

Звіт по комп'ютерному практикуму №1

Експериментальна оцінка ентропії на символ джерела відкритого тексту

Виконали

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Мета роботи: Засвоєння понять ентропії на символ джерела та його надлишковості, вивчення та порівняння різних моделей джерела відкритого тексту для наближеного визначення ентропії, набуття практичних навичок щодо оцінки ентропії на символ джерела.

Порядок виконання роботи:

1. Уважно прочитати методичні вказівки до виконання комп'ютерного практикуму.
2. Написати програми для підрахунку частот букв і частот біграм в тексті, а також підрахунку H_1 та H_2 за безпосереднім означенням. Підрахувати частоти букв та біграм, а також значення H_1 та H_2 на довільно обраному тексті російською мовою достатньої довжини, де імовірності замінити відповідними частотами. Також одержати значення H_1 та H_2 на тому ж тексті, в якому вилучено всі пробіли.
3. За допомогою програми CoolPinkProgram оцінити значення $H^{(10)}$, $H^{(20)}$, $H^{(30)}$.
4. Використовуючи отримані значення ентропії, оцінити надлишковість російської мови в різних моделях джерела.

Name: monogramWhitespace.md

Data entropy: 4.367

Data redundancy: 0.12659998

Text	Entropy
" "	0.16479462
"o"	0.09515052
"e"	0.0683736
"a"	0.06791819
"и"	0.056586202
"H"	0.053051654
"T"	0.050136406
"c"	0.046910424
"л"	0.0406936
"B"	0.04058331
"p"	0.039217386
"к"	0.028795293
"д"	0.025504561
"M"	0.024933593
"y"	0.021999756
"п"	0.02161529
"я"	0.01781741
"г"	0.017130887
"b"	0.01583436
"Ы"	0.015448035

Text	Entropy
"з"	0.014840201
"б"	0.013994747
"ч"	0.011735661
"й"	0.008863783
"ж"	0.008542208
"ш"	0.0074231983
"х"	0.0070096105
"ю"	0.005386551
"ц"	0.0030466062
"э"	0.0024567407
"щ"	0.0024034544
"ф"	0.0018021261

Name: monogramNoWhitespace.md

Data entropy: 4.4554

Data redundancy: 0.10892

Text	Entropy
"o"	0.113924704
"e"	0.08186442
"a"	0.081319146
"и"	0.06775124
"H"	0.06351929
"T"	0.060028836
"c"	0.056166336
"л"	0.048722867
"B"	0.048590817
"p"	0.04695538
"k"	0.0344769
"Д"	0.030536873
"M"	0.029853249
"y"	0.026340535
"п"	0.02588021
"я"	0.02133297
"Г"	0.020510986
"Ь"	0.018958641
"Ы"	0.01849609
"з"	0.017768325

Text	Entropy
"б"	0.016756054
"ч"	0.014051228
"й"	0.0106127
"ж"	0.010227674
"ш"	0.008887872
"х"	0.0083926795
"ю"	0.006449373
"ц"	0.003647733
"э"	0.0029414808
"щ"	0.0028776808
"ф"	0.0021577042

Name: bigramWhitespace.md

Data entropy: 3.961

Data redundancy: 0.2078

Text	Entropy
"о "	0.021641018
"и "	0.018473586
" с"	0.017634947
"а "	0.017308725
" в"	0.016996752
"е "	0.016707396
" п"	0.0152745545
" н"	0.014869951
"то"	0.0142320655
"ст"	0.01384481
" и"	0.01192155
" о"	0.0114692375
"я "	0.0104667125
"на"	0.010024314
" к"	0.009583153
"ь "	0.009223471
"го"	0.008433472
"не"	0.008431613
"по"	0.008319775
"но"	0.008258433

Text	Entropy
"ал"	0.008210723
"ра"	0.00813637
"в "	0.008093927
"ко"	0.007920748
"ка"	0.007839579
"ов"	0.0076818885
"ни"	0.007662681
"ро"	0.007437144
" т"	0.0073686773
"ен"	0.007311054
"м "	0.007227407
"во"	0.007192089
" д"	0.0071561523
"й "	0.007085207
"л "	0.007039666
" б"	0.0068742307
"ос"	0.0067769527
"ол"	0.006451039
"ла"	0.006360267
"ер"	0.006358718
"от"	0.0062375846
"он"	0.006147122
"ор"	0.0059801377
"пр"	0.0059482283
"ли"	0.005899589
"ло"	0.005892154

Text	Entropy
"у "	0.005826785
"ре"	0.005762346
" г"	0.0057282676
"ел"	0.005657942
"ва"	0.0054039033
" м"	0.0053568133
" ч"	0.005262013
"та"	0.005216162
"ть"	0.0050730333
"ри"	0.0048843627
"за"	0.0048329355
"ск"	0.004805053
"ан"	0.0047353473
"ом"	0.004732559
"тр"	0.0047238846
"т "	0.004617932
"ат"	0.004535834
" р"	0.0044998964
"ог"	0.004486575
"од"	0.004442273
"ес"	0.0043803123
"к "	0.0043511908
"ил"	0.004340967
"де"	0.004220144
"те"	0.004191952
"ве"	0.0041708853

Text	Entropy
"ле"	0.004098391
"да"	0.0040695793
"н "	0.0040503717
"ы "	0.004040148
" е"	0.003939152
"ак"	0.0038356776
"ем"	0.00373747
"аз"	0.0037030817
" з"	0.003663427
"бы"	0.0036154075
"ме"	0.0035574741
"ет"	0.0035357878
" у"	0.0035029487
"же"	0.003494584
"до"	0.003489937
"ль"	0.003467631
"х "	0.003383984
"чт"	0.0033737607
"ас"	0.0033703528
"ти"	0.0033117998
"ав"	0.003272455
"мо"	0.003270906
"се"	0.0032644
"ой"	0.0032163805
"ю "	0.0032111139
"ег"	0.0031835414

Text	Entropy
"об"	0.003130255
"ми"	0.0031156943
"ны"	0.0030887413
"ит"	0.003045059
"ви"	0.0030091219
"ин"	0.002994561
"че"	0.0029741141
"вс"	0.0028774554
"ся"	0.0028656828
"ар"	0.0028408985
"р "	0.0028281966
"с "	0.0028058907
"им"	0.0027922594
"ис"	0.0027798673
"со"	0.0027702632
"из"	0.002764377
"ие"	0.002706134
"сь"	0.0026986988
"ру"	0.002698079
"сл"	0.0026485105
"ма"	0.0026420048
"нн"	0.002595844
"ам"	0.0025803538
"ок"	0.0025713695
" л"	0.0025416282
"ед"	0.002488342

Text	Entropy
"ки"	0.0024793579
"тв"	0.0024589107
"ня"	0.002455193
" а"	0.0024310285
"пе"	0.002417397
"вы"	0.0024121304
" э"	0.0024062442
"ди"	0.0023504796
"ив"	0.0023318913
"ая"	0.0023129934
"ей"	0.002259707
"ое"	0.0022590875
"ыл"	0.0022181934
"му"	0.0022036326
"эт"	0.0021584013
"ше"	0.0021404326
"бо"	0.0021032563
"ну"	0.0020859074
"ча"	0.0020388172
"хо"	0.0020242564
"бе"	0.002007527
"д "	0.0019523819
" ж"	0.0018808173
"ик"	0.0018411624
"ия"	0.0018259821
"др"	0.0018108017

Text	Entropy
"г "	0.0017832292
"ши"	0.0017581352
"ад"	0.0017305627
"св"	0.0017181705
"ля"	0.0017175509
"их"	0.0016915273
"ож"	0.0016199627
"гл"	0.0016128373
"сп"	0.0016091196
"уд"	0.0015948686
"зд"	0.0015697746
"дн"	0.0015589314
"ду"	0.0015437511
"зн"	0.0015366256
"ее"	0.0015214452
"ры"	0.0014641315
"ев"	0.0014514296
"кн"	0.0014458532
"кр"	0.0014288139
"ид"	0.0014127041
"ым"	0.0014058885
"са"	0.0013922572
"ье"	0.0013903984
"ку"	0.0013900885
"ту"	0.0013885394
"си"	0.001379865

Text	Entropy
"ша"	0.0013653042
"чи"	0.001352912
"ый"	0.0013346337
"ты"	0.0013141866
"ий"	0.0013107788
"ят"	0.0012928102
" я"	0.0012921906
"ус"	0.0012807279
"жа"	0.0012767004
"з "	0.0012751514
"жи"	0.0012751514
"ут"	0.0012618299
"оч"	0.0012423123
"ич"	0.0012116417
"ще"	0.001206375
"аш"	0.0012057554
"уж"	0.001197081
"оп"	0.0011880966
"ез"	0.0011806614
"ул"	0.0011406967
"па"	0.0011382182
"лс"	0.0011295438
"уг"	0.001129234
"гр"	0.001129234
"аж"	0.0011217986
"лу"	0.0011174614

Text	Entropy
"иц"	0.0011152928
"вш"	0.0011063084
"жн"	0.0011016614
"вн"	0.0010920576
"бр"	0.0010716105
" х"	0.0010604576
"ые"	0.0010375321
"ек"	0.0010366027
"еб"	0.0010316458
"ош"	0.0010273085
"ыв"	0.0010204929
"ьн"	0.001017085
"вл"	0.0010158458
"ьк"	0.001012438
"лю"	0.0010084106
"вм"	0.0010077909
"мн"	9.994262E-4
"ых"	9.975674E-4
"яз"	9.783596E-4
"бу"	9.7526156E-4
"еж"	9.696851E-4
"лы"	9.5047726E-4
"ря"	9.4954786E-4
"нь"	9.473793E-4
"гд"	9.436616E-4
"ае"	9.3963416E-4

Text	Entropy
"ба"	9.3157927E-4
"юю"	9.2011655E-4
"еч"	9.1670867E-4
"ах"	9.1237144E-4
"тн"	9.0524595E-4
"см"	9.0307737E-4
"оз"	8.996695E-4
"ум"	8.959519E-4
"нд"	8.8820676E-4
" ф"	8.8758714E-4
"дв"	8.8727736E-4
"рь"	8.835597E-4
"ии"	8.7488524E-4
"га"	8.73646E-4
"ап"	8.733362E-4
"сс"	8.727166E-4
"ех"	8.724068E-4
"тс"	8.6899893E-4
"це"	8.559872E-4
"сн"	8.504107E-4
"уз"	8.5010094E-4
"еп"	8.361598E-4
"пь"	8.21599E-4
"ял"	8.0641865E-4
"ою"	7.8194414E-4
"ув"	7.813245E-4

Text	Entropy
"ха"	7.8070496E-4
"ьс"	7.7822653E-4
"ву"	7.7388925E-4
"аг"	7.732697E-4
"ои"	7.673834E-4
"мы"	7.6211675E-4
"зв"	7.49105E-4
" ш"	7.4724614E-4
"су"	7.4693636E-4
"дл"	7.4693636E-4
"пи"	7.4352854E-4
"ыс"	7.3547364E-4
"ук"	7.342344E-4
"уч"	7.314462E-4
"бл"	7.308266E-4
"ач"	7.15956E-4
"аю"	7.0356386E-4
"жд"	7.023246E-4
"яс"	6.995364E-4
"щи"	6.979874E-4
"би"	6.917913E-4
"ги"	6.905521E-4
"пл"	6.8776385E-4
"йс"	6.747521E-4
"нц"	6.722737E-4
"уш"	6.685561E-4

Text	Entropy
"еш"	6.369561E-4
"ыт"	6.3354825E-4
"уп"	6.258032E-4
"зо"	6.242542E-4
"пу"	6.242542E-4
"ай"	6.161993E-4
"зь"	6.0876395E-4
"гу"	6.0566596E-4
"вр"	6.034973E-4
"оя"	6.031875E-4
"рн"	6.022581E-4
"ур"	5.957522E-4
"аб"	5.777836E-4
"яд"	5.743758E-4
"ды"	5.7220715E-4
"чу"	5.6941895E-4
"ещ"	5.6167383E-4
"рт"	5.610542E-4
"ге"	5.601248E-4
"ян"	5.5361894E-4
"фр"	5.511405E-4
"цу"	5.499013E-4
"ья"	5.499013E-4
"нс"	5.4649345E-4
"уб"	5.443248E-4
"фи"	5.399876E-4

Text	Entropy
"зы"	5.353405E-4
"лк"	5.337915E-4
"дь"	5.28215E-4
"ца"	5.2604644E-4
"ир"	5.229484E-4
"ке"	5.2170915E-4
"ох"	5.2046997E-4
"ео"	5.0374056E-4
"чн"	4.9506605E-4
"тя"	4.9289747E-4
"аф"	4.8515236E-4
"ью"	4.8174453E-4
"иг"	4.808151E-4
"яж"	4.7461904E-4
"зя"	4.705916E-4
"вз"	4.6594453E-4
"ыш"	4.5572102E-4
"ющ"	4.551014E-4
"ьш"	4.346544E-4
"кт"	4.3403477E-4
"нт"	4.265995E-4
"иб"	4.1606618E-4
"мя"	4.1544656E-4
"ют"	4.1451716E-4
"юд"	4.0522305E-4
"бя"	4.015054E-4

Text	Entropy
"шл"	3.9592895E-4
"дя"	3.925211E-4
"зг"	3.9097207E-4
"тк"	3.8880346E-4
"йн"	3.853956E-4
"юб"	3.838466E-4
"дс"	3.7269367E-4
"шк"	3.7052506E-4
"иж"	3.67427E-4
"ея"	3.664976E-4
"кл"	3.6525837E-4
"ею"	3.6154073E-4
"ща"	3.581329E-4
"ям"	3.5100742E-4
"ию"	3.4914858E-4
"шн"	3.48529E-4
"цо"	3.4728978E-4
"ыб"	3.4667016E-4
"сы"	3.4233293E-4
"кв"	3.414035E-4
"лж"	3.404741E-4
"зи"	3.3768587E-4
" ц"	3.324192E-4
"ч "	3.2808195E-4
"иш"	3.231251E-4
"рд"	3.1971725E-4

Text	Entropy
"б "	3.147604E-4
"сч"	3.1197217E-4
"ух"	3.0794472E-4
"рж"	3.057761E-4
"рг"	3.048467E-4
"ср"	2.983408E-4
"рм"	2.9307415E-4
"пя"	2.8997613E-4
"оф"	2.871879E-4
"рв"	2.8501925E-4
"сд"	2.8347023E-4
"шу"	2.8316045E-4
"ьм"	2.800624E-4
"ьр"	2.7603496E-4
"вд"	2.716977E-4
"яв"	2.698389E-4
"рш"	2.6581145E-4
"лн"	2.6426243E-4
"бн"	2.6023499E-4
"зу"	2.5961536E-4
"шо"	2.5651735E-4
"ун"	2.5496833E-4
"ущ"	2.521801E-4
"зм"	2.4815265E-4
"шь"	2.4660362E-4
"ын"	2.4009775E-4

