CS 445 - Natural Language Processing

Project 2

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10.12.2020

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1. Word Cloud

Including Stopwords vs. Not Including Stopwords:

There are some words called "stopwords" and they are most commonly used as function words. In our project, stopwords in Turkish are:

```
'ise', 'her', 'hepsi', 'için', 'veya', 'mı', 've', 'de', 'belki', 'defa', 'şey', 'tüm', 'birşey', 'niçin', 'biri', 'az', 'o', 'mu', 'niye', 'hem', 'hep', 'nereye', 'yani', 'en', 'diye', 'nerede', 'biz', 'kim', 'ya', 'acaba', 'daha', 'sanki', 'hiç', 'çünkü', 'çok', 'bu', 'birkaç', 'aslında', 'mü', 'eğer', 'neden', 'gibi', 'ama', 'ne', 'bazı', 'ki', 'nasıl', 'nerde', 'siz', 'ile', 'şu', 'da', 'kez'
```

While doing operations on the text, stopwords are filtered out from the data sample, because these words are widely used and their meanings are not that important. From the images below, one can observe that including the stopwords in the vocabulary, changes our word frequencies a lot. This would cause our models to learn (train) unnecessary words.

TF vs. TF-IDF:

One of the goals of this project is to see the difference between "TF" and "TF-IDF" vectors. TF stands for "Term Frequency" and IDF stands for "Inverse Document Frequency". One can observe the difference between "TF" and "TF-IDF" word clouds shown below. For example, in 5k document size we see more entities instead of adverbs or adjectives in the clouds. This is because "TF-IDF" actually reduces the term frequency, if there are many documents that contain that word. This approach would provide us with a model that emphasizes the importance of the word. "kadar" is a word that is used a lot in Turkish but does not have much importance compared to "türkiye". Therefore, "TF-IDF" model states that "türkiye" is more important than "kadar". That's why there are differences between the word clouds given below.

Time

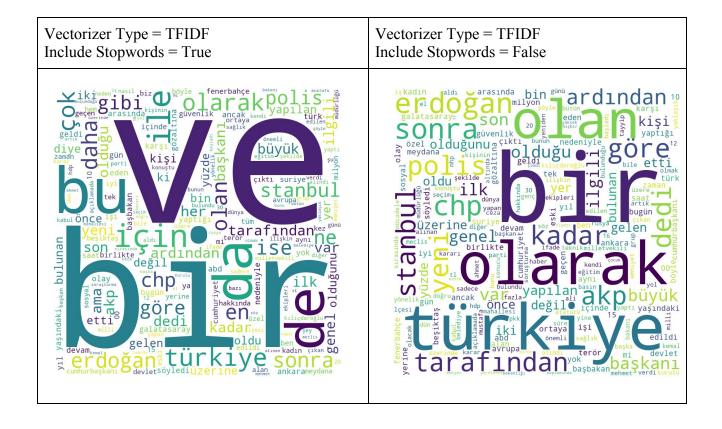
As expected, as document size grows, creating word clouds takes more time. In addition, there are little differences between creating a word cloud with "TF" and "TF-IDF" just like in the case of including stopwords or not.

Preprocess

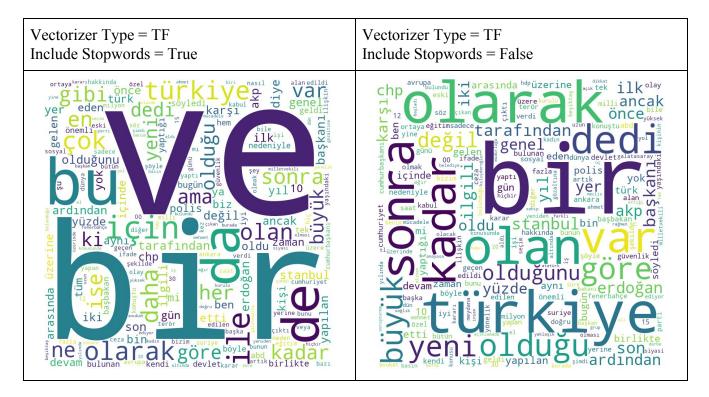
There is some preprocessing to the documents, in order to get rid of unnecessary tokens such as "nin, nin, in". These are the tokens coming from "Türkiye'nin" and they are not important for us to know. So, using regular expressions, we can get rid of these affixes.

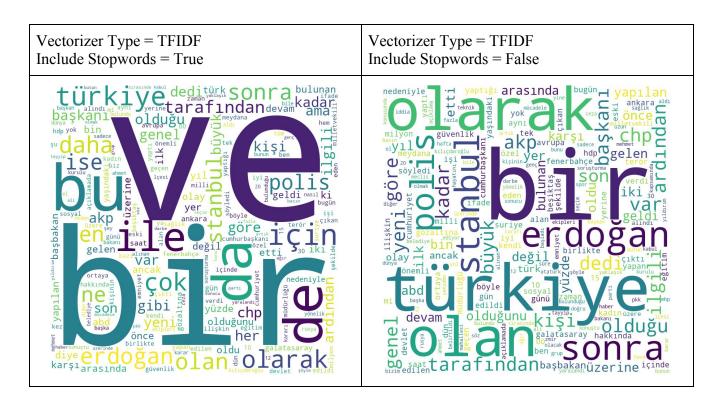
- 5k Document Size

Vectorizer Type = TF Include Stopwords = True	Vectorizer Type = TF Include Stopwords = False
yer turk i veridi kabul yok yerida başkan türk yeni başkan başka b	devam salatabatay polis ardından benim yerine yerin

