



```
In [2]: import warnings
warnings.filterwarnings("ignore")
import pandas as pd
import sqlite3
import csv
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
from wordcloud import WordCloud
import re
import os
from sqlalchemy import create_engine # database connection
import datetime as dt
from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize
from nltk.stem.snowball import SnowballStemmer
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.multiclass import OneVsRestClassifier
from sklearn.linear_model import SGDClassifier
from sklearn import metrics
from sklearn.metrics import f1_score, precision_score, recall_score
from sklearn import svm
from sklearn.linear_model import LogisticRegression
#from skmultilearn.adapt import mlknn
#from skmultilearn.problem_transform import ClassifierChain
#from skmultilearn.problem_transform import BinaryRelevance
#from skmultilearn.problem_transform import LabelPowerset
from sklearn.naive_bayes import GaussianNB
from datetime import datetime
```

Stack Overflow: Tag Prediction

1. Business Problem

1.1 Description

Description

Stack Overflow is the largest, most trusted online community for developers to learn, share their programming knowledge, and build their careers.

Stack Overflow is something which every programmer use one way or another. Each month, over 50 million developers come to Stack Overflow to learn, share their knowledge, and build their careers. It features questions and answers on a wide range of topics in computer programming. The website serves as a platform for users to ask and answer questions, and, through membership and active participation, to vote questions and answers up or down and edit questions and answers in a fashion similar to a wiki or Digg. As of April 2014 Stack Overflow has over 4,000,000 registered users, and it exceeded 10,000,000 questions in late August 2015. Based on the type of tags assigned to questions, the top eight most discussed topics on the site are: Java, JavaScript, C#, PHP, Android, jQuery, Python and HTML.

Problem Statement

Suggest the tags based on the content that was there in the question posted on Stackoverflow.

Source: <https://www.kaggle.com/c/facebook-recruiting-iii-keyword-extraction/>

1.2 Source / useful links

Data Source : <https://www.kaggle.com/c/facebook-recruiting-iii-keyword-extraction/data>

Youtube : <https://youtu.be/nNDqbUhtIRg>

Research paper : <https://www.microsoft.com/en-us/research/wp-content/uploads/2016/02/tagging-1.pdf>

Research paper : <https://dl.acm.org/citation.cfm?id=2660970&dl=ACM&coll=DL>

1.3 Real World / Business Objectives and Constraints

1. Predict as many tags as possible with high precision and recall.
2. Incorrect tags could impact customer experience on StackOverflow.
3. No strict latency constraints.

2. Machine Learning problem

2.1 Data

2.1.1 Data Overview

Refer: <https://www.kaggle.com/c/facebook-recruiting-iii-keyword-extraction/data>

All of the data is in 2 files: Train and Test.

Train.csv contains 4 columns: Id, Title, Body, Tags.

Test.csv contains the same columns but without the Tags, which you are to predict.

Size of Train.csv - 6.75GB

Size of Test.csv - 2GB

Number of rows in Train.csv = 6034195

The questions are randomized and contains a mix of verbose text sites as well as sites related to math and programming. The number of questions from each site may vary, and no filtering has been performed on the questions (such as closed questions).

Data Field Explanation

Dataset contains 6,034,195 rows. The columns in the table are:

Id - Unique identifier for each question

Title - The question's title

Body - The body of the question

Tags - The tags associated with the question in a space-separated format (all lowercase, should not contain tabs '\t' or ampersands '&')

2.1.2 Example Data point

Title: Implementing Boundary Value Analysis of Software Testing in a C++ program?

Body :

```

#include<
iostream>\n
#include<
stdlib.h>\n\n
using namespace std;\n\n
int main()\n
{\n
    int n,a[n],x,c,u[n],m[n],e[n][4];\n

    cout<<"Enter the number of variables";\n
    cin>>n;\n\n
    cout<<"Enter the Lower, and Upper Limits
of the variables";\n
    for(int y=1; y<n+1; y++)\n
    {\n
        cin>>m[y];\n
        cin>>u[y];\n
    }\n
    for(x=1; x<n+1; x++)\n
    {\n
        a[x] = (m[x] + u[x])/2;\n
    }\n
    c=(n*4)-4;\n
    for(int a1=1; a1<n+1; a1++)\n
    {\n\n
        e[a1][0] = m[a1];\n
        e[a1][1] = m[a1]+1;\n
        e[a1][2] = u[a1]-1;\n
        e[a1][3] = u[a1];\n
    }\n
    for(int i=1; i<n+1; i++)\n
    {\n

```

```

        for(int l=1; l<=i; l++)\n
        {\n
            if(l!=1)\n
            {\n
                cout<<a[l]<<"\\t";\n

            }\n
        }\n
        for(int j=0; j<4; j++)\n
        {\n
            cout<<e[i][j];\n
            for(int k=0; k<n-(i+1); k++)\n

            {\n
                cout<<a[k]<<"\\t";\n

            }\n
            cout<<"\\n";\n
        }\n
    }\n
    \n\n
    system("PAUSE");\n
    return 0;    \n
}\n

```

\n\n

The answer should come in the form of a table like
 \n\n

1

50

50\n

2	50	50\n
99	50	50\n
100	50	50\n
50	1	50\n
50	2	50\n
50	99	50\n
50	100	50\n
50	50	1\n
50	50	2\n
50	50	99\n
50	50	100\n

\n\n

if the no of inputs is 3 and their ranges are\n

1,100\n

1,100\n

1,100\n

(could be varied too)

\n\n

The output is not coming,can anyone correct the code or tell me what\'s wrong?

\n'

Tags : 'c++ c'

2.2 Mapping the real-world problem to a Machine Learning Problem

2.2.1 Type of Machine Learning Problem

It is a multi-label classification problem

Multi-label Classification: Multilabel classification assigns to each sample a set of target labels. This can be thought as predicting properties of a data-point that are not mutually exclusive, such as topics that are relevant for a document. A question on Stackoverflow might be about any of C, Pointers, FileIO and/or memory-management at the same time or none of these.

