “.txt” files (reviews)
4. This directory needs to be in the same folder where the script is (classifiers.py)

The command to run is simple:

```
python3 classifiers.py
```

Question 1.1: Sentiment lexicon-based classifier

Description of Algorithm:

The main function is *analyze_sentiment*. The steps of the algorithm are as follows:

1. Read in the test files (Randomly generated list of 400 files)
 - a. Each file is parsed and tokenized
 - b. There is also some cleaning performed:
 - i. Removal of punctuation
 - ii. Removal of stopwords
 - c. A full list of words created
2. Parse the lexicon files
 - a. The required cleaning is done
 - b. 2 lists (positive and negative) are created from parsing the respective files
3. Find the number of positive and negative words for each file
 - a. This is done for each file
 - b. If the positive words > negative words
 - i. Review file is associated to be positive
 - c. Otherwise, the review file is associated to be negative

Accuracy: 64.75 F1 Score: 96.63

See end of write up for a sample classification / output of this run

Question 1.2: Logistic Regression Classifier

Description of Algorithm

The main function for this question is “binary_logistic_classifier_new”. Following are the steps performed in the algorithm

1. Create a bag of words feature set for the training data set
 - a. Here, the number of features will be the vocabulary words seen in the training dataset files
 - b. The feature here is simply whether the word is present or not present
2. The same thing is done for the test dataset
3. Essentially, the feature vector (for training and test inputs) will have the following characteristics:
 - a. Number of rows: Number of files
 - i. 1600 for training dataset
 - ii. 400 for test dataset
 - b. Number of columns
 - i. The number of unique words found in the **training dataset**
4. The model is trained using stochastic gradient descent
 - a. The following loss/cost function has been used (different from lecture notes)

$$\text{LCE}(\hat{y}, y) = -[y \log \sigma(w \cdot x + b) + (1 - y) \log(1 - \sigma(w \cdot x + b))]$$

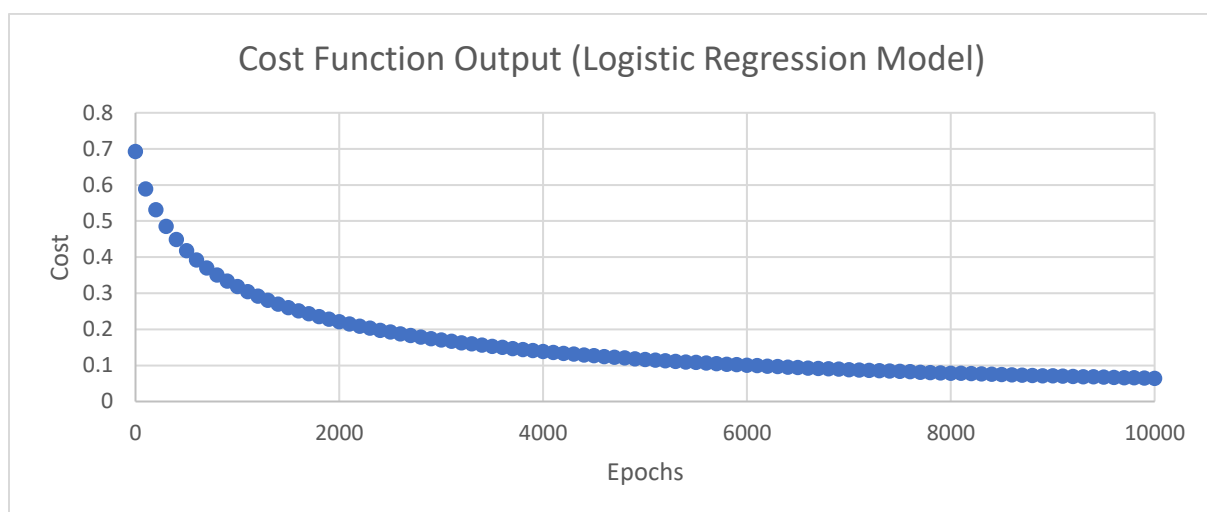
With derivative:

$$[\sigma(w \cdot x + b) - y]x_j$$

5. The gradient descent function outputs the weights associated with the features
 - a. The weights are then used to predict the test dataset, containing 400 files

Accuracy: 76.25

F1 Score: 97.15



The end of the document (after References section) shows the epoch outputs and the classification of the model.

Question 1.3 – Statistical Significance

$$H_0: p_1 = p_2$$

$$H_A: p_1 \neq p_2$$

$$z = \frac{\widehat{p}_1 - \widehat{p}_2}{\sqrt{\widehat{p}(1 - \widehat{p})\left(\frac{1}{n_1} - \frac{1}{n_2}\right)}} \text{ where } \widehat{p} = \frac{n_1 * \widehat{p}_1 + n_2 * \widehat{p}_2}{n_1 + n_2}$$

$$\widehat{p}_1 = 0.6475 \text{ (Accuracy of lexicon based classifier)}$$

$$\widehat{p}_2 = 0.7625 \text{ (Accuracy of logistic regression classifier)}$$

$$n_1 = n_2 = 400$$

$$\widehat{p} = \frac{400 * (0.6475 - 0.7625)}{800} = -0.0575$$

$$\text{Testing at the 95\% confidence interval: } z_{\frac{\alpha}{2}} = 1.96$$

$$\text{Since } |z| < z_{\frac{\alpha}{2}}, \text{ we fail to reject the null hypothesis}$$

The above shows that the two accuracy values are statistically **insignificant**.

References:

1. <https://web.stanford.edu/~jurafsky/slp3/5.pdf>
 - a. This book was used to find the loss function and derivative
2. <https://towardsdatascience.com/understand-logistic-regression-from-scratch-430aef5edb9>
 - a. This article was used to refer to the come up with features
3. <https://medium.com/swlh/sentiment-analysis-from-scratch-with-logistic-regression-ca6f119256ab>
 - a. Code from this article was used to perform some cleaning of the input
4. <https://stats.stackexchange.com/questions/113602/test-if-two-binomial-distributions-are-statistically-different-from-each-other>
 - a. Used to figure out equations for Q1.3 (Statistical significance)

Question 1.1 (Lexicon Based) Model Classification

Classification of positive reviews:

File: cv346_18168.txt	Model Classification: negative
File: cv957_8737.txt	Model Classification: positive
File: cv811_21386.txt	Model Classification: negative
File: cv596_28311.txt	Model Classification: positive
File: cv139_12873.txt	Model Classification: negative
File: cv261_10954.txt	Model Classification: positive
File: cv434_5793.txt	Model Classification: positive
File: cv225_29224.txt	Model Classification: negative
File: cv416_11136.txt	Model Classification: positive
File: cv413_7398.txt	Model Classification: positive
File: cv074_6875.txt	Model Classification: positive
File: cv914_28742.txt	Model Classification: positive
File: cv730_10279.txt	Model Classification: positive
File: cv904_24353.txt	Model Classification: positive
File: cv262_12649.txt	Model Classification: negative
File: cv360_8398.txt	Model Classification: positive
File: cv071_12095.txt	Model Classification: positive
File: cv841_3967.txt	Model Classification: positive
File: cv636_15279.txt	Model Classification: negative
File: cv564_11110.txt	Model Classification: positive
File: cv013_10159.txt	Model Classification: negative
File: cv637_1250.txt	Model Classification: positive
File: cv110_27788.txt	Model Classification: positive
File: cv084_13566.txt	Model Classification: positive
File: cv146_18458.txt	Model Classification: negative
File: cv260_13959.txt	Model Classification: negative
File: cv402_14425.txt	Model Classification: positive

Classification of negative reviews:

File: cv416_12048.txt	Model Classification: negative
File: cv014_15600.txt	Model Classification: negative
File: cv448_16409.txt	Model Classification: positive
File: cv285_18186.txt	Model Classification: negative
File: cv155_7845.txt	Model Classification: negative
File: cv297_10104.txt	Model Classification: negative
File: cv546_12723.txt	Model Classification: negative
File: cv758_9740.txt	Model Classification: negative
File: cv206_15893.txt	Model Classification: positive
File: cv129_18373.txt	Model Classification: negative
File: cv257_11856.txt	Model Classification: negative
File: cv007_4992.txt	Model Classification: negative
File: cv065_16909.txt	Model Classification: negative
File: cv587_20532.txt	Model Classification: positive
File: cv641_13412.txt	Model Classification: negative
File: cv926_18471.txt	Model Classification: negative
File: cv438_8500.txt	Model Classification: negative
File: cv602_8830.txt	Model Classification: positive
File: cv915_9342.txt	Model Classification: negative
File: cv397_28890.txt	Model Classification: negative
File: cv324_7502.txt	Model Classification: negative
File: cv642_29788.txt	Model Classification: negative
File: cv810_13660.txt	Model Classification: negative
File: cv576_15688.txt	Model Classification: negative
File: cv660_23140.txt	Model Classification: negative
File: cv922_10185.txt	Model Classification: positive
File: cv835_20531.txt	Model Classification: negative
File: cv522_5418.txt	Model Classification: negative
File: cv612_5396.txt	Model Classification: negative

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File: cv121_18621.txt	Model Classification: negative
File: cv999_14636.txt	Model Classification: negative
File: cv216_20165.txt	Model Classification: negative
File: cv610_24153.txt	Model Classification: positive
File: cv888_25678.txt	Model Classification: negative
File: cv742_8279.txt	Model Classification: positive
File: cv089_12222.txt	Model Classification: negative
File: cv990_12443.txt	Model Classification: negative
File: cv208_9475.txt	Model Classification: negative
File: cv942_18509.txt	Model Classification: negative
File: cv774_15488.txt	Model Classification: negative
File: cv748_14044.txt	Model Classification: negative
File: cv335_16299.txt	Model Classification: negative
File: cv221_27081.txt	Model Classification: negative
File: cv830_5778.txt	Model Classification: negative
File: cv541_28683.txt	Model Classification: negative
File: cv954_19932.txt	Model Classification: negative
File: cv186_2396.txt	Model Classification: negative
File: cv148_18084.txt	Model Classification: negative
File: cv162_10977.txt	Model Classification: negative
File: cv930_14949.txt	Model Classification: negative
File: cv332_17997.txt	Model Classification: negative
File: cv032_23718.txt	Model Classification: negative
File: cv283_11963.txt	Model Classification: negative
File: cv984_14006.txt	Model Classification: negative
File: cv262_13812.txt	Model Classification: positive
File: cv044_18429.txt	Model Classification: positive
File: cv353_19197.txt	Model Classification: negative
File: cv035_3343.txt	Model Classification: negative
File: cv918_27080.txt	Model Classification: negative

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File: cv008_29326.txt	Model Classification: negative
File: cv600_25043.txt	Model Classification: positive
File: cv868_12799.txt	Model Classification: negative
File: cv884_15230.txt	Model Classification: negative
File: cv744_10091.txt	Model Classification: negative
File: cv860_15520.txt	Model Classification: negative
File: cv273_28961.txt	Model Classification: negative
File: cv808_13773.txt	Model Classification: negative
File: cv561_9484.txt	Model Classification: negative
File: cv308_5079.txt	Model Classification: negative
File: cv039_5963.txt	Model Classification: positive
File: cv488_21453.txt	Model Classification: negative
File: cv145_12239.txt	Model Classification: negative
File: cv124_3903.txt	Model Classification: positive
File: cv793_15235.txt	Model Classification: negative
File: cv715_19246.txt	Model Classification: negative
File: cv067_21192.txt	Model Classification: negative
File: cv075_6250.txt	Model Classification: negative
File: cv170_29808.txt	Model Classification: negative
File: cv372_6654.txt	Model Classification: positive
File: cv425_8603.txt	Model Classification: negative
File: cv656_25395.txt	Model Classification: negative
File: cv684_12727.txt	Model Classification: negative
File: cv766_7983.txt	Model Classification: negative
File: cv986_15092.txt	Model Classification: negative
File: cv184_26935.txt	Model Classification: negative
File: cv834_23192.txt	Model Classification: positive
File: cv969_14760.txt	Model Classification: positive
File: cv263_20693.txt	Model Classification: negative
File: cv047_18725.txt	Model Classification: negative

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File: cv440_16891.txt	Model Classification: positive
File: cv514_12173.txt	Model Classification: positive
File: cv269_23018.txt	Model Classification: negative
File: cv146_19587.txt	Model Classification: negative
File: cv635_0984.txt	Model Classification: negative
File: cv432_15873.txt	Model Classification: negative
File: cv552_0150.txt	Model Classification: negative
File: cv058_8469.txt	Model Classification: positive
File: cv312_29308.txt	Model Classification: negative
File: cv828_21392.txt	Model Classification: negative
File: cv584_29549.txt	Model Classification: negative
File: cv000_29416.txt	Model Classification: negative
File: cv122_7891.txt	Model Classification: negative
File: cv747_18189.txt	Model Classification: negative
File: cv112_12178.txt	Model Classification: negative
File: cv381_21673.txt	Model Classification: negative
File: cv702_12371.txt	Model Classification: negative
File: cv863_7912.txt	Model Classification: negative
File: cv589_12853.txt	Model Classification: negative
File: cv474_10682.txt	Model Classification: negative
File: cv760_8977.txt	Model Classification: negative
File: cv391_11615.txt	Model Classification: positive
File: cv125_9636.txt	Model Classification: negative
File: cv352_5414.txt	Model Classification: negative
File: cv357_14710.txt	Model Classification: negative
File: cv636_16954.txt	Model Classification: positive
File: cv470_17444.txt	Model Classification: positive
File: cv127_16451.txt	Model Classification: negative
File: cv080_14899.txt	Model Classification: negative
File: cv444_9975.txt	Model Classification: negative