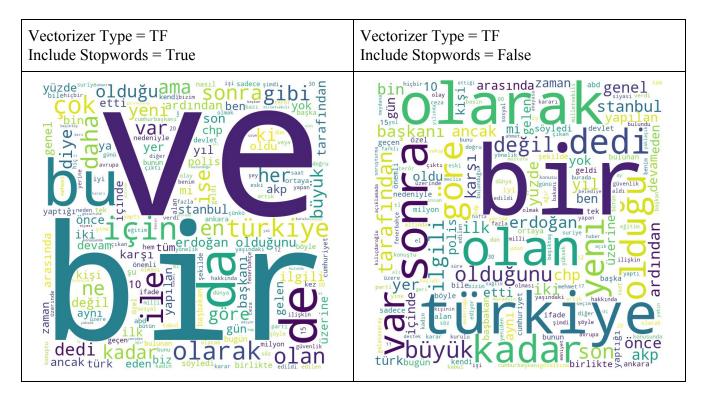


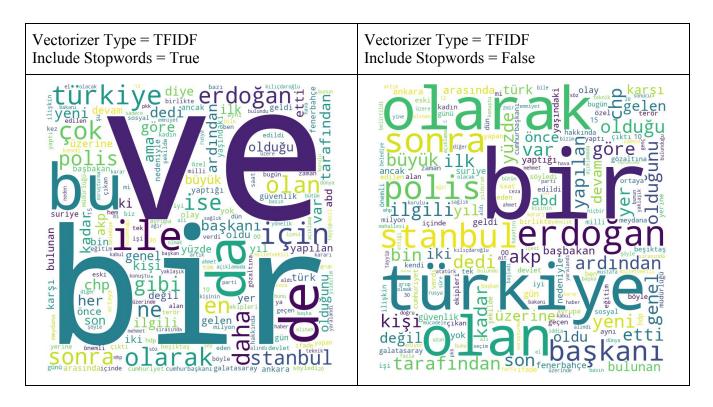
- 20k Document Size



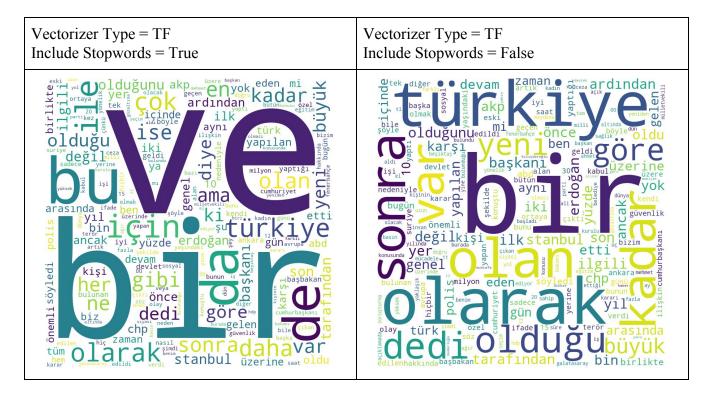


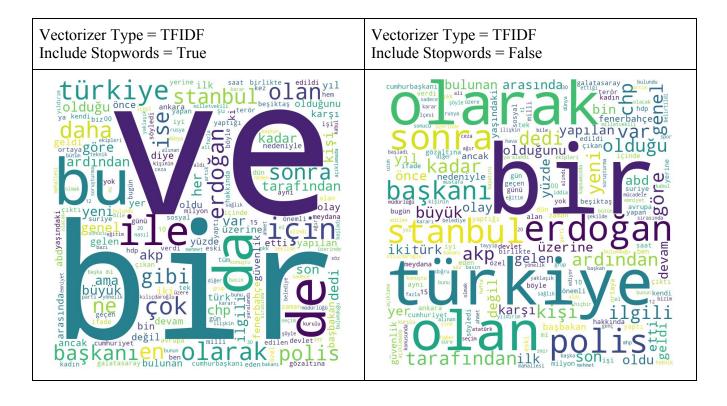
- 50k Document Size





- 100k Document Size





- Time Stats For Creating Word Clouds

5000_TF_w_stopwords	4.365513056000054 seconds.
5000_TF_wout_stopwords	4.434051367999928 seconds.
5000_TFIDF_w_stopwords	4.634461751999879 seconds.
5000_TFIDF_wout_stopwords	4.572551188000034 seconds.
20000_TF_w_stopwords	9.376370553000015 seconds.
20000_TF_wout_stopwords	9.197540297999922 seconds.
20000_TFIDF_w_stopwords	9.71660788600002 seconds.
20000_TFIDF_wout_stopwords	9.541179557000078 seconds.
50000_TF_w_stopwords	19.059226568999975 seconds.
50000_TF_wout_stopwords	18.33779587799995 seconds.
50000_TFIDF_w_stopwords	19.497976956000002 seconds.
50000_TFIDF_wout_stopwords	18.72999321300017 seconds.
100000_TF_w_stopwords	37.857768780000015 seconds.
100000_TF_wout_stopwords	34.27807706699991 seconds.
100000_TFIDF_w_stopwords	37.115745801 seconds.
100000_TFIDF_wout_stopwords	36.66879086600011 seconds.

2. Zipf's Plot

According to the Zipf' Law "term frequency decreases rapidly as a function of rank". Therefore, another goal of this project is to observe Zipf's plots with different sizes of documents to see whether this law holds or not.

Zipf's Law: where f is for frequency, r is for rank and k is a constant
$$f = \frac{k}{r}$$

Logarithmic Zipf's Law:

$$\log(f) = \log(k) - \log(r)$$

The first column shows the plot of log(rank) vs. log(frequency) which should have a negative relationship. Since, the difference between log(rank) vs. log(frequency) should be constant value, the slope of our graph should look like -1. On the other hand, the second column shows the rapid decrease of frequencies.

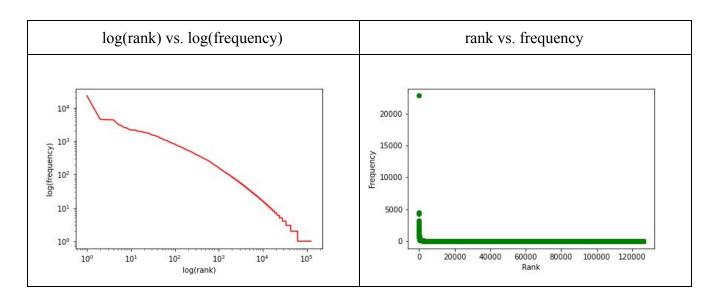
Preprocess:

Before plotting the graph, we tokenized every word and counted the number of occurrences in the documents. In our tokens, we did not include the stopwords and numbers. Finally, with the help of regular expressions, we get rid of the unnecessary affixes.

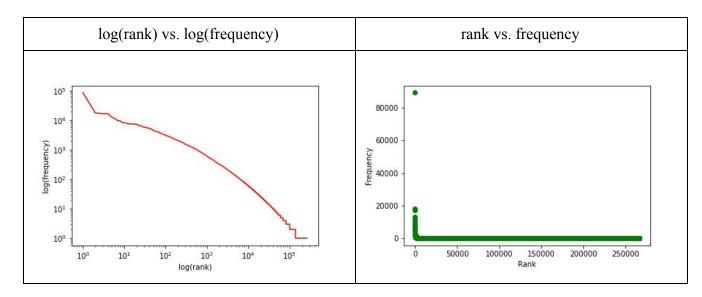
Time:

As expected, as document size increases, plotting the graphs takes more time.

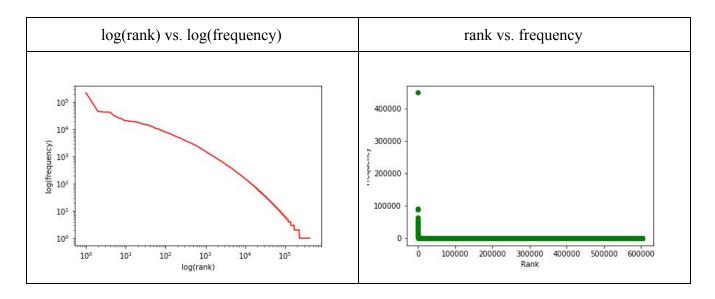
- 5k Document Size



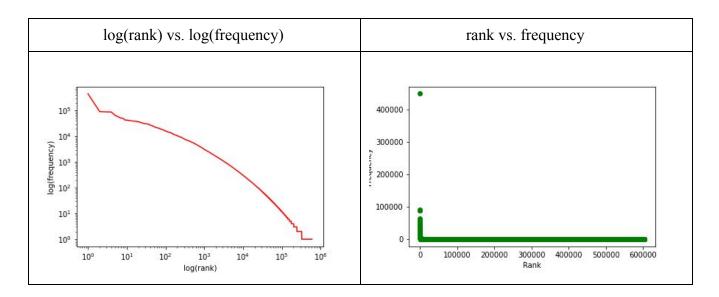
- 20k Document Size



- 50k Document Size



- 100k Document Size



- Time Stats For Creating Zipf's Plot

Zipf's_5000: 7.721361473999991 seconds.

Zipf's 20000: 24.31922487500003 seconds.

Zipf's 50000: 56.916079843000034 seconds.

Zipf's 100000: 1.0 minute(s) 52.56287204900002 seconds.

3. Heap's Plot

Heap's Law states that "the number of new words decreases as the size of the corpus increases". So, one can plot the Heap's plot and observe the curve. As a result of Heap's Law, the slope should increase fast at the beginning but gets slower and slower as the vocabulary increases. The graphs below show the plots for different document sizes.

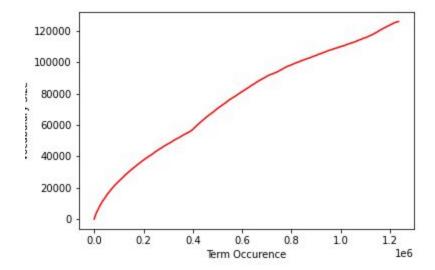
Preprocess:

Before plotting the graph, we tokenized every word including the stopwords and numbers since they will be counted only once and be ignored later. Finally, with the help of regular expressions, we get rid of the unnecessary affixes.

