cosSimScoresList[ 0 ] = (0, 0.016380446956997974)

cosSimScoresList[ 1 ] = (1, 0.18149296974189377)

cosSimScoresList[ 2 ] = (3, 0.130410097650556)

cosSimScoresList[ 3 ] = (4, 0.1191294611973798)

cosSimScoresList[ 4 ] = (5, 0.05303561515807138)

len(rankCosSimList) = 1079

rankCosSimList[ 0 ] = (323, 0.36102506311675114)

rankCosSimList[ 1 ] = (322, 0.3515479432650447)

rankCosSimList[ 2 ] = (1394, 0.3512276970366803)

rankCosSimList[ 3 ] = (628, 0.3464697753459441)

rankCosSimList[ 4 ] = (179, 0.310596542107325)

perDocCorp[322] =

vorticity interaction at an axisymmetric stagnation point in a viscous incompressible fluid . the purpose of the present note is to give an exact solution of the incompressible navier-stokes equations at an axisymmetric stagnation point with vorticity in the oncoming flow which varies linearly with distance from the axis . this solution has application to the hypersonic axisymmetric blunt body problem, for which lighthill has shown the vorticity in the inviscid shock layer is very nearly of this form .

perDocCorp[323] =

vorticity effect on the stagnation point flow of a viscous incompressible fluid . the effect of vorticity on axisymmetric stagnation point boundary layer calculations is investigated by calculating a perturbation to the stagnation point flow . the shear caused by the vorticity effect is found to be surprisingly large,.the slope of the shear curve /at zero vorticity/ as calculated by kemp agrees perfectly with the value deduced in this note .

perDocCorp[324] =

heat transfer to constant property laminar boundary layer flows with power function free stream velocity and wall temperature variation . numerical computations have been performed for the boundary-layer form of the energy equation for incompressible flows with power-function variation of free-stream velocity (u = cx) and of wall temperature (t = ax), the pertinent solutions of the momentum equation in this case being those of hartree . the numerical computations given herein are to some extent a repetition of those given by schuh and by chapman and rubesin, the object of the present computations being the resolution of discrepancies appearing in the previous solutions and an extension of their range . ibm machine calculations were employed in the finite difference calculation presently utilized, the results thereof covering a range of wall-temperature function exponents from values of m(4, 1, 0, -0.0904) . the accuracy of the numerical computations is examined in detail, and the accuracy of the computed functions at the wall, which determine the heat-transfer rate, is estimated to be within 2 per cent . examination of the results reveals that the results of schuh for the flat plate are in error . for the range of the calculations, it was found that the local heat-transfer coefficient can, with the exception of large negative values, be expressed within 5 per cent as where the exponent of the prandtl number varies from 0.254 to 0.367 for -0.0904 and where the function can be approximated by the equation

q\_tuple\_words = (u'investig', 'transfer', u'gener', 'shock', 'effect', u'bodi', 'heat', 'blunt', u'vortic')

323

perDocCorpClean[322] = [u'vortic', u'interact', u'axisymmetr', u'stagnat', 'point', u'viscou', u'incompress', 'fluid', u'purpos', 'present', 'note', 'give', 'exact', u'solut', u'incompress', 'navier', u'stoke', u'equat', u'axisymmetr', u'stagnat', 'point', u'vortic', u'oncom', 'flow', u'vari', u'linearli', u'distanc', u'axi', u'solut', u'applic', u'hyperson', u'axisymmetr', 'blunt', u'bodi', 'problem', u'lighthil', 'shown', u'vortic', 'inviscid', 'shock', 'layer', 'form']

324

perDocCorpClean[323] = [u'vortic', 'effect', u'stagnat', 'point', 'flow', u'viscou', u'incompress', 'fluid', 'effect', u'vortic', u'axisymmetr', u'stagnat', 'point', u'boundari', 'layer', u'calcul', u'investig', u'calcul', u'perturb', u'stagnat', 'point', 'flow', 'shear', u'caus', u'vortic', 'effect', 'found', u'surprisingli', u'larg', 'slope', 'shear', u'curv', u'vortic', u'calcul', 'kemp', u'agre', u'perfectli', u'deduc', 'note']