__Credit__: <http://scikit-learn.org/stable/modules/multiclass.html>

2.2.2 Performance metric

Micro-Averaged F1-Score (Mean F Score) : The F1 score can be interpreted as a weighted average of the precision and recall, where an F1 score reaches its best value at 1 and worst score at 0. The relative contribution of precision and recall to the F1 score are equal. The formula for the F1 score is:

$$F1 = 2 * (precision * recall) / (precision + recall)$$

In the multi-class and multi-label case, this is the weighted average of the F1 score of each class.

'Micro f1 score':

Calculate metrics globally by counting the total true positives, false negatives and false positives. This is a better metric when we have class imbalance.

'Macro f1 score':

Calculate metrics for each label, and find their unweighted mean. This does not take label imbalance into account.

<https://www.kaggle.com/wiki/MeanFScore>

http://scikit-learn.org/stable/modules/generated/sklearn.metrics.f1_score.html

Hamming loss : The Hamming loss is the fraction of labels that are incorrectly predicted.

<https://www.kaggle.com/wiki/HammingLoss>

3. Exploratory Data Analysis

3.1 Data Loading and Cleaning

3.1.1 Using Pandas with SQLite to Load the data

```
In [4]: #Creating db file from csv
#Learn SQL: https://www.w3schools.com/sql/default.asp
if not os.path.isfile('train.db'):
    start = datetime.now()
    disk_engine = create_engine('sqlite:///train.db')
    start = dt.datetime.now()
    chunksize = 180000
    j = 0
    index_start = 1
    for df in pd.read_csv('Train-4.csv', names=['Id', 'Title', 'Body',
'Tags'], chunksize=chunksize, iterator=True, encoding='utf-8', ):
        df.index += index_start
        j+=1
        print('{} rows'.format(j*chunksize))
        df.to_sql('data', disk_engine, if_exists='append')
        index_start = df.index[-1] + 1
    print("Time taken to run this cell :", datetime.now() - start)
```

3.1.2 Counting the number of rows

```
In [5]: if os.path.isfile('train.db'):
    start = datetime.now()
    con = sqlite3.connect('train.db')
    num_rows = pd.read_sql_query("""SELECT count(*) FROM data""", con)
    #Always remember to close the database
```

```

        print("Number of rows in the database :", "\n", num_rows['count(*)'].
values[0])
        con.close()
        print("Time taken to count the number of rows :", datetime.now() -
start)
    else:
        print("Please download the train.db file from drive or run the abov
e cell to generate train.db file")

```

Number of rows in the database :
6034196
Time taken to count the number of rows : 0:00:03.296080

3.1.3 Checking for duplicates

In [6]: *#Learn SQL: <https://www.w3schools.com/sql/default.asp>*

```

if os.path.isfile('train.db'):
    start = datetime.now()
    con = sqlite3.connect('train.db')
    df_no_dup = pd.read_sql_query('SELECT Title, Body, Tags, COUNT(*) a
s cnt_dup FROM data GROUP BY Title, Body, Tags', con)
    con.close()
    print("Time taken to run this cell :", datetime.now() - start)
else:
    print("Please download the train.db file from drive or run the firs
t to generate train.db file")

```

Time taken to run this cell : 0:05:07.932874

In [7]: `df_no_dup.head()`
we can observe that there are duplicates

Out[7]:

	Title	Body	Tags	c
0	Implementing Boundary Value Analysis of S...	<pre> <code>#include<iosstream>\n#include&...	c++ c	1

	Title	Body	Tags	c
1	Dynamic Datagrid Binding in Silverlight?	<p>I should do binding for datagrid dynamicall...	c# silverlight data-binding	1
2	Dynamic Datagrid Binding in Silverlight?	<p>I should do binding for datagrid dynamicall...	c# silverlight data-binding columns	1
3	java.lang.NoClassDefFoundError: javax/serv...	<p>I followed the guide in <a href="http://sta...	jsp jstl	1
4	java.sql.SQLException:[Microsoft] [ODBC Dri...	<p>I use the following code</p>\n\n<pre><code>...	java jdbc	2

```
In [8]: print("number of duplicate questions :", num_rows['count(*)'].values[0]
- df_no_dup.shape[0], "(", (1-((df_no_dup.shape[0])/(num_rows['count(*)'
].values[0]))) * 100, "% )")
```

number of duplicate questions : 1827881 (30.292038906260256 %)

```
In [9]: # number of times each question appeared in our database
df_no_dup.cnt_dup.value_counts()
```

```
Out[9]: 1    2656284
2    1272336
3     277575
4         90
5         25
6          5
Name: cnt_dup, dtype: int64
```

```
In [10]: start = datetime.now()
```

```
df_no_dup= df_no_dup.dropna(how='any',axis=0)
df_no_dup["tag_count"] = df_no_dup['Tags'].apply(lambda text: len(text.
split(" ")))
# adding a new feature number of tags per question
print("Time taken to run this cell :", datetime.now() - start)
df_no_dup.head()
```

Time taken to run this cell : 0:00:07.508765

Out[10]:

	Title	Body	Tags	c
0	Implementing Boundary Value Analysis of S...	<pre> <code>#include<it;iostream>\n#include&...	c++ c	1
1	Dynamic Datagrid Binding in Silverlight?	<p>I should do binding for datagrid dynamicall...	c# silverlight data- binding	1
2	Dynamic Datagrid Binding in Silverlight?	<p>I should do binding for datagrid dynamicall...	c# silverlight data- binding columns	1
3	java.lang.NoClassDefFoundError: javax/serv...	<p>I followed the guide in <a href="http://sta...	jsp jstl	1
4	java.sql.SQLException:[Microsoft] [ODBC Dri...	<p>I use the following code</p>\n\n<pre> <code>...	java jdbc	2

```
In [11]: # distribution of number of tags per question
df_no_dup.tag_count.value_counts()
```

```
Out[11]: 3    1206157
         2    1111706
         4     814996
```

```
1      568291
5      505158
Name: tag_count, dtype: int64
```

```
In [12]: #Creating a new database with no duplicates
if not os.path.isfile('train_no_dup.db'):
    disk_dup = create_engine("sqlite:///train_no_dup.db")
    no_dup = pd.DataFrame(df_no_dup, columns=['Title', 'Body', 'Tags'])
    no_dup.to_sql('no_dup_train', disk_dup)
```

```
In [13]: #This method seems more appropriate to work with this much data.
#creating the connection with database file.
if os.path.isfile('train_no_dup.db'):
    start = datetime.now()
    con = sqlite3.connect('train_no_dup.db')
    tag_data = pd.read_sql_query("""SELECT Tags FROM no_dup_train""", con)
    #Always remember to close the database
    con.close()

    # Let's now drop unwanted column.
    tag_data.drop(tag_data.index[0], inplace=True)
    #Printing first 5 columns from our data frame
    tag_data.head()
    print("Time taken to run this cell :", datetime.now() - start)
else:
    print("Please download the train.db file from drive or run the above cells to generate train.db file")
```

