

Imports

```
In [1]: import numpy as np
import spacy
from sklearn.cluster import DBSCAN
import time
```

```
In [4]: def lc_substring(x, y):
m, n = len(x), len(y)
lcs = np.zeros((m,n))
result = 0

for i in range(0,m):
    for j in range(0,n):
        if x[i] == y[j]:
            lcs[i,j] = lcs[i-1,j-1] + 1
            if lcs[i,j] > result:
                result = lcs[i,j]
        else:
            lcs[i,j] = 0

return int(result)
```

```
In [5]: def n_gram(x, n):
return [x[i:n + i] for i in range(len(x) - n + 1)]
```

```
In [6]: def lcs_metric(x, y):
return 1 - lc_substring(x,y) / max(len(x), len(y))

def dice_metric(x, y, n):
x_gram = set(n_gram(x, n))
y_gram = set(n_gram(y, n))
return 1 - 2*len(x_gram & y_gram) / (len(x_gram) + len(y_gram))

def word_to_vec(x):
res = dict()
for c in x:
    res[c] = res.get(c, 0) + 1
return res

def cos_metric(x, y):
x_vec = word_to_vec(x)
y_vec = word_to_vec(y)

intersection = set(x_vec) & set(y_vec)
numerator = sum([x_vec[a] * y_vec[a] for a in intersection])

x_sum = sum([x_vec[x]**2 for x in x_vec])
y_sum = sum([y_vec[y]**2 for y in y_vec])
denominator = np.sqrt(x_sum) * np.sqrt(y_sum)

if denominator > 0:
    return abs(1 - (numerator / denominator)) # ~ -x.xxxe-16
else:
    return 0.0

def euclidean_metric(x, y):
x_vec = word_to_vec(x)
y_vec = word_to_vec(y)
intersection = set(x_vec) & set(y_vec)
return np.sqrt(sum([x_vec[a] - y_vec[a])**2 for a in intersection])) / max(len(x), len(y))
```

```
In [26]: def sigma(a,b):
return not a == b

def levenshtein_metric(x, y):
m, n = len(x), len(y)
edit = [[0]*(n+1) for i in range(m+1)]

edit[0][0] = 0
for i in range(1,m+1):
    edit[i][0] = i
for j in range(1,n+1):
    edit[0][j] = j

if n == 0 and m == 0:
    return edit[0][0]

for i in range(1,m+1):
    for j in range(1,n+1):
        a = edit[i-1][j] + 1
        b = edit[i][j-1] + 1
        c = edit[i-1][j-1] + sigma(x[i-1], y[j-1])
```

```

        if a < b and a < c:
            edit[i][j] = a
        elif b < c:
            edit[i][j] = b
        else:
            edit[i][j] = c

    return (edit[m][n] / max(len(x), len(y)))

```

Clusterization quality

Davies-Bouldin index

```

In [8]: from IPython.display import Image
        Image("dbi.png")

```

Out[8]:

$$DB = \frac{1}{n_c} \sum_{i=1}^{n_c} R_i, \text{ where}$$

$$R_i = \max_{j=1 \dots n_c, i \neq j} (R_{ij}), \quad i = 1 \dots n_c$$

$$R_{ij} = \frac{s_i + s_j}{d_{ij}}$$

$$d_{ij} = d(v_i, v_j), \quad s_i = \frac{1}{\|c_i\|} \sum_{x \in c_i} d(x, v_i)$$

Where,

- $d(x,y)$ is the Euclidean distance between x and y .
- c_i is the cluster i .
- v_i is the centroid of cluster c_i
- $\|c_i\|$ refers to the norm of c_i

```

In [9]: def get_s(cluster, centroid, dst_method, n_gram=None):
        c_norm = len(cluster) # nie wiem jak to obliczyć
        if n_gram is None:
            s = sum(dst_method(c, centroid) for c in cluster)
        else:
            s = sum(dst_method(c, centroid, n_gram) for c in cluster)
        return s / c_norm

    def get_r(i, j, clusters, centroids, dst_method, n_gram=None):
        if n_gram is None:
            d = dst_method(centroids[i], centroids[j])
        else:
            d = dst_method(centroids[i], centroids[j], n_gram)
        s1 = get_s(clusters[i], centroids[i], dst_method, n_gram)
        s2 = get_s(clusters[j], centroids[j], dst_method, n_gram)
        if d != 0:
            return (s1 + s2) / d
        else:
            return 0.0

    # Davies-Bouldin index
    def dbi(clusters, centroids, dst_method, n_gram=None):
        n = len(clusters)
        numerator = sum([max([get_r(i, j, clusters, centroids, dst_method, n_gram) for i in range(n) for j in range(n) if i != j]) for i in range(n)])
        return numerator / n

```

Dunn index

```

In [10]: def dst_between(C1, C2, dst_method, n_gram=None):
        if n_gram is None:
            return dst_method(C1, C2)

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    else:
        return dst_method(C1, C2, n_gram)

# Dunn index
# Distance between clusters => distance between centroids
def di(clusters, centroids, dst_method, n_gram=None):
    n = len(centroids)
    if n_gram is None:
        numerator = min([dst_between(centroids[i], centroids[j], dst_method) for i in range(n) for j in range(n)
        else:
            numerator = min([dst_between(centroids[i], centroids[j], dst_method, n_gram) for i in range(n) for j in range(n)
        denominator = max(len(cluster) for cluster in clusters)
    return numerator / denominator

```

Stoplist

```

In [11]: def get_stoplist(lines_tokens, alpha=0.8):
    w_freq = dict()
    max_val = 0
    for line_tokens in lines_tokens:
        for token in line_tokens:
            val = w_freq.get(token.text, 0) + 1
            w_freq[token.text] = val
            if val > max_val:
                max_val = val

    res = list()
    for word, freq in w_freq.items():
        if freq > alpha * max_val:
            res.append(word)
    return res

def lines_without_stopwords(lines_tokens, stoplist):
    res = []
    for line_tokens in lines_tokens:
        new_line = [token.text for token in line_tokens if token.text not in stoplist]
        res.append(" ".join(new_line))
    return res

```

Text file

```

In [12]: with open("lines_100.txt", "r") as f:
    lines = f.readlines()
    nlp = spacy.load("pl_core_news_sm")
    n = len(lines)
    lines_tokens = []
    for i in range(n):
        lines_tokens.append(list(nlp.tokenizer(lines[i])))

text_stoplist = get_stoplist(lines_tokens, alpha=0.6)
lines_no_stopwords = lines_without_stopwords(lines_tokens, text_stoplist)

```

DBSCAN clustering

```

In [13]: def get_dst_matrix(lines, dst_method, n_gram=None):
    n = len(lines)
    dst_matrix = np.zeros((n,n))

    for i in range(n):
        for j in range(n):
            if i != j:
                if n_gram is None:
                    dst_matrix[i,j] = dst_method(lines[i], lines[j])
                else:
                    dst_matrix[i,j] = dst_method(lines[i], lines[j], n_gram)
    return dst_matrix

def get_centroids(clusters, dst_method, n_gram=None):
    centroids = []
    for cluster in clusters:
        nc = len(cluster)
        if nc == 1:
            centroids.append(cluster[0])
            continue

        one_to_all_mean_dst = []
        for i in range(nc):
            if n_gram is None:
                one_to_all_mean_dst.append(sum([dst_method(cluster[i], cluster[j]) for j in range(nc)]) / nc)
            else:

```

```

        one_to_all_mean_dst.append(sum([dst_method(cluster[i], cluster[j], n_gram) for j in range(nc)]))
    mean_dst = sum(one_to_all_mean_dst) / nc
    centroid = one_to_all_mean_dst[0]
    c_idx = 0
    for i in range(1, nc):
        if centroid < one_to_all_mean_dst[i] <= mean_dst or mean_dst <= one_to_all_mean_dst[i] < centroid:
            centroid = one_to_all_mean_dst[i]
            c_idx = i
    centroids.append(cluster[c_idx])
return centroids

def clusterize(lines, dst_method, n_gram=None, eps=0.30, min_samples=1):
    dst_matrix = get_dist_matrix(lines, dst_method, n_gram)
    model = DBSCAN(eps, min_samples, metric='precomputed').fit(dst_matrix)
    labels = model.labels_
    nc = len(np.unique(labels))

    clusters = [[] for i in range(nc)]
    for i in range(len(labels)):
        clusters[labels[i]].append(lines[i])

    centroids = get_centroids(clusters, dst_method, n_gram)

    return clusters, centroids

def show_results(clusters):
    for cluster in clusters:
        print("#####")
        for c in cluster:
            print(c)
        print()

```

Lines number : 100

Lcs metric

```

In [15]: now = time.time()
clusters_lcs, centroids_lcs = clusterize(lines, lcs_metric, eps=0.70, min_samples=1)
print("TIME : ", time.time() - now)
show_results(clusters_lcs)

```

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

TIME : 25.87486720085144

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"STEP TRADE" LLC KUBINSKAYA ST., 38, BUILDING A, ROOM 4-H,ST.PETERSBURG, 196247, RUSSIAN FEDERATION

#####

"STEVECO OY" STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA, FINLANDPIC: ANNE LEPPANEN

#####

"STUDIO MODERNA" UL. PERERVA 54 109369 MOSCOW RUSSIA

#####

"SUNTIRE" CO. LTD, M. BALKANSKAYA STREET, 58, LIT.A 192289, ST.-PETERSBURG, RUSSIA

#####

"SUNTIRE" CO. LTD. TEL.: + 7 (812)458 54 38 E-MAIL: CLIENT@S-LOGISTIC.RU

"SUNTIRE"CO.LTD TEL:+7(812)458 54 38 E-MAIL:CLIENT@S-LOGISTIC.RU

#####

"SUNTIRE"CO.LTD M.BALKANSKAYA STREET,58,LIT.A 192289,ST.PETERSBURG,RUSSIA


```
#####  
"TC ""UNOTRANS"" LTD" "190020 ST.PETERSBURG," "BUMAZHNAYA STR.9, K.1,OFFICE 305" "TEL/FAX: +7 812 445 2843"
```

```
#####  
"TC"UNOTRANS"LTD 190020 ST.PETERSBURG,BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43  
  
"TC"UNOTRANS"LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43  
  
"TC "UNOTRANS" LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9, K.1, OFF. 305 TEL/FAX: +7 812 445 28 43
```

Lcs metric stoplist

```
In [16]: now = time.time()  
clusters_lcs_stoplist, centroids_lcs_stoplist = clusterize(lines_no_stopwords, lcs_metric, eps=0.70, min_samples=  
print("TIME : ",time.time() - now)  
show_results(clusters_lcs_stoplist)
```

```
C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as  
keyword args. From version 0.25 passing these as positional arguments will result in an error  
warnings.warn("Pass {} as keyword args. From version 0.25 "
```

```
TIME : 26.068248987197876  
#####  
/11692589 RD TUNA CANNERS LTD PORTION 1004 SIAR NORTH COAST ROAD P O BOX 2113 MADANG PAPUA NEW GUINEA
```

```
#####  
' ' PA INTERIOR ' ' LTD BOLSHAYA LUBYANKA STREET 16/4 MOSCOW 101000 RUSSIA INN / KPP 7704550148//770801001 495 984  
8611
```

```
#####  
' ' SSONTEX ' ' Sp Z0 0 IMPORT EXPORTUL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669  
  
' ' SSONTEX''SP Z0 0 IMPORT EXPORT UL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669 TEL./FAX.:0048(022)  
217 6532
```

```
#####  
' ' TOPEX SP Z 0.0 ' ' SPOLKA KOMANDYTOWA UL POGRANICZNA 2/4 02 285 WARSZAWA POLAND
```

```
#####  
' MASTER PLUS CO.,LTD ' 143000,RUSSIA MO ODINSOVO MOJAISKOE SHOSSE,153 G TEL:+7495 7273939
```

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#####  
2TIGERS GROUP LIMITED ROOM 504 JINSHAZHOU SHANGSHUI ROAD GUANGZHOU 510160
```

```
#####  
ALDETRANS LLC 105066 MOSCOW RUSSIA TOKMAKOV LANE 11 TEL:+7(495)641 03 89
```

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#####  
A LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA MOSCOW 123308,RUSSIA T : +7(495)784 7961
```

```
#####  
ALISA LTD 1/5 Derbenevskaya str Moscow Russia Tel./Fax : ( 495 ) 987 13 07 postal code : 115114
```

```
#####  
ALLIANCE TRADE LLC INN : 7816391055 / KPP : 784601001 190020 Saint Petersburg quay of the Obvodny channel 138 bul  
k 1 liter B
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#####  
ALTAIR LIMITED COMPANY 199004,SAINT PETERSBURG 1 LINE H 20 LIT A OF 8 H
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#####  
ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALSKAYA STR.,5,OFFICE 1 3 ; TEL:+78123277732,FAX:+781 23277729 VOLOKNO  
@YAHOO COM
```

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX+ 78123277729

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX+ 78123277729

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX + 78123277729

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732 FAX +78123277729

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5 OFFICE 1 3 ; TEL.: +78123277732 FAX +78123277729 VOLOKN0@YAHOO COM

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5 OFFICE 1 3 ; TEL.: +78123277732 FAX+78123277729 VOLOKN0@YAHOO COM

#####

AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBOVDNY CHANNEL 134 136 138 BUILD 101 LIT A

AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBOVDNY CHANNEL, 134 136 138 BUILD 101 LIT A

#####

AVENTA LTD ADDRESS: 129 110, MOSCOW PROSPEKT MIRA H 52, STR 3, POM III Tel : 8 968 808 80 11

#####

AVSON GROUP COMPANY LIMITED 190008 ST PETERSBURG RIMSKOGO KORSAKOVA 73/33 LIT A 1

#####

Avson group Company Limited 190008 St Petersburg Rimskogo Korsakova 73/33 lit A 1

#####

BIO plus LTD INN 7805166210 198303 S Petersburg Leninskiy Pr., 110/1 lit B app 53 H RUSSIA

#####

CARGOIMPORT LTD VNUKOVSKAYA STREET BUILDING 2 R 43 H 1 SAINT PETERSBURG RUSSIA

#####

COLOS COMPLEX LOGISTICS SOLUTIONS PIOTR KACZMAREK I PAWEŁ WILK SP J ZACHODNIA STREET NO 3 55 011 SIECHNICE POLAND

#####

ELECTROGROUP (000), 190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA, 5, LIT A POM 4 N

ELECTROGROUP (000), 190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA, 5, LIT A POM 4 N