Text	Entropy
"пы"	2.4009775E-4
"рс"	2.3823892E-4
"зе"	2.3823892E-4
"ц "	2.3730952E-4
"лд"	2.3452129E-4
"ци"	2.3297226E-4
"тл"	2.3173305E-4
"ащ"	2.3049384E-4
"гн"	2.3049384E-4
"вп"	2.2367816E-4
"рк"	2.2243895E-4
"ец"	2.2212915E-4
"чк"	2.190311E-4
"зс"	2.1314484E-4
"ящ"	2.0416053E-4
"нч"	2.0323113E-4
"вт"	2.0230172E-4
"бк"	2.013723E-4
"зл"	1.9827427E-4
"йт"	1.9827427E-4
"нк"	1.9765466E-4
"мп"	1.9672525E-4
"вя"	1.9641545E-4
"зр"	1.9610564E-4
"дт"	1.9424682E-4
"уе"	1.9362722E-4

Text	Entropy
"бщ"	1.917684E-4
"ях"	1.9021938E-4
"ж "	1.8928997E-4
"ио"	1.837135E-4
"ип"	1.7937625E-4
"лч"	1.7937625E-4
"оо"	1.7906645E-4
"ф "	1.7782724E-4
"дк"	1.7782724E-4
"кс"	1.7689783E-4
"еи"	1.7163117E-4
"ык"	1.6822333E-4
"чь"	1.6698411E-4
"вь"	1.6202725E-4
"ыч"	1.6109785E-4
"зб"	1.6078804E-4
"тч"	1.5954883E-4
"лп"	1.5923902E-4
"сх"	1.573802E-4
"рб"	1.5428217E-4
"яя"	1.4963512E-4
"зж"	1.4901551E-4
"тд"	1.4777629E-4
"хи"	1.4529786E-4
"жу"	1.4498807E-4
"йд"	1.4096062E-4

Text	Entropy
"цы"	1.397214E-4
"фа"	1.3786257E-4
"бь"	1.3600376E-4
"вк"	1.3600376E-4
"фе"	1.3383513E-4
"ьи"	1.3166651E-4
"ню"	1.310469E-4
"ощ"	1.307371E-4
"яг"	1.3042729E-4
"ищ"	1.3042729E-4
"ау"	1.2918808E-4
"рю"	1.2763907E-4
"ьз"	1.2578024E-4
"яч"	1.2454102E-4
"як"	1.2051358E-4
"цк"	1.1896456E-4
"дм"	1.1896456E-4
"дш"	1.1710574E-4
"зк"	1.1617633E-4
"аи"	1.1462731E-4
"нг"	1.1431751E-4
"хв"	1.1276849E-4
"лг"	1.12458685E-4
"дц"	1.1214888E-4
"яю"	1.11529276E-4
"мс"	1.10290064E-4

Text	Entropy
"тт"	1.0905085E-4
"ху"	1.0874104E-4
"сю"	1.0750183E-4
"нщ"	1.06882224E-4
"юс"	1.0657242E-4
"яе"	1.05952815E-4
"мл"	1.0316458E-4
"тц"	1.0285478E-4
"ьп"	1.0099596E-4
"йш"	1.0037635E-4
"шт"	9.9137134E-5
"хн"	9.789792E-5
"хр"	9.727832E-5
"ьд"	9.727832E-5
"лл"	9.541949E-5
"рх"	9.2631264E-5
"дп"	9.2631264E-5
"ьб"	9.1392045E-5
"бх"	8.953323E-5
"эл"	8.891362E-5
"ш "	8.73646E-5
"чш"	8.612539E-5
"щу"	8.550578E-5
"рл"	8.550578E-5
"иа"	8.333715E-5
"хл"	8.2717546E-5

Text	Entropy
"ьц"	8.1478334E-5
"сш"	8.0548925E-5
"бв"	8.023912E-5
"пч"	7.992931E-5
"гс"	7.9309706E-5
"рц"	7.776069E-5
"юш"	7.776069E-5
"ыг"	7.745089E-5
"жк"	7.683128E-5
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"йл"	7.435285E-5
"фо"	7.249403E-5
"гк"	7.218423E-5
"юч"	7.156462E-5
"ац"	7.156462E-5
"бс"	6.97058E-5
"еу"	6.815678E-5
"оц"	6.6917564E-5
"чо"	6.629796E-5
"рч"	6.5988155E-5
"уя"	6.474894E-5
"фл"	6.474894E-5
"уй"	6.412934E-5
"зю"	6.3819534E-5
"пк"	6.3819534E-5
"пн"	6.3819534E-5

Text	Entropy
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"мк"	6.10313E-5
"нр"	6.10313E-5
"рп"	6.0721497E-5
"хс"	5.7933263E-5
"жб"	5.7313657E-5
" щ"	5.669405E-5
"тп"	5.669405E-5
"оу"	5.5454835E-5
"йч"	5.328621E-5
"йк"	5.2666604E-5
"ыз"	5.2356798E-5
"юр"	5.2356798E-5
"юл"	5.2046995E-5
"яр"	5.049798E-5
"ьч"	5.0188173E-5
"сб"	4.987837E-5
"эк"	4.9568567E-5
"хм"	4.863916E-5
"жо"	4.863916E-5
"пп"	4.6470534E-5
"рщ"	4.6160727E-5
"тю"	4.554112E-5
"мг"	4.4611712E-5
"п "	4.36823E-5
"мр"	4.2443087E-5

Text	Entropy
"ьд"	4.213328E-5
" ю"	3.9964656E-5
"яб"	3.9964656E-5
"дю"	3.9964656E-5
"пт"	3.9654853E-5
"гг"	3.934505E-5
"дх"	3.934505E-5
"жь"	3.934505E-5
"лт"	3.9035247E-5
"эс"	3.8725444E-5
"гв"	3.748623E-5
"вх"	3.7176425E-5
"яй"	3.6866622E-5
"бм"	3.6866622E-5
"яц"	3.6247016E-5
"вч"	3.593721E-5
"жю"	3.593721E-5
"йм"	3.5627407E-5
"шп"	3.5317604E-5
"чл"	3.50078E-5
"жч"	3.4697998E-5
"юн"	3.2839176E-5
"вг"	3.221957E-5
"рз"	3.221957E-5
"юю"	3.1909767E-5
"иф"	3.159996E-5

Text	Entropy
"ьо"	3.1290157E-5
"мь"	3.0980354E-5
"дч"	3.0360748E-5
"вв"	3.0050944E-5
"дб"	3.0050944E-5
"еа"	3.0050944E-5
"ьг"	2.974114E-5
"хе"	2.9431338E-5
"мю"	2.9431338E-5
"щн"	2.8192122E-5
"эп"	2.7572516E-5
"эн"	2.7262713E-5
"йц"	2.6952908E-5
"сз"	2.6643105E-5
"дд"	2.6643105E-5
"хт"	2.6023497E-5
"тб"	2.5713694E-5
"сц"	2.5094087E-5
"зз"	2.5094087E-5
"тм"	2.4164678E-5
"мб"	2.3854873E-5
"гч"	2.2615659E-5
"мц"	2.2615659E-5
"юц"	2.2305856E-5
"жс"	2.2305856E-5
"оэ"	2.1686248E-5

Text	Entropy
"юз"	2.1376445E-5
"мм"	2.1376445E-5
"мч"	2.1376445E-5
"нш"	2.1376445E-5
"нв"	2.106664E-5
"яп"	2.0756837E-5
"лб"	2.0756837E-5
"чр"	2.0137231E-5
"бд"	2.0137231E-5
"сж"	1.9827427E-5
"цв"	1.9827427E-5
"кж"	1.9517624E-5
"уа"	1.920782E-5
"уэ"	1.8898016E-5
"сг"	1.8588213E-5
"ыж"	1.8588213E-5
"юм"	1.827841E-5
"пф"	1.827841E-5
"бч"	1.7968605E-5
"жж"	1.7658802E-5
"рр"	1.7039196E-5
"эр"	1.7039196E-5
"кч"	1.7039196E-5
"уи"	1.6729391E-5
"шв"	1.6419588E-5
"йр"	1.6109785E-5

Text	Entropy
"ьи"	1.5180374E-5
"рф"	1.487057E-5
"щъ"	1.4250963E-5
"еф"	1.4250963E-5
" й"	1.39411595E-5
"кк"	1.39411595E-5
"шм"	1.36313565E-5
"яш"	1.36313565E-5
"дж"	1.36313565E-5
"зт"	1.36313565E-5
"зч"	1.36313565E-5
"яи"	1.3321553E-5
"нз"	1.3011749E-5
"тщ"	1.2701946E-5
"э "	1.2701946E-5
"нж"	1.2701946E-5
"сф"	1.2392142E-5
"вб"	1.2392142E-5
"пц"	1.2392142E-5
"фс"	1.2082339E-5
"фт"	1.2082339E-5
"вц"	1.1462731E-5
"тх"	1.1152928E-5
"жг"	1.1152928E-5
"эй"	1.0843124E-5
"кц"	1.0843124E-5

Text	Entropy
"уф"	1.053332E-5
"юк"	1.053332E-5
"йо"	1.053332E-5
"нб"	1.053332E-5
"фы"	1.0223517E-5
"щ "	9.60391E-6
"бб"	9.60391E-6
"зш"	9.60391E-6
"кз"	8.984302E-6
"тг"	8.674499E-6
"кш"	8.3646955E-6
"нф"	8.3646955E-6
"уо"	8.0548925E-6
"ьщ"	8.0548925E-6
"бг"	8.0548925E-6
"мт"	8.0548925E-6
"тф"	7.745089E-6
"хш"	7.745089E-6
"ьв"	7.435285E-6
"уц"	7.1254817E-6
"гш"	7.1254817E-6
"қд"	7.1254817E-6
"бз"	6.8156783E-6
"эх"	6.5058744E-6
"юх"	6.5058744E-6
"бт"	6.5058744E-6

Text	Entropy
"жм"	6.5058744E-6
"лш"	6.5058744E-6
"нх"	6.5058744E-6
"цг"	6.196071E-6
"ыц"	6.196071E-6
"юж"	6.196071E-6
"бж"	6.196071E-6
"дг"	6.196071E-6
"тз"	5.8862674E-6
"лв"	5.8862674E-6
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"кю"	5.576464E-6
"мз"	5.576464E-6
"пс"	5.576464E-6
"цн"	5.26666E-6
"дф"	5.26666E-6
"иу"	5.26666E-6
"лх"	5.26666E-6
"эг"	4.9568566E-6
"мщ"	4.9568566E-6
"оа"	4.9568566E-6
"чв"	4.647053E-6
"эм"	4.647053E-6
"аа"	4.647053E-6
"ао"	4.647053E-6

Text	Entropy
"км"	4.647053E-6
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"лз"	4.3372497E-6
"лф"	4.3372497E-6
"пш"	4.3372497E-6
"ьу"	4.0274463E-6
"вщ"	4.0274463E-6
"жл"	4.0274463E-6
"лм"	4.0274463E-6
"нп"	4.0274463E-6
"фк"	3.7176426E-6
"эд"	3.7176426E-6
"бю"	3.7176426E-6
"нл"	3.7176426E-6
"пг"	3.7176426E-6
"бш"	3.4078391E-6
"зц"	3.4078391E-6
"фь"	3.0980354E-6
"ця"	3.0980354E-6
"ьф"	3.0980354E-6
"эз"	3.0980354E-6
"гм"	3.0980354E-6
"йе"	3.0980354E-6
"уу"	2.788232E-6
"фф"	2.788232E-6
"ыщ"	2.788232E-6

Text	Entropy
"бц"	2.788232E-6
"дз"	2.788232E-6
"жр"	2.788232E-6
"йб"	2.788232E-6
"хь"	2.4784283E-6
"цл"	2.4784283E-6
"щр"	2.4784283E-6
"юп"	2.4784283E-6
"фю"	2.1686249E-6
"шр"	2.1686249E-6
"юг"	2.1686249E-6
"вю"	2.1686249E-6
"гт"	2.1686249E-6
"кг"	2.1686249E-6
"лщ"	2.1686249E-6
" ь"	1.8588213E-6
"тэ"	1.8588213E-6
"ья"	1.8588213E-6
"гц"	1.8588213E-6
"фм"	1.5490177E-6
"цм"	1.5490177E-6
"шц"	1.5490177E-6
"эф"	1.5490177E-6
"яу"	1.5490177E-6
"гю"	1.5490177E-6
"пщ"	1.5490177E-6

Text	Entropy
"хх"	1.2392142E-6
"аэ"	1.2392142E-6
"дэ"	1.2392142E-6
"йх"	1.2392142E-6
"нм"	1.2392142E-6
"хд"	9.2941065E-7
"шш"	9.2941065E-7
"ьх"	9.2941065E-7
"йф"	9.2941065E-7
"кх"	9.2941065E-7
"кь"	9.2941065E-7
"нэ"	9.2941065E-7
"рэ"	6.196071E-7
" ы"	6.196071E-7
"тш"	6.196071E-7
"хг"	6.196071E-7
"чч"	6.196071E-7
"шс"	6.196071E-7
"шю"	6.196071E-7
"ьп"	6.196071E-7
"эц"	6.196071E-7
"юа"	6.196071E-7
"юе"	6.196071E-7
"вж"	6.196071E-7
"гь"	6.196071E-7
"мв"	6.196071E-7

Text	Entropy
"мэ"	6.196071E-7
"пб"	6.196071E-7
"пэ"	6.196071E-7
"сщ"	3.0980354E-7
"сэ"	3.0980354E-7
"тж"	3.0980354E-7
"фг"	3.0980354E-7
"фн"	3.0980354E-7
"фч"	3.0980354E-7
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"хч"	3.0980354E-7
"чэ"	3.0980354E-7
"шы"	3.0980354E-7
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"що"	3.0980354E-7
"щэ"	3.0980354E-7
"ьй"	3.0980354E-7
"ьу"	3.0980354E-7
"эш"	3.0980354E-7
"ээ"	3.0980354E-7
"юв"	3.0980354E-7
"юи"	3.0980354E-7
"яф"	3.0980354E-7
"бэ"	3.0980354E-7
"вэ"	3.0980354E-7