Time taken to run this cell : 0:01:06.818648

3.2 Analysis of Tags

3.2.1 Total number of unique tags

```
In [14]: # Importing & Initializing the "CountVectorizer" object, which
#is scikit-learn's bag of words tool.

#by default 'split()' will tokenize each tag using space.
vectorizer = CountVectorizer(tokenizer = lambda x: x.split())
# fit_transform() does two functions: First, it fits the model
# and learns the vocabulary; second, it transforms our training data
# into feature vectors. The input to fit_transform should be a list of
strings.
tag_dtm = vectorizer.fit_transform(tag_data['Tags'])
```

```
In [15]: print("Number of data points :", tag_dtm.shape[0])
print("Number of unique tags :", tag_dtm.shape[1])
```

```
Number of data points : 4206314
Number of unique tags : 42048
```

```
In [16]: # 'get_feature_name()' gives us the vocabulary.
tags = vectorizer.get_feature_names()
# Lets look at the tags we have.
print("Some of the tags we have :", tags[:10])
```

```
Some of the tags we have : ['.a', '.app', '.asp.net-mvc', '.aspxauth',
'.bash-profile', '.class-file', '.cs-file', '.doc', '.drv', '.ds-stor
e']
```

3.2.3 Number of times a tag appeared

```
In [17]: # https://stackoverflow.com/questions/15115765/how-to-access-sparse-matrix-elements
# Lets now store the document term matrix in a dictionary.
freqs = tag_dtm.sum(axis=0).A1
result = dict(zip(tags, freqs))
```

```
In [18]: # Saving this dictionary to csv files.
if not os.path.isfile('tag_counts_dict_dtm.csv'):
    with open('tag_counts_dict_dtm.csv', 'w') as csv_file:
```

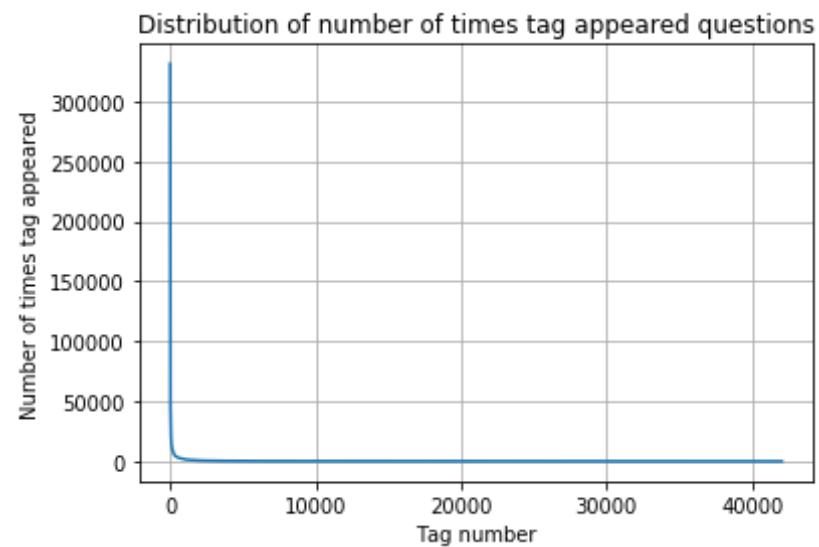
```
writer = csv.writer(csv_file)
for key, value in result.items():
    writer.writerow([key, value])
tag_df = pd.read_csv("tag_counts_dict_dtm.csv", names=['Tags', 'Counts'
])
tag_df.head()
```

Out[18]:

	Tags	Counts
0	.a	18
1	.app	37
2	.asp.net-mvc	1
3	.aspxauth	21
4	.bash-profile	138

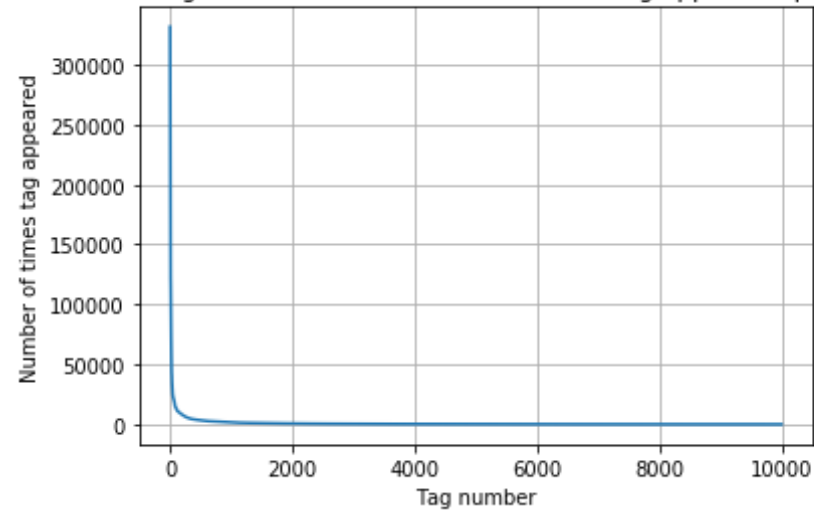
```
In [19]: tag_df_sorted = tag_df.sort_values(['Counts'], ascending=False)
tag_counts = tag_df_sorted['Counts'].values
```

```
In [20]: plt.plot(tag_counts)
plt.title("Distribution of number of times tag appeared questions")
plt.grid()
plt.xlabel("Tag number")
plt.ylabel("Number of times tag appeared")
plt.show()
```



```
In [21]: plt.plot(tag_counts[0:10000])
plt.title('first 10k tags: Distribution of number of times tag appeared
questions')
plt.grid()
plt.xlabel("Tag number")
plt.ylabel("Number of times tag appeared")
plt.show()
print(len(tag_counts[0:10000:25]), tag_counts[0:10000:25])
```