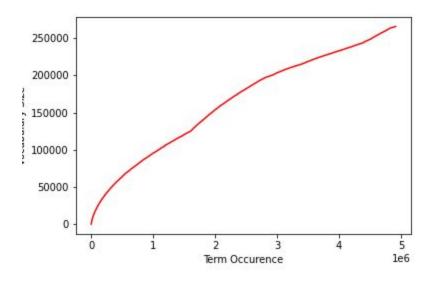
Time:

As expected, as the document size increases, the time required to plot the graphs increases.

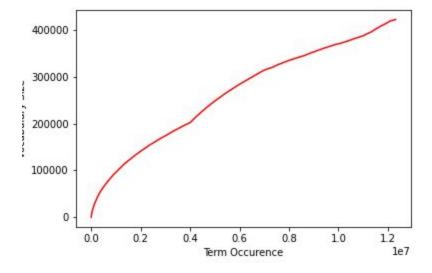
- 5k Document Size



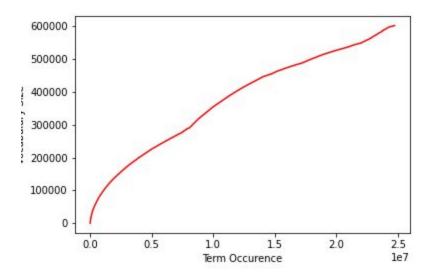
- 20k Document Size



- 50k Document Size



- 100k Document Size



- Time Stats For Creating Heap's Plot

Heap's_5000: 7.187726746000067 seconds.

Heap's 20000: 27.33527608299994 seconds.

Heap's_50000: 1.0 minute(s) 8.776174225999966 seconds.

Heap's_100000: 2.0 minute(s) 19.940495921000092 seconds.

4. Create Language Model & Generate Sentences

In this section, the aim is to create a language model either MLE or KneserNeyInterpoleted and generate a sentence with a given word. Therefore, the steps are:

- 1. Preprocess the documents
- 2. Tokenize the documents
- 3. Add padding to the sentences and create a vocabulary (<s> and </s>)
- 4. Create ngrams and store them.
- 5. Train the given model with the processed data
- 6. Generate 5 sentences and print out the smallest perplexing sentence

Step 1 & 2:

These steps are already explained before. We tokenize each document and use some preprocessing such as case folding and pruning some words.

Step 3 & 4:

These steps are done with the help of NLTK's "padded_everygram_pipeline" function which adds padding to the sentences such as <s> for start of the sentence and </s> for the end of the sentences to create a vocabulary. In addition, it creates every gram of the tokens for us in order to use it while calculating the perplexity.

Step 5:

We train the model with the given parameters such as "MLE or KneserNeyInterpolated" and ngram size.

MLE is a base model that uses sparse matrices to generate a sentence.

KneserNeyInterpolated is a smoothed language model that does not have sparse matrices and utilizes the KneserNey smoothing.

Step 6:

We take a starting word to create a sentence with it until our model returns the end of the sentence (</s>). We generate 5 of these sentences and return the sentence that has the lowest perplexity score. The lower the perplexity score, the better the model is at predicting the sample.

Time:

In terms of time, MLE is much faster than KneserNeyInterpolated since MLE uses sparse matrices there are many 0's in them. This makes the calculations much faster, so the model is trained faster and could generate sentences quicker than KneserNeyInterpolated. You can observe the time scores below for 5k and 20k document sizes. KneserNeyInterpolated took 2 hours to complete which is a lot but it makes sense since KneserNeyInterpolated does not have sparse matrices but has smoothed matrices which increases the calculations a lot.

5k Document Size Different Ngrams - text seed = milli :

- 2-Gram:

From MLE:

milli eğitim gören çocukları ölen işçilerin cansız bedenini gören bir yana bir eğitim bakanlığımız konsolosluk çağrı yapıyoruz. 33.67433113900891

milli eğitim alanına vardığında musa için kampanya kapsamı dışında çalıştıklarını dile getirdi. 21.667236932652298

milli takımı desteklemesiyle şampiyonluğa oynamalı diye başlarken bu celal ülgen, iftiracı, trabzon il eşbaşkanı dbp'li sabite ekinci, iphone 4s; aşkın gazeteci ceyda ersoy'un lensini tuvalete saklamaya çalışsak...cumhuriyet savcılığı tarafından lobide nasıl anlatıyor: artık televizyon yayını için, cumhurbaşkanlığı 'da cesaret, ortadan kaldırdık. 47.91576724078645

milli basketbolcu ibrahim firtina penaltı atışında topu sağ"başlığıyla, yakınları mehmet zaman boş dairede kalan son haftalardaki ataklara bakacaksınız. 58.48054348123397

milli futbolcunun atışması da ülkenin işçileri dışarı çıkmaya çalışan güç bir halkı korumak. 142.65870393971196

Time: 45.98808683000061 seconds.

From KneserNeyInterpolated:

milli parkı ' nin sesi olarak yattık ama müslümanlığı el değiştirmesi tavsiyesinde de sonun başlangıcına qelindi. 44.60731237718869

milli güvenliği sağlamak amacıyla bilim adamı olarak müller, aytaç yalman 'daki yeri inceleme yaptı. 46.19731643807157

milli piyango'nun son çığlık değil. 39.35891244458217

milli okçular dünya genelinde haftalardır hatta kabine arkadaşı kehribar aslantürk (tesk) 21:00 tivibu spor 4 bakanı faruk erdem gül' telaşı başladı. 29.07117094124497

milli takım da tmmob jeoloji profesörü pierre webo skora destek gördü. 23.19313837234016

Time: 2.0 hour(s) 10.0 minute(s) 23.52809968099791 seconds

- 3-Gram:

From MLE:

milli " nin anlamının nasıl bir izlenim yaratmış olabilirim. 5.022172788009126

milli takım, ikinci golün geç gelmesi üzerine yaptığı yazılı açıklamada, kutras'ın cumhurbaşkanı erdoğan'ın göreve``yeni türkiye'nin inşasında cumhurbaşkanı başbakan uyumu çok önem veriyor. 3.172692414299796

milli egemenliğe, seçmenin iradesine tartışmasız bir şekilde gönderilmiştir. " denildi. 2.0727327958385384

milli takım antrenörü esen dönmez de takım olarak biz oradaydık ancak çok değil bundan 2 sene önce yıkılan galatasaray'ın eski yıldızı alex de souza'nın, "umarım bu konuda 1 ay önceki bu köhnelik fotoğrafı, ``bilmeyen varsa söyleyeyim, bu ne"diyorlardı. 4.14920959598542

milli maçlar nedeniyle lige verilen arada, aytemiz alanyaspor'da ülkelerinin milli takımlarında bulunan donald guerrier, fabrice n'sakala, darko lazic, glynor plet teknik direktör şenol güneş üst üste survivor şampiyonu olmayı başaran turabi çamkıran, banu noyan tarafından yapılan araştırma, inceleme sürüyor. 1.7696448381375376

Time: 1.0 minute(s) 8.509625494998545 seconds.