325

perDocCorpClean[324] = ['heat', 'transfer', 'constant', u'properti', 'laminar', u'boundari', 'layer', u'flow', 'power', 'function', 'free', 'stream', u'veloc', 'wall', u'temperatur', u'variat', u'numer', u'comput', u'perform', u'boundari', 'layer', 'form', u'energi', u'equat', u'incompress', u'flow', 'power', 'function', u'variat', 'free', 'stream', u'veloc', 'wall', u'temperatur', u'pertin', u'solut', 'momentum', u'equat', 'case', u'hartre', u'numer', u'comput', 'extent', u'repetit', 'schuh', 'chapman', 'rubesin', 'object', 'present', u'comput', u'resolut', u'discrep', u'appear', u'previou', u'solut', u'extens', u'rang', 'ibm', u'machin', u'calcul', u'employ', u'finit', u'differ', u'calcul', u'present', u'util', u'result', 'thereof', u'cover', u'rang', 'wall', u'temperatur', 'function', u'expon', u'valu', u'accuraci', u'numer', u'comput', u'examin', 'detail', u'accuraci', u'comput', u'function', 'wall', u'determin', 'heat', 'transfer', 'rate', u'estim', 'cent', u'examin', u'result', u'reveal', u'result', 'schuh', 'flat', 'plate', 'error', u'rang', u'calcul', 'found', 'local', 'heat', 'transfer', u'coeffici', u'except', u'larg', u'neg', u'valu', u'express', 'cent', u'expon', 'prandtl', 'number', u'vari', 'function', u'approxim', u'equat']

perDocLen[322] = 42

perDocLen[323] = 39

perDocLen[324] = 118

fdistPerDoc[322] = <FreqDist with 34 samples and 42 outcomes>

fdistPerDoc[323] = <FreqDist with 26 samples and 39 outcomes>

fdistPerDoc[324] = <FreqDist with 75 samples and 118 outcomes>

fdistPerDocLen[322] = 34

fdistPerDocLen[323] = 26

fdistPerDocLen[324] = 75

freq\_word\_PerDoc[322] =

0 1

8 axisymmetr 3

33 vortic 3

22 incompress 2

3 point 2

12 solut 2

.. ... ..

27 shock 1

9 shown 1

23 stoke 1

7 vari 1

6 viscou 1

[34 rows x 2 columns]

freq\_word\_PerDoc[323] =

0 1

25 vortic 4

21 calcul 3

15 effect 3

5 point 3

4 stagnat 3

.. ... ..

18 perfectli 1

10 perturb 1

0 slope 1

7 surprisingli 1

3 viscou 1

[26 rows x 2 columns]

freq\_word\_PerDoc[324] =

0 1

15 comput 5

37 function 5

6 wall 4

67 calcul 3

69 equat 3

.. ... ..

59 reveal 1

52 rubesin 1

10 thereof 1

48 util 1

18 vari 1

[75 rows x 2 columns]

docVecLen[322] = 31.4399296248

docVecLen[323] = 33.8475550064

docVecLen[324] = 58.4904609009

cosSimScoresList[0] = (0, 0.0163) (0, 0.016380446956997974)

cosSimScoresList[1] = (1, 0.1814) (1, 0.18149296974189377)

cosSimScoresList[2] = (3, 0.1304) (3, 0.130410097650556)

rankCosSimList[0] = (323, 0.3610) (323, 0.36102506311675114)

rankCosSimList[1] = (322, 0.3515) (322, 0.3515479432650447)

rankCosSimList[2] = (1394, 0.3512) (1394, 0.3512276970366803)

queries\_from\_file = getQueries(dir\_path\_queries)

INPUT:

queries\_from\_file

postings

fdistCorpus

# -----------------------------------------------------------

query = []

input = ""

input = queries\_from\_file[1]

print('input = queries\_from\_file[1]')

print('input = ', input)

query.append(input)

q = query

qReview, qDocnum, qTexts = getQLines(q)

qCorp = getQCorp(qTexts)

qClean, qLen, fdistQ, fdistQLen, freq\_word\_Q, freq\_word\_Qorpus\

= getQClean(qCorp)

q\_tuple\_words, q\_tuple\_freq\_i = getQTuples(freq\_word\_Q)

retDoc = getRetDoc(postings, q\_tuple\_words)

cosSimScoresList = getCosSimScoresList(retDoc, q\_tuple\_words,

q\_tuple\_freq\_i, fdistCorpus)

rankCosSimList = getRankCosSimList(cosSimScoresList)

# -----------------------------------------------------------

cosSimScoresList[ 0 ] = (2, 0.019995459155317596)

cosSimScoresList[ 1 ] = (3, 0.01683139014534385)

cosSimScoresList[ 2 ] = (4, 0.0337335290517857)

cosSimScoresList[ 3 ] = (6, 0.07592873827055797)

cosSimScoresList[ 4 ] = (7, 0.18992042873343312)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 12

rankCosSimList[ 0 ] = (13, 0.31599128224987927)

rankCosSimList[ 1 ] = (8, 0.20718006491222904)

rankCosSimList[ 2 ] = (12, 0.2027888614874796)

rankCosSimList[ 3 ] = (7, 0.18992042873343312)

rankCosSimList[ 4 ] = (9, 0.14865817476885393)