first 10k tags: Distribution of number of times tag appeared questions

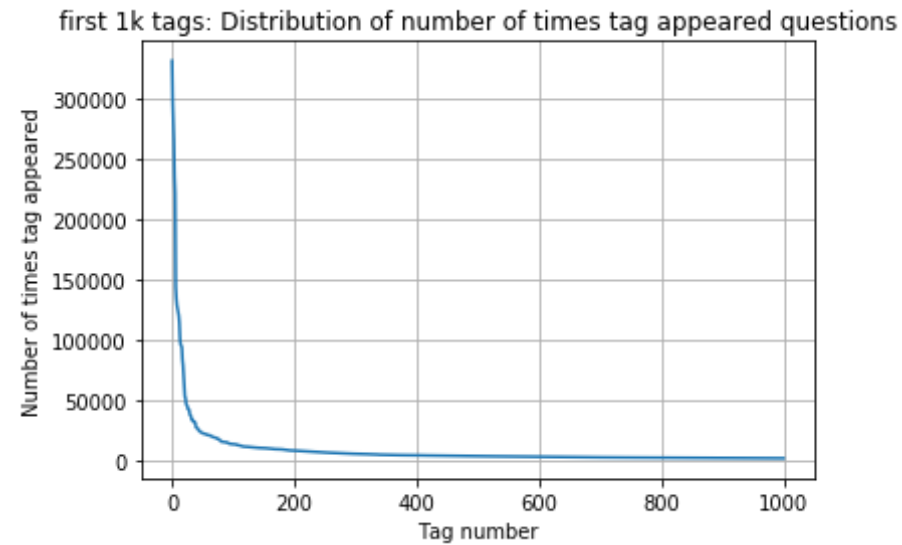


400	[331505	44829	22429	17728	13364	11162	10029	9148	8054
7151									
6466	5865	5370	4983	4526	4281	4144	3929	3750	359
3									
3453	3299	3123	2989	2891	2738	2647	2527	2431	233
1									
2259	2186	2097	2020	1959	1900	1828	1770	1723	167
3									
1631	1574	1532	1479	1448	1406	1365	1328	1300	126
6									
1245	1222	1197	1181	1158	1139	1121	1101	1076	105
6									
1038	1023	1006	983	966	952	938	926	911	89
1									
882	869	856	841	830	816	804	789	779	77
0									
752	743	733	725	712	702	688	678	671	65
8									
650	643	634	627	616	607	598	589	583	57
7									
568	559	552	545	540	533	526	518	512	50
6									
500	495	490	485	480	477	469	465	457	45

0	---	--	--	--	--		--	--	-	-
3	447	442	437	432	426	422	418	413	408	40
5	398	393	388	385	381	378	374	370	367	36
2	361	357	354	350	347	344	342	339	336	33
1	330	326	323	319	315	312	309	307	304	30
6	299	296	293	291	289	286	284	281	278	27
4	275	272	270	268	265	262	260	258	256	25
6	252	250	249	247	245	243	241	239	238	23
9	234	233	232	230	228	226	224	222	220	21
3	217	215	214	212	210	209	207	205	204	20
9	201	200	199	198	196	194	193	192	191	18
7	188	186	185	183	182	181	180	179	178	17
5	175	174	172	171	170	169	168	167	166	16
5	164	162	161	160	159	158	157	156	156	15
6	154	153	152	151	150	149	149	148	147	14
7	145	144	143	142	142	141	140	139	138	13
0	137	136	135	134	134	133	132	131	130	13
3	129	128	128	127	126	126	125	124	124	12
7	123	122	122	121	120	120	119	118	118	11
1	117	116	116	115	115	114	113	113	112	11

6	111	110	109	109	108	108	107	106	106	10
1	105	105	104	104	103	103	102	102	101	10
6	100	100	99	99	98	98	97	97	96	9
1	95	95	94	94	93	93	93	92	92	9
6	91	90	90	89	89	88	88	87	87	8
2	86	86	85	85	84	84	83	83	83	8
8	82	82	81	81	80	80	80	79	79	7
5	78	78	78	77	77	76	76	76	75	7
2]	75	74	74	74	73	73	73	73	72	7

```
In [22]: plt.plot(tag_counts[0:1000])
plt.title('first 1k tags: Distribution of number of times tag appeared
questions')
plt.grid()
plt.xlabel("Tag number")
plt.ylabel("Number of times tag appeared")
plt.show()
print(len(tag_counts[0:1000:5]), tag_counts[0:1000:5])
```