From KneserNeyInterpolated:

milli piyango ïdaresince düzenlenen şans oyununun 669. hafta çekilişinde , 5 bin ton çıkartılacağı öngörülen cevherin kapalı kabinli teleferikle taşınması halinde çevreye zararlarının azalacağı ve ara katlı üretim yöntemi nedeniyle 45 derece diyorlar ... 1.651399826813986

milli futbolcu arda turan'ın formasını giydiği takımın başında sahaya çıkacağı belirtildi. 2.235069441759551

milli takımı'nın golcüsü enner valencia da f.bahçe'nin gündemine geldi. 1.510756075228784

milli savunma bakanı ile adalet bakanı'nın, vakıflardan sorumlu başbakan yardımcısı nurettin canikli, bayraktar'ın yakın çevresinin katıldığı törene yaklaşık bir haftadır daha yoğun bir saldırıyla karşı karşıya geldiler. 3.5577442032548774

milli eğitim bakanlığı, milli eğitim bakanlığımız ile yaygın, deniz gezmiş, hüseyin yıldırım bayburt merkez ilçe yönetim kurulu üyesi necati demirkol da tribünden izledi. 3.457105518153282

Time: 9.0 minute(s) 12.324787122000998 seconds.

- 4-Gram:

From MLE:

milli içki diye nitelendirilen rakı tüketimi yılbaşında getirilen vergilerle düşüyor. 1.0

milli iradenin tecellisini sağlayarak, türkiye'nin entellektüel birikimini zenginliklere taşımaktır. 1.0 milli takımı'ya başladık. 1.0

milli takımı bıraktığını açıkladı. 1.0

milli iradenin " bölünmez bir bütün olarak ortaya koydu"dedi. 1.2879215253908327

Time: 1.0 minute(s) 42.85690606799835 seconds.

From KneserNeyInterpolated:

milli ve sürekli olarak bunun heyecanını, aşkını duyan bir insandı. 1.0704602913164571

milli eğitim müdürü yapması gereken çalışmaları yapmadan 4 bin öğretmeni mağdur ettiğini söyleyen yokuş, "bir kısım gazeteye " tüsiad ' ın ülke ekonomisi ve siyasetiyle ilgili analizlerinin yanlışlığına dair açıklamalarda bulunarak " postu kurtarma ", " gazetecileri " toplamış, açılımın faziletlerini o müthiş gücüyle anlatmıştı ... 1.4132278993131386

milli eğitim bakanlığımız ile yaygın, örgün eğitim kapsamında ilköğretim düzeyinde akılcı ilaç kullanımının müfredata girmesi için ortak bir çalışmamız olacak"dedi. 1.0719681032027277

milli takıma teşekkürü epeyce tartışma yaratacak heybette gelmişti: kişi başı 1.5 milyon liralık bir havale işlemi ile devletin dikkati çekilir? 1.0632045891446213

milli ve sürekli olarak, özellikle de odtü 'ye çok öfkeli. 2.148141815853879

Time: 5.0 minute(s) 2.3109793699986767 seconds.

- 5k Document Size Output - text seed = milli

From MLE with 3-grams:

```
milli yas ilan edilmişti. 2.4101422641752306

milli ve manevi değerlere. 3.138306892451632

milli güvenliğe tehdit oluşturduğu bildirildi. 1.7782794100389228

milli eğitim müdürlüğü asli görevini bırakarak halkın birbirlerine iyi dilek dilemesi ve kutlama yapmasına karışmaya başlamıştır. 1.4465126892847877

milli iradeye sahip çıkan akp ' dir. 7.303109242852957
```

From KneserNeyInterpolated with 3-grams:

```
milli irade parlamentoya tam yansımıyor. 2.1464082140657523

milli takımı'nın başında türkiye var. 2.212084247564147

milli takımı'nın eski oyuncularından kazuyoshi miura , 2. de isaac newton ' a itiraz ederek suç duyurusu hürriyet'te yer alan haberde, hattab dışındaki diğer tutukluların akıbetinin bilinmediği kaydedildi. 2.825171185426728
```

```
milli sporcular var. 1.0803931864108707
```

milli eğitim bakanlığı 'na "en iyi hip hop şarkıcısı: eminem en iyi yönetmen ödülü: görkem şarkan yönetmenliğindeki nergis hanım filmi altın lale ulusal yarışma" nın mevcut hastanelerin ticaret merkezi olmasını öngören kanun hükümleri ile diğer katılımcılara göre daha avantajlı bir skorla istanbul' u geri aldı. 3.039045689577638

Time Scores

```
Generate Sentence (MLE):
1.0 minute(s) 5.373880171000565 seconds.

Generate Sentence (Kneser):
6.0 minute(s) 37.5620919869998 seconds.
```

- 20k Document Size Output - text seed = milli

From MLE with 3-grams:

milli takımda özelleştirildi de haberimiz mi yok? 2.1025788447448206

milli savunma bakanı fikri işık, balyoz davası ile ilgili bilgileri de metodun içeriğinde bas gitar ile ilgili iki önemli unsur konumundalar. 6.268860825707677

milli takıma göz kırpan engin ' e kadar yüzde yüz doğrudur diyemem. 6.23676799394118

milli futbolcu, mücadelenin, kendi koğuşuna mektuplarla gelir. 9.070548186117358

milli savunma bakanı sisi , 2018 yılına kadar dokuz farklı davet sofrası tasarımı, internet mağazaları ve açık, zamanla parçalı bulutlu geçecek. 4.238880713184953

From KneserNeyInterpolated with 3-grams:

milli takım'daki performansıyla yıldızını parlatan başarılı oyuncuya arap ülkelerinden bahreyn'de, ülkenin bütünlüğüne ve milli güvenlik ile ilgili tartışma başladığında ortaya çıkan "criminal record" yazdım. 4.2172121295911165

milli takım 'ın başarılı kurtarışları dışında herkes terörist. 7.317764197681325

milli savunma bakanı fikri işık, söz konusu değildir. 3.8557531623737256

milli takım 'ın sağlığı, erdoğan 'ın yerine chp 'yi ve türkiye halklarının özgür ortaklık girişimi olan demokratik suriye güçleri 'nde yaptığı konuşmasında aynen şöyle dedi: "… bir siyasi partinin kurultaylar partisi 'ni bitirdi. 9.081289007838647

milli içecek konusunda taviz vermediği kaydedilen haberde osmanlı ordusunun asker ve polisleri saklıyorlar, sivil otoriter yönetimlerin, diktatörlüklerin, rejim değişikliği sürecine katılarak, iran ve çin) yanı sıra başbakan yardımcılığı 'na yarın itiraz edecek. 3.8974317591074192

Time Scores

Generate Sentence (MLE): 4.0 minute(s) 9.697063134999553 seconds.

Generate Sentence(Kneser): 2.0 hour(s) 4.0 minute(s) 18.14850980099982 seconds.

5. Create Word Vectors & Use Word Relationship

In this section, the aim is to create a word vector and use this word vector to predict the word pair. We created the word vector by using gensim's word2vector function. Before training the model, we tokenized the given documents. Then we train the model with the given parameters such as documents, dimension size, type (CBOW or Skipgram), and window size.

After we trained the model, we took word pairs:

```
[('fransa','paris'), ('almanya','berlin'), ('italya','roma'), ('ispanya','madrid'),
('hollanda','amsterdam'), ('ingiltere','londra'), ('türkiye','ankara')]
```

Then, we ask to model the unknown pair of [('rusya'), ('')]. From what we observe, the unknown word should be "moskova". In order to find the unknown pair, we used the classic equation:

```
king - man + woman = queen
```

So, in our case:

```
paris - fransa + rusya ?= moskova
```

To find the unknown pair, we need to find the average distance between the pairs and add this distance to the known asked pair.

Time:

Chow tries to predict the focus words from the given context words.

Skip-gram tries to predict the context words from the given focus word.

Note that, skipgram model takes more time for every single time since skipgram uses more calculations than cbow.

As expected, as document size increases, the time model needs to train and predict the unknown pair increases.

Outputs with different parameters:

From the tables, we can see that as the document size increases, our predictions are getting better and better. Also, we may point out that Skipgram takes a long time but produces better results compared to Cbow.