#####

ELEKTROAPPARAT PLC 24th Liniya V O., St Petersburg Sup. office No 1 of Kirovsky RUSSIA TEL : 0079 219646264

#####

ENS LTD ADDRESS : STAROPETROVSKIY PASSAGE BLD 7A CONSTRUCTION 3 125130 MOSCOW RUSSIA TEL : (499) 130 7336

#####

EVROTRANSIT LLC 105005 RUSSIAN FEDERATION MOSCOW BAUMANSKAYA STR 33/2 BLD 1 E MAIL : EVROTRANZIT LOG@INBOX RU TEL: 8 495 665 34 68

#####

EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIHA CENTRALNAYA STR 4A RUSSIA

EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIHA CENTRALNAYA STR 4A RUSSIA

#####

FILITA LTD UKRAINE 83004 DONETSK ARTEMA STR 193 G TEL / FAX: +380563705563

#####

FILLOGISTIK PP ZHOVKIVSKA 22 STREET 79019 LVIV UKRAINE TEL: +380322458030 FAX: +380322458030

#####

FINANS AKTIV", LTD 111250, RUSSIA MOSCOW KRASNOKAZARMENNAYA STR 11+7495 665 6001

#####

FMG SHIPPING AND FORWARDING LTD."190020 SAINT PETERSBURG LIFLYANDSKAYA STR 6,LITERA A",BUILDING 31H OFFICE 310 PO
ST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

#####

FMG SHIPPING AND FORWARDING LTD."190020 ST PETERSBURG RUSSIA BUMAZHNAYA STR 18 OFF 310

#####

FORWARD EXPEDITION LIMITED HKG SUCCES COMM BLDG.,6B,251 HENNESSY ROAD HONGKONG ARRIVAL@FORWARD HKG COM

#####

FRUITIMPEX LLC 121170 Moscow Russia Kulneva st 3 bld 1 INN 7737514219 KPP773001001

#####

FRUITIMPEX LLC TEL (495) 926 74 49

#####

FT LINE LLC RUSSIA 115230,MOSCOW ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

#####

GARANTRANS SERVICE MOSCOW RUSSIAUL GILYAROVSKOGO,57 OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

#####

Goldens LLC

#####

INTERLINK LTD SP ZOO UI POMORSKA50A 81 314 GDYNIA BIELSKA@INTERLINK BIZ PL SIEJKOWSKA@INTERLINK BIZ PL ... +++

#####

INTERTRANS CO LTD ST PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET OFFICE 502 TEL 3242144 FAX:3242145

#####

KM LTD 197183 RUSSIA ST PETERSBURG SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239 3109
FAX:7911239 3109

#####

KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 669

KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 699

#####

KONTUR LLC STR SHPALERNAYA 51 LIT A APP 2 N 191015 ST PETERSBURG RUSSIA INN 7842437789

#####

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812
89 88

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812
89 88

#####

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 ON BEHALF AETZ REKORD CO LTD 2 GAGARINA STR ALEXANDROV

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 ON BEHALF AETZ REKORD CO LTD

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

#####

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PYLAEVATATIANA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION INN 7842339 206

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (81 2) 329 42 62 PASHKEVICHANNA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (81 2) 329 42 62 PYLAEVA TATIANA

#####

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL : +7 812 327 77 41 FAX : +7 812 327 77 29

NFC LTD GAPSALSKAYA STR 5 198035ST PETERSBURG RUSSIA TEL.+78123277741 FAX +78123277729

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL +7 812327 77 41 FAX +7 812 327 77 29

#####

OCEAN WORLD LLC 198099 RUSSIA ST PETERSBURG KALININ STREET 57 LIT A OF 307 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC KALININ STREET 57 LIT A OFFICE 307 ST PETERSBURG RUSSIA 198099 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

#####

OCEAN WORLD LLC LIT A OF 307 57KALININ STREET ST PETERSBURG 198099 RUSSIA MERKOVA MARIYA TEL / FAX : +7 812 336 6 5 88

#####

OMEGA TOYS GRUP CO.,LTD AVTOZAVODSKAY STR 23,STRUCTURE 8 MOSCOW RUSSIAN FEDERATION P O X:115280 TEL / FAX:+7 495 674 60 62 TITARENKO ALEXANDR E mail serinity-toys@mail.ru INN

#####

000 BALTIYSKIY EKSPEDITOR EUGENIY KOMRAKOV (812) 676 16 03

#####

000 TECHNOLINE 191123,ST. PETERSBURG UL FURSHTATSKAYA 48,LITER A

#####

OTL LLC KOROTIN@OTLSPB RU TEL : +7(812) 326 42 52 VIP 13171 1 ST PETERSBURG

#####

OY VAER LOG LTD Y TUNNUS:2066533 3 Adres : Merituulentie 424 48310 Kotka TEL : +358 5 21 21 33 Fax : +3 58 5 21 21 30 Vanhala Olga Ershova Ekaterina

#####

PARTNER LTD INN / KPP 7801080258/780101001 POM/1 N HOUSE 1 2 1 LINE;V 0 ST PETERSBURG 199053 RUSSIA TEL : +7 812 600 20 22 FAX : +7 812 600 20 33

#####

PETERSBURG CHEMICAL COMPANY COMPANY LIMITED(<<PCC>>CO.,LTD) 197374,RUSSIAN FEDERATION SAINT PETERSBURG TORFYANAY A ROAD 7,LIT F OFFICE 925

#####

PO SVET LTD PODREZOVA STR.,16,LIT A ROOM 5 H 197136 SAINT PETERSBURG RUSSIA ITN 7813445827 TEL:+7 812 716 21 76

#####

PRANT LLC 603159 RUSSIA NIZHNY NOVGOROD AKIMOVA STR 41 SUITE 63 INN 5257120394 KPP 525701001 TEL / FAX +7 (831) 423 45 33

#####

Rimal LTD Grazdansky prospect 22 St Petersburg 195220 Russian Federation

#####

SAME AS CONSIGNEE

SAME AS CONSIGNEE AS AGENT OF BLUE ANCHOR LINE

SERVICE EXPRESS LTD 197110 RUSSIA SAINT PETERSBURG GLUHAYA ZELENINA STREET H 4 LIT B OFFICE 19 H

SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39
SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39

SHIP MASTER DELTA LLC RIGSKY PR.,19,SAINT PETERSBURG 190103,RUSSIA TEL:+7(812)251 81 11 ; +7(812)575 33 38;+7(812)
251 73 03 FAX : +7 (812) 575 33 40

SILMET COMPANY LIMITED 196084 RUSSIA ST PETERSBURG ZAOZERNAYA STR 4 LETTER A 9H TEL /FAX : 7 812334 35 74

Spike Rus Limited Liability Company The Yakovlevskiy per H 8 a of 5 n 196105 S Petersburg Russia TEL : 007 812 47
6 15 62 FAX : 007 812 476 15 62

SSONTEX SP ZO O IMPORT EXPORT 03 879 WARSZAWA UL PRZECLAWSKA 5 NIP:113 01 17 669

STEP TRADE LLC KUBINSKAYA ST 38 BUILDING A ROOM 4 H ST PETERSBURG 196247 RUSSIAN FEDERATION

STEVECO OY STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA FONLANDPIC : ANNE LEPPANEN

STUDIO MODERNA UL PERERVA 54 109369 MOSCOW RUSSIA

SUNTIRE CO LTD M BALKANSKAYA STREET 58 LIT A 192289 ST. PETERSBURG RUSSIA
SUNTIRE CO LTD M BALKANSKAYA STREET,58,LIT A 192289,ST PETERSBURG RUSSIA

SUNTIRE CO LTD TEL : + 7 (812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU
SUNTIRE CO LTD TEL:+7(812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1,OFFICE 305 TEL / FAX : +7 812 445 2843
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1 OFF 305 TEL / FAX : +7 812 445 28 43

Dice metric

```
In [17]: now = time.time()
clusters_dice, centroids_dice = clusterize(lines, dice_metric, n_gram=2, eps=0.40, min_samples=1)
print("TIME : ",time.time() - now)
show_results(clusters_dice)
```

TIME : 0.5068528652191162

/11692589 RD TUNA CANNERS, LTD. PORTION 1004, SIAR NORTH COAST ROAD, P.O.BOX 2113, MADANG, PAPUA NEW GUINEA

'PA INTERIOR' LTD BOLSHAYA LUBYANKA STREET, 16/4 MOSCOW, 101000, RUSSIA INN/KPP 7704550148//770801001 495-984-8
611

#####

'SSONTEX' Sp.ZO.O.IMPORT-EXPORTUL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669

'SSONTEX' SP.ZO.O.IMPORT-EXPORT UL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669 TEL./FAX.:0048(022)217 6532--

"SSONTEX" SP.ZO.O IMPORT-EXPORT 03-879 WARSZAWA UL PRZECLAWSKA 5 NIP:113-01-17-669

#####

'TOPEX SP. Z O.O.' SPOLKA KOMANDYTOWA UL. POGRANICZNA 2/4 02-285 WARSZAWA POLAND

#####

'MASTER PLUS CO.,LTD.' 143000,RUSSIA,MO,ODINSOVO, MOJAISKOE, SHOSSE,153G TEL:+7495 7273939

#####

"2TIGERS GROUP LIMITED" ROOM 504 JINSHAZHOU SHANGSHUI ROAD, GUANGZHOU 510160

#####

"ALDETRANS" LLC, 105066, MOSCOW, RUSSIA, TOKMAKOV LANE, 11. TEL:+7(495)641-03-89

#####

"A-LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA,MOSCOW 123308,RUSSIA T: +7(495)784-7961

#####

"ALISA" LTD, 1/5 Derbenevskaya str., Moscow, Russia Tel./Fax: (495) 987-13-07 postal code: 115114

#####

"ALLIANCE-TRADE" LLC INN: 7816391055 / KPP: 784601001 190020, Saint Petersburg, quay of the Obvodny channel, 138, bulk 1, liter.B

#####

"ALTAIR" LIMITED COMPANY 199004,SAINT-PETERSBURG, 1 LINE,H.20 LIT A,OF.8-H

#####

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL:+78123277732,FAX:+781 23277729.VOLO KNO@YAHOO.COM

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL.:+78123277732,FAX+ 78123277729.

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.:+78123277732,FAX+ 78123277729.

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.:+78123277732,FAX + 78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.+78123277732, FAX +78123277729 .

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5, OFFICE1-3; TEL.+78123277732, FAX +78123277729. V OLOKNO@YAHOO.COM

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG. GAPSALSKAYA STR.,5. OFFICE1-3; TEL.+78123277732, FAX+78123277729. VO LOKNO@YAHOO.COM

"NFC" LTD GAPSALSKAYA STR., 5 198035 ST. PETERSBURG, RUSSIA TEL: +7 812 327 77 41 FAX: +7 812 327 77 29

"NFC"LTD GAPSALSKAYA STR., 5 198035ST.PETERSBURG,RUSSIA TEL.+78123277741 FAX +78123277729

"NFC" LTD GAPSALSKAYA STR., 5 198035 ST.PETERSBURG, RUSSIA TEL. +7 812327 77 41 FAX +7 812 327 77 29

#####

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL, 134-136-138 , BUILD. 101, LIT. A"

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL,134-136-138 , BUILD. 101, LIT. A"

#####

"AVENTA"LTD. ADDRESS:129 110,MOSCOW,PROSPEKT MIRA,H.52,STR.3,POM,III Tel: 8-968-808-80-11

#####

"AVSON-GROUP" COMPANY LIMITED 190008, ST. PETERSBURG, RIMSKOGO-KORSAKOVA, 73/33, LIT. A-1

#####

"Avson-group" Company Limited 190008, St. Petersburg, Rimskogo-Korsakova, 73/33, lit. A-1

#####

"BIO plus LTD" INN 7805166210 198303, S-Petersburg, Leninskiy Pr.,110/1, lit B, app.53-H, RUSSIA

#####

"CARGOIMPORT" LTD VNUKOVSKAYA STREET, BUILDING 2, R.43-H-1, SAINT-PETERSBURG, RUSSIA .

#####

"COLOS"COMPLEX LOGISTICS,SOLUTIONSPIOTR KACZMAREK I PAWEL WILK SP.J.ZACHODNIA STREET NO 3 55-011 SIECHNICE POLAND

#####

"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

#####

"ELEKTROAPPARAT" PLC 24th LiniyaV.O.,St.Petersburg. Sup.office No.1of Kirovsky RUSSIA TEL: 0079-219646264

#####

"ENS" LTD ADDRESS: STAROPETROVSKIYPASSAGE, BLD 7A, CONSTRUCTION 3 125130, MOSCOW, RUSSIA TEL: (499) 130-7336

#####

"EVROTRANSIT" LLC 105005, RUSSIAN FEDERATION, MOSCOW, BAUMANSKAYA STR., 33/2, BLD.1 E-MAIL:EVROTRANZIT-LOGI@INBOX.RU TEL:8-495-665-34-68

#####

"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIA, CENTRALNAYA STR. 4ARUSSIA

"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIA, CENTRALNAYA STR. 4ARUSSIA

#####

"FILITA" LTD, UKRAINE, 83004, DONETSK, ARTEMA STR. 193G TEL/FAX:+380563705563

#####

"FILLOGISTIK" PP ZHOVKIVSKA 22 STREET 79019 LVOV,UKRAINE TEL:+380322458030 FAX:+380322458030

#####

"FINANS AKTIV",LTD. 111250,RUSSIA,MOSCOW, KRSNOKAZARMENNAYA STR.11+7495 665 6001

#####

"FMG SHIPPING AND FORWARDING, LTD."190020, SAINT PETERSBURG,LIFLYANDSKAYA STR., 6,LITERA "A",BUILDING 31H,OFFICE 310 POST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

#####

"FMG SHIPPING AND FORWARDING, LTD."190020 ST.PETERSBURG, RUSSIA BUMAZHNAYA STR., 18, OFF. 310

#####

"FORWARD EXPEDITION LIMITED HKG" SUCCES COMM.BLDG.,6B,251, HENNESSY ROAD, HONGKONG ARRIVAL@FORWARD-HKG.COM

#####

"FRUITIMPEX" LLC 121170, Moscow, Russia, Kuľneva st, 3 bld. 1 INN 7737514219 KPP773001001

#####

"FRUITIMPEX" LLC TEL. (495) 926-74-49

#####

"FT-LINE"LLC RUSSIA 115230,MOSCOW,ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