Text	Entropy
"гж"	3.0980354E-7
"гз"	3.0980354E-7
"дщ"	3.0980354E-7
"жэ"	3.0980354E-7
"зх"	3.0980354E-7
"иь"	3.0980354E-7
"йв"	3.0980354E-7
"йз"	3.0980354E-7
"йп"	3.0980354E-7
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"лц"	3.0980354E-7
"лэ"	3.0980354E-7

Name: bigramNoWhitespace.md

Data entropy: 4.1381

Data redundancy: 0.17237997

Text	Entropy
"То"	0.017402222
"ст"	0.01685176
"ов"	0.012088638
"на"	0.01205377
"ос"	0.010527761
"ен"	0.010310024
"го"	0.010254013
"но"	0.010192439
"не"	0.010167216
"ал"	0.010123816
"по"	0.009964316
"ко"	0.009871213
"он"	0.009854892
"ра"	0.009794059
"ни"	0.009521425
"ка"	0.009450948
"во"	0.009112659
"ро"	0.009026232
"от"	0.008978382
"ер"	0.008128208

Text	Entropy
"ол"	0.00812487
"ло"	0.007982062
"ор"	0.0077416985
"ла"	0.007739844
"ан"	0.007729829
"ли"	0.0075291554
"ес"	0.007460904
"ел"	0.0071634175
"пр"	0.0071222438
"ре"	0.0069160066
"ав"	0.0067913737
"ва"	0.006592184
"ом"	0.0064497464
"од"	0.0064059766
"та"	0.0063228877
"ат"	0.006307309
"ть"	0.006073993
"ас"	0.006055447
"ск"	0.0059909048
"ог"	0.0059875664
"ри"	0.005979035
"ак"	0.0058855605
"за"	0.005802843
"тр"	0.005768346
"ин"	0.0056411168
"ис"	0.005553577

Text	Entropy
"ил"	0.005543191
"ем"	0.0055083237
"ле"	0.0053599514
"те"	0.0052253036
"ве"	0.005173744
"ет"	0.0051492625
"ив"	0.0051422147
"об"	0.005109202
"де"	0.005077302
"ви"	0.0049244785
"да"	0.0048910948
"аз"	0.0048417607
"ит"	0.004615493
"мо"	0.004572465
"вс"	0.004508294
"ми"	0.0044778776
"ме"	0.004395531
"ег"	0.004372904
"бы"	0.0043287636
"ти"	0.004320974
"ок"	0.0042786878
"до"	0.004245675
"же"	0.0041937446
"ль"	0.0041518295
"чт"	0.004047227
"им"	0.003975266

Text	Entropy
"се"	0.0039582034
"ед"	0.003911095
"ар"	0.003908128
"из"	0.0038613905
"ой"	0.0038521173
"ам"	0.0038472952
"ие"	0.0037523368
"оп"	0.003719324
"ны"	0.003698181
"ев"	0.0036959553
"нн"	0.0036377192
"тв"	0.0035646458
"че"	0.0035631622
"со"	0.0035030714
"ся"	0.0034433515
"ик"	0.0033936468
"ое"	0.0033331849
"ки"	0.003283851
"ру"	0.0032779162
"ма"	0.0032712396
"сл"	0.0032382268
"сь"	0.003231179
"еп"	0.0030182647
"ап"	0.0029689309
"ня"	0.0029648505
"ая"	0.002963367

Text	Entropy
"ад"	0.0029284994
"ди"	0.0029214516
"пе"	0.0028954865
"вы"	0.0028880679
"му"	0.002833912
"ии"	0.0027241164
"ыл"	0.0027115047
"ей"	0.0027070537
"оч"	0.0026914745
"хо"	0.002688878
"ид"	0.0026855397
"ну"	0.0026703314
"бо"	0.0026439955
"эт"	0.0025842756
"ше"	0.0025638742
"ип"	0.002559052
"ча"	0.0024462892
"ои"	0.002425146
"бе"	0.0024240334
"ож"	0.0023483634
"ия"	0.0023446542
"оо"	0.0023298168
"кн"	0.002286047
"св"	0.002269355
"лс"	0.0022404226
"еб"	0.002238568

Text	Entropy
"ее"	0.0022196504
"сп"	0.0022148283
"уд"	0.0022140865
"ек"	0.0022137156
"др"	0.0022092643
"ьн"	0.0022085225
"ус"	0.0021936854
"их"	0.0021703166
"ян"	0.0021565922
"ье"	0.0021417548
"яс"	0.0021161607
"ят"	0.0021131933
"ши"	0.0021105967
"ля"	0.0020965014
"ьс"	0.0020508769
"ич"	0.0020404907
"ез"	0.0020119292
"дн"	0.0020115583
"зд"	0.0019570314
"зн"	0.001954435
"гл"	0.0019484999
"ео"	0.0019484999
"ьк"	0.0019165999
"ым"	0.0018991661
"вн"	0.0018876673
"ду"	0.0018724591

Text	Entropy
"ю"	0.0018683788
"мн"	0.0018364788
"кр"	0.0018123683
"ут"	0.0018068043
"рс"	0.0017682276
"ту"	0.0017641473
"си"	0.001760809
"ры"	0.0017530194
"ку"	0.0017515357
"йс"	0.0017129588
"са"	0.0017077659
"ае"	0.0016858809
"ыв"	0.0016758657
"яв"	0.0016669634
"ша"	0.001636547
"чи"	0.0016328378
"еч"	0.0016272739
"оз"	0.0016213389
"ый"	0.0015990831
"тн"	0.0015879552
"тс"	0.0015790528
"ты"	0.0015734888
"ий"	0.0015712632
"уг"	0.0015504911
"ув"	0.0015449271
"жи"	0.0015375086

Text	Entropy
"жа"	0.001529719
"аш"	0.0015282353
"еи"	0.0015256387
"аи"	0.0015248968
"вм"	0.0015234131
"уж"	0.0015104306
"аж"	0.0014904003
"лу"	0.0014833526
"аб"	0.0014681445
"ул"	0.001464806
"яз"	0.0014622095
"аг"	0.0014507107
"ще"	0.0014451467
"сн"	0.001427713
"иб"	0.0014240036
"ао"	0.0014154722
"вр"	0.001405828
"гр"	0.0013972967
"ук"	0.001395071
"сс"	0.0013947001
"еж"	0.0013832013
"иц"	0.0013824594
"вл"	0.0013809757
"вш"	0.001379492
"па"	0.0013635419
"уп"	0.0013616873

Text	Entropy
"ые"	0.001347221
"жн"	0.001347221
"ыс"	0.0013464792
"ач"	0.001341657
"ум"	0.0013398024
"ош"	0.0013164338
"бр"	0.0012915813
"уч"	0.0012897267
"лк"	0.0012767441
"ьв"	0.0012756314
"нд"	0.0012459569
"ир"	0.0012429894
"иг"	0.0012370545
"гд"	0.0012363127
"ых"	0.001234829
"ех"	0.0012266685
"яд"	0.0012166533
"лю"	0.001207751
"ах"	0.0012051545
"бу"	0.0012040416
"нс"	0.0011828986
"дв"	0.0011791893
"см"	0.0011695451
"уз"	0.0011580462
"ря"	0.001153966
"лы"	0.001138016

Text	Entropy
"нь"	0.0011346776
"ба"	0.0011291136
"ял"	0.0011224368
"яп"	0.0011124217
"ую"	0.0011027775
"вп"	0.0011016647
"дг"	0.0010961008
"га"	0.0010816344
"мс"	0.0010768124
"ву"	0.0010649426
"ун"	0.0010608623
"рь"	0.0010578949
"йн"	0.0010564112
"лн"	0.001051589
"мп"	0.0010434286
"це"	0.0010319297
"су"	0.0010245111
"оя"	0.001014496
"зв"	0.0010100448
"як"	9.896436E-4
"ьи"	9.870471E-4
"пъ"	9.837088E-4
"ги"	9.796285E-4
"ха"	9.76661E-4
"ьп"	9.647912E-4
"лп"	9.621947E-4

Text	Entropy
"яи"	9.6108194E-4
"ыт"	9.599691E-4
"рв"	9.5922727E-4
"ою"	9.414226E-4
"мы"	9.1249E-4
"дл"	9.1063534E-4
"пи"	8.9653995E-4
"бл"	8.8318647E-4
"рн"	8.8096084E-4
"ур"	8.75026E-4
"уб"	8.7094575E-4
"би"	8.705748E-4
"жд"	8.531411E-4
"аю"	8.4757706E-4
"еш"	8.4015843E-4
"щи"	8.37191E-4
"вк"	8.3273987E-4
"зо"	8.323689E-4
"ын"	8.3014334E-4
"пл"	8.2420843E-4
"уш"	8.2383753E-4
"лв"	8.153061E-4
"мв"	8.10484E-4
"нц"	8.0974214E-4
"вт"	8.0751657E-4
"яо"	8.060328E-4

Text	Entropy
"йп"	7.9416303E-4
"ох"	7.9230836E-4
"кв"	7.830351E-4
"кт"	7.8229327E-4
"йв"	7.737618E-4
"гу"	7.7153626E-4
"ьо"	7.589246E-4
"ья"	7.56699E-4
"пу"	7.477967E-4
"тк"	7.429746E-4
"вд"	7.40749E-4
"ай"	7.3926523E-4
"ям"	7.359269E-4
"зь"	7.288792E-4
"рт"	7.1960595E-4
"ке"	7.025431E-4
"вз"	6.999466E-4
"ге"	6.999466E-4
"нт"	6.980919E-4
"кс"	6.9475354E-4
"аф"	6.92528E-4
"чу"	6.877059E-4
"ды"	6.8510935E-4
"яж"	6.8399654E-4
"фр"	6.8028725E-4
"йд"	6.799163E-4

Text	Entropy
"ещ"	6.76207E-4
"фи"	6.7398144E-4
"ыб"	6.6915934E-4
"юд"	6.624826E-4
"йк"	6.60257E-4
"цу"	6.5988605E-4
"тя"	6.5358024E-4
"уй"	6.498709E-4
"ют"	6.4875814E-4
"зы"	6.4096856E-4
"мк"	6.3614646E-4
"ца"	6.3466275E-4
"дь"	6.324372E-4
"иж"	6.2872784E-4
"лд"	6.2501855E-4
"ьм"	6.183418E-4
"оу"	6.179709E-4
"йи"	6.1574526E-4
"чн"	6.0832663E-4
"ып"	6.0573017E-4
"дс"	5.9868244E-4
"еу"	5.968278E-4
"лч"	5.931185E-4
"вв"	5.8310333E-4
"ью"	5.7939405E-4
"ея"	5.767975E-4

Text	Entropy
"нп"	5.727173E-4
"зя"	5.671533E-4
"ыш"	5.6381495E-4
"юб"	5.6344405E-4
"мя"	5.6233123E-4
"ьш"	5.560254E-4
"ау"	5.549126E-4
"нв"	5.500905E-4
"ющ"	5.4823584E-4
"ьт"	5.4341374E-4
"хс"	5.3265673E-4
"йо"	5.267219E-4
"йт"	5.267219E-4
"иу"	5.211579E-4
"иш"	5.2078697E-4
"хв"	5.189323E-4
"сд"	5.159649E-4
"хи"	5.1448116E-4
"зг"	5.115137E-4
"юс"	5.111428E-4
"яб"	5.0965906E-4
"тп"	5.089172E-4
"яг"	5.0854625E-4
"оф"	5.029823E-4
"мч"	4.951927E-4
"вг"	4.922253E-4

Text	Entropy
"кл"	4.918544E-4
"бя"	4.914834E-4
"яч"	4.862904E-4
"ьи"	4.7738806E-4
"яе"	4.7701714E-4
"шл"	4.755334E-4
"дя"	4.744206E-4
"гн"	4.7034037E-4
"ср"	4.6700198E-4
"ба"	4.6255082E-4
"ьч"	4.5772872E-4
"кб"	4.5327755E-4
"тд"	4.5290662E-4
"лж"	4.5290662E-4
"шк"	4.4993917E-4
"зи"	4.4956824E-4
"ьд"	4.477136E-4
"ьб"	4.469717E-4
"ыр"	4.45488E-4
"нк"	4.4289147E-4
"хп"	4.3992404E-4
"рд"	4.384403E-4
"ею"	4.3547287E-4
"цо"	4.3510195E-4
"ык"	4.3436006E-4
"зс"	4.3065075E-4

Text	Entropy
"ща"	4.287961E-4
"шн"	4.2545772E-4
"ию"	4.2360308E-4
"yo"	4.143298E-4
"сч"	4.13217E-4
"yx"	4.1284607E-4
"хн"	4.1210421E-4
"сы"	4.0987864E-4
"ьз"	4.0913676E-4
"тт"	4.046856E-4
"рг"	3.998635E-4
"тч"	3.9800885E-4
"мд"	3.9467047E-4
"йм"	3.928158E-4
"кп"	3.891065E-4
"рм"	3.8873559E-4
"зм"	3.7983322E-4
"лг"	3.7909136E-4
"мг"	3.7872043E-4
"оэ"	3.783495E-4
"рж"	3.746402E-4
"кк"	3.720437E-4
"рк"	3.638832E-4
"тл"	3.5238435E-4
"йр"	3.5238435E-4
"пя"	3.4756225E-4

Text	Entropy
"лт"	3.468204E-4
"уе"	3.4422387E-4
"нч"	3.4311108E-4
"мб"	3.423692E-4
"шу"	3.397727E-4
"зу"	3.3940177E-4
"иа"	3.360634E-4
"юи"	3.3532153E-4
"ыд"	3.3420874E-4
"йг"	3.3235407E-4
"яр"	3.3161222E-4
"рш"	3.301285E-4
"йб"	3.301285E-4
"юн"	3.2975755E-4
"аз"	3.279029E-4
"юв"	3.241936E-4
"гс"	3.241936E-4
"бн"	3.2270988E-4
"нб"	3.2011335E-4
"мт"	3.1751685E-4
"йч"	3.1677497E-4
"юп"	3.1566218E-4
"ез"	3.145494E-4
"тб"	3.1380754E-4
"шо"	3.134366E-4
"дк"	3.1195287E-4

Text	Entropy
"зе"	3.0638892E-4
"ущ"	3.0564706E-4
"ци"	3.026796E-4
"лб"	3.0156682E-4
"ью"	3.011959E-4
"яа"	2.9822843E-4
"вэ"	2.978575E-4
"ец"	2.9748658E-4
"ях"	2.963738E-4
"шь"	2.9526098E-4
"мл"	2.9377727E-4
"ыч"	2.908098E-4
"пы"	2.8747143E-4
"гв"	2.871005E-4
"хл"	2.8672957E-4
"зр"	2.8413307E-4
"ащ"	2.8264933E-4
"ьг"	2.785691E-4
"аа"	2.7671445E-4
"нг"	2.7671445E-4
"зк"	2.7560166E-4
"дт"	2.7411792E-4
"рп"	2.7411792E-4
"чк"	2.726342E-4
"вб"	2.6966675E-4
"вя"	2.6818304E-4