* The title can be read like this: (document size seems to be the most important parameter for us) model type / document size (5k, 20k, 50k, 100k) / dimension size (200,300,400) / window size (5,10,15)

CBOW_5000_200_5	***SKIPGRAM_5000_200_5***	***CBOW_5000_200_10***	***SKIPGRAM_5000_200_10***
CBOW_5000_200_5:	SKIPGRAM_5000_200_5:	CBOW_5000_200_10:	SKIPGRAM_5000_200_10: 1.0
23.868348830000286 seconds.	48.24553049500037 seconds.	25.16572168699986 seconds.	minute(s) 7.453921819999778
Prediction Similarity	Prediction Similarity	Prediction Similarity	seconds.
			Prediction Similarity
zamanlı 0.925629	rusya 0.825477	başsavcılığınca 0.935867	
idaresi 0.923612	sınırında 0.810368	başsavcılığı 0.929557	rusya 0.859306
başsavcılığı 0.919407	lübnan 0.782984	atanan 0.928717	rus 0.737649
merkezi 0.917705	büyükelçiliği 0.774273	düzenlediği 0.925852	uçağını 0.736924
teşkilatı 0.916221 bankası 0.914166	sınırındaki 0.772887 afganistan 0.769348	merkezi 0.924496 istihbarat 0.924333	uçak 0.727871 lübnan 0.72223
düzenlediği 0.91335	tunus 0.764521	subesi 0.921373	putin 0.72223
vakfi 0.911409	halep 0.764521	idaresi 0.920439	füze 0.714049
federasyonu 0.911059	destekli 0.763078	düzenledi 0.91982	sinirinda 0.713349
kocaeli 0.908579	bab 0.760643	komutanlığı 0.919137	saldırılarının 0.711054
			afganistan 0.699292
CBOW 5000 200 15	***SKIPGRAM 5000 200 15***	***CBOW 5000 300 5***	***SKIPGRAM 5000 300 5***
CBOW 5000 200 15:	SKIPGRAM 5000 200 15: 1.0	CBOW 5000 300 5:	SKIPGRAM 5000 300 5:
25.831032466000124 seconds.	minute(s) 22.208568607000416	26.582481503000054 seconds.	56.980162630999985 seconds.
	seconds.		
Prediction Similarity		Prediction Similarity	Prediction Similarity
	Prediction Similarity		
kamçı 0.948182	0.070700	başsavcılığı 0.938425	rusya 0.835727
şube 0.930027 komutanlığı 0.929562	rusya 0.870702 ucağını 0.734183	zamanlı 0.937169 istihbarat 0.92822	sinirinda 0.790675 rus 0.773436
inisiyatifi 0.929409	uçağını 0.734183 putin 0.712337	toplantisi 0.925662	rus 0.773436 sınırındaki 0.773425
genelgede 0.928469	rus 0.705594	vakfi 0.924653	bab 0.773412
düzenledi 0.928448	uçak 0.694878	teşkilatı 0.924223	büyükelçiliği 0.769891
suçlarla 0.927888	sinirinda 0.693772	mir 0.923769	lübnan 0.757572
şoförleri 0.926879	sahasını 0.693185	ilçe 0.923482	libya 0.757019
dha 0.922885	vladimir 0.692245	ilçe 0.922649	halep 0.755251
emniyeti 0.922576	büyükelçiliği 0.686071	başkanlığının 0.922527	afganistan 0.753507
	lübnan 0.679107		
	+		+
CBOW_5000_300_10	***SKIPGRAM_5000_300_10***	***CBOW_5000_300_15***	***SKIPGRAM_5000_300_15***
CBOW_5000_300_10:	SKIPGRAM_5000_300_10: 1.0	CBOW_5000_300_15:	SKIPGRAM_5000_300_15: 1.0
28.489515617000507 seconds.	minute(s) 21.756728635999934 seconds.	29.219211704999907 seconds.	minute(s) 38.419013976000315 seconds.
Prediction Similarity	seconds.	Prediction Similarity	Seconds.
	Prediction Similarity		Prediction Similarity
operatör 0.939622		dha 0.947476	
savcılarından 0.938174	rusya 0.845846	savcılarından 0.93986	rusya 0.866092
düzenledi 0.936191	sınırında 0.740718	operatör 0.938616	rus 0.743639
başsavcılığı 0.931917	rus 0.731308	düzenledi 0.928027	uçağını 0.733843
komutanlığı 0.929212	uçak 0.722974	yapan 0.927092	uçak 0.725761
düzenlendi 0.927357	uçağını 0.721053	erkal 0.925195	sinirinda 0.71363
beyazıt 0.926 emniyet 0.925338	lübnan 0.718349 büyükelçiliği 0.715209	bezmiâlem 0.924328 operasyon 0.922623	putin 0.712072 büyükelçiliği 0.711497
ilce 0.923336	tahran 0.709619	aksaray 0.921065	lübnan 0.709985
atanan 0.922968	afganistan 0.704954	kuvvetleri 0.919961	uçağı 0.708972
0.322300	halep 0.703917	kavvetti 0.313301	füze 0.696942
	_		
CBOW_5000_400_5 CBOW 5000 400 5:	***SKIPGRAM_5000_400_5***	***CBOW_5000_400_10*** CBOW 5000 400 10:	***SKIPGRAM_5000_400_10***
JBOW_5000_400_5: 29.80251078999936 seconds.	SKIPGRAM_5000_400_5: 1.0 minute(s) 4.377209778000179	CBOW_5000_400_10: 30.46244406200003 seconds.	SKIPGRAM_5000_400_10: 1.0 minute(s) 32.840160501000355
	seconds.	55.15211150200005 Seconds.	seconds.
Prediction Similarity		Prediction Similarity	
	Prediction Similarity		Prediction Similarity
zamanlı 0.943326		şoförleri 0.947512	
paşsavcılığı 0.936979	rusya 0.838735	istihbarat 0.94433	rusya 0.850981
nerkezi 0.930974	rusya 0.838735 sınırında 0.799598 afganistan 0.795571 lübnan 0.786843 büyükelçiliği 0.775975 libya 0.77451	başsavcılığı 0.938734	büyükelçiliği 0.73547 sınırında 0.734727
ilçe 0.926618 Dankası 0.92657	arganistan 0./955/1	genelgede 0.937362 aksaray 0.936839	sinirinda 0.734727 uçağını 0.733092
7akfi 0.925449	büvükelciliği 0.775975	inisiyatifi 0.933356	rus 0.733092
sehircilik 0.924071	libya 0.77451	operatör 0.932601	idlib 0.723529
	tunus 0.77369	bürosu 0.931867	putin 0.723238
comisyonu 0.922565 Tiçe 0.921988	tunus 0.77369 rus 0.772699	suçlarla 0.929515	uçağı 0.711879
paşsavcılığınca 0.921064	hamas 0.768044	ilçe 0.929106	uçak 0.709111
	destekli 0.767404		uçaklarının 0.704648
CBOW_5000_400_15	***SKIPGRAM_5000_400_15***	***CBOW_20000_200_5***	***SKIPGRAM_20000_200_5***
CBOW 5000 400 15:	SKIPGRAM_5000_400_15: 1.0	CBOW_20000_200_5: 1.0 minute(s)	SKIPGRAM_20000_200_5: 3.0
	minute(s) 53.78317642699949	37.19296299799953 seconds.	minute(s) 46.835600051000256
32.264861929999824 seconds.			seconds.
32.264861929999824 seconds.	seconds.	The state of the s	
32.264861929999824 seconds. Prediction Similarity		Prediction Similarity	Prediction Similarity
32.264861929999824 seconds. Prediction Similarity	seconds. Prediction Similarity	 rusya 0.811915	Prediction Similarity
32.264861929999824 seconds. Prediction Similarity	Prediction Similarity		Prediction Similarity rusya 0.83234 putin 0.625184