#####

"GARANTTRANS SERVICE" MOSCOW,RUSSIAUL.GILYAROVSKOGO,57.OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

"Goldens" LLC

"INTERLINK LTD SP ZOO UI. POMORSKA50A 81-314 GDYNIA BIELSKA@INTERLINK.BIZ.PL SIEJKOWSKA@INTERLINK.BIZ.PL...++

"INTERTRANS" CO LTD. ST.PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET,OFFICE 502, TEL 3242144, FAX:3242145

"KM" LTD 197183 RUSSIA,ST. PETERSBURG,SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239-3109 FAX:7911239-3109

"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-669
"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-699

"KONTUR" LLC STR. SHPALERNAYA 51, LIT. A, APP. 2-N 191015 ST. PETERSBURG, RUSSIA INN 7842437789

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA
"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88
"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D. 24, KORP. 5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 ON BEHALF "AETZ REKORD" CO., LTD 2, GAGARINA STR., ALEXANDRO V,--
"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120
"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 ON BEHALF "AETZ REKORD" CO., LTD--
"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION
"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL + 7 (812) 329-42-62 PYLAEVATATIANA
"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION
"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION INN 784 2339206
"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PASHKEVICHANNA
"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PYLAEVA TATIANA

"OCEAN WORLD" LLC 198099 RUSSIA, ST.PETERSBURG KALININ STREET, 57, LIT.A, OF.307 LEDENEVA ELENA. TEL./FAX.+7-812-336-65-88
"OCEAN WORLD" LLC KALININ STREET, 57, LIT. A, OFFICE 307, ST. PETERSBURG, RUSSIA, 198099 LEDENEVA ELENA.TEL./FAX. +7-812-336-65-88
"OCEAN WORLD" LLC LIT A, OF 307, 57KALININ STREET ST PETERSBURG 198099, RUSSIA MERKOVA MARIYA TEL/FAX: +7-812-336-65-88

"OMEGA TOYS GRUP"CO.,LTD. AVTOZAVODSKAY STR.23,STRUCTURE 8 MOSCOW,RUSSIAN FEDERATION,P.O.X:115280 TEL/FAX:+7-495-674-60-62 TITARENKO ALEXANDR E-mail serinity-toys@mail.ru INN

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"000" BALTIYSKIY EKSPEDITOR" EUGENIY KOMRAKOV (812) 676-16-03"

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"000" TECHNOLINE" 191123,ST.-PETERSBURG,UL. FURSCHTATSKAYA 48,LITER A"

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"OTL" LLC KOROTIN@OTLSPB.RU TEL: +7(812) 326-42-52 VIP 13171-1 ST.PETERSBURG

#####

"OY VAER LOG LTD" Y-TUNNUS:2066533-3 Adres: Merituulentie, 424 48310, Kotka TEL: +358 5 21 21 33 Fax: +358 5 21 21 30 Vanhala Olga Ershova Ekaterina

#####

"PARTNER" LTD INN/KPP 7801080258/780101001 POM/1-N, HOUSE 1-2, 1-LINE;V. 0. , ST. PETERSBURG, 199053, RUSSIA TEL. : +7 812 600 20 22 FAX: +7 812 600 20 33

#####

"PETERSBURG CHEMICAL COMPANY" COMPANY LIMITED(<<PCC>>CO.,LTD.) 197374,RUSSIAN FEDERATION,SAINT PETERSBURG,TORFAN AYA ROAD, 7,LIT.F OFFICE 925.

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"PO"SVET "LTD PODREZOVA STR.,16,LIT.A,ROOM 5-H 197136 SAINT-PETERSBURG,RUSSIA. ITN 7813445827 TEL:+7-812-716-21-7 6

#####

"PRANT" LLC 603159 RUSSIA, NIZHNY NOVGOROD AKIMOVA-STR. 41, SUITE 63 INN 5257120394 KPP 525701001 TEL/FAX. +7 (83 1) 423-45-33

#####

"Rimal" LTD "Grazdansky prospect, 22. St. Petersburg, 195220, Russian Federation"

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"SAME AS CONSIGNEE"

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"SAME AS CONSIGNEE" AS AGENT OF BLUE ANCHOR LINE

#####

"SERVICE-EXPRESS" LTD 197110, RUSSIA, SAINT-PETERSBURG, GLUHAYA ZELENINA STREET,H.4, LIT B,OFFICE 19-H

#####

"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

#####

"SHIP-MASTER DELTA"LLC RIGSKY PR.,19,SAINT-PETERSBURG, 190103,RUSSIA TEL:+7(812)251-81-11; +7(812)575-33-38;+7(81 2)251-73-03 FAX: +7 (812) 575-33-40

#####

"SILMET" COMPANY LIMITED 196084, RUSSIA, ST.PETERSBURG, ZAOZERNAYA STR., 4. LETTER A, 9H. TEL /FAX: 7 812334 35 7 4

#####

"Spike Rus" Limited Liability Company, The Yakovlevskiy per., H.8 a of. 5-n, 196105 S.Petersburg, Russia.TEL: 007 -812-476-15-62 FAX: 007-812-476-15-62

#####

"STEP TRADE" LLC KUBINSKAYA ST., 38, BUILDING A, ROOM 4-H,ST.PETERSBURG, 196247, RUSSIAN FEDERATION

#####

"STEVECO OY" STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA, FONLANDPIC: ANNE LEPPANEN

#####

"STUDIO MODERNA" UL. PERERVA 54 109369 MOSCOW RUSSIA

#####

"SUNTIRE" CO. LTD, M. BALKANSKAYA STREET, 58, LIT.A 192289, ST.-PETERSBURG, RUSSIA

"SUNTIRE"CO.LTD M.BALKANSKAYA STREET,58,LIT.A 192289,ST.PETERSBURG,RUSSIA

#####

"SUNTIRE" CO. LTD. TEL.: + 7 (812)458 54 38 E-MAIL: CLIENT@S-LOGISTIC.RU

"SUNTIRE"CO.LTD TEL:+7(812)458 54 38 E-MAIL:CLIENT@S-LOGISTIC.RU

#####

"TC ""UNOTRANS"" LTD" "190020 ST.PETERSBURG," "BUMAZHNAYA STR.9, K.1,OFFICE 305" "TEL/FAX: +7 812 445 2843"

"TC"UNOTRANS"LTD 190020 ST.PETERSBURG,BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

"TC"UNOTRANS"LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

"TC "UNOTRANS" LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9, K.1, OFF. 305 TEL/FAX: +7 812 445 28 43

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

Dice metric stoplist

```
In [18]: now = time.time()
clusters_dice_stoplist, centroids_dice_stoplist = clusterize(lines_no_stopwords, dice_metric, n_gram=2, eps=0.40,
print("TIME : ",time.time() - now)
show_results(clusters_dice_stoplist)
```

TIME : 0.4792037010192871

#####

/11692589 RD TUNA CANNERS LTD PORTION 1004 SIAR NORTH COAST ROAD P O BOX 2113 MADANG PAPUA NEW GUINEA

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' ' PA INTERIOR ' ' LTD BOLSHAYA LUBYANKA STREET 16/4 MOSCOW 101000 RUSSIA INN / KPP 7704550148//770801001 495 984 8611

#####

' ' SSONTEX ' ' Sp ZO O IMPORT EXPORTUL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669

' ' SSONTEX''SP ZO O IMPORT EXPORT UL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669 TEL./FAX.:0048(022) 217 6532

SSONTEX SP ZO O IMPORT EXPORT 03 879 WARSZAWA UL PRZECLAWSKA 5 NIP:113 01 17 669

#####

' ' TOPEX SP Z O.O ' ' SPOLKA KOMANDYTOWA UL POGRANICZNA 2/4 02 285 WARSZAWA POLAND

#####

' MASTER PLUS CO.,LTD ' 143000,RUSSIA MO ODINSOVO MOJAISKOE SHOSSE,153 G TEL:+7495 7273939

#####

2TIGERS GROUP LIMITED ROOM 504 JINSHAZHOU SHANGSHUI ROAD GUANGZHOU 510160

#####

ALDETRANS LLC 105066 MOSCOW RUSSIA TOKMAKOV LANE 11 TEL:+7(495)641 03 89

#####

A LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA MOSCOW 123308,RUSSIA T : +7(495)784 7961

#####

ALISA LTD 1/5 Derbenevskaya str Moscow Russia Tel./Fax : (495) 987 13 07 postal code : 115114

#####

ALLIANCE TRADE LLC INN : 7816391055 / KPP : 784601001 190020 Saint Petersburg quay of the Obvodny channel 138 bul
k 1 liter B

#####

ALTAIR LIMITED COMPANY 199004, SAINT PETERSBURG 1 LINE H 20 LIT A OF 8 H

#####

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX: +781 23277729 VOLOKNO
@YAHOO COM

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX+ 78123277729

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX+ 78123277729

ARIVIST 198035, RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732, FAX + 78123277729

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5, OFFICE 1 3 ; TEL.: +78123277732 FAX +78123277729

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5 OFFICE 1 3 ; TEL.: +78123277732 FAX +78123277729 VOLOKNO@Y
AHOO COM

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR., 5 OFFICE 1 3 ; TEL.: +78123277732 FAX+78123277729 VOLOKNO@YA
HOO COM

INTERTRANS CO LTD ST PETERSBURG, 198035, RUSSIA GAPSALSKAIA STREET OFFICE 502 TEL 3242144 FAX: 3242145

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL : +7 812 327 77 41 FAX : +7 812 327 77 29

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL.: +78123277741 FAX +78123277729

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL +7 812327 77 41 FAX +7 812 327 77 29

#####

AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBVODNY CHANNEL 134 136 138 B
UILD 101 LIT A

AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBVODNY CHANNEL, 134 136 138
BUILD 101 LIT A

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AVENTA LTD ADDRESS: 129 110, MOSCOW PROSPEKT MIRA H 52, STR 3, POM III Tel : 8 968 808 80 11

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AVSON GROUP COMPANY LIMITED 190008 ST PETERSBURG RIMSKOGO KORSAKOVA 73/33 LIT A 1

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Avson group Company Limited 190008 St Petersburg Rimskogo Korsakova 73/33 lit A 1

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BIO plus LTD INN 7805166210 198303 S Petersburg Leninskiy Pr., 110/1 lit B app 53 H RUSSIA

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CARGOIMPORT LTD VNUKOVSKAYA STREET BUILDING 2 R 43 H 1 SAINT PETERSBURG RUSSIA

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COLOS COMPLEX LOGISTICS SOLUTIONS PIOTR KACZMAREK I PAWEL WILK SP J ZACHODNIA STREET NO 3 55 011 SIECHNICE POLAND

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ELECTROGROUP (000), 190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA, 5, LIT A POM 4 N

ELECTROGROUP (000), 190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA, 5, LIT A POM 4 N

#####

ELEKTROAPPARAT PLC 24th Liniya V O., St Petersburg Sup. office No 1 of Kirovsky RUSSIA TEL : 0079 219646264

#####

ENS LTD ADDRESS : STAROPETROVSKIYPASSAGE BLD 7A CONSTRUCTION 3 125130 MOSCOW RUSSIA TEL : (499) 130 7336

#####

EVROTRANZIT LLC 105005 RUSSIAN FEDERATION MOSCOW BAUMANSKAYA STR 33/2 BLD 1 E MAIL : EVROTRANZIT LOG@INBOX RU TE

#####

EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIA CENTRALNAYA STR 4ARUSSIA

EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIA CENTRALNAYA STR 4ARUSSIA

#####

FILITA LTD UKRAINE 83004 DONETSK ARTEMA STR 193 G TEL / FAX:+380563705563

#####

FILLOGISTIK PP ZHOVKIVSKA 22 STREET 79019 LV0V UKRAINE TEL:+380322458030 FAX:+380322458030

#####

FINANS AKTIV",LTD 111250,RUSSIA MOSCOW KRSNOKAZARMENNAYA STR 11+7495 665 6001

#####

FMG SHIPPING AND FORWARDING LTD."190020 SAINT PETERSBURG LIFLYANDSKAYA STR 6,LITERA A",BUILDING 31H OFFICE 310 PO ST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

FMG SHIPPING AND FORWARDING LTD."190020 ST PETERSBURG RUSSIA BUMAZHNAYA STR 18 OFF 310

#####

FORWARD EXPEDITION LIMITED HKG SUCCES COMM BLDG.,6B,251 HENNESSY ROAD HONGKONG ARRIVAL@FORWARD HKG COM

#####

FRUITIMPEX LLC 121170 Moscow Russia Kulneva st 3 bld 1 INN 7737514219 KPP773001001

#####

FRUITIMPEX LLC TEL (495) 926 74 49

#####

FT LINE LLC RUSSIA 115230,MOSCOW ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

#####

GARANTTRANS SERVICE MOSCOW RUSSIAUL GILYAROVSKOGO,57 OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

#####

Goldens LLC

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INTERLINK LTD SP ZOO UI POMORSKA50A 81 314 GDYNIA BIELSKA@INTERLINK BIZ PL SIEJKOWSKA@INTERLINK BIZ PL ... ++

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KM LTD 197183 RUSSIA ST PETERSBURG SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239 3109 FAX:7911239 3109

#####

KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 669

KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 699

#####

KONTUR LLC STR SHPALERNAYA 51 LIT A APP 2 N 191015 ST PETERSBURG RUSSIA INN 7842437789

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PYLAEVATATIANA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION INN 7842339 206

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (81 2) 329 42 62 PASHKEVICHANNA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (81 2) 329 42 62 PYLAEVA TATIANA

PETERSBURG CHEMICAL COMPANY COMPANY LIMITED(<<PCC>>CO.,LTD) 197374,RUSSIAN FEDERATION SAINT PETERSBURG TORFYANAY A ROAD 7,LIT F OFFICE 925

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LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812 89 88

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812 89 88

#####

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 ON BEHALF AETZ REKORD CO LTD 2 GAGARINA STR ALEXANDROV

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 ON BEHALF AETZ REKORD CO LTD

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

#####

OCEAN WORLD LLC 198099 RUSSIA ST PETERSBURG KALININ STREET 57 LIT A OF 307 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC KALININ STREET 57 LIT A OFFICE 307 ST PETERSBURG RUSSIA 198099 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC LIT A OF 307 57KALININ STREET ST PETERSBURG 198099 RUSSIA MERKOVA MARIYA TEL / FAX : +7 812 336 6 5 88

#####

OMEGA TOYS GRUP CO.,LTD AVTOZAVODSKAY STR 23,STRUCTURE 8 MOSCOW RUSSIAN FEDERATION P O X:115280 TEL / FAX:+7 495 674 60 62 TITARENKO ALEXANDR E mail serinity-toys@mail.ru INN