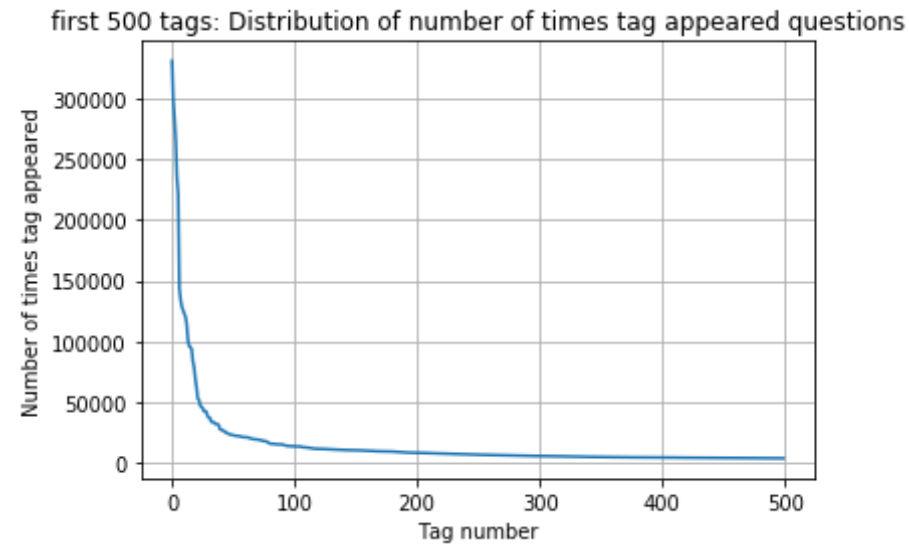


```

200 [331505 221533 122769 95160 62023 44829 37170 31897 26925 24
537
22429 21820 20957 19758 18905 17728 15533 15097 14884 13703
13364 13157 12407 11658 11228 11162 10863 10600 10350 10224
10029 9884 9719 9411 9252 9148 9040 8617 8361 8163
8054 7867 7702 7564 7274 7151 7052 6847 6656 6553
6466 6291 6183 6093 5971 5865 5760 5577 5490 5411
5370 5283 5207 5107 5066 4983 4891 4785 4658 4549
4526 4487 4429 4335 4310 4281 4239 4228 4195 4159
4144 4088 4050 4002 3957 3929 3874 3849 3818 3797
3750 3703 3685 3658 3615 3593 3564 3521 3505 3483
3453 3427 3396 3363 3326 3299 3272 3232 3196 3168
3123 3094 3073 3050 3012 2989 2984 2953 2934 2903
2891 2844 2819 2784 2754 2738 2726 2708 2681 2669
2647 2621 2604 2594 2556 2527 2510 2482 2460 2444
2431 2409 2395 2380 2363 2331 2312 2297 2290 2281
2259 2246 2222 2211 2198 2186 2162 2142 2132 2107
2097 2078 2057 2045 2036 2020 2011 1994 1971 1965
1959 1952 1940 1932 1912 1900 1879 1865 1855 1841
1828 1821 1813 1801 1782 1770 1760 1747 1741 1734
1723 1707 1697 1688 1683 1673 1665 1656 1646 1639]

```

```
In [23]: plt.plot(tag_counts[0:500])
plt.title('first 500 tags: Distribution of number of times tag appeared
questions')
plt.grid()
plt.xlabel("Tag number")
plt.ylabel("Number of times tag appeared")
plt.show()
print(len(tag_counts[0:500:5]), tag_counts[0:500:5])
```



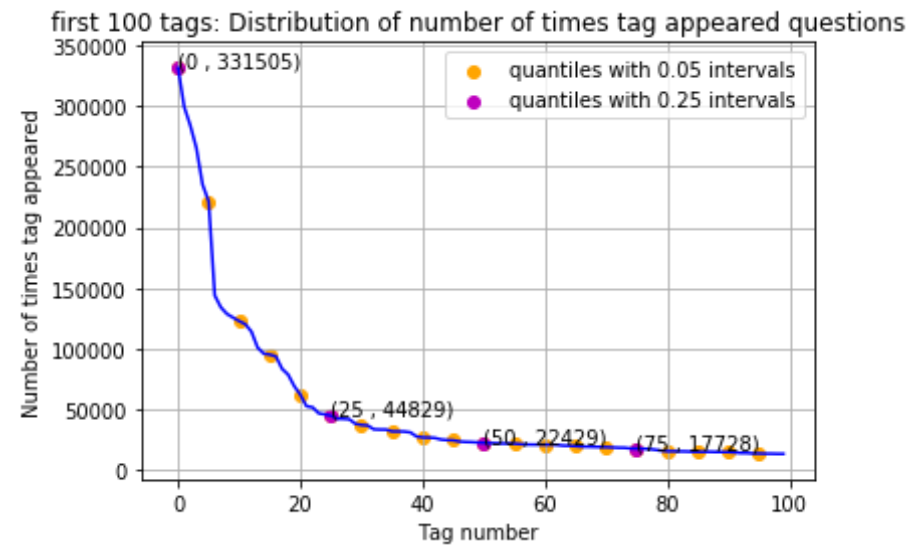
```
100 [331505 221533 122769 95160 62023 44829 37170 31897 26925 24
537
22429 21820 20957 19758 18905 17728 15533 15097 14884 13703
13364 13157 12407 11658 11228 11162 10863 10600 10350 10224
10029 9884 9719 9411 9252 9148 9040 8617 8361 8163
8054 7867 7702 7564 7274 7151 7052 6847 6656 6553
6466 6291 6183 6093 5971 5865 5760 5577 5490 5411
5370 5283 5207 5107 5066 4983 4891 4785 4658 4549
4526 4487 4429 4335 4310 4281 4239 4228 4195 4159
4144 4088 4050 4002 3957 3929 3874 3849 3818 3797
3750 3703 3685 3658 3615 3593 3564 3521 3505 3483]
```

```
In [24]: plt.plot(tag_counts[0:100], c='b')
```

```
plt.scatter(x=list(range(0,100,5)), y=tag_counts[0:100:5], c='orange',
label="quantiles with 0.05 intervals")
# quantiles with 0.25 difference
plt.scatter(x=list(range(0,100,25)), y=tag_counts[0:100:25], c='m', lab
el = "quantiles with 0.25 intervals")

for x,y in zip(list(range(0,100,25)), tag_counts[0:100:25]):
    plt.annotate(s="({} , {})".format(x,y), xy=(x,y), xytext=(x-0.05, y
+500))

plt.title('first 100 tags: Distribution of number of times tag appeared
questions')
plt.grid()
plt.xlabel("Tag number")
plt.ylabel("Number of times tag appeared")
plt.legend()
plt.show()
print(len(tag_counts[0:100:5]), tag_counts[0:100:5])
```



```
20 [331505 221533 122769 95160 62023 44829 37170 31897 26925 245
37
22429 21820 20957 19758 18905 17728 15533 15097 14884 13703]
```

```
In [25]: # Store tags greater than 10K in one list
lst_tags_gt_10k = tag_df[tag_df.Counts>10000].Tags
#Print the length of the list
print ('{} Tags are used more than 10000 times'.format(len(lst_tags_gt_10k)))
# Store tags greater than 100K in one list
lst_tags_gt_100k = tag_df[tag_df.Counts>100000].Tags
#Print the length of the list.
print ('{} Tags are used more than 100000 times'.format(len(lst_tags_gt_100k)))
```

```
153 Tags are used more than 10000 times
14 Tags are used more than 100000 times
```

Observations:

1. There are total 153 tags which are used more than 10000 times.
2. 14 tags are used more than 100000 times.
3. Most frequent tag (i.e. c#) is used 331505 times.
4. Since some tags occur much more frequently than others, Micro-averaged F1-score is the appropriate metric for this problem.