Text	Entropy
"эл"	2.6150627E-4
"мм"	2.607644E-4
"гп"	2.5594232E-4
"яя"	2.5408764E-4
"иэ"	2.5186207E-4
"юк"	2.5149115E-4
"ящ"	2.4926555E-4
"мр"	2.4778183E-4
"рб"	2.4629812E-4
"бк"	2.4444345E-4
"кд"	2.425888E-4
"юо"	2.4221787E-4
"яу"	2.4036321E-4
"лр"	2.3962135E-4
"юч"	2.3925042E-4
"хр"	2.377667E-4
"йл"	2.3628297E-4
"дп"	2.329446E-4
"зб"	2.329446E-4
"ху"	2.3108994E-4
"ьр"	2.3034809E-4
"хк"	2.2997714E-4
"бщ"	2.2960622E-4
"вч"	2.2626785E-4
"еа"	2.1328527E-4
"кж"	2.1291432E-4

Text	Entropy
"юр"	2.0883408E-4
"ыг"	2.077213E-4
"хд"	2.0735037E-4
"зп"	2.0623757E-4
"оа"	2.0586664E-4
"ыз"	2.0549571E-4
"сх"	2.028992E-4
"бу"	2.028992E-4
"тм"	2.0215733E-4
"чь"	1.9993175E-4
"хм"	1.9659338E-4
"бэ"	1.9659338E-4
"гк"	1.9659338E-4
"сб"	1.9436779E-4
"вь"	1.9399685E-4
"км"	1.9251314E-4
"йш"	1.8991661E-4
"лл"	1.8917475E-4
"зж"	1.8880382E-4
"йа"	1.8435266E-4
"нр"	1.8212707E-4
"дм"	1.8027241E-4
"жу"	1.7693403E-4
"нз"	1.7545032E-4
"йу"	1.7359566E-4
"иф"	1.7322472E-4

Text	Entropy
"фа"	1.706282E-4
"мз"	1.6877355E-4
"цы"	1.6728984E-4
"ищ"	1.6617704E-4
"гч"	1.6543518E-4
"ощ"	1.632096E-4
"бь"	1.6283867E-4
"фе"	1.6246772E-4
"юм"	1.6246772E-4
"яэ"	1.6061307E-4
"цк"	1.6024214E-4
"хт"	1.5875843E-4
"ню"	1.5801656E-4
"сг"	1.561619E-4
"йз"	1.561619E-4
"тг"	1.5504911E-4
"кч"	1.5504911E-4
"хб"	1.5467819E-4
"рю"	1.5393631E-4
"ьл"	1.5393631E-4
"кг"	1.5171073E-4
"лз"	1.5096887E-4
"чг"	1.4948515E-4
"дш"	1.4688863E-4
"хг"	1.4614678E-4
"ya"	1.4577583E-4

Text	Entropy
"уя"	1.3947001E-4
"дц"	1.379863E-4
"лм"	1.3724442E-4
"юг"	1.368735E-4
"яю"	1.3613164E-4
"ац"	1.3576071E-4
"тц"	1.3390605E-4
"юл"	1.3279326E-4
"йж"	1.3279326E-4
"сю"	1.3130953E-4
"нщ"	1.2982581E-4
"мж"	1.2685836E-4
"рх"	1.2314906E-4
"оц"	1.2314906E-4
"сж"	1.2277812E-4
"тз"	1.2277812E-4
"шт"	1.212944E-4
"уу"	1.2092347E-4
"тэ"	1.1943975E-4
"юа"	1.18697884E-4
"юш"	1.18697884E-4
"юу"	1.17214164E-4
"йе"	1.1684323E-4
"рл"	1.164723E-4
"сш"	1.1610137E-4
"лэ"	1.15730436E-4

Text	Entropy
"зз"	1.1535951E-4
"нм"	1.1535951E-4
"ьц"	1.105374E-4
"тж"	1.10166475E-4
"рч"	1.0942461E-4
"бх"	1.07569955E-4
"эл"	1.068281E-4
"бв"	1.0645716E-4
"чш"	1.0460251E-4
"фо"	1.0386065E-4
"сз"	1.0348972E-4
"жк"	1.0348972E-4
"кэ"	1.0274786E-4
"щу"	1.0237692E-4
"уэ"	1.0052227E-4
"хе"	1.0015134E-4
"чо"	9.829669E-5
"пч"	9.7554825E-5
"кз"	9.7183896E-5
"ьу"	9.644203E-5
"рц"	9.60711E-5
"бс"	9.532924E-5
"фy"	9.4587376E-5
"еф"	9.3103656E-5
"юз"	9.199086E-5
"юж"	8.9023415E-5

Text	Entropy
"зт"	8.753969E-5
"вх"	8.679783E-5
"гг"	8.4943174E-5
"юе"	8.383038E-5
"пн"	8.2346654E-5
"хз"	8.1975726E-5
"пк"	8.0862934E-5
"ьх"	8.0492006E-5
"фл"	8.012107E-5
"гб"	7.975014E-5
"дб"	7.975014E-5
"рз"	7.863735E-5
"жб"	7.7895485E-5
"уй"	7.752456E-5
"мэ"	7.715362E-5
"йф"	7.678269E-5
"зю"	7.6411765E-5
"хч"	7.56699E-5
"дд"	7.529897E-5
"мх"	7.047687E-5
"ьж"	7.010594E-5
"яц"	7.010594E-5
"жо"	7.010594E-5
"дч"	6.899315E-5
"йх"	6.8251284E-5
"йэ"	6.750942E-5

Text	Entropy
"мш"	6.639663E-5
"йя"	6.491291E-5
"яш"	6.3800115E-5
"йц"	6.3800115E-5
"кя"	6.342918E-5
"яф"	6.305825E-5
"гз"	6.305825E-5
"ыж"	6.268732E-5
"гт"	6.231639E-5
"мф"	6.0461734E-5
"рр"	5.9719874E-5
"эк"	5.9719874E-5
"вж"	5.897801E-5
"пп"	5.897801E-5
"сэ"	5.823615E-5
"нх"	5.6381494E-5
"рц"	5.52687E-5
"тю"	5.52687E-5
"ыэ"	5.4897773E-5
"шп"	5.452684E-5
"ья"	5.3043117E-5
"нж"	5.3043117E-5
"цв"	5.2672185E-5
"лш"	5.1930325E-5
"дх"	5.0817533E-5
"тх"	5.04466E-5

Text	Entropy
"дз"	4.970474E-5
"дю"	4.933381E-5
"пт"	4.933381E-5
"бм"	4.8591948E-5
"лф"	4.7479152E-5
"нэ"	4.7479152E-5
"сф"	4.7108224E-5
"хж"	4.7108224E-5
"эс"	4.7108224E-5
"жь"	4.7108224E-5
"гм"	4.6737292E-5
"уф"	4.636636E-5
"жч"	4.599543E-5
"нл"	4.56245E-5
"чл"	4.5253568E-5
"юц"	4.4882636E-5
"яй"	4.4511708E-5
"юэ"	4.3027983E-5
"жю"	4.3027983E-5
"вц"	4.191519E-5
"нш"	4.191519E-5
"ыя"	4.154426E-5
"жс"	4.154426E-5
"зэ"	4.154426E-5
"чр"	4.1173327E-5
"чв"	4.08024E-5

Text	Entropy
"юю"	4.08024E-5
"бэ"	4.08024E-5
"кх"	4.08024E-5
"сц"	4.0431467E-5
"ьф"	4.0431467E-5
"мц"	4.0431467E-5
"зч"	4.0060535E-5
"хэ"	3.8947743E-5
"лх"	3.8947743E-5
"рф"	3.8205882E-5
"мь"	3.709309E-5
"юя"	3.6351226E-5
"мю"	3.6351226E-5
"фс"	3.5609366E-5
"цс"	3.5609366E-5
"тф"	3.4867502E-5
"цп"	3.4867502E-5
"эп"	3.4867502E-5
"цн"	3.4496574E-5
"чп"	3.375471E-5
"вф"	3.338378E-5
"эн"	3.301285E-5
"гэ"	3.1158193E-5
"нф"	3.1158193E-5
"кш"	3.0787265E-5
"цн"	2.8190747E-5

Text	Entropy
"чс"	2.8190747E-5
"хш"	2.7819817E-5
"шв"	2.7819817E-5
"бд"	2.7819817E-5
"юх"	2.7448887E-5
"хф"	2.7077955E-5
"ыф"	2.6336093E-5
"дэ"	2.5965162E-5
"кц"	2.52233E-5
"хя"	2.485237E-5
"кф"	2.485237E-5
"юф"	2.4481438E-5
"бч"	2.4110508E-5
"дж"	2.4110508E-5
"зш"	2.3368646E-5
"фт"	2.2626784E-5
"жж"	2.2626784E-5
"пф"	2.2626784E-5
"шм"	2.2255854E-5
"дф"	2.2255854E-5
"жв"	2.2255854E-5
"рэ"	2.1884922E-5
"жм"	2.1884922E-5
"фв"	2.1513992E-5
"эр"	2.04012E-5
"фп"	2.0030267E-5

Text	Entropy
"уц"	1.9659337E-5
"цг"	1.8917475E-5
"жг"	1.8917475E-5
"жт"	1.8917475E-5
"хх"	1.8546545E-5
"тщ"	1.7804683E-5
"гж"	1.7433751E-5
"щъ"	1.7062821E-5
"тш"	1.5950029E-5
"бб"	1.5950029E-5
"ыц"	1.5208167E-5
"пц"	1.5208167E-5
"фн"	1.48372355E-5
"цт"	1.48372355E-5
"пс"	1.3724443E-5
"бг"	1.3353512E-5
"эй"	1.2982581E-5
"жп"	1.2982581E-5
"фк"	1.261165E-5
"гш"	1.261165E-5
"гя"	1.261165E-5
"жэ"	1.261165E-5
"фы"	1.2240719E-5
"хц"	1.1869788E-5
"чб"	1.1498858E-5
"ыщ"	1.1498858E-5

Text	Entropy
"бз"	1.1498858E-5
"цм"	1.1127927E-5
"гф"	1.1127927E-5
"лц"	1.0756996E-5
"чм"	1.0386065E-5
"шб"	1.0386065E-5
"цб"	1.0015134E-5
"цд"	9.644203E-6
"бт"	9.644203E-6
"гх"	9.644203E-6
"фб"	9.273273E-6
"вц"	8.9023415E-6
"чд"	8.5314105E-6
"бж"	8.5314105E-6
"зц"	8.5314105E-6
"кю"	8.5314105E-6
"мц"	8.5314105E-6
"шс"	8.160479E-6
"жз"	8.160479E-6
"жл"	8.160479E-6
"чч"	7.789548E-6
"эх"	7.789548E-6
"зф"	7.789548E-6
"фм"	7.4186178E-6
"цр"	7.4186178E-6
"бп"	7.4186178E-6

Text	Entropy
"шр"	7.0476867E-6
"эд"	7.0476867E-6
"эм"	7.0476867E-6
"жя"	6.676756E-6
"цл"	6.305825E-6
"шд"	6.305825E-6
"эх"	6.305825E-6
"лщ"	6.305825E-6
"пш"	6.305825E-6
"ыщ"	5.934894E-6
"эг"	5.934894E-6
"пг"	5.934894E-6
"цз"	5.5639634E-6
"цч"	5.5639634E-6
"фз"	5.1930324E-6
"гц"	5.1930324E-6
"жр"	5.1930324E-6
"фф"	4.8221013E-6
"цэ"	4.8221013E-6
"бш"	4.8221013E-6
"вю"	4.8221013E-6
"йю"	4.8221013E-6
"фг"	4.4511708E-6
"ця"	4.4511708E-6
"бю"	4.4511708E-6
"щр"	4.0802397E-6

Text	Entropy
"фд"	3.7093089E-6
"фь"	3.7093089E-6
"чз"	3.7093089E-6
"эв"	3.7093089E-6
"эз"	3.7093089E-6
"пв"	3.7093089E-6
"бц"	3.338378E-6
"гю"	3.338378E-6
"хь"	2.967447E-6
"шг"	2.967447E-6
"шэ"	2.967447E-6
"йц"	2.967447E-6
"фю"	2.5965162E-6
"фя"	2.5965162E-6
"чэ"	2.5965162E-6
"шц"	2.5965162E-6
"шш"	2.5965162E-6
"йй"	2.5965162E-6
"фч"	2.2255854E-6
"фш"	2.2255854E-6
"чх"	2.2255854E-6
"шз"	2.2255854E-6
"кц"	2.2255854E-6
"пц"	2.2255854E-6
"пэ"	2.2255854E-6
"фж"	1.8546544E-6

Text	Entropy
"чж"	1.8546544E-6
"чя"	1.8546544E-6
"шч"	1.8546544E-6
"щв"	1.8546544E-6
"эф"	1.8546544E-6
"пм"	1.8546544E-6
"сщ"	1.4837235E-6
"фх"	1.4837235E-6
"хщ"	1.4837235E-6
"цж"	1.4837235E-6
"цф"	1.4837235E-6
"цх"	1.4837235E-6
"цш"	1.4837235E-6
"шж"	1.4837235E-6
"щк"	1.4837235E-6
"лй"	1.4837235E-6
"пб"	1.4837235E-6
"пд"	1.4837235E-6
"ьй"	1.1127927E-6
"эц"	1.1127927E-6
"эч"	1.1127927E-6
"гь"	1.1127927E-6
"жх"	1.1127927E-6
"зщ"	1.1127927E-6
"ий"	1.1127927E-6
"кь"	1.1127927E-6

Text	Entropy
"тй"	7.4186175E-7
"хю"	7.4186175E-7
"чф"	7.4186175E-7
"шх"	7.4186175E-7
"шю"	7.4186175E-7
"шя"	7.4186175E-7
"щд"	7.4186175E-7
"щз"	7.4186175E-7
"щп"	7.4186175E-7
"щс"	7.4186175E-7
"ээ"	7.4186175E-7
"гы"	7.4186175E-7
"дщ"	7.4186175E-7
"мй"	7.4186175E-7
"пз"	7.4186175E-7
"уь"	3.7093088E-7
"фц"	3.7093088E-7
"фэ"	3.7093088E-7
"хй"	3.7093088E-7
"чю"	3.7093088E-7
"шф"	3.7093088E-7
"шы"	3.7093088E-7
"щб"	3.7093088E-7
"щм"	3.7093088E-7
"що"	3.7093088E-7
"щт"	3.7093088E-7