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File: cv390_12187.txt	Model Classification: negative
File: cv971_11790.txt	Model Classification: negative
File: cv385_29621.txt	Model Classification: negative
File: cv418_16562.txt	Model Classification: negative
File: cv556_16563.txt	Model Classification: positive
File: cv380_8164.txt	Model Classification: negative
File: cv439_17633.txt	Model Classification: negative
File: cv824_9335.txt	Model Classification: negative
File: cv460_11723.txt	Model Classification: negative
File: cv710_23745.txt	Model Classification: negative
File: cv858_20266.txt	Model Classification: negative
File: cv762_15604.txt	Model Classification: positive
File: cv877_29132.txt	Model Classification: positive
File: cv577_28220.txt	Model Classification: positive
File: cv746_10471.txt	Model Classification: positive
File: cv050_12128.txt	Model Classification: positive
File: cv632_9704.txt	Model Classification: negative
File: cv976_10724.txt	Model Classification: positive
File: cv818_10698.txt	Model Classification: positive
File: cv306_10859.txt	Model Classification: negative
File: cv485_26879.txt	Model Classification: negative
File: cv214_13285.txt	Model Classification: positive
File: cv463_10846.txt	Model Classification: negative
File: cv161_12224.txt	Model Classification: negative
File: cv147_22625.txt	Model Classification: positive
File: cv864_3087.txt	Model Classification: negative
File: cv140_7963.txt	Model Classification: positive
File: cv622_8583.txt	Model Classification: positive
File: cv554_14678.txt	Model Classification: negative
File: cv889_22670.txt	Model Classification: negative

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File: cv669_24318.txt	Model Classification: positive
File: cv738_10287.txt	Model Classification: positive
File: cv901_11934.txt	Model Classification: positive
File: cv160_10848.txt	Model Classification: negative
File: cv171_15164.txt	Model Classification: negative
File: cv770_11061.txt	Model Classification: negative
File: cv288_20212.txt	Model Classification: negative
File: cv477_23530.txt	Model Classification: negative
File: cv940_18935.txt	Model Classification: negative
File: cv785_23748.txt	Model Classification: negative
File: cv325_18330.txt	Model Classification: negative
File: cv819_9567.txt	Model Classification: negative
File: cv528_11669.txt	Model Classification: positive
File: cv349_15032.txt	Model Classification: negative
File: cv345_9966.txt	Model Classification: positive
File: cv723_9002.txt	Model Classification: negative
File: cv675_22871.txt	Model Classification: negative
File: cv181_16083.txt	Model Classification: negative
File: cv454_21961.txt	Model Classification: negative
File: cv404_21805.txt	Model Classification: negative
File: cv687_22207.txt	Model Classification: positive
File: cv419_14799.txt	Model Classification: positive
File: cv775_17966.txt	Model Classification: negative
File: cv900_10800.txt	Model Classification: negative
File: cv917_29484.txt	Model Classification: positive
File: cv974_24303.txt	Model Classification: negative
File: cv811_22646.txt	Model Classification: negative
File: cv781_5358.txt	Model Classification: negative
File: cv459_21834.txt	Model Classification: negative
File: cv870_18090.txt	Model Classification: negative

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File: cv224_18875.txt	Model Classification: negative
File: cv729_10475.txt	Model Classification: positive
File: cv795_10291.txt	Model Classification: positive
File: cv892_18788.txt	Model Classification: negative
File: cv298_24487.txt	Model Classification: negative
File: cv697_12106.txt	Model Classification: positive
File: cv060_11754.txt	Model Classification: negative
File: cv923_11951.txt	Model Classification: positive
File: cv341_25667.txt	Model Classification: negative
File: cv281_24711.txt	Model Classification: negative
File: cv073_23039.txt	Model Classification: negative
File: cv188_20687.txt	Model Classification: negative
File: cv168_7435.txt	Model Classification: negative
File: cv686_15553.txt	Model Classification: positive
File: cv079_12766.txt	Model Classification: negative
File: cv809_5012.txt	Model Classification: negative
File: cv081_18241.txt	Model Classification: negative
File: cv677_18938.txt	Model Classification: negative
File: cv169_24973.txt	Model Classification: positive
File: cv520_13297.txt	Model Classification: positive
File: cv852_27512.txt	Model Classification: negative
File: cv412_25254.txt	Model Classification: negative
File: cv061_9321.txt	Model Classification: positive
File: cv970_19532.txt	Model Classification: negative
File: cv601_24759.txt	Model Classification: negative
File: cv333_9443.txt	Model Classification: negative
File: cv752_25330.txt	Model Classification: negative
File: cv254_5870.txt	Model Classification: negative
File: cv682_17947.txt	Model Classification: negative
File: cv616_29187.txt	Model Classification: negative

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File: cv069_11613.txt	Model Classification: negative
File: cv941_10718.txt	Model Classification: negative
File: cv790_16202.txt	Model Classification: negative
File: cv282_6833.txt	Model Classification: negative
File: cv492_19370.txt	Model Classification: positive
File: cv626_7907.txt	Model Classification: positive
File: cv051_10751.txt	Model Classification: positive
File: cv088_25274.txt	Model Classification: positive
File: cv648_17277.txt	Model Classification: negative
File: cv053_23117.txt	Model Classification: negative
File: cv812_19051.txt	Model Classification: negative
File: cv779_18989.txt	Model Classification: positive
File: cv549_22771.txt	Model Classification: positive
File: cv234_22123.txt	Model Classification: negative
File: cv581_20790.txt	Model Classification: negative
File: cv193_5393.txt	Model Classification: negative
File: cv253_10190.txt	Model Classification: negative
File: cv009_29417.txt	Model Classification: negative
File: cv531_26838.txt	Model Classification: negative
File: cv005_29357.txt	Model Classification: negative
File: cv310_14568.txt	Model Classification: positive
File: cv956_12547.txt	Model Classification: negative
File: cv151_17231.txt	Model Classification: positive
File: cv773_20264.txt	Model Classification: negative
File: cv972_26837.txt	Model Classification: negative
File: cv153_11607.txt	Model Classification: negative
File: cv138_13903.txt	Model Classification: negative
File: cv185_28372.txt	Model Classification: negative
File: cv840_18033.txt	Model Classification: negative
File: cv862_15924.txt	Model Classification: positive