3.2.4 Tags Per Question

```
In [26]: #Storing the count of tag in each question in list 'tag_count'
tag_quest_count = tag_dtm.sum(axis=1).tolist()
#Converting list of lists into single list, we will get [[3], [4], [2], [2], [3]] and we are converting this to [3, 4, 2, 2, 3]
tag_quest_count=[int(j) for i in tag_quest_count for j in i]
print ('We have total {} datapoints.'.format(len(tag_quest_count)))

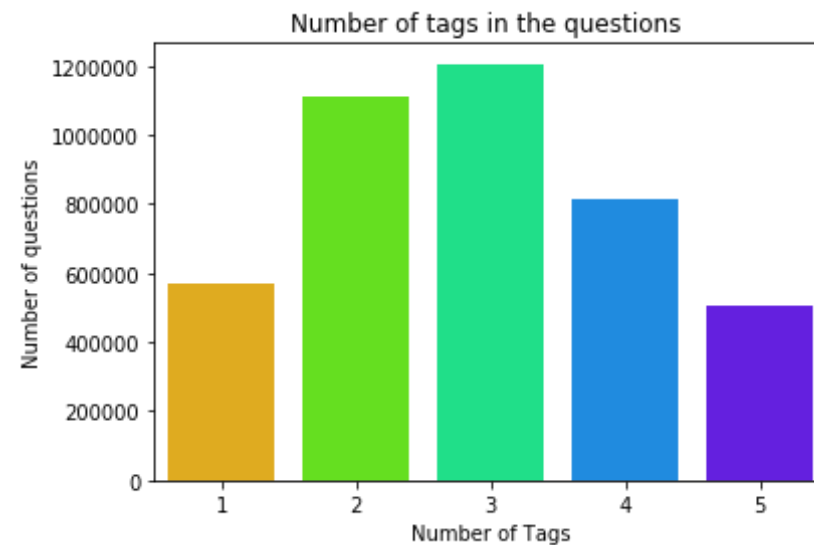
print(tag_quest_count[:5])
```

```
We have total 4206314 datapoints.
[3, 4, 2, 2, 3]
```

```
In [27]: print( "Maximum number of tags per question: %d"%max(tag_quest_count))
print( "Minimum number of tags per question: %d"%min(tag_quest_count))
print( "Avg. number of tags per question: %f"% ((sum(tag_quest_count)*
1.0)/len(tag_quest_count)))
```

Maximum number of tags per question: 5
Minimum number of tags per question: 1
Avg. number of tags per question: 2.899440

```
In [28]: sns.countplot(tag_quest_count, palette='gist_rainbow')
plt.title("Number of tags in the questions ")
plt.xlabel("Number of Tags")
plt.ylabel("Number of questions")
plt.show()
```



Observations:

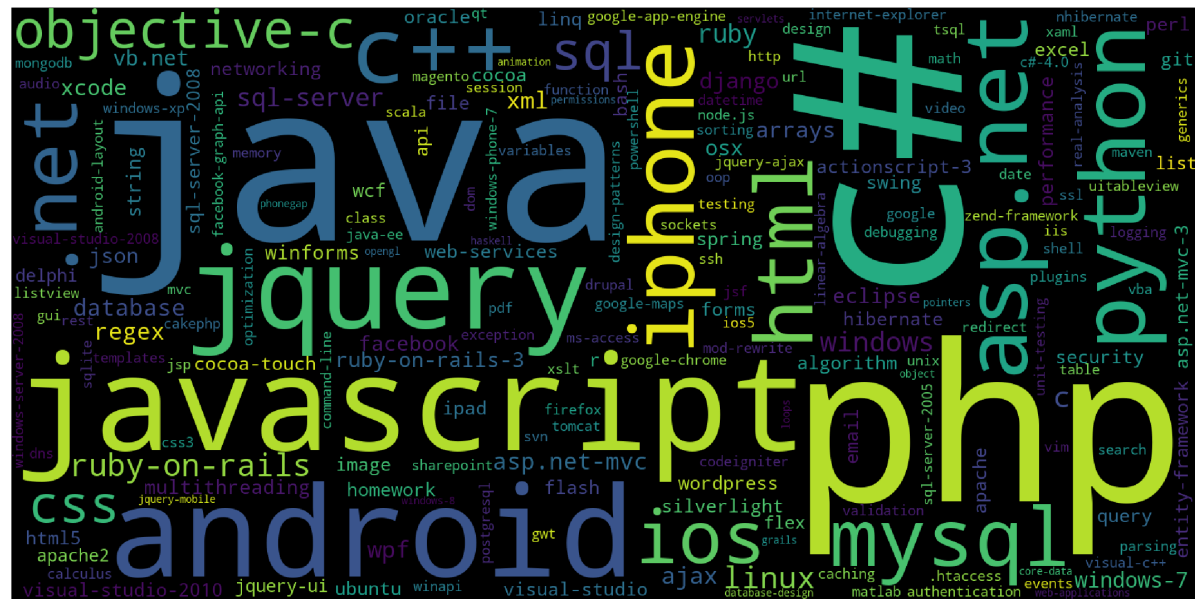
1. Maximum number of tags per question: 5
2. Minimum number of tags per question: 1
3. Avg. number of tags per question: 2.899
4. Most of the questions are having 2 or 3 tags

3.2.5 Most Frequent Tags

```
In [29]: # Plotting word cloud
start = datetime.now()

# Lets first convert the 'result' dictionary to 'list of tuples'
tup = dict(result.items())
#Initializing WordCloud using frequencies of tags.
wordcloud = WordCloud(    background_color='black',
                           width=1600,
                           height=800,
                           ).generate_from_frequencies(tup)

fig = plt.figure(figsize=(30,20))
plt.imshow(wordcloud)
plt.axis('off')
plt.tight_layout(pad=0)
fig.savefig("tag.png")
plt.show()
print("Time taken to run this cell :", datetime.now() - start)
```