#####

000 BALTIYSKIY EKSPEDITOR EUGENIY KOMRAKOV (812) 676 16 03

#####

000 TECHNOLINE 191123,ST. PETERSBURG UL FURSHTATSKAYA 48,LITER A

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OTL LLC KOROTIN@OTLSPB RU TEL : +7(812) 326 42 52 VIP 13171 1 ST PETERSBURG

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OY VAER LOG LTD Y TUNNUS:2066533 3 Adres : Merituulentie 424 48310 Kotka TEL : +358 5 21 21 33 Fax : +3 58 5 21 21 30 Vanhala Olga Ershova Ekaterina

#####

PARTNER LTD INN / KPP 7801080258/780101001 POM/1 N HOUSE 1 2 1 LINE;V 0 ST PETERSBURG 199053 RUSSIA TEL : +7 812 600 20 22 FAX : +7 812 600 20 33

#####

PO SVET LTD PODREZOVA STR.,16,LIT A ROOM 5 H 197136 SAINT PETERSBURG RUSSIA ITN 7813445827 TEL:+7 812 716 21 76

#####

PRANT LLC 603159 RUSSIA NIZHNY NOVGOROD AKIMOVA STR 41 SUITE 63 INN 5257120394 KPP 525701001 TEL / FAX +7 (831) 423 45 33

#####

Rimal LTD Grazdansky prospect 22 St Petersburg 195220 Russian Federation

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SAME AS CONSIGNEE

SAME AS CONSIGNEE AS AGENT OF BLUE ANCHOR LINE

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#####
SERVICE EXPRESS LTD 197110 RUSSIA SAINT PETERSBURG GLUHAYA ZELENINA STREET H 4 LIT B OFFICE 19 H

#####
SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B    02 495 WARSZAWA URSUS    TEL : ( 022 ) 312 31 39

SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B    02 495 WARSZAWA URSUS    TEL : ( 022 ) 312 31 39

#####
SHIP MASTER DELTA LLC RIGSKY PR.,19,SAINT PETERSBURG 190103,RUSSIA TEL:+7(812)251 81 11 ; +7(812)575 33 38;+7(812)251 73 03 FAX : +7 ( 812 ) 575 33 40

#####
SILMET COMPANY LIMITED 196084 RUSSIA ST PETERSBURG ZAOZERNAYA STR 4 LETTER A 9H TEL /FAX : 7 812334 35 74

#####
Spike Rus Limited Liability Company The Yakovlevskiy per H 8 a of 5 n 196105 S Petersburg Russia TEL : 007 812 47 6 15 62 FAX : 007 812 476 15 62

#####
STEP TRADE LLC KUBINSKAYA ST 38 BUILDING A ROOM 4 H ST PETERSBURG 196247 RUSSIAN FEDERATION

#####
STEVECO OY STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA FONLANDPIC : ANNE LEPPANEN

#####
STUDIO MODERNA UL PERERVA 54 109369 MOSCOW RUSSIA

#####
SUNTIRE CO LTD M BALKANSKAYA STREET 58 LIT A 192289 ST. PETERSBURG RUSSIA

SUNTIRE CO LTD M BALKANSKAYA STREET,58,LIT A 192289,ST PETERSBURG RUSSIA

#####
SUNTIRE CO LTD TEL : + 7 ( 812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

SUNTIRE CO LTD TEL:+7(812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

#####
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1,OFFICE 305 TEL / FAX : +7 812 445 2843

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1 OFF 305 TEL / FAX : +7 812 445 28 43
```

```
C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
  warnings.warn("Pass {} as keyword args. From version 0.25 "
```

Cosinus metric

```
In [19]: now = time.time()
clusters_cos, centroids_cos = clusterize(lines, cos_metric, eps=0.05, min_samples=1)
print("TIME : ",time.time() - now)
show_results(clusters_cos)
```

```
TIME : 0.575068473815918
#####
/11692589 RD TUNA CANNERS, LTD. PORTION 1004, SIAR NORTH COAST ROAD, P.O.BOX 2113, MADANG, PAPUA NEW GUINEA

#####
''PA INTERIOR'' LTD BOLSHAYA LUBYANKA STREET, 16/4 MOSCOW, 101000, RUSSIA INN/KPP 7704550148//770801001 495-984-8 611
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#####

'SSONTEX'' Sp.ZO.O.IMPORT-EXPORTUL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669

'SSONTEX''SP.ZO.O.IMPORT-EXPORT UL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669 TEL./FAX.:0048(022)217 6532--

"SSONTEX" SP.ZO.O IMPORT-EXPORT 03-879 WARSZAWA UL PRZECLAWSKA 5 NIP:113-01-17-669

#####

'TOPEX SP. Z O.O.' SPOLKA KOMANDYTOWA UL. POGRANICZNA 2/4 02-285 WARSZAWA POLAND

#####

'MASTER PLUS CO.,LTD.' 143000,RUSSIA,MO,ODINSOVO, MOJAISKOE, SHOSSE,153G TEL:+7495 7273939

#####

"2TIGERS GROUP LIMITED" ROOM 504 JINSHAZHOU SHANGSHUI ROAD, GUANGZHOU 510160

#####

"ALDETRANS" LLC, 105066, MOSCOW, RUSSIA, TOKMAKOV LANE, 11. TEL:+7(495)641-03-89

#####

"A-LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA,MOSCOW 123308,RUSSIA T: +7(495)784-7961

#####

"ALISA" LTD, 1/5 Derbenevskaya str., Moscow, Russia Tel./Fax: (495) 987-13-07 postal code: 115114

#####

"ALLIANCE-TRADE" LLC INN: 7816391055 / KPP: 784601001 190020, Saint Petersburg, quay of the Obvodny channel, 138, bulk 1, liter.B

#####

"ALTAIR" LIMITED COMPANY 199004,SAINT-PETERSBURG, 1 LINE,H.20 LIT A,OF.8-H

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"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL:+78123277732,FAX:+781 23277729.VOLO KNO@YAH00.COM

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL.:+78123277732,FAX+ 78123277729.

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"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.:+78123277732,FAX + 78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.+78123277732, FAX +78123277729 .

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5, OFFICE1-3; TEL.+78123277732, FAX +78123277729. V OLOKNO@YAH00.COM

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG. GAPSALSKAYA STR.,5. OFFICE1-3; TEL.+78123277732, FAX+78123277729. VO LOKNO@YAH00.COM

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"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL, 134-136-138 , BUILD. 101, LIT. A"

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL,134-136-138 , BUILD. 101, LIT. A"

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"AVENTA"LTD. ADDRESS:129 110,MOSCOW,PROSPEKT MIRA,H.52,STR.3,POM,III Tel: 8-968-808-80-11

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"AVSON-GROUP" COMPANY LIMITED 190008, ST. PETERSBURG, RIMSKOGO-KORSAKOVA, 73/33, LIT. A-1

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"Avson-group" Company Limited 190008, St. Petersburg, Rimskogo-Korsakova, 73/33, lit. A-1

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"BIO plus LTD" INN 7805166210 198303, S-Petersburg, Leninskiy Pr.,110/1, lit B, app.53-H, RUSSIA

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"CARGOIMPORT" LTD VNUKOVSKAYA STREET, BUILDING 2, R.43-H-1, SAINT-PETERSBURG, RUSSIA .

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D. 24, KORP. 5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

"STEP TRADE" LLC KUBINSKAYA ST., 38, BUILDING A, ROOM 4-H,ST.PETERSBURG, 196247, RUSSIAN FEDERATION

"SUNTIRE" CO. LTD, M. BALKANSKAYA STREET, 58, LIT.A 192289, ST.-PETERSBURG, RUSSIA

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"COLOS"COMPLEX LOGISTICS,SOLUTIONSPIOTR KACZMAREK I PAWEL WILK SP.J.ZACHODNIA STREET NO 3 55-011 SIECHNICE POLAND

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"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

#####

"ELEKTROAPPARAT" PLC 24th LiniyaV.O.,St.Petersburg. Sup.office No.1of Kirovsky RUSSIA TEL: 0079-219646264

#####

"ENS" LTD ADDRESS: STAROPETROVSKIYPASSAGE, BLD 7A, CONSTRUCTION 3 125130, MOSCOW, RUSSIA TEL: (499) 130-7336

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"EVROTRANSIT" LLC 105005, RUSSIAN FEDERATION, MOSCOW, BAUMANSKAYA STR., 33/2, BLD.1 E-MAIL:EVROTRANZIT-LOGI@INBOX.RU TEL:8-495-665-34-68

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"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4ARUSSIA

"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4ARUSSIA

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"FILITA" LTD, UKRAINE, 83004, DONETSK, ARTEMA STR. 193G TEL/FAX:+380563705563

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"FILLOGISTIK" PP ZHOVKIVSKA 22 STREET 79019 LVOV,UKRAINE TEL:+380322458030 FAX:+380322458030

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"FINANS AKTIV",LTD. 111250,RUSSIA,MOSCOW, KRSNOKAZARMENNAYA STR.11+7495 665 6001

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"FMG SHIPPING AND FORWARDING, LTD."190020, SAINT PETERSBURG,LIFLYANDSKAYA STR., 6,LITERA "A",BUILDING 31H,OFFICE 310 POST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

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"FMG SHIPPING AND FORWARDING, LTD."190020 ST.PETERSBURG, RUSSIA BUMAZHNAYA STR., 18, OFF. 310

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"FORWARD EXPEDITION LIMITED HKG" SUCCES COMM.BLDG.,6B,251, HENNESSY ROAD, HONGKONG ARRIVAL@FORWARD-HKG.COM

#####

"FRUITIMPEX" LLC 121170, Moscow, Russia, Kuľneva st, 3 bld. 1 INN 7737514219 KPP773001001

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"FRUITIMPEX" LLC TEL. (495) 926-74-49

#####

"FT-LINE"LLC RUSSIA 115230,MOSCOW,ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

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"GARANTTRANS SERVICE" MOSCOW,RUSSIAUL.GILYAROVSKOGO,57.OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

#####

"Goldens" LLC

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"INTERLINK LTD SP ZOO UI. POMORSKA50A 81-314 GDYNIA BIELSKA@INTERLINK.BIZ.PL SIEJKOWSKA@INTERLINK.BIZ.PL...++

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"INTERTRANS" CO LTD. ST.PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET,OFFICE 502, TEL 3242144, FAX:3242145

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"KM" LTD 197183 RUSSIA,ST. PETERSBURG,SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239-3109 FAX:7911239-3109

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"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-669

"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-699

#####

"KONTUR" LLC STR. SHPALERNAYA 51, LIT. A, APP. 2-N 191015 ST. PETERSBURG, RUSSIA INN 7842437789

#####

"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 ON BEHALF "AETZ REKORD" CO., LTD 2, GAGARINA STR., ALEXANDRO V, - -

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 ON BEHALF "AETZ REKORD" CO., LTD--

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"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

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"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL + 7 (812) 329-42-62 PYLAEVATATIANA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION INN 784 2339206

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PASHKEVICHANNA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PYLAeva TATIANA

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"NFC" LTD GAPSALSKAYA STR., 5 198035 ST. PETERSBURG, RUSSIA TEL: +7 812 327 77 41 FAX: +7 812 327 77 29

"NFC" LTD GAPSALSKAYA STR., 5 198035 ST.PETERSBURG, RUSSIA TEL. +7 812327 77 41 FAX +7 812 327 77 29

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"NFC"LTD GAPSALSKAYA STR., 5 198035ST.PETERSBURG,RUSSIA TEL.+78123277741 FAX +78123277729

#####

"OCEAN WORLD" LLC 198099 RUSSIA, ST.PETERSBURG KALININ STREET, 57, LIT.A, OF.307 LEDENEVA ELENA. TEL./FAX.+7-812-336-65-88

"OCEAN WORLD" LLC KALININ STREET, 57, LIT. A, OFFICE 307, ST. PETERSBURG, RUSSIA, 198099 LEDENEVA ELENA.TEL./FAX. +7-812-336-65-88

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"OCEAN WORLD" LLC LIT A, OF 307, 57KALININ STREET ST PETERSBURG 198099, RUSSIA MERKOVA MARIYA TEL/FAX: +7-812-336-65-88

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"OMEGA TOYS GRUP"CO.,LTD. AVTOZAVODSKAY STR.23,STRUCTURE 8 MOSCOW,RUSSIAN FEDERATION,P.O.X:115280 TEL/FAX:+7-495-674-60-62 TITARENKO ALEXANDR E-mail serinity-toys@mail.ru INN

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"000" BALTIYSKIY EKSPEDITOR" EUGENIY KOMRAKOV (812) 676-16-03"

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"000" TECHNOLINE" 191123,ST.-PETERSBURG,UL. FURSCHTATSKAYA 48,LITER A"

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"OTL" LLC KOROTIN@OTLSPB.RU TEL: +7(812) 326-42-52 VIP 13171-1 ST.PETERSBURG

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"OY VAER LOG LTD" Y-TUNNUS:2066533-3 Adres: Merituulentie, 424 48310, Kotka TEL: +358 5 21 21 33 Fax: +358 5 21 21 30 Vanhala Olga Ershova Ekaterina

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"PARTNER" LTD INN/KPP 7801080258/780101001 POM/1-N, HOUSE 1-2, 1-LINE;V. 0. , ST. PETERSBURG, 199053, RUSSIA TEL. : +7 812 600 20 22 FAX: +7 812 600 20 33

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"PETERSBURG CHEMICAL COMPANY" COMPANY LIMITED(<<PCC>>CO.,LTD.) 197374,RUSSIAN FEDERATION,SAINT PETERSBURG,TORFAN AYA ROAD, 7,LIT.F OFFICE 925.