Text	Entropy
"щф"	3.7093088E-7
"щэ"	3.7093088E-7
"ью"	3.7093088E-7
"эа"	3.7093088E-7
"эб"	3.7093088E-7
"эе"	3.7093088E-7
"эи"	3.7093088E-7
"эо"	3.7093088E-7
"эш"	3.7093088E-7
"вй"	3.7093088E-7
"гй"	3.7093088E-7
"гщ"	3.7093088E-7
"дй"	3.7093088E-7
"жф"	3.7093088E-7
"жш"	3.7093088E-7
"кй"	3.7093088E-7
"оь"	3.7093088E-7
"пж"	3.7093088E-7
"пх"	3.7093088E-7
"рй"	3.7093088E-7

Name: bigramCrossWhitespace.md

Data entropy: 3.9617

Data redundancy: 0.20766

Text	Entropy
"о "	0.021681279
"и "	0.018549167
" с"	0.017647019
"а "	0.017254807
" в"	0.017042901
"е "	0.0167932
" п"	0.015261533
" н"	0.014801165
"то"	0.014184657
"ст"	0.013829002
" и"	0.011876002
" о"	0.011481932
"я "	0.010559337
"на"	0.010035151
" к"	0.009603904
"ь "	0.009323842
"не"	0.008499765
"го"	0.008488612
"по"	0.008330612
"ал"	0.008190582

Text	Entropy
"но"	0.008185005
"ра"	0.008134817
"в "	0.00803382
"ко"	0.007944597
"ка"	0.007866527
"ов"	0.007755617
"ни"	0.007650904
"ро"	0.007496002
" т"	0.0073584495
"ен"	0.0073057828
"м "	0.0072493986
"во"	0.007191775
" д"	0.0071285754
"й "	0.0070182853
"л "	0.006935258
" б"	0.0068714386
"ос"	0.006766105
"ол"	0.006497196
"ла"	0.006353447
"ер"	0.0063323807
"от"	0.006251212
"он"	0.006181816
"пр"	0.005975487
"ор"	0.005968052
"ли"	0.0058738715
"ло"	0.00584475

Text	Entropy
"y "	0.0058410326
"pe"	0.0057431348
"ел"	0.0057214485
" г"	0.0057140132
"ва"	0.0053781862
" м"	0.005369512
" ч"	0.0052709943
"та"	0.005253026
"ть"	0.004983497
"ри"	0.0048831203
"ск"	0.004818681
"за"	0.004814964
"ан"	0.0048118657
"ом"	0.0047437088
"тр"	0.0046891836
"т "	0.0046228855
"ат"	0.004516933
" р"	0.0044921488
"ил"	0.004446298
"од"	0.0044432
"ог"	0.004433286
"к "	0.0043508783
"ес"	0.004324235
"де"	0.004217663
"ле"	0.0041532237
"те"	0.0041464083

Text	Entropy
"ве"	0.0041141887
"да"	0.004047271
"н "	0.004020628
"ы "	0.003961146
" е"	0.003933883
"ак"	0.0038316478
"ем"	0.003738707
"аз"	0.0037219776
" з"	0.0036488639
"бы"	0.0036154052
"ме"	0.0035689347
"ет"	0.0035584013
" у"	0.003516268
"до"	0.0034914839
"же"	0.00346608
"ас"	0.0034047388
"ль"	0.003396684
"чт"	0.0033508332
"х "	0.0033328645
"мо"	0.0032678058
"ав"	0.0032603706
"ти"	0.0032554136
"ой"	0.0032411627
"се"	0.0032349667
"ю "	0.0032021275
"ег"	0.0031426453

Text	Entropy
"об"	0.0031252962
"ны"	0.0030961747
"ми"	0.0030819238
"ит"	0.0030806845
"ин"	0.0030181042
"ви"	0.0029635788
"че"	0.0029480888
"вс"	0.0028861281
"ар"	0.0028526692
"р "	0.0028297438
"ся"	0.0028204496
"из"	0.0028173516
"ис"	0.0028006223
"с "	0.0027975242
"им"	0.002790089
"со"	0.002746097
"ие"	0.002738042
"ру"	0.0027014853
"сл"	0.0026568735
"сь"	0.002651297
"ма"	0.0026444814
"нн"	0.0025936738
"ам"	0.0025905757
" л"	0.0025676503
"ок"	0.0025335718
"тв"	0.0025125053

Text	Entropy
"ед"	0.0024963955
" а"	0.0024462072
"ки"	0.0024307172
"ня"	0.0024269994
"пе"	0.0024015957
"вы"	0.0023929211
" э"	0.0023650387
"ив"	0.0023414937
"ди"	0.0023167096
"ая"	0.0022900663
"ей"	0.0022863487
"ое"	0.0022460744
"ыл"	0.002224388
"эт"	0.002200843
"му"	0.002196506
"ше"	0.0021686235
"бо"	0.0021308274
"ну"	0.0021246313
"ча"	0.0020186787
"бе"	0.0020186787
"хо"	0.0020044276
"д "	0.0020013298
" ж"	0.0019065299
"ик"	0.0018414712
"ия"	0.0018414712
"г "	0.0018235026

Text	Entropy
"др"	0.0017863262
"их"	0.0017373773
"св"	0.0017268439
"ши"	0.001715691
"ля"	0.0016896675
"ад"	0.0016698401
"гл"	0.0016370009
"сп"	0.001625848
"уд"	0.0016208912
"ож"	0.0016091187
"дн"	0.0015614089
"зд"	0.0015595501
"ду"	0.0015372443
"зн"	0.0015353854
"ее"	0.0015198953
"ры"	0.0014474012
"кн"	0.0014455424
"ым"	0.0014325307
"кр"	0.0014281934
"ев"	0.001422617
"ид"	0.0014127033
"са"	0.0014034092
"си"	0.0014034092
"ту"	0.0013897779
"ье"	0.0013792445
"ша"	0.0013730485

Text	Entropy
"ку"	0.0013507426
"ты"	0.001340829
"ий"	0.0013364917
"чи"	0.0013340133
"ый"	0.0013197623
"ят"	0.0013073701
"з "	0.0012701937
"оч"	0.0012677154
"ус"	0.0012670957
" я"	0.0012652369
"ут"	0.00126028
"жа"	0.0012584212
"жи"	0.001247888
"уж"	0.0012206252
"ич"	0.0012125704
"ще"	0.0012001782
"па"	0.0011716763
"оп"	0.0011704371
"ез"	0.0011698175
"аш"	0.001164241
"лс"	0.0011518488
"ул"	0.001140696
"вш"	0.0011400763
"иц"	0.0011295431
"лу"	0.0011239665
"аж"	0.0011152921

Text	Entropy
"гр"	0.0011097157
" х"	0.0011016608
"жн"	0.0010991823
"уг"	0.0010892686
"вн"	0.001074398
"бр"	0.0010694412
"еб"	0.0010551902
"ек"	0.0010545707
"ьн"	0.0010434177
"ош"	0.0010322648
"ьк"	0.0010198726
"ыв"	0.001016155
"вл"	0.0010081001
"ых"	0.0010074805
"лю"	0.0010074805
"ье"	0.001001904
"вм"	9.969472E-4
"еж"	9.795983E-4
"бу"	9.734021E-4
"яз"	9.703041E-4
"мн"	9.6101E-4
"гд"	9.591512E-4
"ае"	9.5791195E-4
"лы"	9.467591E-4
"ря"	9.43661E-4
"нь"	9.343669E-4

Text	Entropy
"юю"	9.3002967E-4
"ах"	9.287905E-4
"ба"	9.133003E-4
"ум"	9.102023E-4
"рь"	9.040062E-4
"га"	9.0338656E-4
"тн"	9.0090814E-4
"еч"	8.9966896E-4
"оз"	8.9966896E-4
"дв"	8.984297E-4
"см"	8.85418E-4
"нд"	8.85418E-4
" ф"	8.841788E-4
"тс"	8.804611E-4
"ех"	8.798415E-4
"ии"	8.717866E-4
"сс"	8.7116705E-4
"ап"	8.593945E-4
"пъ"	8.4576313E-4
"уз"	8.4390433E-4
"це"	8.414259E-4
"сн"	8.3584944E-4
"ял"	8.222181E-4
"ьс"	8.1602205E-4
"еп"	8.0734753E-4
"мы"	7.75128E-4

Text	Entropy
"ха"	7.726496E-4
"ву"	7.6893193E-4
"ув"	7.645947E-4
"аг"	7.6273584E-4
"ои"	7.602574E-4
"ыс"	7.5901824E-4
" ш"	7.57779E-4
"уч"	7.565398E-4
"су"	7.5096334E-4
"зв"	7.5096334E-4
"ою"	7.5096334E-4
"дл"	7.453869E-4
"ач"	7.4476725E-4
"яс"	7.2246144E-4
"бл"	7.175046E-4
"пи"	7.156457E-4
"жд"	7.113085E-4
"ук"	7.0635165E-4
"аю"	6.908615E-4
"ги"	6.8652426E-4
"йс"	6.8404584E-4
"пл"	6.834262E-4
"щи"	6.772301E-4
"би"	6.747517E-4
"нц"	6.6917524E-4
"ыт"	6.567831E-4

Text	Entropy
"еш"	6.5306545E-4
"уш"	6.381949E-4
"вр"	6.2146556E-4
"пу"	6.177479E-4
"ай"	6.171283E-4
"ур"	6.158891E-4
"уп"	6.1279105E-4
"зо"	6.1279105E-4
"зь"	6.121714E-4
"гу"	6.1093224E-4
"чу"	6.016381E-4
"рн"	5.9420284E-4
"яд"	5.8676756E-4
"оя"	5.818107E-4
"ды"	5.7747343E-4
"ге"	5.74995E-4
"рт"	5.737558E-4
"ещ"	5.669401E-4
"аб"	5.6198327E-4
"цу"	5.5578724E-4
"ья"	5.551676E-4
"ян"	5.539284E-4
"фр"	5.5021077E-4
"уб"	5.452539E-4
"зы"	5.452539E-4
"нс"	5.452539E-4

Text	Entropy
"фи"	5.3905783E-4
"ке"	5.37199E-4
"дь"	5.347206E-4
"ца"	5.303833E-4
"ир"	5.285245E-4
"лк"	5.204696E-4
"ео"	5.179912E-4
"ох"	5.037403E-4
"чн"	4.96305E-4
"тя"	4.938266E-4
"аф"	4.894893E-4
"ью"	4.795756E-4
"яж"	4.7771676E-4
"зя"	4.7647755E-4
"иг"	4.7585796E-4
"вз"	4.6408543E-4
"ющ"	4.609874E-4
"ыш"	4.5788937E-4
"ют"	4.4735605E-4
"кт"	4.417796E-4
"ьш"	4.349639E-4
"нт"	4.1265806E-4
"иб"	4.1203847E-4
"юд"	4.1141885E-4
"дя"	4.1017964E-4
"мя"	4.0460317E-4

Text	Entropy
"тк"	4.0212474E-4
"юб"	3.9406988E-4
"бя"	3.9345026E-4
"шл"	3.9097184E-4
"йн"	3.9035222E-4
"иж"	3.8973262E-4
"зг"	3.8539537E-4
"дс"	3.7981893E-4
"шк"	3.785797E-4
"кл"	3.7362284E-4
"ею"	3.6370914E-4
"ща"	3.618503E-4
"ыб"	3.587523E-4
"сы"	3.5751308E-4
"шн"	3.5627387E-4
"ям"	3.506974E-4
"ию"	3.5007778E-4
"кв"	3.494582E-4
"цо"	3.4450134E-4
"ея"	3.401641E-4
"лж"	3.3892487E-4
"иш"	3.2901115E-4
"ч "	3.2777194E-4
"рд"	3.2653273E-4
" ц"	3.252935E-4
"зи"	3.228151E-4

Text	Entropy
"рж"	3.0918376E-4
"сч"	3.0236808E-4
"б "	3.0112886E-4
"ср"	2.9741123E-4
"рг"	2.9741123E-4
"оф"	2.967916E-4
"ух"	2.955524E-4
"пя"	2.9431318E-4
"шу"	2.9245438E-4
"сд"	2.9059555E-4
"рм"	2.8935634E-4
"вд"	2.8873672E-4
"ьм"	2.8254066E-4
"рв"	2.8130144E-4
"лн"	2.7572497E-4
"ьр"	2.7138775E-4
"бн"	2.7076813E-4
"ун"	2.7014854E-4
"рш"	2.676701E-4
"яв"	2.5527796E-4
"зм"	2.5527796E-4
"шь"	2.5403875E-4
"шо"	2.5217992E-4
"зу"	2.497015E-4
"ц "	2.4722307E-4
"ащ"	2.4412504E-4

Text	Entropy
"ущ"	2.397878E-4
"гн"	2.3792898E-4
"зе"	2.3483095E-4
"рк"	2.304937E-4
"рс"	2.2863488E-4
"пы"	2.2801527E-4
"вп"	2.2739566E-4
"ци"	2.2553685E-4
"ящ"	2.2553685E-4
"тл"	2.2429763E-4
"ын"	2.2429763E-4
"нч"	2.2057998E-4
"лд"	2.1810156E-4
"ец"	2.1562313E-4
"зс"	2.112859E-4
"чк"	2.0508982E-4
"вт"	2.038506E-4
"йт"	2.038506E-4
"зр"	2.0137218E-4
"бк"	1.9641533E-4
"зл"	1.9517611E-4
"вя"	1.939369E-4
"ж "	1.9145847E-4
"мп"	1.9145847E-4
"дт"	1.8898005E-4
"уе"	1.8650162E-4

Text	Entropy
"ях"	1.8526241E-4
"ю"	1.846428E-4
"ип"	1.8278397E-4
"нк"	1.8278397E-4
"бщ"	1.7968594E-4
"кс"	1.7968594E-4
"ф "	1.7782713E-4
"лч"	1.7287028E-4
"дж"	1.7163107E-4
"ей"	1.7101146E-4
"лп"	1.7101146E-4
"оо"	1.6977223E-4
"ык"	1.6791341E-4
"ыч"	1.6791341E-4
"сх"	1.6729381E-4
"зб"	1.6419578E-4
"чь"	1.6357617E-4
"тч"	1.6295657E-4
"рб"	1.5985854E-4
"зж"	1.5366246E-4
"вь"	1.5304286E-4
"цы"	1.5242325E-4
"тд"	1.5056443E-4
"вк"	1.4994483E-4
"яя"	1.4622719E-4
"хи"	1.4498796E-4