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File: cv363_29273.txt	Model Classification: negative
File: cv903_18981.txt	Model Classification: positive
File: cv443_22367.txt	Model Classification: negative
File: cv126_28821.txt	Model Classification: positive
File: cv242_11354.txt	Model Classification: positive
File: cv469_21998.txt	Model Classification: negative
File: cv564_12011.txt	Model Classification: positive
File: cv575_22598.txt	Model Classification: negative
File: cv034_29446.txt	Model Classification: negative
File: cv323_29633.txt	Model Classification: negative
File: cv671_5164.txt	Model Classification: positive
File: cv102_8306.txt	Model Classification: negative
File: cv944_15042.txt	Model Classification: negative
File: cv539_21865.txt	Model Classification: negative
File: cv026_29229.txt	Model Classification: positive
File: cv855_22134.txt	Model Classification: negative
File: cv783_14724.txt	Model Classification: negative
File: cv722_7571.txt	Model Classification: negative
File: cv681_9744.txt	Model Classification: negative
File: cv553_26965.txt	Model Classification: negative
File: cv021_17313.txt	Model Classification: negative
File: cv826_12761.txt	Model Classification: negative
File: cv630_10152.txt	Model Classification: negative
File: cv313_19337.txt	Model Classification: negative
File: cv358_11557.txt	Model Classification: negative
File: cv765_20429.txt	Model Classification: negative
File: cv623_16988.txt	Model Classification: negative
File: cv604_23339.txt	Model Classification: positive
File: cv486_9788.txt	Model Classification: negative
File: cv727_5006.txt	Model Classification: negative

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File: cv567_29420.txt	Model Classification: negative
File: cv962_9813.txt	Model Classification: positive
File: cv792_3257.txt	Model Classification: negative
File: cv343_10906.txt	Model Classification: positive
File: cv118_28837.txt	Model Classification: negative
File: cv450_8319.txt	Model Classification: negative
File: cv120_3793.txt	Model Classification: positive
File: cv236_12427.txt	Model Classification: positive
File: cv822_21545.txt	Model Classification: negative
File: cv210_9557.txt	Model Classification: negative
File: cv695_22268.txt	Model Classification: negative
File: cv735_20218.txt	Model Classification: positive
File: cv680_10533.txt	Model Classification: negative
File: cv217_28707.txt	Model Classification: negative
File: cv119_9909.txt	Model Classification: negative
File: cv316_5972.txt	Model Classification: negative
File: cv123_12165.txt	Model Classification: negative
File: cv533_9843.txt	Model Classification: negative
File: cv875_5622.txt	Model Classification: positive
File: cv472_29140.txt	Model Classification: positive
File: cv012_29411.txt	Model Classification: negative
File: cv427_11693.txt	Model Classification: negative
File: cv588_14467.txt	Model Classification: negative
File: cv658_11186.txt	Model Classification: negative
File: cv510_24758.txt	Model Classification: negative
File: cv701_15880.txt	Model Classification: positive
File: cv771_28466.txt	Model Classification: negative
File: cv832_24713.txt	Model Classification: negative
File: cv452_5179.txt	Model Classification: positive
File: cv255_15267.txt	Model Classification: negative

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File: cv920_29423.txt	Model Classification: positive
File: cv414_11161.txt	Model Classification: negative
File: cv911_21695.txt	Model Classification: negative
File: cv821_29283.txt	Model Classification: negative
File: cv754_7709.txt	Model Classification: negative
File: cv965_26688.txt	Model Classification: negative
File: cv796_17243.txt	Model Classification: positive
File: cv916_17034.txt	Model Classification: negative
File: cv043_16808.txt	Model Classification: negative
File: cv194_12855.txt	Model Classification: negative
File: cv207_29141.txt	Model Classification: negative
File: cv062_24556.txt	Model Classification: negative
File: cv369_14245.txt	Model Classification: negative
File: cv490_18986.txt	Model Classification: negative
File: cv338_9183.txt	Model Classification: negative
File: cv077_23172.txt	Model Classification: positive
File: cv784_16077.txt	Model Classification: positive
File: cv534_15683.txt	Model Classification: negative
File: cv319_16459.txt	Model Classification: negative
File: cv417_14653.txt	Model Classification: positive
File: cv167_18094.txt	Model Classification: negative
File: cv232_16768.txt	Model Classification: positive
File: cv958_13020.txt	Model Classification: negative
File: cv016_4348.txt	Model Classification: negative
File: cv620_2556.txt	Model Classification: positive
File: cv015_29356.txt	Model Classification: negative
File: cv714_19704.txt	Model Classification: negative
File: cv406_22199.txt	Model Classification: negative
File: cv857_17527.txt	Model Classification: positive
File: cv172_12037.txt	Model Classification: negative

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File: cv248_15672.txt	Model Classification: negative
File: cv685_5710.txt	Model Classification: positive
File: cv049_21917.txt	Model Classification: negative
File: cv116_28734.txt	Model Classification: positive
File: cv696_29619.txt	Model Classification: negative
File: cv131_11568.txt	Model Classification: positive
File: cv726_4365.txt	Model Classification: negative
File: cv240_15948.txt	Model Classification: positive
File: cv258_5627.txt	Model Classification: negative
File: cv661_25780.txt	Model Classification: negative
File: cv494_18689.txt	Model Classification: negative
File: cv690_5425.txt	Model Classification: negative
File: cv936_17473.txt	Model Classification: positive
File: cv022_14227.txt	Model Classification: negative
File: cv525_17930.txt	Model Classification: negative
File: cv205_9676.txt	Model Classification: negative
File: cv458_9000.txt	Model Classification: negative
File: cv816_15257.txt	Model Classification: positive
File: cv365_12442.txt	Model Classification: negative
File: cv219_19874.txt	Model Classification: negative
File: cv342_20917.txt	Model Classification: negative
File: cv247_14668.txt	Model Classification: negative
File: cv585_23576.txt	Model Classification: positive
File: cv166_11959.txt	Model Classification: negative
File: cv360_8927.txt	Model Classification: negative
File: cv318_11146.txt	Model Classification: negative
File: cv415_23674.txt	Model Classification: negative
File: cv935_24977.txt	Model Classification: negative
File: cv030_22893.txt	Model Classification: negative
File: cv149_17084.txt	Model Classification: negative