-------------------------------------------------------------------------

cosSimScoresList[ 0 ] = (4, 0.026799866277800698)

cosSimScoresList[ 1 ] = (6, 0.06773316889812754)

cosSimScoresList[ 2 ] = (7, 0.20472948626806542)

cosSimScoresList[ 3 ] = (8, 0.1994653617440986)

cosSimScoresList[ 4 ] = (9, 0.15939368053933003)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 8

rankCosSimList[ 0 ] = (13, 0.32685744395235766)

rankCosSimList[ 1 ] = (12, 0.21326042350403546)

rankCosSimList[ 2 ] = (7, 0.20472948626806542)

rankCosSimList[ 3 ] = (8, 0.1994653617440986)

rankCosSimList[ 4 ] = (9, 0.15939368053933003)

rankListPerQ[ 0 ] = (13, 0.32685744395235766)

rankListPerQ[ 1 ] = (12, 0.21326042350403546)

rankListPerQ[ 2 ] = (7, 0.20472948626806542)

rankListPerQ[ 3 ] = (8, 0.1994653617440986)

rankListPerQ[ 4 ] = (9, 0.15939368053933003)

cosSimScoresList[ 0 ] = (3, 0.041341943337189144)

cosSimScoresList[ 1 ] = (4, 0.04640230014235631)

cosSimScoresList[ 2 ] = (7, 0.2237130281585963)

cosSimScoresList[ 3 ] = (8, 0.022148172535910435)

cosSimScoresList[ 4 ] = (9, 0.06852132422349984)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (7, 0.2237130281585963)

rankCosSimList[ 1 ] = (10, 0.12344687807513793)

rankCosSimList[ 2 ] = (9, 0.06852132422349984)

rankCosSimList[ 3 ] = (11, 0.058464593490

cosSimScoresList[ 0 ] = (3, 0.041341943337189144)

cosSimScoresList[ 1 ] = (4, 0.04640230014235631)

cosSimScoresList[ 2 ] = (7, 0.2237130281585963)

cosSimScoresList[ 3 ] = (8, 0.022148172535910435)

cosSimScoresList[ 4 ] = (9, 0.06852132422349984)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (7, 0.2237130281585963)

rankCosSimList[ 1 ] = (10, 0.12344687807513793)

rankCosSimList[ 2 ] = (9, 0.06852132422349984)

rankCosSimList[ 3 ] = (11, 0.058464593490776075)

rankCosSimList[ 4 ] = (4, 0.04640230014235631)

rankListPerQ[ 0 ] = (7, 0.2237130281585963)

rankListPerQ[ 1 ] = (10, 0.12344687807513793)

rankListPerQ[ 2 ] = (9, 0.06852132422349984)

rankListPerQ[ 3 ] = (11, 0.058464593490776075)

rankListPerQ[ 4 ] = (4, 0.04640230014235631)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 7), (1, 10), (1, 9), (1, 11), (1, 4), (1, 3), (1, 14), (1, 8), (1, 13), (1, 15)]

//////////////////////////////////////////////////////////

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.019995459155317596)

cosSimScoresList[ 1 ] = (3, 0.01683139014534385)

cosSimScoresList[ 2 ] = (4, 0.0337335290517857)

cosSimScoresList[ 3 ] = (6, 0.07592873827055797)

cosSimScoresList[ 4 ] = (7, 0.18992042873343312)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 12

rankCosSimList[ 0 ] = (13, 0.31599128224987927)

rankCosSimList[ 1 ] = (8, 0.20718006491222904)

rankCosSimList[ 2 ] = (12, 0.2027888614874796)

rankCosSimList[ 3 ] = (7, 0.18992042873343312)

rankCosSimList[ 4 ] = (9, 0.14865817476885393)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.019995459155317596)

cosSimScoresList[ 1 ] = (3, 0.01683139014534385)

cosSimScoresList[ 2 ] = (4, 0.0337335290517857)

cosSimScoresList[ 3 ] = (6, 0.07592873827055797)

cosSimScoresList[ 4 ] = (7, 0.18992042873343312)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 12

rankCosSimList[ 0 ] = (13, 0.31599128224987927)

rankCosSimList[ 1 ] = (8, 0.20718006491222904)