Text	Entropy
"рю"	1.4065072E-4
"ау"	1.4065072E-4
"жу"	1.381723E-4
"ьз"	1.3693309E-4
"яг"	1.3631348E-4
"бь"	1.3631348E-4
"фа"	1.3321545E-4
"йд"	1.3321545E-4
"фе"	1.3259583E-4
"ню"	1.3259583E-4
"яч"	1.301174E-4
"ощ"	1.301174E-4
"дм"	1.2639977E-4
"ьи"	1.2516056E-4
"ищ"	1.2516056E-4
"як"	1.2206252E-4
"дш"	1.202037E-4
"зк"	1.202037E-4
"яе"	1.18344884E-4
"тт"	1.14007635E-4
"хв"	1.1276842E-4
"лг"	1.1276842E-4
"нг"	1.1276842E-4
"дц"	1.1028999E-4
"сю"	1.09670385E-4
"аи"	1.09670385E-4

Text	Entropy
"цк"	1.0905078E-4
"яю"	1.0843117E-4
"мс"	1.0843117E-4
"нщ"	1.06572355E-4
"тц"	1.0595275E-4
"ху"	1.0285471E-4
"ып"	1.02235106E-4
"йш"	1.00995894E-4
"ыд"	9.975668E-5
"хн"	9.9137076E-5
"юс"	9.9137076E-5
"дп"	9.9137076E-5
"ьб"	9.6658645E-5
"хр"	9.479983E-5
"щу"	9.418022E-5
"мл"	9.418022E-5
"ш "	8.9223366E-5
"шт"	8.860376E-5
"эл"	8.7984154E-5
"бх"	8.736455E-5
"иа"	8.736455E-5
"лл"	8.674494E-5
"хл"	8.550573E-5
"рх"	8.488612E-5
"йл"	8.488612E-5
"чш"	8.30273E-5

Text	Entropy
"бв"	8.240769E-5
"пч"	8.178809E-5
"гс"	8.0548874E-5
"ац"	7.930966E-5
"ьц"	7.869005E-5
"гк"	7.683123E-5
"рл"	7.683123E-5
"ыг"	7.6211625E-5
"жк"	7.497241E-5
"сш"	7.435281E-5
"фо"	7.3113595E-5
"рц"	7.249398E-5
"юш"	7.1874376E-5
"оц"	7.001556E-5
"фy"	6.939595E-5
"бс"	6.8776346E-5
"пк"	6.815674E-5
"юч"	6.691753E-5
"фл"	6.6297915E-5
"рч"	6.567831E-5
"зю"	6.50587E-5
"рп"	6.44391E-5
"чо"	6.3199885E-5
"ьт"	6.3199885E-5
"ey"	6.3199885E-5
"нр"	6.3199885E-5

Text	Entropy
"уя"	6.134107E-5
"мк"	6.0721457E-5
"пн"	6.0721457E-5
"жб"	5.886264E-5
"уй"	5.7623423E-5
"ыз"	5.638421E-5
"йк"	5.5764605E-5
"юл"	5.3905784E-5
"тп"	5.3286178E-5
"эк"	5.3286178E-5
"хс"	5.266657E-5
"оу"	5.2046962E-5
"сб"	5.1427356E-5
"жо"	5.1427356E-5
"пп"	5.1427356E-5
" щ"	5.080775E-5
"ьч"	4.894893E-5
"яр"	4.894893E-5
"мг"	4.894893E-5
"хм"	4.8329322E-5
"юр"	4.7709716E-5
"рщ"	4.709011E-5
"мр"	4.5850895E-5
"дю"	4.4611683E-5
"яб"	4.3992077E-5
"дх"	4.2752865E-5

Text	Entropy
"жб"	4.2752865E-5
"йч"	4.2752865E-5
"тю"	4.2133255E-5
"яй"	4.2133255E-5
"вч"	4.2133255E-5
"лт"	4.151365E-5
"эс"	4.0894043E-5
"гг"	4.0274437E-5
"п "	3.965483E-5
"ьд"	3.903522E-5
"пт"	3.903522E-5
"гв"	3.8415616E-5
"рз"	3.779601E-5
" ю"	3.7176404E-5
"шп"	3.7176404E-5
"яц"	3.7176404E-5
"вх"	3.7176404E-5
"юн"	3.5317582E-5
"вв"	3.5317582E-5
"вг"	3.4697976E-5
"еа"	3.3458764E-5
"жч"	3.3458764E-5
"юю"	3.2839154E-5
"бм"	3.2839154E-5
"жю"	3.2839154E-5
"чл"	3.221955E-5

Text	Entropy
"йм"	3.221955E-5
"мю"	3.221955E-5
"хт"	3.1599942E-5
"ьо"	3.1599942E-5
"иф"	3.1599942E-5
"ьг"	3.0980336E-5
"щн"	3.0360728E-5
"эп"	3.0360728E-5
"хе"	2.9741122E-5
"тб"	2.7882303E-5
"дч"	2.7882303E-5
"мь"	2.7882303E-5
"дб"	2.7262695E-5
"цв"	2.6643089E-5
"дд"	2.6643089E-5
"мб"	2.6643089E-5
"жс"	2.6023481E-5
"эн"	2.5403875E-5
"тм"	2.4784269E-5
"гч"	2.4784269E-5
"мм"	2.4164661E-5
"сз"	2.3545055E-5
"сц"	2.2925447E-5
"лб"	2.2925447E-5
"мч"	2.2925447E-5
"юц"	2.2305841E-5

Text	Entropy
"йц"	2.1686235E-5
"нв"	2.1686235E-5
"уэ"	2.1066628E-5
"чр"	2.1066628E-5
"мц"	2.1066628E-5
"оэ"	2.1066628E-5
"яп"	2.0447022E-5
"пф"	2.0447022E-5
"шв"	1.9827416E-5
"нш"	1.9827416E-5
"зз"	1.9207808E-5
"рр"	1.8588202E-5
"уа"	1.8588202E-5
"бд"	1.8588202E-5
"сг"	1.7968594E-5
"жж"	1.7968594E-5
"уи"	1.7348988E-5
"кж"	1.7348988E-5
"ыж"	1.6729382E-5
"юз"	1.6729382E-5
"еф"	1.6729382E-5
"кч"	1.6729382E-5
"ыи"	1.6109774E-5
"яш"	1.6109774E-5
"бч"	1.6109774E-5
"зт"	1.6109774E-5

Text	Entropy
"рф"	1.5490168E-5
"йр"	1.5490168E-5
"зч"	1.4870561E-5
"сж"	1.4250954E-5
"фс"	1.4250954E-5
"эр"	1.4250954E-5
"дж"	1.4250954E-5
"кк"	1.4250954E-5
"юм"	1.3631347E-5
"нж"	1.3631347E-5
"щъ"	1.30117405E-5
"нз"	1.30117405E-5
"фт"	1.23921345E-5
"шм"	1.23921345E-5
"яи"	1.23921345E-5
"э "	1.23921345E-5
"нб"	1.23921345E-5
" й"	1.1772528E-5
"сф"	1.1772528E-5
"тх"	1.1772528E-5
"тщ"	1.1772528E-5
"уф"	1.1772528E-5
"кз"	1.1772528E-5
"фы"	1.1152921E-5
"вб"	1.1152921E-5
"вц"	1.1152921E-5

Text	Entropy
"кц"	1.1152921E-5
"эй"	1.0533314E-5
"юк"	1.0533314E-5
"йо"	1.0533314E-5
"пц"	1.0533314E-5
"ьщ"	9.913708E-6
"қд"	9.913708E-6
"кш"	9.913708E-6
"уц"	9.294101E-6
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"бб"	9.294101E-6
"бз"	9.294101E-6
"мт"	9.294101E-6
"нф"	9.294101E-6
"уо"	8.674494E-6
"ьв"	8.674494E-6
"жг"	8.674494E-6
"бж"	8.054887E-6
"цн"	7.4352806E-6
"зш"	7.4352806E-6
"тф"	6.8156737E-6
"бг"	6.8156737E-6
"хш"	6.1960673E-6
"юж"	6.1960673E-6
"юх"	6.1960673E-6
"бт"	6.1960673E-6

Text	Entropy
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"кю"	6.1960673E-6
"мз"	6.1960673E-6
"тг"	5.5764604E-6
"чм"	5.5764604E-6
"ыц"	5.5764604E-6
"вщ"	5.5764604E-6
"дг"	5.5764604E-6
"жл"	5.5764604E-6
"жм"	5.5764604E-6
"иу"	5.5764604E-6
"мш"	5.5764604E-6
"нх"	5.5764604E-6
"тз"	4.956854E-6
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"аа"	4.956854E-6
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"лш"	4.956854E-6
"мщ"	4.956854E-6
"пс"	4.956854E-6
"эм"	4.337247E-6
"эх"	4.337247E-6
"бш"	4.337247E-6
"бю"	4.337247E-6
"км"	4.337247E-6
"лв"	4.337247E-6

Text	Entropy
"лф"	4.337247E-6
"нл"	4.337247E-6
"оа"	4.337247E-6
"фк"	3.7176403E-6
"чв"	3.7176403E-6
"ыщ"	3.7176403E-6
"юп"	3.7176403E-6
"ао"	3.7176403E-6
"дф"	3.7176403E-6
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"лз"	3.7176403E-6
"лм"	3.7176403E-6
"лх"	3.7176403E-6
"мф"	3.7176403E-6
"нп"	3.7176403E-6
"пг"	3.7176403E-6
"пш"	3.7176403E-6
"цл"	3.0980336E-6
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"эз"	3.0980336E-6
"бц"	3.0980336E-6
"гм"	3.0980336E-6
"йб"	3.0980336E-6
"йе"	3.0980336E-6
" ь"	2.478427E-6

Text	Entropy
"yy"	2.478427E-6
"фф"	2.478427E-6
"цм"	2.478427E-6
"ця"	2.478427E-6
"шр"	2.478427E-6
"by"	2.478427E-6
"ьф"	2.478427E-6
"вю"	2.478427E-6
"гт"	2.478427E-6
"пщ"	2.478427E-6
"тэ"	1.8588202E-6
"хх"	1.8588202E-6
"ья"	1.8588202E-6
"эг"	1.8588202E-6
"эф"	1.8588202E-6
"юг"	1.8588202E-6
"яу"	1.8588202E-6
"аэ"	1.8588202E-6
"дз"	1.8588202E-6
"дэ"	1.8588202E-6
"йф"	1.8588202E-6
"кг"	1.8588202E-6
"кь"	1.8588202E-6
"нм"	1.8588202E-6
"нэ"	1.8588202E-6
"фю"	1.2392135E-6

Text	Entropy
"хг"	1.2392135E-6
"шш"	1.2392135E-6
"гц"	1.2392135E-6
"гю"	1.2392135E-6
"йх"	1.2392135E-6
"пб"	1.2392135E-6
"сщ"	6.1960674E-7
" ы"	6.1960674E-7
"тж"	6.1960674E-7
"тш"	6.1960674E-7
"фг"	6.1960674E-7
"фм"	6.1960674E-7
"фч"	6.1960674E-7
"фь"	6.1960674E-7
"хд"	6.1960674E-7
"хп"	6.1960674E-7
"хь"	6.1960674E-7
"чч"	6.1960674E-7
"чэ"	6.1960674E-7
"шц"	6.1960674E-7
"шы"	6.1960674E-7
"щв"	6.1960674E-7
"що"	6.1960674E-7
"ьп"	6.1960674E-7
"ьу"	6.1960674E-7
"ьх"	6.1960674E-7

Text	Entropy
"эц"	6.1960674E-7
"эш"	6.1960674E-7
"ээ"	6.1960674E-7
"юа"	6.1960674E-7
"юв"	6.1960674E-7
"юи"	6.1960674E-7
"вж"	6.1960674E-7
"гь"	6.1960674E-7
"эх"	6.1960674E-7
"иь"	6.1960674E-7
"йв"	6.1960674E-7
"йщ"	6.1960674E-7
"кп"	6.1960674E-7
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"мв"	6.1960674E-7
"мэ"	6.1960674E-7
"пэ"	6.1960674E-7

Name: bigramCrossNoWhitespace.md

Data entropy: 4.1396

Data redundancy: 0.17208004

Text	Entropy
"То"	0.017504228
"ст"	0.016869936
"ов"	0.012080478
"на"	0.012010742
"ос"	0.010404611
"го"	0.010343037
"ен"	0.010330426
"но"	0.010292591
"не"	0.010187988
"ал"	0.010116027
"по"	0.009900145
"ко"	0.009892727
"ра"	0.009856376
"он"	0.009816315
"ка"	0.009498798
"ни"	0.009452803
"во"	0.009245082
"ро"	0.009097451
"от"	0.00893795
"ер"	0.0081449

Text	Entropy
"ол"	0.0080521675
"ло"	0.008031395
"ан"	0.0077480045
"ор"	0.007716846
"ла"	0.0076968158
"ес"	0.007509125
"ли"	0.0074364226
"пр"	0.0071419035
"ел"	0.007112229
"ре"	0.006929731
"ав"	0.0067331376
"ва"	0.0066040535
"од"	0.006423781
"ом"	0.0064178463
"та"	0.0062872786
"ат"	0.0062501854
"ть"	0.0061537432
"ас"	0.006129262
"ск"	0.0059719873
"ак"	0.0059067034
"ог"	0.005885931
"ри"	0.0058659012
"за"	0.0057902313
"тр"	0.005774652
"ин"	0.005580284
"ис"	0.0055676727

Text	Entropy
"ем"	0.005517226
"ил"	0.0055164844
"ле"	0.0054675215
"те"	0.0053362115
"ве"	0.0051893233
"об"	0.005115137
"ив"	0.0050973324
"ет"	0.00507656
"де"	0.005023888
"ви"	0.00496899
"аз"	0.0048228432
"да"	0.0048020715
"мо"	0.004578771
"ит"	0.004555031
"ми"	0.0045483545
"вс"	0.004529808
"ме"	0.0044467193
"ег"	0.004401466
"ти"	0.004374759
"бы"	0.0043102168
"до"	0.0042219353
"же"	0.004218226
"ль"	0.004218226
"ок"	0.004209324
"чт"	0.004008279
"им"	0.003951898

Text	Entropy
"ар"	0.003933351
"ед"	0.0039214813
"се"	0.003917772
"из"	0.0038613905
"ам"	0.0038280068
"ие"	0.0037708834
"оп"	0.0037382415
"ой"	0.0037337902
"нн"	0.003675925
"ны"	0.003675925
"ев"	0.0036699902
"тв"	0.0035535179
"че"	0.0035201341
"ся"	0.0034860084
"со"	0.003483041
"ик"	0.0033851152
"ки"	0.0033450548
"ое"	0.0033406036
"ру"	0.003273836
"ма"	0.0032708687
"сь"	0.0032374847
"сл"	0.0032026174
"ня"	0.0030186356
"ап"	0.0029874775
"ад"	0.002979317
"еп"	0.0029770914