File: cv705_11973.txt	Model Classification: negative
File: cv993_29565.txt	Model Classification: positive
File: cv787_15277.txt	Model Classification: negative
File: cv199_9721.txt	Model Classification: positive
File: cv740_13643.txt	Model Classification: negative
File: cv295_17060.txt	Model Classification: negative
File: cv853_29119.txt	Model Classification: negative
File: cv382_8393.txt	Model Classification: negative
File: cv429_7937.txt	Model Classification: negative
File: cv598_18184.txt	Model Classification: negative
File: cv673_25874.txt	Model Classification: negative
File: cv907_3193.txt	Model Classification: positive
File: cv388_12810.txt	Model Classification: negative
File: cv407_23928.txt	Model Classification: negative

Question 1.2 – Classifications of Reviews

Classification of positive reviews:

File: cv346_18168.txt	Model Classification: positive
File: cv957_8737.txt	Model Classification: positive
File: cv811_21386.txt	Model Classification: positive
File: cv596_28311.txt	Model Classification: positive
File: cv139_12873.txt	Model Classification: negative
File: cv261_10954.txt	Model Classification: positive
File: cv434_5793.txt	Model Classification: positive
File: cv225_29224.txt	Model Classification: positive
File: cv416_11136.txt	Model Classification: positive
File: cv413_7398.txt	Model Classification: positive
File: cv074_6875.txt	Model Classification: positive
File: cv914_28742.txt	Model Classification: positive
File: cv730_10279.txt	Model Classification: positive

NLP – Assignment 1 – Writeup

File: cv904_24353.txt	Model Classification: positive
File: cv262_12649.txt	Model Classification: negative
File: cv360_8398.txt	Model Classification: positive
File: cv071_12095.txt	Model Classification: positive
File: cv841_3967.txt	Model Classification: negative
File: cv636_15279.txt	Model Classification: positive
File: cv564_11110.txt	Model Classification: positive
File: cv013_10159.txt	Model Classification: positive
File: cv637_1250.txt	Model Classification: negative
File: cv110_27788.txt	Model Classification: positive
File: cv084_13566.txt	Model Classification: positive
File: cv146_18458.txt	Model Classification: positive
File: cv260_13959.txt	Model Classification: positive
File: cv402_14425.txt	Model Classification: positive

Classification of negative reviews:

File: cv416_12048.txt	Model Classification: negative
File: cv014_15600.txt	Model Classification: negative
File: cv448_16409.txt	Model Classification: negative
File: cv285_18186.txt	Model Classification: negative
File: cv155_7845.txt	Model Classification: negative
File: cv297_10104.txt	Model Classification: positive
File: cv546_12723.txt	Model Classification: negative
File: cv758_9740.txt	Model Classification: negative
File: cv206_15893.txt	Model Classification: positive
File: cv129_18373.txt	Model Classification: negative
File: cv257_11856.txt	Model Classification: negative
File: cv007_4992.txt	Model Classification: negative
File: cv065_16909.txt	Model Classification: negative
File: cv587_20532.txt	Model Classification: positive

NLP – Assignment 1 – Writeup

File: cv641_13412.txt	Model Classification: negative
File: cv926_18471.txt	Model Classification: positive
File: cv438_8500.txt	Model Classification: negative
File: cv602_8830.txt	Model Classification: positive
File: cv915_9342.txt	Model Classification: negative
File: cv397_28890.txt	Model Classification: negative
File: cv324_7502.txt	Model Classification: positive
File: cv642_29788.txt	Model Classification: negative
File: cv810_13660.txt	Model Classification: positive
File: cv576_15688.txt	Model Classification: negative
File: cv660_23140.txt	Model Classification: negative
File: cv922_10185.txt	Model Classification: negative
File: cv835_20531.txt	Model Classification: positive
File: cv522_5418.txt	Model Classification: negative
File: cv612_5396.txt	Model Classification: positive
File: cv121_18621.txt	Model Classification: negative
File: cv999_14636.txt	Model Classification: negative
File: cv216_20165.txt	Model Classification: negative
File: cv610_24153.txt	Model Classification: negative
File: cv888_25678.txt	Model Classification: positive
File: cv742_8279.txt	Model Classification: negative
File: cv089_12222.txt	Model Classification: negative
File: cv990_12443.txt	Model Classification: negative
File: cv208_9475.txt	Model Classification: negative
File: cv942_18509.txt	Model Classification: negative
File: cv774_15488.txt	Model Classification: positive
File: cv748_14044.txt	Model Classification: negative
File: cv335_16299.txt	Model Classification: negative
File: cv221_27081.txt	Model Classification: positive
File: cv830_5778.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv541_28683.txt	Model Classification: negative
File: cv954_19932.txt	Model Classification: negative
File: cv186_2396.txt	Model Classification: negative
File: cv148_18084.txt	Model Classification: negative
File: cv162_10977.txt	Model Classification: negative
File: cv930_14949.txt	Model Classification: negative
File: cv332_17997.txt	Model Classification: negative
File: cv032_23718.txt	Model Classification: positive
File: cv283_11963.txt	Model Classification: positive
File: cv984_14006.txt	Model Classification: negative
File: cv262_13812.txt	Model Classification: positive
File: cv044_18429.txt	Model Classification: negative
File: cv353_19197.txt	Model Classification: positive
File: cv035_3343.txt	Model Classification: positive
File: cv918_27080.txt	Model Classification: negative
File: cv008_29326.txt	Model Classification: positive
File: cv600_25043.txt	Model Classification: positive
File: cv868_12799.txt	Model Classification: positive
File: cv884_15230.txt	Model Classification: negative
File: cv744_10091.txt	Model Classification: negative
File: cv860_15520.txt	Model Classification: negative
File: cv273_28961.txt	Model Classification: positive
File: cv808_13773.txt	Model Classification: positive
File: cv561_9484.txt	Model Classification: negative
File: cv308_5079.txt	Model Classification: negative
File: cv039_5963.txt	Model Classification: positive
File: cv488_21453.txt	Model Classification: negative
File: cv145_12239.txt	Model Classification: negative
File: cv124_3903.txt	Model Classification: positive
File: cv793_15235.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv715_19246.txt	Model Classification: negative
File: cv067_21192.txt	Model Classification: positive
File: cv075_6250.txt	Model Classification: negative
File: cv170_29808.txt	Model Classification: negative
File: cv372_6654.txt	Model Classification: negative
File: cv425_8603.txt	Model Classification: negative
File: cv656_25395.txt	Model Classification: positive
File: cv684_12727.txt	Model Classification: negative
File: cv766_7983.txt	Model Classification: negative
File: cv986_15092.txt	Model Classification: negative
File: cv184_26935.txt	Model Classification: negative
File: cv834_23192.txt	Model Classification: negative
File: cv969_14760.txt	Model Classification: negative
File: cv263_20693.txt	Model Classification: negative
File: cv047_18725.txt	Model Classification: positive
File: cv440_16891.txt	Model Classification: negative
File: cv514_12173.txt	Model Classification: negative
File: cv269_23018.txt	Model Classification: negative
File: cv146_19587.txt	Model Classification: negative
File: cv635_0984.txt	Model Classification: negative
File: cv432_15873.txt	Model Classification: negative
File: cv552_0150.txt	Model Classification: negative
File: cv058_8469.txt	Model Classification: negative
File: cv312_29308.txt	Model Classification: negative
File: cv828_21392.txt	Model Classification: negative
File: cv584_29549.txt	Model Classification: negative
File: cv000_29416.txt	Model Classification: negative
File: cv122_7891.txt	Model Classification: positive
File: cv747_18189.txt	Model Classification: positive
File: cv112_12178.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv381_21673.txt	Model Classification: positive
File: cv702_12371.txt	Model Classification: negative
File: cv863_7912.txt	Model Classification: negative
File: cv589_12853.txt	Model Classification: negative
File: cv474_10682.txt	Model Classification: negative
File: cv760_8977.txt	Model Classification: positive
File: cv391_11615.txt	Model Classification: positive
File: cv125_9636.txt	Model Classification: positive
File: cv352_5414.txt	Model Classification: negative
File: cv357_14710.txt	Model Classification: negative
File: cv636_16954.txt	Model Classification: negative
File: cv470_17444.txt	Model Classification: negative
File: cv127_16451.txt	Model Classification: positive
File: cv080_14899.txt	Model Classification: negative
File: cv444_9975.txt	Model Classification: negative
File: cv390_12187.txt	Model Classification: negative
File: cv971_11790.txt	Model Classification: negative
File: cv385_29621.txt	Model Classification: negative
File: cv418_16562.txt	Model Classification: negative
File: cv556_16563.txt	Model Classification: negative
File: cv380_8164.txt	Model Classification: negative
File: cv439_17633.txt	Model Classification: negative
File: cv824_9335.txt	Model Classification: negative
File: cv460_11723.txt	Model Classification: positive
File: cv710_23745.txt	Model Classification: negative
File: cv858_20266.txt	Model Classification: negative
File: cv762_15604.txt	Model Classification: negative
File: cv877_29132.txt	Model Classification: negative
File: cv577_28220.txt	Model Classification: negative
File: cv746_10471.txt	Model Classification: positive