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"PO"SVET "LTD PODREZOVA STR.,16,LIT.A,ROOM 5-H 197136 SAINT-PETERSBURG,RUSSIA. ITN 7813445827 TEL:+7-812-716-21-76

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"PRANT" LLC 603159 RUSSIA, NIZHNY NOVGOROD AKIMOVA-STR. 41, SUITE 63 INN 5257120394 KPP 525701001 TEL/FAX. +7 (831) 423-45-33

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"Rimal" LTD "Grazdansky prospect, 22. St. Petersburg, 195220, Russian Federation"

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"SAME AS CONSIGNEE" AS AGENT OF BLUE ANCHOR LINE

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"SERVICE-EXPRESS" LTD 197110, RUSSIA, SAINT-PETERSBURG, GLUHAYA ZELENINA STREET,H.4, LIT B,OFFICE 19-H

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"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

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"SHIP-MASTER DELTA"LLC RIGSKY PR.,19,SAINT-PETERSBURG, 190103,RUSSIA TEL:+7(812)251-81-11; +7(812)575-33-38;+7(812)251-73-03 FAX: +7 (812) 575-33-40

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"SILMET" COMPANY LIMITED 196084, RUSSIA, ST.PETERSBURG, ZAOZERNAYA STR., 4. LETTER A, 9H. TEL /FAX: 7 812334 35 74

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"Spike Rus" Limited Liability Company, The Yakovlevskiy per., H.8 a of. 5-n, 196105 S.Petersburg, Russia.TEL: 007-812-476-15-62 FAX: 007-812-476-15-62

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#####
"STEVECO OY" STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA, FONLANDPIC: ANNE LEPPANEN

#####
"STUDIO MODERNA" UL. PERERVA 54 109369 MOSCOW RUSSIA

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"SUNTIRE" CO. LTD. TEL.: + 7 (812)458 54 38 E-MAIL: CLIENT@S-LOGISTIC.RU

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"SUNTIRE"CO.LTD M.BALKANSKAYA STREET,58,LIT.A 192289,ST.PETERSBURG,RUSSIA

#####
"SUNTIRE"CO.LTD TEL:+7(812)458 54 38 E-MAIL:CLIENT@S-LOGISTIC.RU

#####
"TC "UNOTRANS" LTD" "190020 ST.PETERSBURG," "BUMAZHNAYA STR.9, K.1,OFFICE 305" "TEL/FAX: +7 812 445 2843"

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"TC"UNOTRANS"LTD 190020 ST.PETERSBURG,BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

"TC"UNOTRANS"LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

"TC "UNOTRANS" LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9, K.1, OFF. 305 TEL/FAX: +7 812 445 28 43
```

```
C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as
keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "
```

Cosinus metric stoplist

```
In [20]: now = time.time()
clusters_cos_stoplist, centroids_cos_stoplist = clusterize(lines_no_stopwords, cos_metric, eps=0.05, min_samples=
print("TIME : ",time.time() - now)
show_results(clusters_cos_stoplist)
```

```
TIME : 0.6037521362304688
#####
/11692589 RD TUNA CANNERS LTD PORTION 1004 SIAR NORTH COAST ROAD P O BOX 2113 MADANG PAPUA NEW GUINEA

#####
'' PA INTERIOR '' LTD BOLSHAYA LUBYANKA STREET 16/4 MOSCOW 101000 RUSSIA INN / KPP 7704550148//770801001 495 984
8611

#####
'' SSONTEX '' Sp ZO 0 IMPORT EXPORTUL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669

'' SSONTEX''SP ZO 0 IMPORT EXPORT UL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669 TEL./FAX.:0048(022)
217 6532

SSONTEX SP ZO 0 IMPORT EXPORT 03 879 WARSZAWA UL PRZECLAWSKA 5 NIP:113 01 17 669

#####
'' TOPEX SP Z 0.0 '' SPOLKA KOMANDYTOWA UL POGRANICZNA 2/4 02 285 WARSZAWA POLAND

#####
' MASTER PLUS CO.,LTD ' 143000,RUSSIA MO ODINSOVO MOJAISKOE SHOSSE,153 G TEL:+7495 7273939

#####
2TIGERS GROUP LIMITED ROOM 504 JINSHAZHOU SHANGSHUI ROAD GUANGZHOU 510160

#####
ALDETRANS LLC 105066 MOSCOW RUSSIA TOKMAKOV LANE 11 TEL:+7(495)641 03 89
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#####

A LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA MOSCOW 123308,RUSSIA T : +7(495)784 7961

#####

ALISA LTD 1/5 Derbenevskaya str Moscow Russia Tel./Fax : (495) 987 13 07 postal code : 115114

#####

ALLIANCE TRADE LLC INN : 7816391055 / KPP : 784601001 190020 Saint Petersburg quay of the Obvodny channel 138 bul k 1 liter B

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ALTAIR LIMITED COMPANY 199004,SAINT PETERSBURG 1 LINE H 20 LIT A OF 8 H

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ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALSKAYA STR.,5,OFFICE 1 3 ; TEL:+78123277732,FAX:+781 23277729 VOLOKNO@YAHOO COM

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ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALSKAYA STR.,5,OFFICE1 3 ; TEL.:+78123277732,FAX + 78123277729

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR.,5,OFFICE1 3 ; TEL.+78123277732 FAX +78123277729

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ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALSKAYA STR.,5 OFFICE1 3 ; TEL.+78123277732 FAX+78123277729 VOLOKNO@YAHOO COM

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL : +7 812 327 77 41 FAX : +7 812 327 77 29

NFC LTD GAPSALSKAYA STR 5 198035ST PETERSBURG RUSSIA TEL.+78123277741 FAX +78123277729

NFC LTD GAPSALSKAYA STR 5 198035 ST PETERSBURG RUSSIA TEL +7 812327 77 41 FAX +7 812 327 77 29

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PRANT LLC 603159 RUSSIA NIZHNY NOVGOROD AKIMOVA STR 41 SUITE 63 INN 5257120394 KPP 525701001 TEL / FAX +7 (831) 423 45 33

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AVENTA LTD ADDRESS:129 110,MOSCOW PROSPEKT MIRA H 52,STR 3,POM III Tel : 8 968 808 80 11

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AVSON GROUP COMPANY LIMITED 190008 ST PETERSBURG RIMSKOGO KORSAKOVA 73/33 LIT A 1

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Avson group Company Limited 190008 St Petersburg Rimskogo Korsakova 73/33 lit A 1

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BIO plus LTD INN 7805166210 198303 S Petersburg Leninskiy Pr.,110/1 lit B app 53 H RUSSIA

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CARGOIMPORT LTD VNUKOVSKAYA STREET BUILDING 2 R 43 H 1 SAINT PETERSBURG RUSSIA

EVROTRANSIT LLC 105005 RUSSIAN FEDERATION MOSCOW BAUMANSKAYA STR 33/2 BLD 1 E MAIL : EVROTRANZIT LOG@INBOX RU TEL:8 495 665 34 68

FILITA LTD UKRAINE 83004 DONETSK ARTEMA STR 193 G TEL / FAX:+380563705563

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 Korp 5 SAINT PETERSBURG 198096 RUSSIA

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 Korp 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812 89 88

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MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PYLAEVATATIANA

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MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PASHKEVICHANNA

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OCEAN WORLD LLC 198099 RUSSIA ST PETERSBURG KALININ STREET 57 LIT A OF 307 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC KALININ STREET 57 LIT A OFFICE 307 ST PETERSBURG RUSSIA 198099 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC LIT A OF 307 57KALININ STREET ST PETERSBURG 198099 RUSSIA MERKOVA MARIYA TEL / FAX : +7 812 336 65 88

SERVICE EXPRESS LTD 197110 RUSSIA SAINT PETERSBURG GLUHAYA ZELENINA STREET H 4 LIT B OFFICE 19 H

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STEP TRADE LLC KUBINSKAYA ST 38 BUILDING A ROOM 4 H ST PETERSBURG 196247 RUSSIAN FEDERATION

SUNTIRE CO LTD M BALKANSKAYA STREET 58 LIT A 192289 ST. PETERSBURG RUSSIA

SUNTIRE CO LTD M BALKANSKAYA STREET,58,LIT A 192289,ST PETERSBURG RUSSIA

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COLOS COMPLEX LOGISTICS SOLUTIONSPIOTR KACZMAREK I PAWEL WILK SP J ZACHODNIA STREET NO 3 55 011 SIECHNICE POLAND

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ELECTROGROUP (000),190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA,5,LIT A POM 4 N

ELECTROGROUP (000),190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA,5,LIT A POM 4 N

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ELEKTR0APPARAT PLC 24th LiniyaV 0.,St Petersburg Sup.office No 1of Kirovsky RUSSIA TEL : 0079 219646264

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EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAI0N D KOR0VIHA CENTRALNAYA STR 4ARUSSIA

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FINANS AKTIV",LTD 111250,RUSSIA MOSCOW KRSNOKAZARMENNAYA STR 11+7495 665 6001

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FRUITIMPEX LLC 121170 Moscow Russia Kulneva st 3 bld 1 INN 7737514219 KPP773001001

FRUITIMPEX LLC TEL (495) 926 74 49

FT LINE LLC RUSSIA 115230,MOSCOW ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

GARANTTRANS SERVICE MOSCOW RUSSIAUL GILYAROVSKOGO,57 OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

Goldens LLC

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INTERTRANS CO LTD ST PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET OFFICE 502 TEL 3242144 FAX:3242145

KM LTD 197183 RUSSIA ST PETERSBURG SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239 3109
FAX:7911239 3109

KOBİ LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 669

KOBİ LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 699

KONTUR LLC STR SHPALERNAYA 51 LIT A APP 2 N 191015 ST PETERSBURG RUSSIA INN 7842437789

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 ON BEHALF AETZ REKORD CO LTD 2 GAGARINA STR ALEXANDROV

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 ON BEHALF AETZ REKORD CO LTD

LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

OMEGA TOYS GRUP CO.,LTD AVTOZAVODSKAY STR 23,STRUCTURE 8 MOSCOW RUSSIAN FEDERATION P O X:115280 TEL / FAX:+7 495
674 60 62 TITARENKO ALEXANDR E mail serinity-toys@mail.ru INN

000 BALTIYSKIY EKSPEDITOR EUGENIY KOMRAKOV (812) 676 16 03

000 TECHNOLINE 191123,ST. PETERSBURG UL FURSHTATSKAYA 48,LITER A

OTL LLC KOROTIN@OTLSPB RU TEL : +7(812) 326 42 52 VIP 13171 1 ST PETERSBURG

OY VAER LOG LTD Y TUNNUS:2066533 3 Adres : Merituulentie 424 48310 Kotka TEL : +358 5 21 21 33 Fax : +3
58 5 21 21 30 Vanhala Olga Ershova Ekaterina

PARTNER LTD INN / KPP 7801080258/780101001 POM/1 N HOUSE 1 2 1 LINE;V 0 ST PETERSBURG 199053 RUSSIA TEL : +7 812
600 20 22 FAX : +7 812 600 20 33

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PETERSBURG CHEMICAL COMPANY COMPANY LIMITED(<<PCC>>CO.,LTD) 197374,RUSSIAN FEDERATION SAINT PETERSBURG TORFYANAY
A ROAD 7,LIT F OFFICE 925

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PO SVET LTD PODREZOVA STR.,16,LIT A ROOM 5 H 197136 SAINT PETERSBURG RUSSIA ITN 7813445827 TEL:+7 812 716 21 76

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Rimal LTD Grazdansky prospect 22 St Petersburg 195220 Russian Federation

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SAME AS CONSIGNEE

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SAME AS CONSIGNEE AS AGENT OF BLUE ANCHOR LINE

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SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39

SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39

#####

SHIP MASTER DELTA LLC RIGSKY PR.,19,SAINT PETERSBURG 190103,RUSSIA TEL:+7(812)251 81 11 ; +7(812)575 33 38;+7(812)
)251 73 03 FAX : +7 (812) 575 33 40

#####

Spike Rus Limited Liability Company The Yakovlevskiy per H 8 a of 5 n 196105 S Petersburg Russia TEL : 007 812 47
6 15 62 FAX : 007 812 476 15 62

#####

STEVECO OY STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA FONLANDPIC : ANNE LEPPANEN

#####

STUDIO MODERNA UL PERERVA 54 109369 MOSCOW RUSSIA

#####

SUNTIRE CO LTD TEL : + 7 (812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

SUNTIRE CO LTD TEL:+7(812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

#####

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1,OFFICE 305 TEL / FAX : +7 812 445 2843

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1 OFF 305 TEL / FAX : +7 812 445 28 43

```
C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as  
keyword args. From version 0.25 passing these as positional arguments will result in an error  
warnings.warn("Pass {} as keyword args. From version 0.25 "
```

Euclidean metric

```
In [21]: now = time.time()  
clusters_euclidean, centroids_euclidean = clusterize(lines, euclidean_metric, eps=0.05, min_samples=1)  
print("TIME : ",time.time() - now)  
show_results(clusters_euclidean)
```

TIME : 0.4567732810974121

#####

/11692589 RD TUNA CANNERS, LTD. PORTION 1004, SIAR NORTH COAST ROAD, P.O.BOX 2113, MADANG, PAPUA NEW GUINEA

#####

'PA INTERIOR' LTD BOLSHAYA LUBYANKA STREET, 16/4 MOSCOW, 101000, RUSSIA INN/KPP 7704550148//770801001 495-984-8
611

#####

'SSONTEX'' Sp.ZO.O.IMPORT-EXPORTUL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669

'SSONTEX''SP.ZO.O.IMPORT-EXPORT UL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669 TEL./FAX.:0048(022)217 6532--

"SSONTEX" SP.ZO.O IMPORT-EXPORT 03-879 WARSZAWA UL PRZECLAWSKA 5 NIP:113-01-17-669

#####

'TOPEX SP. Z O.O.' SPOLKA KOMANDYTOWA UL. POGRANICZNA 2/4 02-285 WARSZAWA POLAND

#####

'MASTER PLUS CO.,LTD.' 143000,RUSSIA,MO,ODINSOVO, MOJAISKOE, SHOSSE,153G TEL:+7495 7273939

#####

"2TIGERS GROUP LIMITED" ROOM 504 JINSHAZHOU SHANGSHUI ROAD, GUANGZHOU 510160

#####

"ALDETRANS" LLC, 105066, MOSCOW, RUSSIA, TOKMAKOV LANE, 11. TEL:+7(495)641-03-89

#####

"A-LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA,MOSCOW 123308,RUSSIA T: +7(495)784-7961

#####

"ALISA" LTD, 1/5 Derbenevskaya str., Moscow, Russia Tel./Fax: (495) 987-13-07 postal code: 115114

#####

"ALLIANCE-TRADE" LLC INN: 7816391055 / KPP: 784601001 190020, Saint Petersburg, quay of the Obvodny channel, 138, bulk 1, liter.B

#####

"ALTAIR" LIMITED COMPANY 199004,SAINT-PETERSBURG, 1 LINE,H.20 LIT A,OF.8-H

#####

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL:+78123277732,FAX:+781 23277729.VOLO KNO@YAH00.COM

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE 1-3; TEL.:+78123277732,FAX+ 78123277729.

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.:+78123277732,FAX+ 78123277729.