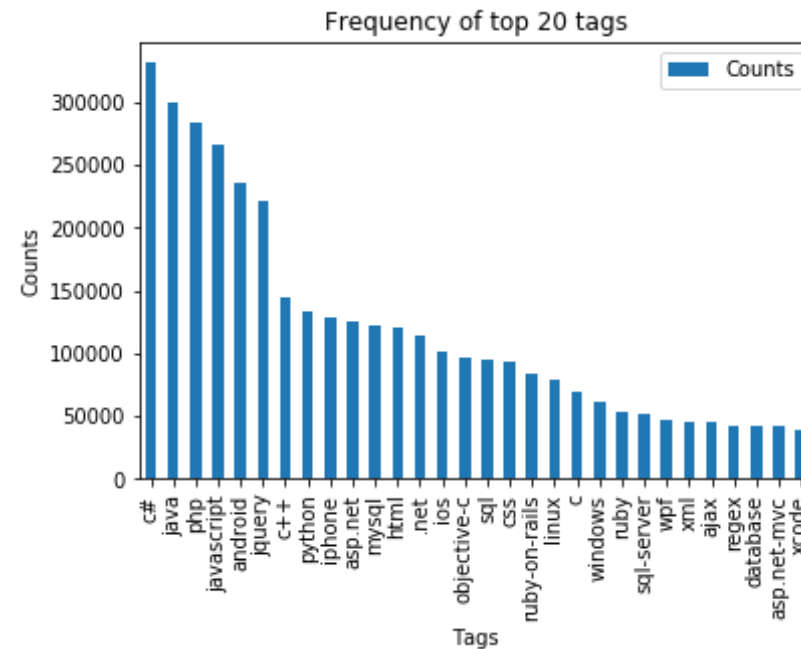
Observations:

A look at the word cloud shows that "c#", "java", "php", "asp.net", "javascript", "c++" are some of the most frequent tags.

3.2.6 The top 20 tags

```
In [30]: i=np.arange(30)
tag_df_sorted.head(30).plot(kind='bar')
plt.title('Frequency of top 20 tags')
plt.xticks(i, tag_df_sorted['Tags'])
plt.xlabel('Tags')
plt.ylabel('Counts')
plt.show()
```

Time taken to run this cell : 0:00:07.596200



Observations:

1. Majority of the most frequent tags are programming language.
2. C# is the top most frequent programming language.
3. Android, IOS, Linux and windows are among the top most frequent operating systems.

3.3 Cleaning and preprocessing of Questions

3.3.1 Preprocessing

1. Sample 1M data points
2. Separate out code-snippets from Body
3. Remove Special characters from Question title and description (not in code)
4. Remove stop words (Except 'C')

5. Remove HTML Tags
6. Convert all the characters into small letters
7. Use SnowballStemmer to stem the words

```
In [31]: def striphtml(data):  
        cleanr = re.compile('<.*?>')  
        cleantext = re.sub(cleanr, ' ', str(data))  
        return cleantext  
stop_words = set(stopwords.words('english'))  
stemmer = SnowballStemmer("english")
```

```
In [32]: #http://www.sqlitetutorial.net/sqlite-python/create-tables/  
def create_connection(db_file):  
    """ create a database connection to the SQLite database  
        specified by db_file  
    :param db_file: database file  
    :return: Connection object or None  
    """  
    try:  
        conn = sqlite3.connect(db_file)  
        return conn  
    except Error as e:  
        print(e)  
  
    return None  
  
def create_table(conn, create_table_sql):  
    """ create a table from the create_table_sql statement  
    :param conn: Connection object  
    :param create_table_sql: a CREATE TABLE statement  
    :return:  
    """  
    try:  
        c = conn.cursor()  
        c.execute(create_table_sql)  
    except Error as e:  
        print(e)
```

```

def checkTableExists(dbcon):
    cursr = dbcon.cursor()
    str = "select name from sqlite_master where type='table'"
    table_names = cursr.execute(str)
    print("Tables in the database:")
    tables = table_names.fetchall()
    print(tables[0][0])
    return(len(tables))

def create_database_table(database, query):
    conn = create_connection(database)
    if conn is not None:
        create_table(conn, query)
        checkTableExists(conn)
    else:
        print("Error! cannot create the database connection.")
    conn.close()

sql_create_table = """CREATE TABLE IF NOT EXISTS QuestionsProcessed (qu
estion text NOT NULL, code text, tags text, words_pre integer, words_po
st integer, is_code integer);"""
create_database_table("Processed.db", sql_create_table)

```

Tables in the database:
QuestionsProcessed

```

In [33]: # http://www.sqlitetutorial.net/sqlite-delete/
# https://stackoverflow.com/questions/2279706/select-random-row-from-a-
sqlite-table
start = datetime.now()
read_db = 'train_no_dup.db'
write_db = 'Processed.db'
if os.path.isfile(read_db):
    conn_r = create_connection(read_db)
    if conn_r is not None:
        reader = conn_r.cursor()
        reader.execute("SELECT Title, Body, Tags From no_dup_train ORDE
R BY RANDOM() LIMIT 1000000;")

```

```

if os.path.isfile(write_db):
    conn_w = create_connection(write_db)
    if conn_w is not None:
        tables = checkTableExists(conn_w)
        writer = conn_w.cursor()
        if tables != 0:
            writer.execute("DELETE FROM QuestionsProcessed WHERE 1")
            print("Cleared All the rows")
print("Time taken to run this cell :", datetime.now() - start)

```

Tables in the database:

QuestionsProcessed

Cleared All the rows

Time taken to run this cell : 0:18:22.967189

we create a new data base to store the sampled and preprocessed questions

In [34]: [#http://www.bernzilla.com/2008/05/13/selecting-a-random-row-from-an-sqlite-table/](http://www.bernzilla.com/2008/05/13/selecting-a-random-row-from-an-sqlite-table/)

```

start = datetime.now()
preprocessed_data_list=[]
reader.fetchone()
questions_with_code=0
len_pre=0
len_post=0
questions_proccesed = 0
for row in reader:

    is_code = 0

    title, question, tags = row[0], row[1], row[2]

    if '<code>' in question:
        questions_with_code+=1
        is_code = 1
    x = len(question)+len(title)
    len_pre+=x

