

Національний технічний університет України
«Київський політехнічний інститут імені Ігоря Сікорського»
Фізико-технічний інститут

КРИПТОГРАФІЯ

КОМП'ЮТЕРНИЙ ПРАКТИКУМ №1

Експериментальна оцінка ентропії на символ джерела відкритого тексту.

Виконав:

студент III курсу ФТІ

групи ФБ-95

Прохоренко Ярослав

Перевірила:

Селюх П.В.

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.

Результати

Ентропія:

Entropy monograms with spaces - 4.408440887367498

Surplus monograms with spaces - 0.12607128169276272

Entropy monograms without spaces - 4.392071937250406

Surplus monograms without spaces - 0.12158561254991884

Entropy bigrams with spaces - 3.8167294698199736

Surplus bigrams with spaces - 0.24337207214384238

Entropy bigrams without spaces - 3.8505377603780717

Surplus bigrams without spaces - 0.22989244792438568

Монограми:

<i>With spaces</i>	<i>Without spaces</i>
с,0.05901044030867	с,0.0663265306122449
л,0.026781661370857923	л,0.03010204081632653
н,0.07535179300953246	н,0.08469387755102041
б,0.012256014525646845	б,0.013775510204081633
г,0.009986382206082615	г,0.011224489795918367
м,0.019518837948252384	м,0.02193877551020408
в,0.04176123467998184	в,0.04693877551020408
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ь,0.01044030866999546	ь,0.01173469387755102
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ю,0.004539264639128461	ю,0.00510204081632653
ш,0.006808896958692692	ш,0.007653061224489796
ч,0.013163867453472538	ч,0.01479591836734694
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щ,0.006808896958692692	щ,0.007653061224489796
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я,0.016795279164775308	я,0.018877551020408164
э,0.0031774852473899226	э,0.0035714285714285713
е,0.08896958692691784	е,0.1
з,0.014979573309123922	з,0.01683673469387755
р,0.03858374943259192	р,0.04336734693877551
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и,0.06945074897866546	и,0.07806122448979592
й,0.011802088061733999	й,0.013265306122448979
ы,0.021788470267816613	ы,0.024489795918367346

,0.11030413073082161 о,0.09623241034952337 п,0.029505220154335 д,0.023604176123467997 у,0.013617793917385384 ц,0.005901044030866999	о,0.10816326530612246 п,0.03316326530612245 д,0.026530612244897958 у,0.015306122448979591 ц,0.0066326530612244895
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Біграми

<i>With spaces</i>	<i>Without spaces</i>
в ,0.003631411711302769	вс,0.001530612244897959
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во,0.007262823422605538	ом,0.006122448979591836
ом,0.004993191103041307	мс,0.0010204081632653062
м ,0.0031774852473899226	ст,0.026020408163265306
ст,0.02315024965955515	тр,0.0010204081632653062
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ре,0.01270994098955969	ем,0.002551020408163265
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п,0.01997276441216523	ов,0.011224489795918367
по,0.013617793917385384	вы,0.003061224489795918
ов,0.009078529278256923	ыс,0.003061224489795918

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дл,0.0009078529278256923	ев,0.004081632653061225
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це,0.0009078529278256923	яу,0.0005102040816326531
кж,0.00045392646391284613	ук,0.0005102040816326531
же,0.00045392646391284613	кр,0.0005102040816326531
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бо,0.00045392646391284613	же,0.0005102040816326531
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ч ,0.00045392646391284613	яп,0.001530612244897959
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иф,0.00045392646391284613	йи,0.0005102040816326531
фи,0.00045392646391284613	йэ,0.0005102040816326531
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оэ,0.0009078529278256923	мз,0.0005102040816326531
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ю ,0.0009078529278256923	мн,0.001530612244897959
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ьк,0.0009078529278256923	дв,0.0005102040816326531
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ид,0.00045392646391284613	оэ,0.0010204081632653062

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ян,0.0013617793917385383	ию,0.0005102040816326531
сф,0.0009078529278256923	юк,0.0005102040816326531
фе,0.0009078529278256923	ап,0.002551020408163265
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мы,0.0018157058556513845	оч,0.0010204081632653062
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н ,0.00045392646391284613	мы,0.0020408163265306124
ря,0.00045392646391284613	ыр,0.0010204081632653062
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вс,0.0009078529278256923	иу,0.0005102040816326531
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ке,0.00045392646391284613	мп,0.0010204081632653062
зы,0.00045392646391284613	см,0.001530612244897959
нф,0.00045392646391284613	шн,0.0010204081632653062
тс,0.0009078529278256923	еэ,0.0010204081632653062
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дх,0.00045392646391284613	хт,0.0005102040816326531
ип,0.00045392646391284613	ги,0.0005102040816326531
пы,0.00045392646391284613	йг,0.0005102040816326531
я,0.00045392646391284613	тя,0.0010204081632653062
яв,0.00045392646391284613	ях,0.0005102040816326531

яю,0.00045392646391284613	хэ,0.0005102040816326531
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ну,0.00045392646391284613	шт,0.0005102040816326531
ьз,0.00045392646391284613	иг,0.0005102040816326531
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	зы,0.0005102040816326531
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[illegible]

$$0,7113983068 > R > 0,585436838$$