rankCosSimList[ 2 ] = (12, 0.2027888614874796)

rankCosSimList[ 3 ] = (7, 0.18992042873343312)

rankCosSimList[ 4 ] = (9, 0.14865817476885393)

rankListPerQ[ 0 ] = (13, 0.31599128224987927)

rankListPerQ[ 1 ] = (8, 0.20718006491222904)

rankListPerQ[ 2 ] = (12, 0.2027888614874796)

rankListPerQ[ 3 ] = (7, 0.18992042873343312)

rankListPerQ[ 4 ] = (9, 0.14865817476885393)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 13), (1, 8), (1, 12), (1, 7), (1, 9), (1, 6), (1, 10), (1, 11), (1, 4), (1, 2), (1, 3), (1, 15)]

//////////////////////////////////////////////////////////

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.10783598079816142)

cosSimScoresList[ 1 ] = (2, 0.07717898940142882)

cosSimScoresList[ 2 ] = (3, 0.01785935040212166)

cosSimScoresList[ 3 ] = (4, 0.011017158629140126)

cosSimScoresList[ 4 ] = (6, 0.06997765324779832)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 14

rankCosSimList[ 0 ] = (11, 0.13336743914144994)

rankCosSimList[ 1 ] = (12, 0.11708687369986584)

rankCosSimList[ 2 ] = (1, 0.10783598079816142)

rankCosSimList[ 3 ] = (7, 0.09166850208855237)

rankCosSimList[ 4 ] = (2, 0.07717898940142882)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.10783598079816142)

cosSimScoresList[ 1 ] = (2, 0.07717898940142882)

cosSimScoresList[ 2 ] = (3, 0.01785935040212166)

cosSimScoresList[ 3 ] = (4, 0.011017158629140126)

cosSimScoresList[ 4 ] = (6, 0.06997765324779832)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 14

rankCosSimList[ 0 ] = (11, 0.13336743914144994)

rankCosSimList[ 1 ] = (12, 0.11708687369986584)

rankCosSimList[ 2 ] = (1, 0.10783598079816142)

rankCosSimList[ 3 ] = (7, 0.09166850208855237)

rankCosSimList[ 4 ] = (2, 0.07717898940142882)

rankListPerQ[ 0 ] = (11, 0.13336743914144994)

rankListPerQ[ 1 ] = (12, 0.11708687369986584)

rankListPerQ[ 2 ] = (1, 0.10783598079816142)

rankListPerQ[ 3 ] = (7, 0.09166850208855237)

rankListPerQ[ 4 ] = (2, 0.07717898940142882)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 11), (1, 12), (1, 1), (1, 7), (1, 2), (1, 6), (1, 10), (1, 14), (1, 8), (1, 9), (1, 3), (1, 15), (1, 13), (1, 4)]

//////////////////////////////////////////////////////////

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.0)

cosSimScoresList[ 1 ] = (3, 0.0)

cosSimScoresList[ 2 ] = (5, 0.018449706005844103)

cosSimScoresList[ 3 ] = (6, 0.06745398956153906)

cosSimScoresList[ 4 ] = (7, 0.006256225847793216)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (8, 0.16023614212688597)

rankCosSimList[ 1 ] = (10, 0.14117792847729882)

rankCosSimList[ 2 ] = (9, 0.12854297857825292)

rankCosSimList[ 3 ] = (11, 0.09916930913358309)

rankCosSimList[ 4 ] = (6, 0.06745398956153906)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.08579190714914271)

cosSimScoresList[ 1 ] = (4, 0.004460608395866064)

cosSimScoresList[ 2 ] = (6, 0.10514297840753244)

cosSimScoresList[ 3 ] = (7, 0.018449706005844103)

cosSimScoresList[ 4 ] = (8, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (10, 0.16023614212688597)

rankCosSimList[ 1 ] = (12, 0.14117792847729882)

rankCosSimList[ 2 ] = (11, 0.12854297857825292)

rankCosSimList[ 3 ] = (6, 0.10514297840753244)

rankCosSimList[ 4 ] = (13, 0.09916930913358309)

rankListPerQ[ 0 ] = (10, 0.16023614212688597)

rankListPerQ[ 1 ] = (12, 0.14117792847729882)

rankListPerQ[ 2 ] = (11, 0.12854297857825292)

rankListPerQ[ 3 ] = (6, 0.10514297840753244)

rankListPerQ[ 4 ] = (13, 0.09916930913358309)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 10), (1, 12), (1, 11), (1, 6), (1, 13), (1, 2), (1, 8), (1, 7), (1, 9), (1, 4)]