"ARIVIST", 198035,RUSSIA,SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.:+78123277732,FAX + 78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5,OFFICE1-3; TEL.+78123277732, FAX +78123277729

.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR.,5, OFFICE1-3; TEL.+78123277732, FAX +78123277729. V OLOKNO@YAH00.COM

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG. GAPSALSKAYA STR.,5. OFFICE1-3; TEL.+78123277732, FAX+78123277729. VO LOKNO@YAH00.COM

"AVENTA"LTD. ADDRESS:129 110,MOSCOW,PROSPEKT MIRA,H.52,STR.3,POM,III Tel: 8-968-808-80-11

"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

"ELECTROGROUP" (000),190068.RUSSIA,SAINT-PETERSBURG,UL.BOLSHAYA PODYACHESKAYA,5,LIT.A,POM.4-N

"Goldens" LLC

"SAME AS CONSIGNEE"

"SUNTIRE"CO.LTD M.BALKANSKAYA STREET,58,LIT.A 192289,ST.PETERSBURG,RUSSIA

#####

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL, 134-136-138, BUILD. 101, LIT. A"

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBVODNY CHANNEL,134-136-138, BUILD. 101, LIT. A"

#####

"AVSON-GROUP" COMPANY LIMITED 190008, ST. PETERSBURG, RIMSKOGO-KORSAKOVA, 73/33, LIT. A-1

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"Avson-group" Company Limited 190008, St. Petersburg, Rimskogo-Korsakova, 73/33, lit. A-1

#####

"BIO plus LTD" INN 7805166210 198303, S-Petersburg, Leninskiy Pr.,110/1, lit B, app.53-H, RUSSIA

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"CARGOIMPORT" LTD VNUKOVSKAYA STREET, BUILDING 2, R.43-H-1, SAINT-PETERSBURG, RUSSIA .

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"COLOS"COMPLEX LOGISTICS,SOLUTIONSPIOTR KACZMAREK I PAWEL WILK SP.J.ZACHODNIA STREET NO 3 55-011 SIECHNICE POLAND

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"ELEKTROAPPARAT" PLC 24th LiniyaV.O.,St.Petersburg. Sup.office No.1of Kirovsky RUSSIA TEL: 0079-219646264

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"ENS" LTD ADDRESS: STAROPETROVSKIYPASSAGE, BLD 7A, CONSTRUCTION 3 125130, MOSCOW, RUSSIA TEL: (499) 130-7336

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"EVROTRANSIT" LLC 105005, RUSSIAN FEDERATION, MOSCOW, BAUMANSKAYA STR., 33/2, BLD.1 E-MAIL:EVROTRANZIT-LOGI@INBOX.RU TEL:8-495-665-34-68

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"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4ARUSSIA

"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4ARUSSIA

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"FILITA" LTD, UKRAINE, 83004, DONETSK, ARTEMA STR. 193G TEL/FAX:+380563705563

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"FILLOGISTIK" PP ZHOVKIVSKA 22 STREET 79019 LVOV,UKRAINE TEL:+380322458030 FAX:+380322458030

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"FINANS AKTIV",LTD. 111250,RUSSIA,MOSCOW, KRASNOKAZARMENNAYA STR.11+7495 665 6001

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"FMG SHIPPING AND FORWARDING, LTD."190020, SAINT PETERSBURG,LIFLYANDSKAYA STR., 6,LITERA "A",BUILDING 31H,OFFICE 310 POST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

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"FMG SHIPPING AND FORWARDING, LTD."190020 ST.PETERSBURG, RUSSIA BUMAZHNAYA STR., 18, OFF. 310

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"FORWARD EXPEDITION LIMITED HKG" SUCCES COMM.BLDG.,6B,251, HENNESSY ROAD, HONGKONG ARRIVAL@FORWARD-HKG.COM

#####

"FRUITIMPEX" LLC 121170, Moscow, Russia, Kulneva st, 3 bld. 1 INN 7737514219 KPP773001001

#####

"FRUITIMPEX" LLC TEL. (495) 926-74-49

#####

"FT-LINE"LLC RUSSIA 115230,MOSCOW,ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

#####

"GARANTTRANS SERVICE" MOSCOW,RUSSIAUL.GILYAROVSKOGO,57.OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

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"INTERLINK LTD SP ZOO UI. POMORSKA50A 81-314 GDYNIA BIELSKA@INTERLINK.BIZ.PL SIEJKOWSKA@INTERLINK.BIZ.PL...++

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"INTERTRANS" CO LTD. ST.PETERSBURG,198035,RUSSIA GAPSALSKAYA STREET,OFFICE 502, TEL 3242144, FAX:3242145

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"KM" LTD 197183 RUSSIA,ST. PETERSBURG,SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239-3109 FAX:7911239-3109

#####

"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-669

"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-699

#####

"KONTUR" LLC STR. SHPALERNAYA 51, LIT. A, APP. 2-N 191015 ST. PETERSBURG, RUSSIA INN 7842437789

#####

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA

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"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D. 24, KORP. 5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

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"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 ON BEHALF "AETZ REKORD" CO., LTD 2, GAGARINA STR., ALEXANDRO V,--

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"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

#####

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 ON BEHALF "AETZ REKORD" CO., LTD--

#####

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL + 7 (812) 329-42-62 PYLAEVATATIANA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION INN 784 2339206

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PASHKEVICHANNA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PYLAEVA TATIANA

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"NFC" LTD GAPSALSKAYA STR., 5 198035 ST. PETERSBURG, RUSSIA TEL: +7 812 327 77 41 FAX: +7 812 327 77 29

"NFC" LTD GAPSALSKAYA STR., 5 198035 ST.PETERSBURG, RUSSIA TEL. +7 812327 77 41 FAX +7 812 327 77 29

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"NFC"LTD GAPSALSKAYA STR., 5 198035ST.PETERSBURG,RUSSIA TEL.+78123277741 FAX +78123277729

#####

"OCEAN WORLD" LLC 198099 RUSSIA, ST.PETERSBURG KALININ STREET, 57, LIT.A, OF.307 LEDENEVA ELENA. TEL./FAX.+7-812-336-65-88

"OCEAN WORLD" LLC KALININ STREET, 57, LIT. A, OFFICE 307, ST. PETERSBURG, RUSSIA, 198099 LEDENEVA ELENA.TEL./FAX. +7-812-336-65-88

#####

"OCEAN WORLD" LLC LIT A, OF 307, 57KALININ STREET ST PETERSBURG 198099, RUSSIA MERKOVA MARIYA TEL/FAX: +7-812-336-65-88

#####

"OMEGA TOYS GRUP"CO.,LTD. AVTOZAVODSKAY STR.23,STRUCTURE 8 MOSCOW,RUSSIAN FEDERATION,P.O.X:115280 TEL/FAX:+7-495-674-60-62 TITARENKO ALEXANDR E-mail serinity-toys@mail.ru INN

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"000" BALTIYSKIY EKSPEDITOR" EUGENIY KOMRAKOV (812) 676-16-03"

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"000" TECHNOLINE" 191123,ST.-PETERSBURG,UL. FURSCHTATSKAYA 48,LITER A"

#####

"OTL" LLC KOROTIN@OTLSPB.RU TEL: +7(812) 326-42-52 VIP 13171-1 ST.PETERSBURG

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"OY VAER LOG LTD" Y-TUNNUS:2066533-3 Adres: Merituulentie, 424 48310, Kotka TEL: +358 5 21 21 33 Fax: +358 5 21 21 30 Vanhala Olga Ershova Ekaterina

#####

"PARTNER" LTD INN/KPP 7801080258/780101001 POM/1-N, HOUSE 1-2, 1-LINE;V. 0. , ST. PETERSBURG, 199053, RUSSIA TEL. : +7 812 600 20 22 FAX: +7 812 600 20 33

#####

"PETERSBURG CHEMICAL COMPANY" COMPANY LIMITED(<<PCC>>CO.,LTD.) 197374,RUSSIAN FEDERATION,SAINT PETERSBURG,TORFYAN AYA ROAD, 7,LIT.F OFFICE 925.

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"PO"SVET "LTD PODREZOVA STR.,16,LIT.A,ROOM 5-H 197136 SAINT-PETERSBURG,RUSSIA. ITN 7813445827 TEL:+7-812-716-21-76

#####

"PRANT" LLC 603159 RUSSIA, NIZHNY NOVGOROD AKIMOVA-STR. 41, SUITE 63 INN 5257120394 KPP 525701001 TEL/FAX. +7 (831) 423-45-33

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"Rimal" LTD "Grazdansky prospect, 22. St. Petersburg, 195220, Russian Federation"

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"SAME AS CONSIGNEE" AS AGENT OF BLUE ANCHOR LINE

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"SERVICE-EXPRESS" LTD 197110, RUSSIA, SAINT-PETERSBURG, GLUHAYA ZELENINA STREET,H.4, LIT B,OFFICE 19-H

#####

"SEVROLL-SYSTEM" SP.Z O.O. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

"SEVROLL-SYSTEM" SP.Z O.O. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

#####

"SHIP-MASTER DELTA"LLC RIGSKY PR.,19,SAINT-PETERSBURG, 190103,RUSSIA TEL:+7(812)251-81-11; +7(812)575-33-38;+7(812)251-73-03 FAX: +7 (812) 575-33-40

#####

"SILMET" COMPANY LIMITED 196084, RUSSIA, ST.PETERSBURG, ZAOZERNAYA STR., 4. LETTER A, 9H. TEL /FAX: 7 812334 35 74

#####

"Spike Rus" Limited Liability Company, The Yakovlevskiy per., H.8 a of. 5-n, 196105 S.Petersburg, Russia.TEL: 007-812-476-15-62 FAX: 007-812-476-15-62

#####

"STEP TRADE" LLC KUBINSKAYA ST., 38, BUILDING A, ROOM 4-H,ST.PETERSBURG, 196247, RUSSIAN FEDERATION

#####

"STEVECO OY" STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA, FONLANDPIC: ANNE LEPPANEN

#####

"STUDIO MODERNA" UL. PERERVA 54 109369 MOSCOW RUSSIA

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"SUNTIRE" CO. LTD, M. BALKANSKAYA STREET, 58, LIT.A 192289, ST.-PETERSBURG, RUSSIA

#####

"SUNTIRE" CO. LTD. TEL.: + 7 (812)458 54 38 E-MAIL: CLIENT@S-LOGISTIC.RU

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"SUNTIRE"CO.LTD TEL:+7(812)458 54 38 E-MAIL:CLIENT@S-LOGISTIC.RU

#####

"TC "UNOTRANS" LTD" "190020 ST.PETERSBURG," "BUMAZHNAYA STR.9, K.1,OFFICE 305" "TEL/FAX: +7 812 445 2843"

#####

"TC"UNOTRANS"LTD 190020 ST.PETERSBURG,BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

"TC"UNOTRANS"LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9,K.1,OFF.305 TEL/FAX:+7 812 445 28 43

#####

"TC "UNOTRANS" LTD 190020 ST.PETERSBURG, BUMAZHNAYA STR.9, K.1, OFF. 305 TEL/FAX: +7 812 445 28 43

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

Euclidean metric stoplist

```
In [22]: now = time.time()
clusters_euclidean_stoplist, centroids_euclidean_stoplist = clusterize(lines_no_stopwords, euclidean_metric, eps=
print("TIME : ",time.time() - now)
show_results(clusters_euclidean_stoplist)
```

TIME : 0.4296286106109619

#####

/11692589 RD TUNA CANNERS LTD PORTION 1004 SIAR NORTH COAST ROAD P O BOX 2113 MADANG PAPUA NEW GUINEA

#####

' ' PA INTERIOR ' ' LTD BOLSHAYA LUBYANKA STREET 16/4 MOSCOW 101000 RUSSIA INN / KPP 7704550148//770801001 495 984 8611

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' ' SSONTEX ' ' Sp ZO O IMPORT EXPORTUL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669

' ' SSONTEX' 'SP ZO O IMPORT EXPORT UL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669 TEL./FAX.:0048(022) 217 6532

#####

' ' TOPEX SP Z O.O ' ' SPOLKA KOMANDYTOWA UL POGRANICZNA 2/4 02 285 WARSZAWA POLAND

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' MASTER PLUS CO.,LTD ' 143000,RUSSIA MO ODINSOVO MOJAISKOE SHOSSE,153 G TEL:+7495 7273939

#####

2TIGERS GROUP LIMITED ROOM 504 JINSHAZHOU SHANGSHUI ROAD GUANGZHOU 510160

#####

ALDETRANS LLC 105066 MOSCOW RUSSIA TOKMAKOV LANE 11 TEL:+7(495)641 03 89

#####

A LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA MOSCOW 123308,RUSSIA T : +7(495)784 7961

#####

ALISA LTD 1/5 Derbenevskaya str Moscow Russia Tel./Fax : (495) 987 13 07 postal code : 115114

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ALLIANCE TRADE LLC INN : 7816391055 / KPP : 784601001 190020 Saint Petersburg quay of the Obvodny channel 138 bul k 1 liter B

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ALTAIR LIMITED COMPANY 199004,SAINT PETERSBURG 1 LINE H 20 LIT A OF 8 H

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ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5,OFFICE 1 3 ; TEL:+78123277732,FAX:+781 23277729 VOLOKNO@YAHOO COM

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5 OFFICE1 3 ; TEL.+78123277732 FAX +78123277729 VOLOKNO@YAHOO COM

ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5 OFFICE1 3 ; TEL.+78123277732 FAX+78123277729 VOLOKNO@YAHOO COM

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ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5,OFFICE1 3 ; TEL.:+78123277732,FAX+ 78123277729

ARIVIST 198035,RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5,OFFICE1 3 ; TEL.:+78123277732,FAX + 78123277729

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ARIVIST 198035 RUSSIA SAINT PETERSBURG GAPSALS KAYA STR.,5,OFFICE1 3 ; TEL.+78123277732 FAX +78123277729

NFC LTD GAPSALS KAYA STR 5 198035 ST PETERSBURG RUSSIA TEL : +7 812 327 77 41 FAX : +7 812 327 77 29

NFC LTD GAPSALS KAYA STR 5 198035 ST PETERSBURG RUSSIA TEL +7 812327 77 41 FAX +7 812 327 77 29

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AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBVODNY CHANNEL 134 136 138 B UILD 101 LIT A

AVANPORT LLC INN : 7839413675 KPP : 783901001 190020 SAINT PETERSBURG QUAY OF THE OBVODNY CHANNEL,134 136 138 BUILD 101 LIT A

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AVENTA LTD ADDRESS:129 110,MOSCOW PROSPEKT MIRA H 52,STR 3,POM III Tel : 8 968 808 80 11

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AVSON GROUP COMPANY LIMITED 190008 ST PETERSBURG RIMSKOGO KORSAKOVA 73/33 LIT A 1