1				
kesan	0.946787	ucağını 0.719969	füze 0.677113	karlov 0.609896
komutanlığı	0.943986	rus 0.713485	nato 0.674945	vladimir 0.608314
düzenlendi	0.936787	uçak 0.693764	karlov 0.672031	rus 0.599023
		-		
ïlçe	0.932138	sinirinda 0.690876	idlib 0.671763	andrey 0.592577
muş	0.931673	moskova 0.690195	libya 0.661632	büyükelçisi 0.590668
emniyeti	0.930029	gazze 0.689629	düşürülen 0.656614	moskova 0.587117
şubesi	0.928806	lübnan 0.687473	gazze 0.653711	petersburg 0.586155
gunesi	0.920000		gazze 0.033/11	_
		sahasını 0.683105		tahran 0.584131
CBOW 20000 2	200 10	***SKIPGRAM 20000 200 10***	***CBOW 20000 200 15***	***SKIPGRAM 20000 200 15***
	10: 1.0 minute(s)	SKIPGRAM 20000 200 10: 5.0	CBOW 20000 200 15: 1.0 minute(s)	SKIPGRAM 20000 200 15: 6.0
39.402708814999		minute(s) 9.465208132999578	42.6242787759993 seconds.	minute(s) 22.13151976500012
33.402/0001433	of seconds.		42.0242707733333 Seconds.	
Prediction	01 11 11	seconds.	Prediction Similarity	seconds.
	Similarity	Prediction Similarity	Prediction Similarity	Prediction Similarity
rusya	0.817168		rusya 0.830562	
rus	0.730704	rusya 0.826075	rus 0.741699	rusya 0.840873
düşürülen	0.715665	rus 0.65877	incirlik 0.734562	rus 0.709966
incirlik	0.70106	putin 0.640012	suriye 0.716751	putin 0.677813
ıçağının	0.700844	vladimir 0.624228	pentagon 0.713269	petersburg 0.648811
füze	0.700602	moskova 0.618077	uçağının 0.71271	moskova 0.641898
ïdlib	0.700475	andrey 0.596313	cerablus 0.712224	vladimir 0.618248
cerablus	0.700352	petersburg 0.594956	harekâtı 0.710567	kremlin 0.611941
sınırındaki	0.694995	büyükelçisi 0.593011	idlib 0.705269	karlov 0.606144
suriye	0.688635	kosaçev 0.586442	düşürülen 0.70294	jetinin 0.601569
-		düşürülmesinin 0.576664		andrey 0.596744
CBOW_20000_3	_	***SKIPGRAM_20000_300_5	***CBOW_20000_300_10***	***SKIPGRAM_20000_300_10***
	_5: 1.0 minute(s)	SKIPGRAM_20000_300_5: 4.0	CBOW_20000_300_10: 1.0 minute(s)	SKIPGRAM_20000_300_10: 6.0
51.738615058000		minute(s) 33.956092322000586	53.73239004599964 seconds.	minute(s) 28.631405263000488
		seconds.		seconds.
Dwadic+i-	cimila:	Seconds.	Dradiation Girls !!	occords.
	Similarity		Prediction Similarity	
		Prediction Similarity		Prediction Similarity
rusya	0.814252		rusya 0.823312	
incirlik	0.715157	rusya 0.824712	düşürülen 0.747843	rusya 0.83863
idlib	0.695388	karlov 0.617231	incirlik 0.732895	rus 0.620137
nusul	0.688836	kremlin 0.613794	rus 0.720657	putin 0.605487
ahran	0.687976	rus 0.612676	idlib 0.718358	vladimir 0.579219
lübnan	0.684951	andrey 0.597549	füze 0.697031	karlov 0.568074
libva	0.680418	-		
-	0.680418	putin 0.5966	harekâtı 0.686042	petersburg 0.566402
rakka	0.680086	putin 0.5966 tahran 0.586395	harekâtı 0.686042 pentagon 0.685867	petersburg 0.566402 moskova 0.563209
rakka irak	0.680086 0.677439	putin 0.5966 tahran 0.586395 moskova 0.584213	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593
rakka irak	0.680086	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426	harekâtı 0.686042 pentagon 0.685867	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761
rakka irak	0.680086 0.677439	putin 0.5966 tahran 0.586395 moskova 0.584213	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593
libya rakka irak rus ***CBOW_20000_6	0.680086 0.677439 0.676303	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761
rakka irak rus ***CBOW 20000_	0.680086 0.677439 0.676303	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539
rakka irak rus ***CBOW_20000_3	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s)	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM 20000 300 15*** SKIPGRAM 20000 300 15: 7.0	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s)	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0
rakka irak rus ***CBOW_20000_300	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s)	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425
rakka irak rus ***CBOW 20000 300 CBOW 20000 300 58.269723182000	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds.	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM 20000 300 15*** SKIPGRAM 20000 300 15: 7.0	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5:*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds.	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0
rakka irak rus ***CBOW_20000_: CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds.	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15:** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds.	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds.
rakka irak rus ***CBOW_20000_3 CBOW_20000_300 58.269723182000	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 1234 seconds.	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15:** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds.	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5:*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds.	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425
rakka irak rus ***CBOW_20000_3 CBOW_20000_300 58.269723182000	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 1234 seconds.	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM 20000 300 15*** SKIPGRAM 20000 300 15: 7.0 minute(s) 35.673185063000346	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds.
rakka irak rus ***CBOW_20000_: CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds. Similarity 0.832493	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_3 CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0.234 seconds. Similarity 	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_3 CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds. Similarity 0.832493 0.73633 0.729523	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_3 CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 1234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity rusya 0.790107 incirlik 0.702152 musul 0.699422 idlib 0.690771	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_i ZBOW_20000_300 68.269723182000 Prediction rusya rus iüşürülen Incirlik	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds. Similarity 0.832493 0.73633 0.729523	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
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rakka irak rus ***CBOW_20000_ CBOW_20000_300_ S8.269723182000 Prediction rusya rus düşürülen incirlik içağının ikrayna pentagon moskova zerablus israil ***CBOW_20000_ 20000_ ****CBOW_20000_ ****CBOW_20000_	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 1034 seconds. Similarity	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5:** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_: 2BOW_20000_300 88.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 2234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.7710312 0.693545 0.688002 0.687261 0.686939 0.684187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000 2000300 88.269723182000 Prediction rusya rus iiişürülen incirlik iqağının ikrayna bentagon noskova rerablus israil ***CBOW_200004006.58267712099999999999999999999999999999999999	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 1234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.684187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.741755 0.741254	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak trak trak trak trak trak trak trak t	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 10: 1.0 minute(s) 10: 2.0 minute(s)	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_300 CBOW_20000_300 S8.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.687487 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisine 0.58293 ***SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_300 CBOW_20000_300 S8.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 10: 1.0 minute(s) 10: 2.0 minute(s)	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_300_ ibbow_20000_300_ ibbow_20000_300_ ibbow_20000_300_ ibbow_20000_ibbow_20000_400_ ibbow_20000_400_ ibbow_20000_400_100_ ibbow_20000_400_100_ ibbow_20000_400_100_100_ ibbow_20000	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 0234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.687487 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisine 0.58293 ***SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka rak rak rak rus r**CBOW_200002000 _88.269723182000 rusya rus thisirülen thicirlik thicaginin thickrayna theragon therag	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 2234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.6686939 0.684187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321 0.704227 0.698529	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.5833426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak trus ***CBOW 20000 3 CBOW_20000_300 S8.269723182000 Prediction trusya trus dispirulen incirlik açağının takrayna pentagon nooskova cerablus Israil ***CBOW_20000_400 5.58267712099999 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 10234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.684187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321 0.704227 0.698529 0.698233	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak rus ***CBOW_20000_300 58.269723182000 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 10234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.6874187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321 0.704227 0.698529 0.698233 0.697194	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisine 0.58293 ***SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.557539 ***SKIPGRAM_20000_400_5*** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity
rakka irak irak rus ***CBOW_20000_300 58.269723182000 Prediction cusya rus disprulen incirlik açağının dikrayna bentagon noskova zerablus Israil ***CBOW_20000_400 5.5826771209999 Prediction	0.680086 0.677439 0.676303 300_15*** 15: 1.0 minute(s) 10234 seconds. Similarity 0.832493 0.73633 0.729523 0.727892 0.710312 0.693545 0.688002 0.687261 0.686939 0.684187 400_10*** 10: 2.0 minute(s) 506 seconds. Similarity 0.830286 0.747755 0.741254 0.713287 0.710321 0.704227 0.698529 0.698233	putin 0.5966 tahran 0.586395 moskova 0.584213 büyükelçisine 0.583426 büyükelçisi 0.58293 ***SKIPGRAM_20000_300_15*** SKIPGRAM_20000_300_15: 7.0 minute(s) 35.673185063000346 seconds. Prediction Similarity	harekâtı 0.686042 pentagon 0.685867 uçağının 0.685356 abd 0.685057 ***CBOW_20000_400_5*** CBOW_20000_400_5: 2.0 minute(s) 2.1037411270008306 seconds. Prediction Similarity	petersburg 0.566402 moskova 0.563209 büyükelçisi 0.559593 aleksandr 0.557761 düşürülmesinin 0.5577539 ***SKIPGRAM_20000_400_5:** SKIPGRAM_20000_400_5: 5.0 minute(s) 3.1702939919996425 seconds. Prediction Similarity