//////////////////////////////////////////////////////////

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

cosSimScoresList[ 0 ] = (1, 0.0)

cosSimScoresList[ 1 ] = (3, 0.0)

cosSimScoresList[ 2 ] = (5, 0.018449706005844103)

cosSimScoresList[ 3 ] = (6, 0.06745398956153906)

cosSimScoresList[ 4 ] = (7, 0.006256225847793216)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (8, 0.16023614212688597)

rankCosSimList[ 1 ] = (10, 0.14117792847729882)

rankCosSimList[ 2 ] = (9, 0.12854297857825292)

rankCosSimList[ 3 ] = (11, 0.09916930913358309)

rankCosSimList[ 4 ] = (6, 0.06745398956153906)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

runfile('C:/Users/derekc/Dropbox/\_\_cis833irtm/hw2/2019-spyder-from-scratch\_RANKING.py', wdir='C:/Users/derekc/Dropbox/\_\_cis833irtm/hw2')

corpusLen[ 0 ] = 1680

fdistCorpus[ 0 ] = <FreqDist with 519 samples and 1680 outcomes>

fdistCorpusLen[ 0 ] = 519

freq\_word\_Corpus[ 0 ] =

0 1

211 number 42

26 shock 35

257 mach 30

365 layer 27

368 cone 23

.. ... ..

467 width 1

144 wind 1

241 womersley 1

97 work 1

74 zerolift 1

[519 rows x 2 columns]

fdistPerDoc[x].most\_common(10) =

[(u'number', 42), ('shock', 35), ('mach', 30), ('layer', 27), (u'cone', 23), ('heat', 23), (u'result', 21), (u'boundari', 21), ('transfer', 21), ('flow', 20)]

len(corpusClean) = 1

fdistCorpus = [FreqDist({u'number': 42, 'shock': 35, 'mach': 30, 'layer': 27, u'cone': 23, 'heat': 23, u'result': 21, u'boundari': 21, 'transfer': 21, 'flow': 20, ...})]

file\_names[0:6] = ['cranfield0111', 'cranfield0150', 'cranfield0156', 'cranfield0225', 'cranfield0400', 'cranfield0630']

len(file\_names) = 15

file\_idx[0:6] = [1, 2, 3, 4, 5, 6]

file\_zip = <itertools.izip object at 0x000000001040BBC8>

len(positings) = 519

DFfirst20 = {u'millisecond': 1, u'represent': 1, u'program': 1, 'concept': 1, u'entropi': 1, u'edg': 2, u'antisymmetr': 1, 'fay': 1, u'intermedi': 1, u'asymptot': 1, 'eckert': 1, 'wave': 4, 'tail': 1, u'correl': 1, u'ellipt': 2, u'ga': 1, u'volum': 1, u'depend': 1, 'downstream': 2, u'consider': 1}

type(df) = <type 'collections.defaultdict'>

len(df) = 519

QUERY TEST TEXT TO ENTER:

"queries.txt" Input

Q2 = has anyone investigated the effect of shock generated vorticity on heat transfer to a blunt body .

Input for <data-15> folder:

type(queries\_from\_file) = <type 'list'>

queries\_from\_file[0] = in practice, how close to reality are the assumptions that the flow in a hypersonic shock tube using nitrogen is non-viscous and in thermodynamic equilibrium .

queries\_from\_file[1:4] = []

queries\_from\_file[ 0 ] = in practice, how close to reality are the assumptions that the flow in a hypersonic shock tube using nitrogen is non-viscous and in thermodynamic equilibrium .

input = queries\_from\_file[1]

input = in practice, how close to reality are the assumptions that the flow in a hypersonic shock tube using nitrogen is non-viscous and in thermodynamic equilibrium .

qTexts = ['in practice, how close to reality are the assumptions that the flow in a hypersonic shock tube using nitrogen is non-viscous and in thermodynamic equilibrium . ']

DONE ASSIGNING DOCNUM TITLES AND TEXTS

-----END OF getQLines-----

qfdist = <FreqDist with 12 samples and 12 outcomes>

type(qfdist) = <class 'nltk.probability.FreqDist'>

qfdist.items() =

[(u'hyperson', 1), (u'viscou', 1), (u'practic', 1), (u'thermodynam', 1), ('tube', 1), ('shock', 1), ('flow', 1), (u'assumpt', 1), ('nitrogen', 1), ('close', 1), ('equilibrium', 1), (u'realiti', 1)]

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

fdistQ[ 0 ] = <FreqDist with 12 samples and 12 outcomes>

fdistQLen[ 0 ] = 12

freq\_word\_Q[ 0 ] =

[u'hyperson', 1]

freq\_word\_Qorpus[ 0 ] =

0 1

7 assumpt 1

9 close 1

10 equilibrium 1

6 flow 1

0 hyperson 1

.. ... ..