Text	Entropy
"ая"	0.002946675
"пе"	0.002945933
"ди"	0.0029266446
"вы"	0.0028747143
"му"	0.0028005282
"ей"	0.0027367282
"ии"	0.0027359861
"ид"	0.0027285677
"ыл"	0.0027189234
"хо"	0.002710021
"оч"	0.0027085373
"бо"	0.0026692187
"ну"	0.002651414
"ип"	0.0025757442
"эт"	0.002560165
"ше"	0.0025482953
"ча"	0.0024184694
"ои"	0.0024132764
"бе"	0.002399181
"ож"	0.0023798926
"ия"	0.0023628299
"оо"	0.0023598622
"кн"	0.0022522924
"уд"	0.002247841
"лс"	0.002238197
"ек"	0.0022359714

Text	Entropy
"св"	0.0022352296
"ее"	0.0022352296
"сп"	0.0022226179
"еб"	0.0022181666
"др"	0.00221149
"ус"	0.0021944272
"ьн"	0.0021884923
"ян"	0.0021669783
"их"	0.00214769
"ье"	0.002131369
"ля"	0.002115048
"ши"	0.002109113
"ят"	0.0020913084
"ич"	0.002088341
"яс"	0.0020534734
"ьс"	0.0020512477
"дн"	0.0020208315
"гл"	0.0019629663
"зд"	0.001958515
"ез"	0.0019548058
"зн"	0.0019421942
"ьк"	0.0019340337
"ео"	0.0019177127
"ым"	0.0019088103
"ду"	0.0019013918
"ио"	0.0018761684

Text	Entropy
"вн"	0.0018754266
"мн"	0.0018628149
"кр"	0.0018042078
"ту"	0.0017953055
"рс"	0.001787145
"си"	0.0017782426
"ут"	0.0017782426
"ры"	0.0017641473
"са"	0.0017366984
"ку"	0.0017292798
"йс"	0.0017062821
"ае"	0.0016981217
"ша"	0.0016721564
"яв"	0.0016513843
"ыв"	0.0016454494
"чи"	0.001642482
"еч"	0.001626161
"оз"	0.0016157749
"ый"	0.0016083564
"тн"	0.0016009377
"тс"	0.0015950028
"ий"	0.0015898098
"ты"	0.001566812
"ув"	0.0015638446
"вм"	0.001556426
"уг"	0.0015430725

Text	Entropy
"аш"	0.0015200748
"жа"	0.001513398
"аж"	0.0015104306
"уж"	0.0015089469
"еи"	0.0015074632
"аи"	0.0014926259
"жи"	0.0014896585
"аг"	0.0014837235
"аб"	0.0014822398
"яз"	0.0014740793
"лу"	0.0014733375
"ул"	0.0014555329
"ао"	0.0014525653
"ще"	0.0014518235
"иб"	0.0014414374
"сн"	0.0014362443
"вр"	0.0014362443
"иц"	0.0014251164
"вш"	0.0014021187
"сс"	0.0013865397
"вл"	0.0013731861
"ыс"	0.0013620582
"уп"	0.0013576071
"ук"	0.0013553814
"ач"	0.0013531559
"па"	0.001352414

Text	Entropy
"жн"	0.0013501884
"гр"	0.0013420279
"ые"	0.0013390605
"ош"	0.0013271907
"еж"	0.0013116116
"уч"	0.0013056768
"ум"	0.0012967744
"лк"	0.0012952907
"бр"	0.0012871302
"гд"	0.0012708092
"ых"	0.001244844
"ъв"	0.0012270394
"лю"	0.0012225882
"ех"	0.0012211045
"иг"	0.001218137
"ир"	0.0012166533
"ах"	0.0012047836
"яд"	0.001201816
"нд"	0.0011988486
"бу"	0.0011825276
"нс"	0.0011743671
"см"	0.0011706579
"дв"	0.0011654649
"ба"	0.0011602718
"лы"	0.0011550788
"уз"	0.0011506276

Text	Entropy
"ря"	0.0011343067
"нь"	0.0011291136
"ял"	0.0011202113
"вп"	0.0011075996
"дг"	0.0011024066
"мс"	0.0010986973
"ую"	0.0010972136
"ун"	0.0010905368
"яп"	0.0010816344
"ву"	0.0010816344
"йн"	0.0010801507
"су"	0.0010660554
"га"	0.0010586367
"лн"	0.001057153
"рь"	0.0010452833
"це"	0.0010230273
"мп"	0.0010230273
"ьи"	0.0010126414
"оя"	0.0010081901
"ги"	0.0010059646
"як"	0.0010052227
"зв"	9.92611E-4
"пъ"	9.844506E-4
"ха"	9.837088E-4
"яи"	9.829669E-4
"ьп"	9.7332266E-4

Text	Entropy
"ыт"	9.5625984E-4
"рв"	9.5032493E-4
"лп"	9.2510163E-4
"ою"	9.1249E-4
"пи"	9.1100624E-4
"дл"	9.021039E-4
"мы"	9.006202E-4
"бл"	8.9616905E-4
"жд"	8.9320156E-4
"ур"	8.783644E-4
"рн"	8.783644E-4
"уб"	8.7242946E-4
"би"	8.7094575E-4
"аю"	8.6649455E-4
"пл"	8.486899E-4
"вк"	8.3533634E-4
"щи"	8.286596E-4
"лв"	8.2717586E-4
"ын"	8.197573E-4
"мв"	8.182735E-4
"еш"	8.167898E-4
"уш"	8.1604795E-4
"зо"	8.130805E-4
"ох"	8.0492004E-4
"яо"	8.0269447E-4
"йп"	7.9898513E-4

Text	Entropy
"гу"	7.8711536E-4
"вт"	7.863735E-4
"кв"	7.8118045E-4
"йв"	7.789549E-4
"нц"	7.789549E-4
"кт"	7.693107E-4
"ьо"	7.678269E-4
"ай"	7.5447344E-4
"ья"	7.4482925E-4
"вд"	7.3444314E-4
"пу"	7.329594E-4
"тк"	7.314757E-4
"зь"	7.2925014E-4
"нт"	7.2479894E-4
"ям"	7.233152E-4
"рт"	7.08478E-4
"фр"	7.062524E-4
"ке"	7.0105935E-4
"вз"	6.980919E-4
"ге"	6.980919E-4
"фи"	6.936408E-4
"чу"	6.891896E-4
"кс"	6.8622216E-4
"цу"	6.8399654E-4
"йд"	6.8399654E-4
"йк"	6.736105E-4

Text	Entropy
"ды"	6.6322443E-4
"юд"	6.624826E-4
"ыб"	6.617407E-4
"ещ"	6.60257E-4
"яж"	6.5654767E-4
"уй"	6.498709E-4
"зы"	6.402267E-4
"иж"	6.38743E-4
"тя"	6.372593E-4
"аф"	6.350337E-4
"лд"	6.2835694E-4
"йи"	6.231639E-4
"оу"	6.2168017E-4
"ца"	6.209383E-4
"ью"	6.194546E-4
"ют"	6.179709E-4
"мк"	6.179709E-4
"дъ"	6.112941E-4
"ъм"	6.090685E-4
"лч"	6.068429E-4
"чн"	6.0461735E-4
"ып"	5.942313E-4
"нп"	5.927476E-4
"еу"	5.8755453E-4
"зя"	5.845871E-4
"ея"	5.8310333E-4

Text	Entropy
"дс"	5.8087776E-4
"ыш"	5.801359E-4
"вв"	5.764266E-4
"ющ"	5.6233123E-4
"ау"	5.615894E-4
"нв"	5.571382E-4
"юб"	5.4971955E-4
"хс"	5.452684E-4
"юс"	5.393335E-4
"йт"	5.3488236E-4
"мя"	5.3488236E-4
"яб"	5.341405E-4
"хв"	5.2449625E-4
"йо"	5.2449625E-4
"тп"	5.2301254E-4
"ьш"	5.215288E-4
"сд"	5.200451E-4
"иу"	5.200451E-4
"зг"	5.185614E-4
"хи"	5.1781954E-4
"иш"	5.1781954E-4
"ьт"	5.066916E-4
"бя"	5.059497E-4
"яч"	5.04466E-4
"мч"	5.029823E-4
"ьи"	4.970474E-4

Text	Entropy
"яг"	4.948218E-4
"оф"	4.9407996E-4
"дя"	4.918544E-4
"вг"	4.888869E-4
"яе"	4.8295202E-4
"зи"	4.792427E-4
"кл"	4.7404968E-4
"шк"	4.6885666E-4
"шл"	4.644055E-4
"кб"	4.644055E-4
"тд"	4.5772872E-4
"лж"	4.5327755E-4
"ср"	4.5179384E-4
"гн"	4.503101E-4
"ыр"	4.4956824E-4
"зс"	4.4734264E-4
"хп"	4.4660078E-4
"ьч"	4.4660078E-4
"нк"	4.4585892E-4
"рд"	4.421496E-4
"ба"	4.384403E-4
"ьб"	4.3769844E-4
"ык"	4.3621473E-4
"ьд"	4.3621473E-4
"ию"	4.34731E-4
"сч"	4.310217E-4

Text	Entropy
"yo"	4.2582865E-4
"ею"	4.2434494E-4
"цо"	4.2286122E-4
"ща"	4.2286122E-4
"тч"	4.1989377E-4
"ьз"	4.1766817E-4
"хн"	4.117333E-4
"тт"	4.0802397E-4
"шн"	4.0802397E-4
"ух"	4.0283095E-4
"кк"	3.9912164E-4
"рм"	3.9689604E-4
"мд"	3.9318675E-4
"кп"	3.8947744E-4
"рг"	3.8502627E-4
"лг"	3.842844E-4
"оэ"	3.8131696E-4
"мг"	3.805751E-4
"йм"	3.783495E-4
"рж"	3.746402E-4
"сы"	3.7018902E-4
"зм"	3.6796345E-4
"рк"	3.6796345E-4
"ьд"	3.5757737E-4
"пя"	3.5683552E-4
"нч"	3.516425E-4

Text	Entropy
"шу"	3.4793318E-4
"уе"	3.4719132E-4
"аэ"	3.4570758E-4
"тл"	3.4274015E-4
"зу"	3.412564E-4
"йб"	3.412564E-4
"йг"	3.397727E-4
"лт"	3.3828898E-4
"мб"	3.3161222E-4
"йр"	3.3087036E-4
"ци"	3.279029E-4
"юв"	3.2567733E-4
"юи"	3.2567733E-4
"рш"	3.2345174E-4
"яр"	3.2270988E-4
"шо"	3.2196802E-4
"ущ"	3.2122614E-4
"бн"	3.2048428E-4
"нб"	3.2048428E-4
"еэ"	3.1974242E-4
"иа"	3.1974242E-4
"юп"	3.1900057E-4
"мт"	3.1677497E-4
"лб"	3.1380754E-4
"юн"	3.1009823E-4
"ью"	3.0935637E-4

Text	Entropy
"мл"	3.049052E-4
"шь"	3.0416332E-4
"йч"	3.0342146E-4
"тб"	3.0193775E-4
"гс"	3.011959E-4
"вэ"	3.00454E-4
"ях"	2.9971215E-4
"яа"	2.989703E-4
"зе"	2.9822843E-4
"ец"	2.9526098E-4
"ащ"	2.9377727E-4
"ыч"	2.930354E-4
"дк"	2.9155167E-4
"нг"	2.893261E-4
"гв"	2.871005E-4
"зр"	2.871005E-4
"хл"	2.8561678E-4
"рп"	2.8561678E-4
"зл"	2.8413307E-4
"пы"	2.8190747E-4
"зк"	2.752307E-4
"ьг"	2.7152142E-4
"аа"	2.678121E-4
"чк"	2.6632837E-4
"вя"	2.6632837E-4
"дт"	2.6632837E-4

Text	Entropy
"яя"	2.6261905E-4
"ящ"	2.618772E-4
"мм"	2.6113534E-4
"гп"	2.5890977E-4
"вб"	2.5594232E-4
"из"	2.544586E-4
"юк"	2.5297486E-4
"лр"	2.52233E-4
"рб"	2.507493E-4
"мр"	2.485237E-4
"хр"	2.4555624E-4
"кд"	2.425888E-4
"йл"	2.388795E-4
"ьр"	2.3591204E-4
"ху"	2.3517018E-4
"бк"	2.3517018E-4
"яу"	2.329446E-4
"юо"	2.3220274E-4
"вч"	2.2849343E-4
"зб"	2.270097E-4
"ыз"	2.2181668E-4
"бщ"	2.2181668E-4
"еа"	2.210748E-4
"дп"	2.173655E-4
"юч"	2.1588178E-4
"ыг"	2.1513991E-4

Text	Entropy
"зп"	2.1439805E-4
"тм"	2.1217247E-4
"юр"	2.0920503E-4
"гк"	2.0920503E-4
"сх"	2.0846316E-4
"хд"	2.0846316E-4
"хк"	2.0697944E-4
"вь"	2.0327013E-4
"ьэ"	2.0252826E-4
"кж"	2.0104455E-4
"лл"	2.0104455E-4
"йа"	2.0030267E-4
"оа"	1.9956082E-4
"хм"	1.9807709E-4
"фа"	1.9733523E-4
"йш"	1.9659338E-4
"ьу"	1.958515E-4
"зж"	1.9436779E-4
"чь"	1.9140034E-4
"сб"	1.8917475E-4
"км"	1.8917475E-4
"дм"	1.8769102E-4
"нз"	1.7730496E-4
"цы"	1.7582125E-4
"жу"	1.7582125E-4
"бь"	1.706282E-4

Text	Entropy
"нр"	1.706282E-4
"мз"	1.6617704E-4
"йу"	1.632096E-4
"ню"	1.6246772E-4
"хт"	1.6172587E-4
"тг"	1.6024214E-4
"цк"	1.5950028E-4
"иф"	1.5801656E-4
"рю"	1.5653283E-4
"лз"	1.5653283E-4
"гч"	1.5579097E-4
"чг"	1.5504911E-4
"кч"	1.5430724E-4
"юм"	1.5356539E-4
"ощ"	1.5356539E-4
"дш"	1.5208166E-4
"ищ"	1.513398E-4
"фе"	1.5059795E-4
"яз"	1.5059795E-4
"йз"	1.5059795E-4
"дц"	1.4985607E-4
"сг"	1.4614678E-4
"хб"	1.454049E-4
"кг"	1.454049E-4
"ьл"	1.4392118E-4
"уа"	1.4243746E-4