NLP – Assignment 1 – Writeup

File: cv050_12128.txt	Model Classification: negative
File: cv632_9704.txt	Model Classification: negative
File: cv976_10724.txt	Model Classification: negative
File: cv818_10698.txt	Model Classification: negative
File: cv306_10859.txt	Model Classification: negative
File: cv485_26879.txt	Model Classification: positive
File: cv214_13285.txt	Model Classification: negative
File: cv463_10846.txt	Model Classification: negative
File: cv161_12224.txt	Model Classification: negative
File: cv147_22625.txt	Model Classification: negative
File: cv864_3087.txt	Model Classification: negative
File: cv140_7963.txt	Model Classification: negative
File: cv622_8583.txt	Model Classification: positive
File: cv554_14678.txt	Model Classification: negative
File: cv889_22670.txt	Model Classification: positive
File: cv669_24318.txt	Model Classification: positive
File: cv738_10287.txt	Model Classification: negative
File: cv901_11934.txt	Model Classification: negative
File: cv160_10848.txt	Model Classification: positive
File: cv171_15164.txt	Model Classification: negative
File: cv770_11061.txt	Model Classification: negative
File: cv288_20212.txt	Model Classification: negative
File: cv477_23530.txt	Model Classification: positive
File: cv940_18935.txt	Model Classification: negative
File: cv785_23748.txt	Model Classification: negative
File: cv325_18330.txt	Model Classification: negative
File: cv819_9567.txt	Model Classification: negative
File: cv528_11669.txt	Model Classification: positive
File: cv349_15032.txt	Model Classification: negative
File: cv345_9966.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv723_9002.txt	Model Classification: negative
File: cv675_22871.txt	Model Classification: negative
File: cv181_16083.txt	Model Classification: negative
File: cv454_21961.txt	Model Classification: positive
File: cv404_21805.txt	Model Classification: negative
File: cv687_22207.txt	Model Classification: negative
File: cv419_14799.txt	Model Classification: negative
File: cv775_17966.txt	Model Classification: negative
File: cv900_10800.txt	Model Classification: negative
File: cv917_29484.txt	Model Classification: negative
File: cv974_24303.txt	Model Classification: negative
File: cv811_22646.txt	Model Classification: negative
File: cv781_5358.txt	Model Classification: negative
File: cv459_21834.txt	Model Classification: negative
File: cv870_18090.txt	Model Classification: negative
File: cv224_18875.txt	Model Classification: negative
File: cv729_10475.txt	Model Classification: negative
File: cv795_10291.txt	Model Classification: negative
File: cv892_18788.txt	Model Classification: negative
File: cv298_24487.txt	Model Classification: negative
File: cv697_12106.txt	Model Classification: positive
File: cv060_11754.txt	Model Classification: positive
File: cv923_11951.txt	Model Classification: negative
File: cv341_25667.txt	Model Classification: negative
File: cv281_24711.txt	Model Classification: negative
File: cv073_23039.txt	Model Classification: negative
File: cv188_20687.txt	Model Classification: negative
File: cv168_7435.txt	Model Classification: negative
File: cv686_15553.txt	Model Classification: positive
File: cv079_12766.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv809_5012.txt	Model Classification: negative
File: cv081_18241.txt	Model Classification: positive
File: cv677_18938.txt	Model Classification: negative
File: cv169_24973.txt	Model Classification: negative
File: cv520_13297.txt	Model Classification: negative
File: cv852_27512.txt	Model Classification: positive
File: cv412_25254.txt	Model Classification: positive
File: cv061_9321.txt	Model Classification: positive
File: cv970_19532.txt	Model Classification: negative
File: cv601_24759.txt	Model Classification: negative
File: cv333_9443.txt	Model Classification: positive
File: cv752_25330.txt	Model Classification: negative
File: cv254_5870.txt	Model Classification: negative
File: cv682_17947.txt	Model Classification: positive
File: cv616_29187.txt	Model Classification: negative
File: cv069_11613.txt	Model Classification: negative
File: cv941_10718.txt	Model Classification: positive
File: cv790_16202.txt	Model Classification: negative
File: cv282_6833.txt	Model Classification: negative
File: cv492_19370.txt	Model Classification: negative
File: cv626_7907.txt	Model Classification: negative
File: cv051_10751.txt	Model Classification: negative
File: cv088_25274.txt	Model Classification: negative
File: cv648_17277.txt	Model Classification: negative
File: cv053_23117.txt	Model Classification: negative
File: cv812_19051.txt	Model Classification: negative
File: cv779_18989.txt	Model Classification: negative
File: cv549_22771.txt	Model Classification: negative
File: cv234_22123.txt	Model Classification: negative
File: cv581_20790.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv193_5393.txt	Model Classification: negative
File: cv253_10190.txt	Model Classification: negative
File: cv009_29417.txt	Model Classification: negative
File: cv531_26838.txt	Model Classification: positive
File: cv005_29357.txt	Model Classification: negative
File: cv310_14568.txt	Model Classification: negative
File: cv956_12547.txt	Model Classification: negative
File: cv151_17231.txt	Model Classification: negative
File: cv773_20264.txt	Model Classification: negative
File: cv972_26837.txt	Model Classification: positive
File: cv153_11607.txt	Model Classification: negative
File: cv138_13903.txt	Model Classification: negative
File: cv185_28372.txt	Model Classification: negative
File: cv840_18033.txt	Model Classification: negative
File: cv862_15924.txt	Model Classification: positive