11 realiti 1

5 shock 1

3 thermodynam 1

4 tube 1

1 viscou 1

[12 rows x 2 columns]

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

type(fdistQ) = <type 'list'>

type(freq\_word\_Q) = <type 'list'>

type(freq\_word\_Qorpus) = <type 'list'>

fdistQ = [FreqDist({u'hyperson': 1, u'viscou': 1, u'practic': 1, u'thermodynam': 1, 'tube': 1, 'shock': 1, 'flow': 1, u'assumpt': 1, 'nitrogen': 1, 'close': 1, ...})]

freq\_word\_Q = [[u'hyperson', 1], [u'viscou', 1], [u'practic', 1], [u'thermodynam', 1], ['tube', 1], ['shock', 1], ['flow', 1], [u'assumpt', 1], ['nitrogen', 1], ['close', 1], ['equilibrium', 1], [u'realiti', 1]]

freq\_word\_Qorpus =

[ 0 1

7 assumpt 1

9 close 1

10 equilibrium 1

6 flow 1

0 hyperson 1

.. ... ..

11 realiti 1

5 shock 1

3 thermodynam 1

4 tube 1

1 viscou 1

[12 rows x 2 columns]]

freq\_word\_Q[:] =

[[u'hyperson', 1], [u'viscou', 1], [u'practic', 1], [u'thermodynam', 1], ['tube', 1], ['shock', 1], ['flow', 1], [u'assumpt', 1], ['nitrogen', 1], ['close', 1], ['equilibrium', 1], [u'realiti', 1]]

type(freq\_word\_Q) = <type 'list'>

qClean0 =

[u'practic', 'close', u'realiti', u'assumpt', 'flow', u'hyperson', 'shock', 'tube', 'nitrogen', u'viscou', u'thermodynam', 'equilibrium']

type(qClean0) = <type 'str'>

q\_tuple\_words = (u'hyperson', u'viscou', u'practic', u'thermodynam', 'tube', 'shock', 'flow', u'assumpt', 'nitrogen', 'close', 'equilibrium', u'realiti')

q\_tuple\_freq\_i = (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)

fdistCorpus = [FreqDist({u'number': 42, 'shock': 35, 'mach': 30, 'layer': 27, u'cone': 23, 'heat': 23, u'result': 21, u'boundari': 21, 'transfer': 21, 'flow': 20, ...})]

qVecLen = 6.20892070774

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

cosSimScoresList[ 5 ] = (8, 0.006256225847793216)

cosSimScoresList[ 6 ] = (9, 0.16023614212688597)

cosSimScoresList[ 7 ] = (10, 0.12854297857825292)

cosSimScoresList[ 8 ] = (11, 0.14117792847729882)

cosSimScoresList[ 9 ] = (12, 0.09916930913358309)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

rankCosSimList[ 5 ] = (1, 0.08579190714914271)

rankCosSimList[ 6 ] = (7, 0.06745398956153906)

rankCosSimList[ 7 ] = (6, 0.018449706005844103)

rankCosSimList[ 8 ] = (8, 0.006256225847793216)

rankCosSimList[ 9 ] = (3, 0.004460608395866064)

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post\_word\_keys = [set([11, 12, 7]), set([9, 12, 5]), set([]), set([]), set([9, 10]), set([5, 7, 8, 9, 10, 11, 12]), set([1, 3, 5, 6, 7, 9, 11]), set([9, 7]), set([]), set([1, 5]), set([]), set([])]

sets = [set([11, 12, 7]), set([9, 12, 5]), set([]), set([]), set([9, 10]), set([5, 7, 8, 9, 10, 11, 12]), set([1, 3, 5, 6, 7, 9, 11]), set([9, 7]), set([]), set([1, 5]), set([]), set([])]

docid\_set = set([1, 3, 5, 6, 7, 8, 9, 10, 11, 12])

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retDoc[ 1 ] = 1

retDoc[ 3 ] = 3

retDoc[ 5 ] = 5

retDoc[ 6 ] = 6

retDoc[ 7 ] = 7

retDoc[ 8 ] = 8

retDoc[ 9 ] = 9

retDoc[ 10 ] = 10

retDoc[ 11 ] = 11

retDoc[ 12 ] = 12

retDoc = set([1, 3, 5, 6, 7, 8, 9, 10, 11, 12])