GARANTTRANS SERVICE MOSCOW RUSSIAUL GILYAROVSKOGO,57 OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

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Avson group Company Limited 190008 St Petersburg Rimskogo Korsakova 73/33 lit A 1

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BI0 plus LTD INN 7805166210 198303 S Petersburg Leninskiy Pr.,110/1 lit B app 53 H RUSSIA

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CARGOIMPORT LTD VNUKOVSKAYA STREET BUILDING 2 R 43 H 1 SAINT PETERSBURG RUSSIA

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COLOS COMPLEX LOGISTICS SOLUTIONSPIOTR KACZMAREK I PAWEL WILK SP J ZACHODNIA STREET NO 3 55 011 SIECHNICE POLAND

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ELECTROGROUP (000),190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA,5,LIT A POM 4 N

ELECTROGROUP (000),190068 RUSSIA SAINT PETERSBURG UL BOLSHAYA PODYACHESKAYA,5,LIT A POM 4 N

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ELEKTROAPPARAT PLC 24th LiniyaV O.,St Petersburg Sup.office No 1of Kirovsky RUSSIA TEL : 0079 219646264

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ENS LTD ADDRESS : STAROPETROVSKIYPASSAGE BLD 7A CONSTRUCTION 3 125130 MOSCOW RUSSIA TEL : (499) 130 7336

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EVROTRANSIT LLC 105005 RUSSIAN FEDERATION MOSCOW BAUMANSKAYA STR 33/2 BLD 1 E MAIL : EVROTRANZIT LOGL@INBOX RU TEL:8 495 665 34 68

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EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIHA CENTRALNAYA STR 4ARUSSIA

EXPRESS CO LTD RUSSIA 155101 IVANOVSKAYA REGION LEZHNEVSKIY RAION D KOROVIIHA CENTRALNAYA STR 4ARUSSIA

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FILITA LTD UKRAINE 83004 DONETSK ARTEMA STR 193 G TEL / FAX:+380563705563

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FILLOGISTIK PP ZHOVKIVSKA 22 STREET 79019 LVOV UKRAINE TEL:+380322458030 FAX:+380322458030

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FINANS AKTIV",LTD 111250,RUSSIA MOSCOW KRASNOKAZARMENNAYA STR 11+7495 665 6001

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FMG SHIPPING AND FORWARDING LTD."190020 SAINT PETERSBURG LIFLYANDSKAYA STR 6,LITERA A",BUILDING 31H OFFICE 310 POST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

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FMG SHIPPING AND FORWARDING LTD."190020 ST PETERSBURG RUSSIA BUMAZHNAYA STR 18 OFF 310

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FORWARD EXPEDITION LIMITED HKG SUCCES COMM BLDG.,6B,251 HENNESSY ROAD HONGKONG ARRIVAL@FORWARD HKG COM

#####

FRUITIMPEX LLC 121170 Moscow Russia Kulneva st 3 bld 1 INN 7737514219 KPP773001001

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FRUITIMPEX LLC TEL (495) 926 74 49

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FT LINE LLC RUSSIA 115230,MOSCOW ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

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Goldens LLC

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INTERLINK LTD SP ZO0 UI POMORSKA50A 81 314 GDYNIA BIELSKA@INTERLINK BIZ PL SIEJKOWSKA@INTERLINK BIZ PL ... ++

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INTERTRANS CO LTD ST PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET OFFICE 502 TEL 3242144 FAX:3242145

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KM LTD 197183 RUSSIA ST PETERSBURG SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239 3109 FAX:7911239 3109

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KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 669

KOBI LIGHT SPOLKA KOMANDYTOWA UL T BOYA ZELENSKIEGO 25 35 105 RZESZOW POLAND NIP:813 34 99 699

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KONTUR LLC STR SHPALERNAYA 51 LIT A APP 2 N 191015 ST PETERSBURG RUSSIA INN 7842437789

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LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA

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LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812 89 88

LIGA IMPORT LTD DOROGA NA TURUHTANNIE OSTROVA D 24 KORP 5 SAINT PETERSBURG 198096 RUSSIA TEL / FAX:+7 (911) 812 89 88

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LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 ON BEHALF AETZ REKORD CO LTD 2 GAGARINA STR ALEXANDROV

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LTC SOLUTION OY FINLAND HAMINA 49420 PILARITIE 2 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 TEL +358 (0) 522 66 130 FAX : +358 (0) 522 66 120

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LTC SOLUTION OY FINLAND HAMINA 49420 SYVASATAMANTIE 18 ON BEHALF AETZ REKORD CO LTD

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MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION INN 7842339 206

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MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PYLAEVATATIANA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PASHKEVICHANNA

MEAT TRADE COMPANY ST PETERSBURG LTD 191015 SAINT PETERSBURG SHPALERNAYA STREET 51 RUSSIAN FEDERATION TEL +7 (812) 329 42 62 PYLAEVA TATIANA

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NFC LTD GAPSALSKAYA STR 5 198035ST PETERSBURG RUSSIA TEL.+78123277741 FAX +78123277729

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OCEAN WORLD LLC 198099 RUSSIA ST PETERSBURG KALININ STREET 57 LIT A OF 307 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

OCEAN WORLD LLC KALININ STREET 57 LIT A OFFICE 307 ST PETERSBURG RUSSIA 198099 LEDENEVA ELENA TEL./FAX.+7 812 336 65 88

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OCEAN WORLD LLC LIT A OF 307 57KALININ STREET ST PETERSBURG 198099 RUSSIA MERKOVA MARIYA TEL / FAX : +7 812 336 65 88

#####

OMEGA TOYS GRUP CO.,LTD AVTOZAVODSKAY STR 23,STRUCTURE 8 MOSCOW RUSSIAN FEDERATION P O X:115280 TEL / FAX:+7 495 674 60 62 TITARENKO ALEXANDR E mail serinity-toys@mail.ru INN

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000 BALTIYSKIY EKSPEDITOR EUGENIY KOMRAKOV (812) 676 16 03

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000 TECHNOLINE 191123,ST. PETERSBURG UL FURSHTATSKAYA 48,LITER A

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OTL LLC KOROTIN@OTLSPB RU TEL : +7(812) 326 42 52 VIP 13171 1 ST PETERSBURG

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OY VAER LOG LTD Y TUNNUS:2066533 3 Adres : Merituulentie 424 48310 Kotka TEL : +358 5 21 21 33 Fax : +358 5 21 21 30 Vanhala Olga Ershova Ekaterina

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PARTNER LTD INN / KPP 7801080258/780101001 POM/1 N HOUSE 1 2 1 LINE;V 0 ST PETERSBURG 199053 RUSSIA TEL : +7 812 600 20 22 FAX : +7 812 600 20 33

#####

PETERSBURG CHEMICAL COMPANY COMPANY LIMITED(<<PCC>>CO.,LTD) 197374,RUSSIAN FEDERATION SAINT PETERSBURG TORFYANAY A ROAD 7,LIT F OFFICE 925

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PO SVET LTD PODREZOVA STR.,16,LIT A ROOM 5 H 197136 SAINT PETERSBURG RUSSIA ITN 7813445827 TEL:+7 812 716 21 76

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PRANT LLC 603159 RUSSIA NIZHNY NOVGOROD AKIMOVA STR 41 SUITE 63 INN 5257120394 KPP 525701001 TEL / FAX +7 (831) 423 45 33

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Rimal LTD Grazdansky prospect 22 St Petersburg 195220 Russian Federation

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SAME AS CONSIGNEE AS AGENT OF BLUE ANCHOR LINE

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SERVICE EXPRESS LTD 197110 RUSSIA SAINT PETERSBURG GLUHAYA ZELENINA STREET H 4 LIT B OFFICE 19 H

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SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39

SEVROLL SYSTEM SP Z 0.0 PLAC CZERWCA 1976 ROKU NR 1B 02 495 WARSZAWA URSUS TEL : (022) 312 31 39

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SHIP MASTER DELTA LLC RIGSKY PR.,19,SAINT PETERSBURG 190103,RUSSIA TEL:+7(812)251 81 11 ; +7(812)575 33 38;+7(812)251 73 03 FAX : +7 (812) 575 33 40

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SILMET COMPANY LIMITED 196084 RUSSIA ST PETERSBURG ZAOZERNAYA STR 4 LETTER A 9H TEL /FAX : 7 812334 35 74

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Spike Rus Limited Liability Company The Yakovlevskiy per H 8 a of 5 n 196105 S Petersburg Russia TEL : 007 812 47 6 15 62 FAX : 007 812 476 15 62

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SSONTEX SP ZO O IMPORT EXPORT 03 879 WARSZAWA UL PRZECIOWSKA 5 NIP:113 01 17 669

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STEP TRADE LLC KUBINSKAYA ST 38 BUILDING A ROOM 4 H ST PETERSBURG 196247 RUSSIAN FEDERATION

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STEECO OY STEECO LOGISTICS MERITUULENTIE 424 48310 KOTKA FONLANDPIC : ANNE LEPPANEN

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STUDIO MODERNA UL PERERVA 54 109369 MOSCOW RUSSIA

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SUNTIRE CO LTD M BALKANSKAYA STREET 58 LIT A 192289 ST. PETERSBURG RUSSIA

SUNTIRE CO LTD M BALKANSKAYA STREET,58,LIT A 192289,ST PETERSBURG RUSSIA

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SUNTIRE CO LTD TEL : + 7 (812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

SUNTIRE CO LTD TEL:+7(812)458 54 38 E MAIL : CLIENT@S LOGISTIC RU

TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1,OFFICE 305 TEL / FAX : +7 812 445 2843
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9,K 1,OFF 305 TEL / FAX:+7 812 445 28 43
TC UNOTRANS LTD 190020 ST PETERSBURG BUMAZHNAYA STR 9 K 1 OFF 305 TEL / FAX : +7 812 445 28 43

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

Levenshtein metric

```
In [27]: now = time.time()
clusters_levenshtein, centroids_levenshtein = clusterize(lines, levenshtein_metric, eps=0.40, min_samples=1)
print("TIME : ",time.time() - now)
show_results(clusters_levenshtein)
```

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

TIME : 74.22279667854309

/11692589 RD TUNA CANNERS, LTD. PORTION 1004, SIAR NORTH COAST ROAD, P.O.BOX 2113, MADANG, PAPUA NEW GUINEA

'PA INTERIOR' LTD BOLSHAYA LUBYANKA STREET, 16/4 MOSCOW, 101000, RUSSIA INN/KPP 7704550148//770801001 495-984-8
611

'SSONTEX' Sp.ZO.O.IMPORT-EXPORTUL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669
'SSONTEX' SP.ZO.O.IMPORT-EXPORT UL:PRZECLAWSKA 5 03-879 WARSZAWA,POLAND NIP 113-01-17-669 TEL./FAX.:0048(022)217
6532--

'TOPEX SP. Z O.O.' SPOLKA KOMANDYTOWA UL. POGRANICZNA 2/4 02-285 WARSZAWA POLAND

'MASTER PLUS CO.,LTD.' 143000,RUSSIA,MO,ODINSOVO, MOJAISKOE, SHOSSE,153G TEL:+7495 7273939

"2TIGERS GROUP LIMITED" ROOM 504 JINSHAZHOU SHANGSHUI ROAD, GUANGZHOU 510160

"ALDETRANS" LLC, 105066, MOSCOW, RUSSIA, TOKMAKOV LANE, 11. TEL:+7(495)641-03-89

"A-LIFT",JSC 1 PROSPEKT MARSHALA ZHUKOVA,MOSCOW 123308,RUSSIA T: +7(495)784-7961

"ALISA" LTD, 1/5 Derbenevskaya str., Moscow, Russia Tel./Fax: (495) 987-13-07 postal code: 115114

"ALLIANCE-TRADE" LLC INN: 7816391055 / KPP: 784601001 190020, Saint Petersburg, quay of the Obvodny channel, 138,
bulk 1, liter.B

"ALTAIR" LIMITED COMPANY 199004,SAINT-PETERSBURG, 1 LINE,H.20 LIT A,OF.8-H

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"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +781 23277729. VLOKNO@YAHOO.COM

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729.

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729. VLOKNO@YAHOO.COM

"ARIVIST", 198035, RUSSIA, SAINT-PETERSBURG, GAPSALSKAYA STR., 5, OFFICE 1-3; TEL.: +78123277732, FAX: +78123277729. VLOKNO@YAHOO.COM

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"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBOVODNY CHANNEL, 134-136-138, BUILD. 101, LIT. A"

"AVANPORT" LLC INN: 7839413675 KPP: 783901001 190020, SAINT PETERSBURG, QUAY OF THE OBOVODNY CHANNEL, 134-136-138, BUILD. 101, LIT. A"

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"AVENTA" LTD. ADDRESS: 129 110, MOSCOW, PROSPEKT MIRA, H. 52, STR. 3, POM. III Tel: 8-968-808-80-11

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"AVSON-GROUP" COMPANY LIMITED 190008, ST. PETERSBURG, RIMSKOGO-KORSAKOVA, 73/33, LIT. A-1

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"Avson-group" Company Limited 190008, St. Petersburg, Rimskogo-Korsakova, 73/33, lit. A-1

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"BIO plus LTD" INN 7805166210 198303, S-Petersburg, Leninskiy Pr., 110/1, lit B, app. 53-H, RUSSIA

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"CARGOIMPORT" LTD VNUKOVSKAYA STREET, BUILDING 2, R. 43-H-1, SAINT-PETERSBURG, RUSSIA .