File: cv363_29273.txt	Model Classification: positive
File: cv903_18981.txt	Model Classification: positive
File: cv443_22367.txt	Model Classification: negative
File: cv126_28821.txt	Model Classification: negative
File: cv242_11354.txt	Model Classification: positive
File: cv469_21998.txt	Model Classification: negative
File: cv564_12011.txt	Model Classification: positive
File: cv575_22598.txt	Model Classification: positive
File: cv034_29446.txt	Model Classification: negative
File: cv323_29633.txt	Model Classification: negative
File: cv671_5164.txt	Model Classification: positive
File: cv102_8306.txt	Model Classification: negative
File: cv944_15042.txt	Model Classification: negative
File: cv539_21865.txt	Model Classification: negative
File: cv026_29229.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv855_22134.txt	Model Classification: negative
File: cv783_14724.txt	Model Classification: negative
File: cv722_7571.txt	Model Classification: negative
File: cv681_9744.txt	Model Classification: negative
File: cv553_26965.txt	Model Classification: negative
File: cv021_17313.txt	Model Classification: negative
File: cv826_12761.txt	Model Classification: positive
File: cv630_10152.txt	Model Classification: negative
File: cv313_19337.txt	Model Classification: negative
File: cv358_11557.txt	Model Classification: positive
File: cv765_20429.txt	Model Classification: negative
File: cv623_16988.txt	Model Classification: negative
File: cv604_23339.txt	Model Classification: positive
File: cv486_9788.txt	Model Classification: negative
File: cv727_5006.txt	Model Classification: negative
File: cv567_29420.txt	Model Classification: negative
File: cv962_9813.txt	Model Classification: negative
File: cv792_3257.txt	Model Classification: negative
File: cv343_10906.txt	Model Classification: positive
File: cv118_28837.txt	Model Classification: negative
File: cv450_8319.txt	Model Classification: negative
File: cv120_3793.txt	Model Classification: positive
File: cv236_12427.txt	Model Classification: negative
File: cv822_21545.txt	Model Classification: negative
File: cv210_9557.txt	Model Classification: positive
File: cv695_22268.txt	Model Classification: negative
File: cv735_20218.txt	Model Classification: positive
File: cv680_10533.txt	Model Classification: negative
File: cv217_28707.txt	Model Classification: negative
File: cv119_9909.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv316_5972.txt	Model Classification: positive
File: cv123_12165.txt	Model Classification: negative
File: cv533_9843.txt	Model Classification: negative
File: cv875_5622.txt	Model Classification: positive
File: cv472_29140.txt	Model Classification: positive
File: cv012_29411.txt	Model Classification: negative
File: cv427_11693.txt	Model Classification: positive
File: cv588_14467.txt	Model Classification: negative
File: cv658_11186.txt	Model Classification: negative
File: cv510_24758.txt	Model Classification: negative
File: cv701_15880.txt	Model Classification: negative
File: cv771_28466.txt	Model Classification: negative
File: cv832_24713.txt	Model Classification: negative
File: cv452_5179.txt	Model Classification: negative
File: cv255_15267.txt	Model Classification: negative
File: cv920_29423.txt	Model Classification: positive
File: cv414_11161.txt	Model Classification: positive
File: cv911_21695.txt	Model Classification: negative
File: cv821_29283.txt	Model Classification: positive
File: cv754_7709.txt	Model Classification: negative
File: cv965_26688.txt	Model Classification: negative
File: cv796_17243.txt	Model Classification: negative
File: cv916_17034.txt	Model Classification: negative
File: cv043_16808.txt	Model Classification: negative
File: cv194_12855.txt	Model Classification: negative
File: cv207_29141.txt	Model Classification: negative
File: cv062_24556.txt	Model Classification: negative
File: cv369_14245.txt	Model Classification: negative
File: cv490_18986.txt	Model Classification: negative
File: cv338_9183.txt	Model Classification: positive

NLP – Assignment 1 – Writeup

File: cv077_23172.txt	Model Classification: negative
File: cv784_16077.txt	Model Classification: negative
File: cv534_15683.txt	Model Classification: negative
File: cv319_16459.txt	Model Classification: negative
File: cv417_14653.txt	Model Classification: negative
File: cv167_18094.txt	Model Classification: positive
File: cv232_16768.txt	Model Classification: positive
File: cv958_13020.txt	Model Classification: negative
File: cv016_4348.txt	Model Classification: negative
File: cv620_2556.txt	Model Classification: negative
File: cv015_29356.txt	Model Classification: negative
File: cv714_19704.txt	Model Classification: negative
File: cv406_22199.txt	Model Classification: negative
File: cv857_17527.txt	Model Classification: negative
File: cv172_12037.txt	Model Classification: positive
File: cv248_15672.txt	Model Classification: negative
File: cv685_5710.txt	Model Classification: negative
File: cv049_21917.txt	Model Classification: positive
File: cv116_28734.txt	Model Classification: negative
File: cv696_29619.txt	Model Classification: negative
File: cv131_11568.txt	Model Classification: negative
File: cv726_4365.txt	Model Classification: negative
File: cv240_15948.txt	Model Classification: positive
File: cv258_5627.txt	Model Classification: negative
File: cv661_25780.txt	Model Classification: negative
File: cv494_18689.txt	Model Classification: negative
File: cv690_5425.txt	Model Classification: positive
File: cv936_17473.txt	Model Classification: negative
File: cv022_14227.txt	Model Classification: negative
File: cv525_17930.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