CBOW_50000_200_5 CBOW_50000_200_5: 3.0 minute(s) 56.24900078099927 seconds. Prediction Similarity	***SKIPGRAM_50000_200_5*** SKIPGRAM_50000_200_5: 9.0 minute(s) 47.58791649900013 seconds. Prediction Similarity	***CBOW_50000_200_10*** CBOW_50000_200_10: 4.0 minute(s) 14.166396497999813 seconds. Prediction Similarity	***SKIPGRAM_50000_200_10*** SKIPGRAM_50000_200_10: 14.0 minute(s) 28.561868188000517 seconds. Prediction Similarity
rusya 0.83861		rusya 0.858347	
moskova 0.692425	rusya 0.809429	moskova 0.702133	rusya 0.831132
tahran 0.649562	moskova 0.721321	rus 0.682872	moskova 0.739329
ukrayna 0.635842	tahran 0.651198	putin 0.652748	putin 0.695972
putin 0.634964	kremlin 0.626729	lavrov 0.633611	rus 0.683896
iran 0.618345	putin 0.620681	sergey 0.624193	kremlin 0.664591
rus 0.612107	karlov 0.613763	tahran 0.623126	vladimir 0.653346
karlov 0.610391	vaşington 0.609989	ukrayna 0.619037	sergey 0.634642
washington 0.608875	washington 0.604946	iran 0.602809	andrey 0.62724
israil 0.601259	andrey 0.602206	kremlin 0.591541	ukrayna 0.62723
	vladimir 0.60213		paraşenko 0.625798
CBOW_50000_200_15 CBOW_50000_200_15: 4.0 minute(s) 28.51106463799806 seconds.	***SKIPGRAM_50000_200_15*** SKIPGRAM_50000_200_15: 17.0 minute(s) 38.50510849800048 seconds.	***CBOW_50000_300_5*** CBOW_50000_300_5: 4.0 minute(s) 42.14282848499715 seconds.	***SKIPGRAM_50000_300_5*** SKIPGRAM_50000_300_5: 12.0 minute(s) 29.539060813000106 seconds.
Prediction Similarity		Prediction Similarity	
	Prediction Similarity		Prediction Similarity
rusya 0.848824		rusya 0.838244	
moskova 0.706803	rusya 0.844691	moskova 0.68827	rusya 0.830736
rus 0.68692	moskova 0.754258	tahran 0.647437	moskova 0.682972
putin 0.67056	rus 0.705865	ukrayna 0.611807	putin 0.608755
sergey 0.626437	kremlin 0.679638	washington 0.610121	kremlin 0.607363
tahran 0.623396	putin 0.677674	rus 0.592489	vladimir 0.591299
ukrayna 0.612536	vladimir 0.67/8/4	rus 0.592489 putin 0.584253	viadimir 0.591299 sergey 0.556929
kremlin 0.592181	dmitri 0.654206	iran 0.580865	dmitri 0.556375
kırım 0.584247		incirlik 0.576001	karlov 0.555687
	9-1		
ïran 0.57919	soçi 0.626888	israil 0.575632	soçi 0.553091
	ukrayna 0.626217		petersburg 0.552344
CBOW_50000_300_10: 5.0 minute(s) 4.500730220999685 seconds. Prediction Similarity	SKIPGRAM_50000_300_10: 17.0 minute(s) 35.18383240599724 seconds. Prediction Similarity	CBOW_50000_300_15: 5.0 minute(s) 14.120701600000757 seconds. Prediction Similarity	SKIPGRAM_50000_300_15: 21.0 minute(s) 21.87407138100025 seconds. Prediction Similarity
lavrov 0.593377	rus 0.583044	kirim 0.57655	sergey 0.593714
Iran 0.586971	dmitri 0.564952	iran 0.568013	karlov 0.590826
o.581308	lavrov 0.560081 soçi 0.559699	vladimir 0.559982	ukrayna 0.585474 dmitri 0.585182
CBOW_50000_400_5 CBOW_50000_400_5: 5.0 minute(s) 22.224258317997737 seconds. Prediction Similarity	***SKIPGRAM_50000_400_5*** SKIPGRAM_50000_400_5: 13.0 minute(s) 0.5791116079999483 seconds.	***CBOW_50000_400_10*** CBOW_50000_400_10: 5.0 minute(s) 24.343411255998944 seconds. Prediction Similarity	***SKIPGRAM_50000_400_10*** SKIPGRAM_50000_400_10: 19.0 minute(s) 42.93098167399876 seconds.
	Prediction Similarity		Prediction Similarity
rusya 0.837384		rusya 0.845389	
oskova 0.688003	rusya 0.825762	moskova 0.699988	rusya 0.833134
ahran 0.680103	moskova 0.625007	rus 0.657954	moskova 0.622628
0.632995	kremlin 0.549726	tahran 0.639405	putin 0.618989
outin 0.606428	putin 0.547845	putin 0.637262	vladimir 0.615798
rus 0.602192	vladimir 0.547517	kremlin 0.624663	kremlin 0.577919
dlib 0.592531	tahran 0.533986	sergey 0.624388	rus 0.573614
Cirim 0.589678	ukrayna 0.530574	ukrayna 0.615218	ukrayna 0.551255
vashington 0.58524	peskov 0.522512	lavrov 0.588368	soçi 0.546111
erablus 0.584584	andrey 0.516929	uçağının 0.583319	karlov 0.544011
	rus 0.516675	,,,,	andrey 0.530148
CBOW_50000_400_15* BOW_50000_400_15: 5.0 minute(s)	***SKIPGRAM_50000_400_15*** SKIPGRAM_50000_400_15: 24.0	***CBOW_100000_200_5*** CBOW_100000_200_5: 8.0 minute(s)	***SKIPGRAM_100000_200_5*** SKIPGRAM_100000_200_5: 20.0
39.786060629998246 seconds. Prediction Similarity	minute(s) 21.848492141998577 seconds.	11.009053109999968 seconds. Prediction Similarity	minute(s) 19.51567946299997 seconds.
	Prediction Similarity		Prediction Similarity
rusya 0.855997		rusya 0.86812	
oskova 0.714319	rusya 0.835626	moskova 0.771655	rusya 0.842383
		<u></u>	<u></u>