Text	Entropy
"уя"	1.4243746E-4
"лм"	1.4243746E-4
"юг"	1.3872815E-4
"тз"	1.3724442E-4
"йж"	1.3650257E-4
"сю"	1.3130953E-4
"шт"	1.3130953E-4
"хг"	1.3056767E-4
"юл"	1.3056767E-4
"рх"	1.2908394E-4
"тэ"	1.2834209E-4
"тц"	1.2760023E-4
"яю"	1.2760023E-4
"рл"	1.2760023E-4
"нм"	1.2685836E-4
"юа"	1.2389092E-4
"юу"	1.2389092E-4
"мж"	1.2389092E-4
"йе"	1.2314906E-4
"сш"	1.2240719E-4
"сж"	1.20181605E-4
"рч"	1.1943975E-4
"нщ"	1.1943975E-4
"зз"	1.18697884E-4
"уу"	1.17214164E-4
"бв"	1.164723E-4

Text	Entropy
"лэ"	1.164723E-4
"тж"	1.15730436E-4
"жк"	1.15730436E-4
"фо"	1.14246715E-4
"бх"	1.1202113E-4
"оц"	1.1127927E-4
"ац"	1.0905368E-4
"юш"	1.07569955E-4
"сз"	1.06086234E-4
"щγ"	1.06086234E-4
"чш"	1.03118786E-4
"ыγ"	1.0237692E-4
"ьц"	1.0237692E-4
"хе"	1.008932E-4
"фγ"	1.0015134E-4
"юз"	1.0015134E-4
"чо"	9.940948E-5
"эл"	9.866762E-5
"еф"	9.866762E-5
"γэ"	9.4958305E-5
"кз"	9.421645E-5
"пч"	9.421645E-5
"кэ"	9.3474584E-5
"юж"	9.273272E-5
"рц"	9.0507136E-5
"бс"	8.828155E-5

Text	Entropy
"хз"	8.679783E-5
"гг"	8.4572246E-5
"дд"	8.4572246E-5
"зт"	8.4572246E-5
"ьж"	8.383038E-5
"хч"	8.2346654E-5
"жб"	8.2346654E-5
"пн"	8.2346654E-5
"пк"	8.16048E-5
"зю"	8.0862934E-5
"ьх"	7.863735E-5
"гб"	7.863735E-5
"вх"	7.715362E-5
"дб"	7.715362E-5
"йф"	7.56699E-5
"уй"	7.492804E-5
"фл"	7.492804E-5
"мэ"	7.492804E-5
"жо"	7.418618E-5
"юе"	7.270245E-5
"йц"	7.270245E-5
"рз"	7.270245E-5
"ыж"	7.121873E-5
"яц"	7.121873E-5
"дч"	7.047687E-5
"мш"	6.9735004E-5

Text	Entropy
"йэ"	6.899315E-5
"гт"	6.5283835E-5
"яш"	6.454197E-5
"мх"	6.454197E-5
"гз"	6.3800115E-5
"эк"	6.305825E-5
"йх"	6.231639E-5
"йя"	6.231639E-5
"тю"	6.0832666E-5
"кя"	6.0832666E-5
"вж"	6.0090802E-5
"мф"	6.0090802E-5
"ья"	5.9348942E-5
"ыэ"	5.7865218E-5
"сэ"	5.7123358E-5
"рщ"	5.6381494E-5
"шп"	5.6381494E-5
"яф"	5.6381494E-5
"дз"	5.6381494E-5
"сф"	5.4897773E-5
"дю"	5.4897773E-5
"нж"	5.4897773E-5
"пп"	5.415591E-5
"тх"	5.2672185E-5
"нх"	5.2672185E-5
"цв"	5.1930325E-5

Text	Entropy
"эс"	5.118846E-5
"pp"	5.04466E-5
"юц"	5.04466E-5
"яй"	5.04466E-5
"гм"	5.04466E-5
"бм"	4.970474E-5
"хж"	4.8962876E-5
"кх"	4.8962876E-5
"пт"	4.8221016E-5
"лш"	4.6737292E-5
"чл"	4.599543E-5
"жь"	4.5253568E-5
"лф"	4.5253568E-5
"жс"	4.4511708E-5
"нэ"	4.4511708E-5
"уф"	4.3769844E-5
"нл"	4.3769844E-5
"чв"	4.3027983E-5
"юэ"	4.3027983E-5
"бэ"	4.3027983E-5
"нш"	4.3027983E-5
"жю"	4.2286123E-5
"щн"	4.154426E-5
"юю"	4.154426E-5
"вц"	4.154426E-5
"цп"	4.08024E-5

Text	Entropy
"ыя"	4.08024E-5
"фс"	4.0060535E-5
"чр"	4.0060535E-5
"юя"	4.0060535E-5
"зэ"	4.0060535E-5
"мц"	4.0060535E-5
"сц"	3.9318675E-5
"ьф"	3.9318675E-5
"эп"	3.9318675E-5
"мю"	3.9318675E-5
"тф"	3.857681E-5
"зч"	3.857681E-5
"дх"	3.709309E-5
"рф"	3.6351226E-5
"вф"	3.5609366E-5
"гэ"	3.4125642E-5
"мь"	3.4125642E-5
"хэ"	3.2641918E-5
"эн"	3.1900057E-5
"цн"	3.1158193E-5
"нф"	3.1158193E-5
"жч"	3.0416333E-5
"лх"	3.0416333E-5
"чп"	2.9674471E-5
"юх"	2.9674471E-5
"цс"	2.8190747E-5

Text	Entropy
"фт"	2.7448887E-5
"кш"	2.7448887E-5
"фв"	2.6707025E-5
"хш"	2.6707025E-5
"зш"	2.6707025E-5
"кф"	2.6707025E-5
"хя"	2.5965162E-5
"юф"	2.5965162E-5
"бч"	2.52233E-5
"ыф"	2.4481438E-5
"уц"	2.3739576E-5
"дж"	2.3739576E-5
"жж"	2.3739576E-5
"хф"	2.2997716E-5
"чс"	2.2997716E-5
"бд"	2.2997716E-5
"дэ"	2.2997716E-5
"кц"	2.2997716E-5
"шв"	2.2255854E-5
"эр"	2.2255854E-5
"жв"	2.2255854E-5
"жм"	2.2255854E-5
"шм"	2.1513992E-5
"рэ"	2.077213E-5
"хх"	2.077213E-5
"жг"	2.0030267E-5

Text	Entropy
"цг"	1.9288405E-5
"дф"	1.9288405E-5
"тщ"	1.8546545E-5
"цт"	1.8546545E-5
"жт"	1.8546545E-5
"пф"	1.8546545E-5
"щъ"	1.7804683E-5
"фн"	1.7062821E-5
"фы"	1.5579097E-5
"гж"	1.5579097E-5
"пц"	1.5579097E-5
"фп"	1.48372355E-5
"ыц"	1.48372355E-5
"бб"	1.48372355E-5
"гф"	1.4095373E-5
"жп"	1.4095373E-5
"пс"	1.4095373E-5
"тш"	1.3353512E-5
"фк"	1.3353512E-5
"чм"	1.3353512E-5
"ьщ"	1.3353512E-5
"жэ"	1.3353512E-5
"бг"	1.261165E-5
"гя"	1.261165E-5
"чб"	1.1869788E-5
"шб"	1.1869788E-5

Text	Entropy
"эй"	1.1869788E-5
"гх"	1.1869788E-5
"гш"	1.1869788E-5
"хц"	1.1127927E-5
"эм"	1.1127927E-5
"вщ"	1.1127927E-5
"фм"	1.0386065E-5
"цм"	1.0386065E-5
"бж"	1.0386065E-5
"цд"	9.644203E-6
"бт"	9.644203E-6
"лц"	9.644203E-6
"бз"	8.9023415E-6
"бп"	8.9023415E-6
"жл"	8.9023415E-6
"эд"	8.160479E-6
"эх"	8.160479E-6
"зц"	8.160479E-6
"цб"	7.4186178E-6
"цр"	7.4186178E-6
"шд"	7.4186178E-6
"эг"	7.4186178E-6
"зф"	7.4186178E-6
"фф"	6.676756E-6
"чч"	6.676756E-6
"гц"	6.676756E-6

Text	Entropy
"жя"	6.676756E-6
"кю"	6.676756E-6
"лщ"	6.676756E-6
"мщ"	6.676756E-6
"фб"	5.934894E-6
"цз"	5.934894E-6
"цл"	5.934894E-6
"шс"	5.934894E-6
"щр"	5.934894E-6
"бю"	5.934894E-6
"жз"	5.934894E-6
"жр"	5.934894E-6
"фз"	5.1930324E-6
"цч"	5.1930324E-6
"цэ"	5.1930324E-6
"чд"	5.1930324E-6
"ыщ"	5.1930324E-6
"зх"	5.1930324E-6
"йю"	5.1930324E-6
"пг"	5.1930324E-6
"пш"	5.1930324E-6
"пв"	4.4511708E-6
"фд"	3.7093089E-6
"шг"	3.7093089E-6
"шш"	3.7093089E-6
"эз"	3.7093089E-6

Text	Entropy
"бш"	3.7093089E-6
"бю"	3.7093089E-6
"фг"	2.967447E-6
"фш"	2.967447E-6
"фь"	2.967447E-6
"фя"	2.967447E-6
"хь"	2.967447E-6
"ця"	2.967447E-6
"чз"	2.967447E-6
"чэ"	2.967447E-6
"шр"	2.967447E-6
"эв"	2.967447E-6
"бц"	2.967447E-6
"гю"	2.967447E-6
"кщ"	2.967447E-6
"пщ"	2.967447E-6
"цф"	2.2255854E-6
"чж"	2.2255854E-6
"шц"	2.2255854E-6
"щк"	2.2255854E-6
"зщ"	2.2255854E-6
"йй"	2.2255854E-6
"пд"	2.2255854E-6
"пм"	2.2255854E-6
"фх"	1.4837235E-6
"фч"	1.4837235E-6

Text	Entropy
"хщ"	1.4837235E-6
"цж"	1.4837235E-6
"цш"	1.4837235E-6
"чф"	1.4837235E-6
"чх"	1.4837235E-6
"шч"	1.4837235E-6
"шэ"	1.4837235E-6
"щв"	1.4837235E-6
"эф"	1.4837235E-6
"эц"	1.4837235E-6
"эч"	1.4837235E-6
"ээ"	1.4837235E-6
"гы"	1.4837235E-6
"жх"	1.4837235E-6
"йщ"	1.4837235E-6
"кб"	1.4837235E-6
"пз"	1.4837235E-6
"пэ"	1.4837235E-6
"тй"	7.4186175E-7
"уь"	7.4186175E-7
"фц"	7.4186175E-7
"хй"	7.4186175E-7
"хю"	7.4186175E-7
"цх"	7.4186175E-7
"чя"	7.4186175E-7
"шж"	7.4186175E-7

Text	Entropy
"шз"	7.4186175E-7
"шф"	7.4186175E-7
"шх"	7.4186175E-7
"шю"	7.4186175E-7
"щб"	7.4186175E-7
"ью"	7.4186175E-7
"ьй"	7.4186175E-7
"эб"	7.4186175E-7
"эе"	7.4186175E-7
"эо"	7.4186175E-7
"эш"	7.4186175E-7
"гй"	7.4186175E-7
"гщ"	7.4186175E-7
"гь"	7.4186175E-7
"дй"	7.4186175E-7
"дщ"	7.4186175E-7
"жф"	7.4186175E-7
"иь"	7.4186175E-7
"лий"	7.4186175E-7
"пб"	7.4186175E-7
"пж"	7.4186175E-7
"пх"	7.4186175E-7

Cool pink program

Лабораторная работа №1

Произвольная часть текста:
лись_совершенно_несхожих_взглядов_на_мораль_но_это_неверно_различия_между_в

Использованные буквы:
т, е, й, ц, у, ф, ы, в, я, ч, с, к, н, а, п,

Порядок n-граммы:
5 символов
10 символов
15 символов
20 символов
25 символов
30 символов
35 символов
40 символов
45 символов
50 символов

Введенный символ: р

Символ по счету: 16

Номер эксперимента: 51

Поле ввода символов:
р

ПродолжитьДругой

Неравенство для энтропии:
2.29604957094257 < H < 3.0674980430199

Двоичная таблица угаданных символов:
00001000000000000000000000000000
10000000000000000000000000000000
10000000000000000000000000000000
10000000000000000000000000000000
10000000000000000000000000000000
00000000000000000000000000000000

Вероятности:
q[1] = 0.4901960
q[2] = 0.0784313
q[3] = 0.0196078
q[4] = 0
q[5] = 0.0392156
q[6] = 0.0196078
q[7] = 0.0196078
q[8] = 0.0196078
q[9] = 0.0196078
q[10] = 0.019607
q[11] = 0.019607
q[12] = 0
q[13] = 0
q[14] = 0.058823
q[15] = 0.019607
q[16] = 0.039215
q[17] = 0
q[18] = 0.019607
q[19] = 0.019607
q[20] = 0
q[21] = 0.019607
q[22] = 0.019607
q[23] = 0.019607
q[24] = 0.019607
q[25] = 0
q[26] = 0
q[27] = 0.019607
q[28] = 0
q[29] = 0
q[30] = 0
q[31] = 0
q[32] = 0

Строка состояния:
Вы угадали. Для продолжения опыта нажмите "Продолжить", или "Другой" для выбора другого порядка

Энтропія: 2.29604957094257	Энтропія: 3.0674980430199
Надлишковість: 0.5407901	Надлишковість: 0.3865004

Ентропія: 2.30753371126146	Ентропія: 2.89023440936874
Надлишковість: 0.5384933	Надлишковість: 0.4219531

Ентропія: 2.30753371126146	Ентропія: 2.89023440936874
Надлишковість: 0.5384933	Надлишковість: 0.4219531

[illegible]

Ентропія: 2.27003426341243	Ентропія: 2.84602143851991
Надлишковість: 0.54599315	Надлишковість: 0.4307957

Висновки

У ході роботи ми засвоїли поняття ентропії на символ джерела та його надлишковості, вивчили та порівняли різні моделі джерела відкритого тексту для наближеного визначення ентропії, набули практичних навичок щодо оцінки ентропії на символ джерела.

Також ми зрозуміли, що працювати з кирилицею на мові програмування C++ важко, оскільки виникають проблеми з кодуванням символів при виводі у кінцевий файл. Таким чином ми вирішили написати програму на іншій мові, а саме на Kotlin.