File: cv205_9676.txt	Model Classification: positive
File: cv458_9000.txt	Model Classification: negative
File: cv816_15257.txt	Model Classification: negative
File: cv365_12442.txt	Model Classification: negative
File: cv219_19874.txt	Model Classification: negative
File: cv342_20917.txt	Model Classification: negative
File: cv247_14668.txt	Model Classification: negative
File: cv585_23576.txt	Model Classification: positive
File: cv166_11959.txt	Model Classification: negative
File: cv360_8927.txt	Model Classification: negative
File: cv318_11146.txt	Model Classification: negative
File: cv415_23674.txt	Model Classification: negative
File: cv935_24977.txt	Model Classification: negative
File: cv030_22893.txt	Model Classification: negative
File: cv149_17084.txt	Model Classification: negative
File: cv705_11973.txt	Model Classification: negative
File: cv993_29565.txt	Model Classification: negative
File: cv787_15277.txt	Model Classification: negative
File: cv199_9721.txt	Model Classification: negative
File: cv740_13643.txt	Model Classification: positive
File: cv295_17060.txt	Model Classification: negative
File: cv853_29119.txt	Model Classification: negative
File: cv382_8393.txt	Model Classification: negative
File: cv429_7937.txt	Model Classification: negative
File: cv598_18184.txt	Model Classification: positive
File: cv673_25874.txt	Model Classification: negative
File: cv907_3193.txt	Model Classification: negative
File: cv388_12810.txt	Model Classification: positive
File: cv407_23928.txt	Model Classification: negative

NLP – Assignment 1 – Writeup

Loss after epoch 0 is: 0.69315
Loss after epoch 100 is: 0.58929
Loss after epoch 200 is: 0.53106
Loss after epoch 300 is: 0.48553
Loss after epoch 400 is: 0.44881
Loss after epoch 500 is: 0.41839
Loss after epoch 600 is: 0.39262
Loss after epoch 700 is: 0.37042
Loss after epoch 800 is: 0.35100
Loss after epoch 900 is: 0.33381
Loss after epoch 1000 is: 0.31845
Loss after epoch 1100 is: 0.30460
Loss after epoch 1200 is: 0.29204
Loss after epoch 1300 is: 0.28057
Loss after epoch 1400 is: 0.27004
Loss after epoch 1500 is: 0.26034
Loss after epoch 1600 is: 0.25135
Loss after epoch 1700 is: 0.24300
Loss after epoch 1800 is: 0.23521
Loss after epoch 1900 is: 0.22793
Loss after epoch 2000 is: 0.22110
Loss after epoch 2100 is: 0.21469
Loss after epoch 2200 is: 0.20865
Loss after epoch 2300 is: 0.20294
Loss after epoch 2400 is: 0.19755
Loss after epoch 2500 is: 0.19244
Loss after epoch 2600 is: 0.18759
Loss after epoch 2700 is: 0.18298
Loss after epoch 2800 is: 0.17860
Loss after epoch 2900 is: 0.17442

NLP – Assignment 1 – Writeup

Loss after epoch 3000 is: 0.17043
Loss after epoch 3100 is: 0.16662
Loss after epoch 3200 is: 0.16297
Loss after epoch 3300 is: 0.15948
Loss after epoch 3400 is: 0.15614
Loss after epoch 3500 is: 0.15293
Loss after epoch 3600 is: 0.14985
Loss after epoch 3700 is: 0.14689
Loss after epoch 3800 is: 0.14404
Loss after epoch 3900 is: 0.14130
Loss after epoch 4000 is: 0.13865
Loss after epoch 4100 is: 0.13611
Loss after epoch 4200 is: 0.13365
Loss after epoch 4300 is: 0.13128
Loss after epoch 4400 is: 0.12899
Loss after epoch 4500 is: 0.12678
Loss after epoch 4600 is: 0.12464
Loss after epoch 4700 is: 0.12257
Loss after epoch 4800 is: 0.12056
Loss after epoch 4900 is: 0.11862
Loss after epoch 5000 is: 0.11674
Loss after epoch 5100 is: 0.11491
Loss after epoch 5200 is: 0.11314
Loss after epoch 5300 is: 0.11142
Loss after epoch 5400 is: 0.10975
Loss after epoch 5500 is: 0.10813
Loss after epoch 5600 is: 0.10656
Loss after epoch 5700 is: 0.10503
Loss after epoch 5800 is: 0.10354
Loss after epoch 5900 is: 0.10209

NLP – Assignment 1 – Writeup

Loss after epoch 6000 is: 0.10068
Loss after epoch 6100 is: 0.09931
Loss after epoch 6200 is: 0.09797
Loss after epoch 6300 is: 0.09667
Loss after epoch 6400 is: 0.09540
Loss after epoch 6500 is: 0.09416
Loss after epoch 6600 is: 0.09295
Loss after epoch 6700 is: 0.09178
Loss after epoch 6800 is: 0.09063
Loss after epoch 6900 is: 0.08951
Loss after epoch 7000 is: 0.08841
Loss after epoch 7100 is: 0.08734
Loss after epoch 7200 is: 0.08630
Loss after epoch 7300 is: 0.08528
Loss after epoch 7400 is: 0.08428
Loss after epoch 7500 is: 0.08331
Loss after epoch 7600 is: 0.08235
Loss after epoch 7700 is: 0.08142
Loss after epoch 7800 is: 0.08051
Loss after epoch 7900 is: 0.07962
Loss after epoch 8000 is: 0.07874
Loss after epoch 8100 is: 0.07789
Loss after epoch 8200 is: 0.07705
Loss after epoch 8300 is: 0.07623
Loss after epoch 8400 is: 0.07543
Loss after epoch 8500 is: 0.07464
Loss after epoch 8600 is: 0.07387
Loss after epoch 8700 is: 0.07311
Loss after epoch 8800 is: 0.07237
Loss after epoch 8900 is: 0.07164

NLP – Assignment 1 – Writeup

Loss after epoch 9000 is: 0.07093

Loss after epoch 9100 is: 0.07023

Loss after epoch 9200 is: 0.06954

Loss after epoch 9300 is: 0.06887

Loss after epoch 9400 is: 0.06821

Loss after epoch 9500 is: 0.06756

Loss after epoch 9600 is: 0.06692

Loss after epoch 9700 is: 0.06630

Loss after epoch 9800 is: 0.06568

Loss after epoch 9900 is: 0.06508

Loss after epoch 10000 is: 0.06449

Done after **10001** epochs with final cost: **0.06449**