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"COLOS" COMPLEX LOGISTICS, SOLUTIONS PIOTR KACZMAREK I PAWEŁ WILK SP. J. ZACHODNIA STREET NO 3 55-011 SIECHNICE POLAND

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"ELECTROGROUP" (OOO), 190068, RUSSIA, SAINT-PETERSBURG, UL. BOLSHAYA PODYACHESKAYA, 5, LIT. A, POM. 4-N

"ELECTROGROUP" (OOO), 190068, RUSSIA, SAINT-PETERSBURG, UL. BOLSHAYA PODYACHESKAYA, 5, LIT. A, POM. 4-N

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"ELEKTROAPPARAT" PLC 24th Liniya V.O., St. Petersburg. Sup. office No. 1 of Kirovsky RUSSIA TEL: 0079-219646264

#####

"ENS" LTD ADDRESS: STAROPETROVSKIY PASSAGE, BLD 7A, CONSTRUCTION 3 125130, MOSCOW, RUSSIA TEL: (499) 130-7336

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"EVROTRANSIT" LLC 105005, RUSSIAN FEDERATION, MOSCOW, BAUMANSKAYA STR., 33/2, BLD. 1 E-MAIL: EVROTRANZIT-LOG@INBOX.RU TEL: 8-495-665-34-68

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"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4A RUSSIA

"EXPRESS CO. LTD." RUSSIA 155101 IVANOVSKAYA REGION, LEZHNEVSKIY RAION, D. KOROVIIHA, CENTRALNAYA STR. 4A RUSSIA

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"FILITA" LTD, UKRAINE, 83004, DONETSK, ARTEMA STR. 193G TEL/FAX: +380563705563

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"FILLOGISTIK" PP ZHOVKIVSKA 22 STREET 79019 LV0V,UKRAINE TEL:+380322458030 FAX:+380322458030

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"FINANS AKTIV",LTD. 111250,RUSSIA,MOSCOW, KRASNOKAZARMENNAYA STR.11+7495 665 6001

#####

"FMG SHIPPING AND FORWARDING, LTD."190020, SAINT PETERSBURG,LIFLYANDSKAYA STR., 6,LITERA "A",BUILDING 31H,OFFICE 310 POST CODE:190020 TEL:+7 812 448 82 83 FAX:+7 812 448 04 9

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"FMG SHIPPING AND FORWARDING, LTD."190020 ST.PETERSBURG, RUSSIA BUMAZHNAYA STR., 18, OFF. 310

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"FORWARD EXPEDITION LIMITED HKG" SUCCES COMM.BLDG.,6B,251, HENNESSY ROAD, HONGKONG ARRIVAL@FORWARD-HKG.COM

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"FRUITIMPEX" LLC 121170, Moscow, Russia, Kulneva st, 3 bld. 1 INN 7737514219 KPP773001001

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"FRUITIMPEX" LLC TEL. (495) 926-74-49

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"FT-LINE"LLC RUSSIA 115230,MOSCOW,ELECTROLYTNIY PROEZO,3G/2 TEL:+79851607522

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"GARANTTRANS SERVICE" MOSCOW,RUSSIAUL.GILYAROVSKOGO,57.OFFICE 514 TEL:(495) 748 02 87 FAX:(495) 684 12 01

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"Goldens" LLC

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"INTERLINK LTD SP ZO0 UI. POMORSKA50A 81-314 GDYNIA BIELSKA@INTERLINK.BIZ.PL SIEJKOWSKA@INTERLINK.BIZ.PL...++

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"INTERTRANS" CO LTD. ST.PETERSBURG,198035,RUSSIA GAPSALSKAIA STREET,OFFICE 502, TEL 3242144, FAX:3242145

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"KM" LTD 197183 RUSSIA,ST. PETERSBURG,SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239-3109 FAX:7911239-3109

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"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-669

"KOBI-LIGHT" SPOLKA KOMANDYTOWA UL.T.BOYA ZELENSKIEGO 25 35-105 RZESZOW,POLAND NIP:813-34-99-699

#####

"KONTUR" LLC STR. SHPALERNAYA 51, LIT. A, APP. 2-N 191015 ST. PETERSBURG, RUSSIA INN 7842437789

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"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D.24, KORP.5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

"LIGA-IMPORT" LTD DOROGA NA TURUHTANNIE OSTROVA, D. 24, KORP. 5, SAINT-PETERSBURG, 198096, RUSSIA TEL/FAX:+7 (911) 812 89 88

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"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 ON BEHALF "AETZ REKORD" CO., LTD 2, GAGARINA STR., ALEXANDRO V,--

"LTC SOLUTION OY" FINLAND, HAMINA 49420, PILARITIE 2 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 ON BEHALF "AETZ REKORD" CO., LTD--

"LTC SOLUTION OY" FINLAND, HAMINA 49420, SYVASATAMANTIE 18 TEL. +358 (0) 522-66-130 FAX: +358 (0) 522-66-120

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"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD. 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL + 7 (812) 329-42-62 PYLAEVATATIANA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION INN 784 2339206

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PASHKEVICHANNA

"MEAT TRADE COMPANY "ST.PETERSBURG"LTD 191015 SAINT-PETERSBURG, SHPALERNAYA STREET, 51 RUSSIAN FEDERATION TEL +7 (812) 329-42-62 PYLAeva TATIANA

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"NFC" LTD GAPSALS KAYA STR., 5 198035 ST. PETERSBURG, RUSSIA TEL: +7 812 327 77 41 FAX: +7 812 327 77 29

"NFC"LTD GAPSALS KAYA STR., 5 198035ST.PETERSBURG,RUSSIA TEL.+78123277741 FAX +78123277729

"NFC" LTD GAPSALS KAYA STR., 5 198035 ST.PETERSBURG, RUSSIA TEL. +7 812327 77 41 FAX +7 812 327 77 29

#####

"OCEAN WORLD" LLC 198099 RUSSIA, ST.PETERSBURG KALININ STREET, 57, LIT.A, OF.307 LEDENEVA ELENA. TEL./FAX.+7-812-336-65-88

#####

"OCEAN WORLD" LLC KALININ STREET, 57, LIT. A, OFFICE 307, ST. PETERSBURG, RUSSIA, 198099 LEDENEVA ELENA.TEL./FAX. +7-812-336-65-88

#####

"OCEAN WORLD" LLC LIT A, OF 307, 57KALININ STREET ST PETERSBURG 198099, RUSSIA MERKOVA MARIYA TEL/FAX: +7-812-336-65-88

#####

"OMEGA TOYS GRUP"CO.,LTD. AVTOZAVODSKAY STR.23,STRUCTURE 8 MOSCOW,RUSSIAN FEDERATION,P.O.X:115280 TEL/FAX:+7-495-674-60-62 TITARENKO ALEXANDR E-mail serinity-toys@mail.ru INN

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"000" BALTIYSKIY EKSPEDITOR" EUGENIY KOMRAKOV (812) 676-16-03"

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"000" TECHNOLINE" 191123,ST.-PETERSBURG,UL. FURSCHTATSKAYA 48,LITER A"

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"OTL" LLC KOROTIN@OTLSPB.RU TEL: +7(812) 326-42-52 VIP 13171-1 ST.PETERSBURG

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"OY VAER LOG LTD" Y-TUNNUS:2066533-3 Adres: Merituulentie, 424 48310, Kotka TEL: +358 5 21 21 33 Fax: +358 5 21 21 30 Vanhala Olga Ershova Ekaterina

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"PARTNER" LTD INN/KPP 7801080258/780101001 POM/1-N, HOUSE 1-2, 1-LINE;V. 0. , ST. PETERSBURG, 199053, RUSSIA TEL. : +7 812 600 20 22 FAX: +7 812 600 20 33

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"PETERSBURG CHEMICAL COMPANY" COMPANY LIMITED(<<PCC>>CO.,LTD.) 197374,RUSSIAN FEDERATION,SAINT PETERSBURG,TORFAN AYA ROAD, 7,LIT.F OFFICE 925.

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"PO"SVET "LTD PODREZOVA STR.,16,LIT.A,ROOM 5-H 197136 SAINT-PETERSBURG,RUSSIA. ITN 7813445827 TEL:+7-812-716-21-7 6

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"PRANT" LLC 603159 RUSSIA, NIZHNY NOVGOROD AKIMOVA-STR. 41, SUITE 63 INN 5257120394 KPP 525701001 TEL/FAX. +7 (83 1) 423-45-33

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"Rimal" LTD "Grazdansky prospect, 22. St. Petersburg, 195220, Russian Federation"

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"SAME AS CONSIGNEE" AS AGENT OF BLUE ANCHOR LINE

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"SERVICE-EXPRESS" LTD 197110, RUSSIA, SAINT-PETERSBURG, GLUHAYA ZELENINA STREET,H.4, LIT B,OFFICE 19-H

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"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

"SEVROLL-SYSTEM" SP.Z 0.0. PLAC CZERWCA 1976 ROKU NR 1B 02-495 WARSZAWA URSUS TEL: (022) 312-31-39

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"SHIP-MASTER DELTA"LLC RIGSKY PR.,19,SAINT-PETERSBURG, 190103,RUSSIA TEL:+7(812)251-81-11; +7(812)575-33-38;+7(812)251-73-03 FAX: +7 (812) 575-33-40

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"SILMET" COMPANY LIMITED 196084, RUSSIA, ST.PETERSBURG, ZAOZERNAYA STR., 4. LETTER A, 9H. TEL /FAX: 7 812334 35 74

#####

"Spike Rus" Limited Liability Company, The Yakovlevskiy per., H.8 a of. 5-n, 196105 S.Petersburg, Russia.TEL: 007-812-476-15-62 FAX: 007-812-476-15-62

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"SSONTEX" SP.ZO.O IMPORT-EXPORT 03-879 WARSZAWA UL PRZECLAWSKA 5 NIP:113-01-17-669

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"STEP TRADE" LLC KUBINSKAYA ST., 38, BUILDING A, ROOM 4-H,ST.PETERSBURG, 196247, RUSSIAN FEDERATION

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"STEVECO OY" STEVECO LOGISTICS MERITUULENTIE 424 48310 KOTKA, FONLANDPIC: ANNE LEPPANEN

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"STUDIO MODERNA" UL. PERERVA 54 109369 MOSCOW RUSSIA

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```
In [28]: now = time.time()
clusters levenshtein_stoplist, centroids levenshtein_stoplist = clusterize(lines_no_stopwords, levenshtein_metric)
print("TIME : ",time.time() - now)
show_results(clusters_levenshtein_stoplist)
```

C:\Users\Norbert\anaconda3\lib\site-packages\sklearn\utils\validation.py:67: FutureWarning: Pass min_samples=1 as keyword args. From version 0.25 passing these as positional arguments will result in an error
warnings.warn("Pass {} as keyword args. From version 0.25 "

TIME : 72.86178135871887

#####

/11692589 RD TUNA CANNERS LTD PORTION 1004 SIAR NORTH COAST ROAD P O BOX 2113 MADANG PAPUA NEW GUINEA

#####

' ' PA INTERIOR ' ' LTD BOLSHAYA LUBYANKA STREET 16/4 MOSCOW 101000 RUSSIA INN / KPP 7704550148//770801001 495 984 8611

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' ' SSONTEX ' ' Sp ZO O IMPORT EXPORTUL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669

' ' SSONTEX' 'SP ZO O IMPORT EXPORT UL : PRZECLAWSKA 5 03 879 WARSZAWA POLAND NIP 113 01 17 669 TEL./FAX.:0048(022) 217 6532

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' ' TOPEX SP Z O.O ' ' SPOLKA KOMANDYTOWA UL POGRANICZNA 2/4 02 285 WARSZAWA POLAND

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' MASTER PLUS CO.,LTD ' 143000,RUSSIA MO ODINSOVO MOJAISKOE SHOSSE,153 G TEL:+7495 7273939

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2TIGERS GROUP LIMITED ROOM 504 JINSHAZHOU SHANGSHUI ROAD GUANGZHOU 510160

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ALISA LTD 1/5 Derbenevskaya str Moscow Russia Tel./Fax : (495) 987 13 07 postal code : 115114

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ALLIANCE TRADE LLC INN : 7816391055 / KPP : 784601001 190020 Saint Petersburg quay of the Obvodny channel 138 bul k 1 liter B

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ALTAIR LIMITED COMPANY 199004,SAINT PETERSBURG 1 LINE H 20 LIT A OF 8 H

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BUILD 101 LIT A

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AVSON GROUP COMPANY LIMITED 190008 ST PETERSBURG RIMSKOGO KORSAKOVA 73/33 LIT A 1

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Goldens LLC

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KM LTD 197183 RUSSIA ST PETERSBURG SABIROVSKAYA STR.,50,OFF,115 OLEG TEREKHOV ZIP CODE:197183 PHONE:7911239 3109
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Clusterization quality test

LCS

```
In [35]: print(dbi(clusters_lcs, centroids_lcs, lcs_metric))
         print(di(clusters_lcs, centroids_lcs, lcs_metric))
```

```
0.01534760987607778
0.11904761904761905
```

LCS stoplist

```
In [36]: print(dbi(clusters_lcs_stoplist, centroids_lcs_stoplist, lcs_metric))
         print(di(clusters_lcs_stoplist, centroids_lcs_stoplist, lcs_metric))
```

```
0.01675962084915398
0.10641399416909622
```

Dice

```
In [29]: print(dbi(clusters_dice, centroids_dice, dice_metric, n_gram=2))
         print(di(clusters_dice, centroids_dice, dice_metric, n_gram=2))
```

```
0.009873792305523314
0.04098360655737705
```

Dice stoplist

```
In [30]: print(dbi(clusters_dice_stoplist, centroids_dice_stoplist, dice_metric, n_gram=2))
print(di(clusters_dice_stoplist, centroids_dice_stoplist, dice_metric, n_gram=2))

0.01575811682158994
0.039555863983344895
```

Cosinus

```
In [31]: print(dbi(clusters_cos, centroids_cos, cos_metric))
print(di(clusters_cos, centroids_cos, cos_metric))

0.009942823796892642
0.008775843527967422
```

Cosinus stoplist

```
In [32]: print(dbi(clusters_cos_stoplist, centroids_cos_stoplist, cos_metric))
print(di(clusters_cos_stoplist, centroids_cos_stoplist, cos_metric))

0.023611102724672307
0.0026562994507046134
```

Euclidean

```
In [33]: print(dbi(clusters_euclidean, centroids_euclidean, euclidean_metric))
print(di(clusters_euclidean, centroids_euclidean, euclidean_metric))

0.014169576450287649
0.0038736903592187996
```

Euclidean stoplist

```
In [34]: print(dbi(clusters_euclidean_stoplist, centroids_euclidean_stoplist, euclidean_metric))
print(di(clusters_euclidean_stoplist, centroids_euclidean_stoplist, euclidean_metric))

0.00964145594812797
0.01260864451565438
```

Levenshtein

```
In [37]: print(dbi(clusters_levenshtein, centroids_levenshtein, levenshtein_metric))
print(di(clusters_levenshtein, centroids_levenshtein, levenshtein_metric))

0.00815245299956168
0.059006211180124224
```

Levenshtein stoplist

```
In [38]: print(dbi(clusters_levenshtein_stoplist, centroids_levenshtein_stoplist, levenshtein_metric))
print(di(clusters_levenshtein_stoplist, centroids_levenshtein_stoplist, levenshtein_metric))

0.007307113690092413
0.059766763848396506
```

Jedną z lepszych metryk okazała się metryka cosinusowa

Zad6

Można zamienić LOWER_CASE na UPPER_CASE, oraz można posortować każdą linię wejściową aby np. metryka Levenshteina zwracała lepsze odległości.