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OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

cosSimScoresList[ 0 ] = (1, 0.08579190714914271)

cosSimScoresList[ 1 ] = (3, 0.004460608395866064)

cosSimScoresList[ 2 ] = (5, 0.10514297840753244)

cosSimScoresList[ 3 ] = (6, 0.018449706005844103)

cosSimScoresList[ 4 ] = (7, 0.06745398956153906)

cosSimScoresList[ 5 ] = (8, 0.006256225847793216)

cosSimScoresList[ 6 ] = (9, 0.16023614212688597)

cosSimScoresList[ 7 ] = (10, 0.12854297857825292)

cosSimScoresList[ 8 ] = (11, 0.14117792847729882)

cosSimScoresList[ 9 ] = (12, 0.09916930913358309)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

rankCosSimList[ 0 ] = (9, 0.16023614212688597)

rankCosSimList[ 1 ] = (11, 0.14117792847729882)

rankCosSimList[ 2 ] = (10, 0.12854297857825292)

rankCosSimList[ 3 ] = (5, 0.10514297840753244)

rankCosSimList[ 4 ] = (12, 0.09916930913358309)

rankCosSimList[ 5 ] = (1, 0.08579190714914271)

rankCosSimList[ 6 ] = (7, 0.06745398956153906)

rankCosSimList[ 7 ] = (6, 0.018449706005844103)

rankCosSimList[ 8 ] = (8, 0.006256225847793216)

rankCosSimList[ 9 ] = (3, 0.004460608395866064)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.08579190714914271)

cosSimScoresList[ 1 ] = (4, 0.004460608395866064)

cosSimScoresList[ 2 ] = (6, 0.10514297840753244)

cosSimScoresList[ 3 ] = (7, 0.018449706005844103)

cosSimScoresList[ 4 ] = (8, 0.06745398956153906)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (10, 0.16023614212688597)

rankCosSimList[ 1 ] = (12, 0.14117792847729882)

rankCosSimList[ 2 ] = (11, 0.12854297857825292)

rankCosSimList[ 3 ] = (6, 0.10514297840753244)

rankCosSimList[ 4 ] = (13, 0.09916930913358309)

rankListPerQ[ 0 ] = (10, 0.16023614212688597)

rankListPerQ[ 1 ] = (12, 0.14117792847729882)

rankListPerQ[ 2 ] = (11, 0.12854297857825292)

rankListPerQ[ 3 ] = (6, 0.10514297840753244)

rankListPerQ[ 4 ] = (13, 0.09916930913358309)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 10), (1, 12), (1, 11), (1, 6), (1, 13), (1, 2), (1, 8), (1, 7), (1, 9), (1, 4)]

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Q6

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (0, 0.03972376606249487)

cosSimScoresList[ 1 ] = (1, 0.057071307096228416)

cosSimScoresList[ 2 ] = (3, 0.025082516599825654)

cosSimScoresList[ 3 ] = (5, 0.12717512974789338)

cosSimScoresList[ 4 ] = (6, 0.20515826701164017)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 11

rankCosSimList[ 0 ] = (6, 0.20515826701164017)

rankCosSimList[ 1 ] = (5, 0.12717512974789338)

rankCosSimList[ 2 ] = (11, 0.06882954715178355)

rankCosSimList[ 3 ] = (13, 0.057765950317681655)

rankCosSimList[ 4 ] = (1, 0.057071307096228416)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.03972376606249487)

cosSimScoresList[ 1 ] = (2, 0.057071307096228416)

cosSimScoresList[ 2 ] = (4, 0.025082516599825654)

cosSimScoresList[ 3 ] = (6, 0.12717512974789338)

cosSimScoresList[ 4 ] = (7, 0.20515826701164017)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 11

rankCosSimList[ 0 ] = (7, 0.20515826701164017)

rankCosSimList[ 1 ] = (6, 0.12717512974789338)

rankCosSimList[ 2 ] = (12, 0.06882954715178355)

rankCosSimList[ 3 ] = (14, 0.057765950317681655)

rankCosSimList[ 4 ] = (2, 0.057071307096228416)

rankListPerQ[ 0 ] = (7, 0.20515826701164017)

rankListPerQ[ 1 ] = (6, 0.12717512974789338)

rankListPerQ[ 2 ] = (12, 0.06882954715178355)

rankListPerQ[ 3 ] = (14, 0.057765950317681655)

rankListPerQ[ 4 ] = (2, 0.057071307096228416)