rus 0.67775	moskova 0.650186	tahran 0.673964	moskova 0.798129
	putin 0.607882		
-			
ukrayna 0.608179	vladimir 0.593246	riyad 0.635882	tahran 0.662204
tahran 0.606929	rus 0.582546	putin 0.63301	ukrayna 0.656182
sergey 0.604442	kremlin 0.559407	petersburg 0.621884	washington 0.648259
kremlin 0.57749	ukrayna 0.546696	rus 0.621442	kremlin 0.640264
iran 0.573658	sergey 0.540586	ermenistan 0.608859	putin 0.639864
kirim 0.566798	dmitri 0.537852	washington 0.606992	andrey 0.634903
	dmitriy 0.532571		washington 0.633898
CBOW 100000 200 10	***SKIPGRAM 100000 200 10***	***CBOW 100000 200 15***	***SKIPGRAM 100000 200 15***
CBOW 100000 200 10: 8.0 minute(s)	SKIPGRAM 100000 200 10: 29.0	CBOW 100000 200 15: 8.0 minute(s)	SKIPGRAM 100000 200 15: 34.0
26.359885320000103 seconds.	minute(s) 59.15187462200038	42.7778197990001 seconds.	minute(s) 16.95703409700036
20.339003320000103 seconds.		42.7778197990001 Seconds.	
Prediction Similarity	seconds.	Prediction Similarity	seconds.
	_ 11 . 1	_	
	Prediction Similarity		Prediction Similarity
rusya 0.883964		rusya 0.883567	
moskova 0.808087	rusya 0.860251	moskova 0.824216	rusya 0.867483
rus 0.672673	moskova 0.803258	rus 0.702782	moskova 0.799768
tahran 0.663524	petersburg 0.702027	putin 0.689846	rus 0.720998
ukrayna 0.650787	rus 0.69159	kremlin 0.675091	ukrayna 0.697077
kremlin 0.647166	putin 0.689116	ukrayna 0.669122	petersburg 0.693461
putin 0.639103	ukrayna 0.683792	petersburg 0.650941	putin 0.68553
kiev 0.635299	kremlin 0.662538	tahran 0.63623	kremlin 0.659125
kırım 0.626776	vladimir 0.653923	kırım 0.617051	sergey 0.650932
sergey 0.611195	sergey 0.641815	kiev 0.605525	vladimir 0.648457
	soçi 0.636884		andrey 0.645406
CBOW 100000 300 5	***SKIPGRAM 100000 300 5***	***CBOW 100000 300 10***	***SKIPGRAM 100000 300 10***
CBOW 100000 300 5: 8.0 minute(s)	SKIPGRAM 100000 300 5: 24.0	CBOW 100000 300 10: 9.0 minute(s)	SKIPGRAM 100000 300 10: 36.0
40.910042615998464 seconds.	minute(s) 13.554162069000085	13.457523136999953 seconds.	minute(s) 26.511746816000596
Duralistics O' 13	seconds.	Purali ation	seconds.
Prediction Similarity		Prediction Similarity	
	Prediction Similarity		Prediction Similarity
rusya 0.868543		rusya 0.875668	
moskova 0.766282	rusya 0.832713	moskova 0.78094	rusya 0.848115
ukrayna 0.654708	moskova 0.755778	rus 0.666911	moskova 0.749857
tahran 0.639997	petersburg 0.644568	ukrayna 0.653702	rus 0.677178
kırım 0.632984	rus 0.611811	putin 0.64761	petersburg 0.66271
washington 0.615996	putin 0.594294	sergey 0.635686	putin 0.644647
putin 0.609687	ukrayna 0.592841	kiev 0.630541	ukrayna 0.638744
kiev 0.605388	addis 0.583437	tahran 0.615637	kremlin 0.625088
rivad 0.596892	kremlin 0.577975	petersburg 0.614984	vladimir 0.606096
	kremlin 0.577975 tahran 0.576941	petersburg 0.614984 kirim 0.604878	
riyad 0.596892 rus 0.593888	kremlin 0.577975 tahran 0.576941 vaṣington 0.576368	petersburg 0.614984 kırım 0.604878	vladimir 0.606096 peskov 0.598573 soçi 0.594948
	tahran 0.576941	-	peskov 0.598573
	tahran 0.576941	-	peskov 0.598573
	tahran 0.576941	-	peskov 0.598573
rus 0.593888	tahran 0.576941 vaşington 0.576368	kirim 0.604878	peskov 0.598573 soçi 0.594948
rus 0.593888 ***CBOW_100000_300_15***	tahran 0.576941 vaşington 0.576368	***CBOW 100000 400 5***	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5***
rus 0.593888 ***CBOW_100000_300_15*** CBOW_100000_300_15: 9.0 minute(s)	tahran 0.576941 vaşington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s)	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_10000_400_5*** SKIPGRAM_10000_400_5: 26.0
rus 0.593888	tahran 0.576941 vaşington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808	***CBOW 100000 400 5***	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_10000_400_5*** SKIPGRAM_10000_400_5: 26.0 minute(s) 57.832210500999736
CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds.	tahran 0.576941 vaşington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0	***CBOW 100000 400 5*** CBOW 100000 400 5: 10.0 minute(s) 4.483005160999937 seconds.	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0
rus 0.593888 ***CBOW_100000_300_15*** CBOW_100000_300_15: 9.0 minute(s)	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds.	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s)	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds.
CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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rus 0.593888 ***CBOW 100000 300 15*** CBOW 100000 300 15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	tahran 0.576941 vasington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW 100000 400 5*** CBOW 100000 400 5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity rusya 0.885762 moskova 0.773329 rus 0.692096	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW 100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity rusya 0.867873 moskova 0.753655 ukrayna 0.665093	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity rusya 0.885762 moskova 0.773329 rus 0.692096 kremlin 0.675938 putin 0.662272	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
CBOW 100000 300 15 CBOW 100000 300 15*** CBOW 100000 300 15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW 100000 400 5*** CBOW 100000 400 5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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rus 0.593888 ***CBOW 100000 300 15*** CBOW_100000 300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW 100000 400 5*** CBOW 100000 400 5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	***SKIPGRAM 100000 300 15*** SKIPGRAM 100000 300 15*** SKIPGRAM 100000 300 15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW 100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity rusya 0.836482 moskova 0.761861 rus 0.678761 ukrayna 0.639185 sergey 0.630112 putin 0.628805 kremlin 0.608121	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity rusya 0.885762 moskova 0.773329 rus 0.692096 kremlin 0.675938 putin 0.662272 ukrayna 0.630171 sergey 0.617064 petersburg 0.611842 kiev 0.60489	***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	tahran 0.576941 vaşington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	peskov 0.598573 soçi 0.594948 ***SKIPGRAM_100000_400_5*** SKIPGRAM_100000_400_5: 26.0 minute(s) 57.832210500999736 seconds. Prediction Similarity
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CBOW_100000_300_15 CBOW_100000_300_15: 9.0 minute(s) 32.81714697300049 seconds. Prediction Similarity	tahran 0.576941 vaşington 0.576368 ***SKIPGRAM_100000_300_15*** SKIPGRAM_100000_300_15: 42.0 minute(s) 15.09574136199808 seconds. Prediction Similarity	***CBOW_100000_400_5*** CBOW_100000_400_5: 10.0 minute(s) 4.483005160999937 seconds. Prediction Similarity	Test