//////////////////////////////////////////////////////////

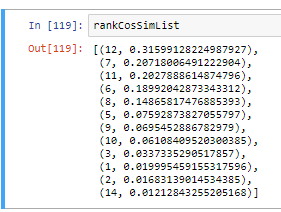
output\_qid\_docid = [(1, 7), (1, 6), (1, 12), (1, 14), (1, 2), (1, 1), (1, 10), (1, 8), (1, 4), (1, 9), (1, 15)]

//////////////////////////////////////////////////////////

Q2

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (1, 0.019995459155317596)

cosSimScoresList[ 1 ] = (2, 0.01683139014534385)

cosSimScoresList[ 2 ] = (3, 0.0337335290517857)

cosSimScoresList[ 3 ] = (5, 0.07592873827055797)

cosSimScoresList[ 4 ] = (6, 0.18992042873343312)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 12

rankCosSimList[ 0 ] = (12, 0.31599128224987927)

rankCosSimList[ 1 ] = (7, 0.20718006491222904)

rankCosSimList[ 2 ] = (11, 0.2027888614874796)

rankCosSimList[ 3 ] = (6, 0.18992042873343312)

rankCosSimList[ 4 ] = (8, 0.14865817476885393)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.019995459155317596)

cosSimScoresList[ 1 ] = (3, 0.01683139014534385)

cosSimScoresList[ 2 ] = (4, 0.0337335290517857)

cosSimScoresList[ 3 ] = (6, 0.07592873827055797)

cosSimScoresList[ 4 ] = (7, 0.18992042873343312)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 12

rankCosSimList[ 0 ] = (13, 0.31599128224987927)

rankCosSimList[ 1 ] = (8, 0.20718006491222904)

rankCosSimList[ 2 ] = (12, 0.2027888614874796)

rankCosSimList[ 3 ] = (7, 0.18992042873343312)

rankCosSimList[ 4 ] = (9, 0.14865817476885393)

rankListPerQ[ 0 ] = (13, 0.31599128224987927)

rankListPerQ[ 1 ] = (8, 0.20718006491222904)

rankListPerQ[ 2 ] = (12, 0.2027888614874796)

rankListPerQ[ 3 ] = (7, 0.18992042873343312)

rankListPerQ[ 4 ] = (9, 0.14865817476885393)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 13), (1, 8), (1, 12), (1, 7), (1, 9), (1, 6), (1, 10), (1, 11), (1, 4), (1, 2), (1, 3), (1, 15)]

//////////////////////////////////////////////////////////

Q1

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (2, 0.041341943337189144)

cosSimScoresList[ 1 ] = (3, 0.04640230014235631)

cosSimScoresList[ 2 ] = (6, 0.2237130281585963)

cosSimScoresList[ 3 ] = (7, 0.022148172535910435)

cosSimScoresList[ 4 ] = (8, 0.06852132422349984)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (6, 0.2237130281585963)

rankCosSimList[ 1 ] = (9, 0.12344687807513793)

rankCosSimList[ 2 ] = (8, 0.06852132422349984)

rankCosSimList[ 3 ] = (10, 0.058464593490776075)

rankCosSimList[ 4 ] = (3, 0.04640230014235631)

OUTPUT of cosSimScoresList values

cosSimScoresList[ 0 ] = (3, 0.041341943337189144)

cosSimScoresList[ 1 ] = (4, 0.04640230014235631)

cosSimScoresList[ 2 ] = (7, 0.2237130281585963)

cosSimScoresList[ 3 ] = (8, 0.022148172535910435)

cosSimScoresList[ 4 ] = (9, 0.06852132422349984)

type(rankCosSimList) = <type 'list'>

len(rankCosSimList) = 10

rankCosSimList[ 0 ] = (7, 0.2237130281585963)

rankCosSimList[ 1 ] = (10, 0.12344687807513793)

rankCosSimList[ 2 ] = (9, 0.06852132422349984)

rankCosSimList[ 3 ] = (11, 0.058464593490776075)

rankCosSimList[ 4 ] = (4, 0.04640230014235631)

rankListPerQ[ 0 ] = (7, 0.2237130281585963)

rankListPerQ[ 1 ] = (10, 0.12344687807513793)

rankListPerQ[ 2 ] = (9, 0.06852132422349984)

rankListPerQ[ 3 ] = (11, 0.058464593490776075)

rankListPerQ[ 4 ] = (4, 0.04640230014235631)

//////////////////////////////////////////////////////////

output\_qid\_docid = [(1, 7), (1, 10), (1, 9), (1, 11), (1, 4), (1, 3), (1, 14), (1, 8), (1, 13), (1, 15)]

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