```

```

code = str(re.findall(r'<code>(.*?)</code>', question, flags=re.DOTALL))

question=re.sub('<code>(.*?)</code>', '', question, flags=re.MULTILINE|re.DOTALL)
question=stripthtml(question.encode('utf-8'))

title=title.encode('utf-8')

question=str(title)+" "+str(question)
question=re.sub(r'^[A-Za-z]+', ' ', question)
words=word_tokenize(str(question.lower()))

#Removing all single letter and and stopwords from question exceptt for the letter 'c'
question=' '.join(str(stemmer.stem(j)) for j in words if j not in stopwords and (len(j)!=1 or j=='c'))

len_post+=len(question)
tup = (question,code,tags,x,len(question),is_code)
questions_proccesed += 1
writer.execute("insert into QuestionsProcessed(question,code,tags,words_pre,words_post,is_code) values (?,?,?,?,?,?)",tup)
if (questions_proccesed%100000==0):
    print("number of questions completed=",questions_proccesed)

no_dup_avg_len_pre=(len_pre*1.0)/questions_proccesed
no_dup_avg_len_post=(len_post*1.0)/questions_proccesed

print( "Avg. length of questions(Title+Body) before processing: %d"%no_dup_avg_len_pre)
print( "Avg. length of questions(Title+Body) after processing: %d"%no_dup_avg_len_post)
print( "Percent of questions containing code: %d"%((questions_with_code*100.0)/questions_proccesed))

print("Time taken to run this cell :", datetime.now() - start)

number of questions completed= 100000
number of questions completed= 200000
number of questions completed= 300000

```

```
number of questions completed= 300000
number of questions completed= 400000
number of questions completed= 500000
number of questions completed= 600000
number of questions completed= 700000
number of questions completed= 800000
number of questions completed= 900000
Avg. length of questions(Title+Body) before processing: 1168
Avg. length of questions(Title+Body) after processing: 326
Percent of questions containing code: 57
Time taken to run this cell : 1:02:03.302695
```

```
In [35]: # dont forget to close the connections, or else you will end up with locks
conn_r.commit()
conn_w.commit()
conn_r.close()
conn_w.close()
```

```
In [36]: if os.path.isfile(write_db):
        conn_r = create_connection(write_db)
        if conn_r is not None:
            reader = conn_r.cursor()
            reader.execute("SELECT question From QuestionsProcessed LIMIT 10")

            print("Questions after preprocessed")
            print('='*100)
            reader.fetchone()
            for row in reader:
                print(row)
                print('-'*100)
        conn_r.commit()
        conn_r.close()
```

Questions after preprocessed

```
=====
=====
('undefin fatal warn encount mani time function report thus stop build
process time warn',)
```


('asp net c upload big file process want abl upload file aspx page web
server preocess differ format user upload doc second would see pdf vers
ion doc web page web servic avail convert doc pdf autom upload convers
process handl big file make user wait thing happen',)

('chang annot time seri plot chang annot generic plot command turn axe
nannot specifi use axi command car lt c plot car type col blue ylim ran
g car axe fals ann fals naxi lab c mon tue wed thu fri cant time seri o
bject www lt http www massey ac nz pscowper ts main dat nmain month lt
read tabl www header true nattach main month nmain month ts lt ts unemp
loy start c freq nmain lt window main month ts start c end c plot main
annot look like jan feb mar apr may etc',)

('access vmware filesystem run vmware workstat ubuntu window xp box way
access linux filesystem insid virtual machin window',)

('synchron worker thread scenario tri come best synchron approach assum
std thread c present need worri differ various thread librari etc scena
rio thread main thread want hand task bunch worker thread give final in
struct time need wait thread complet work want join wait finish given t
ask thread analyz collect data thread send command worker begin procedu
r short step thread send command worker thread thread wait worker finis
h thread process go back would suggest use simpl mutex condit variabl c
ombin two tip structur synchron effici possibl would appreci',)

('except function work list got xml file tri use ienumer except functio
n c get differ two list like function work remov item room list check d
ebug room list contain desir valu dal getallroom function get room xml
file data access layer sure problem xml use dal implement list xml exac
t function work fine',)

('load multipl jqgrid page tri use two differ jqgrid page mvc applic ta
bl use difer url load data difer name possibl use multipl jqgrid page t

```
hank advanc updat first thank quick respons problem continu chang id to  
ld nhere code javascript first grid second grid server endpoint xc xba  
xc xba end point code contain recomend thank',)
```

```
-----  
-----  
( 'mysql load data infil unknown number column confus search googl found  
help attempt ni want creat new tabl load content csv file csv file firs  
t row column name want done load file without know mani column exist',)
```

```
-----  
-----  
( 'jw player doubl audio ie jw player instal site homepag video page vid  
eo work homepag browser howev video page video play ie video start corr  
ect second audio portion file start play second time top everyth origin  
video audio still play well along second delay second audio strangest p  
art use code homepag video page understand one two player instanc http  
www timetoplaymag com homepag video host timetoplaymag com video sorri  
let post link first time poster current code use overlay host longtailv  
ideo com switch see host overlay might problem still problem even longt  
ail overlay',)
```

```
In [37]: #Taking 1 Million entries to a dataframe.  
write_db = 'Processed.db'  
if os.path.isfile(write_db):  
    conn_r = create_connection(write_db)  
    if conn_r is not None:  
        preprocessed_data = pd.read_sql_query("""SELECT question, Tags  
        FROM QuestionsProcessed""", conn_r)  
    conn_r.commit()  
    conn_r.close()
```

```
In [38]: preprocessed_data.head()  
preprocessed_data=preprocessed_data[0:500000]
```

```
In [39]: print("number of data points in sample :", preprocessed_data.shape[0])  
print("number of dimensions :", preprocessed_data.shape[1])
```

number of data points in sample : 500000
number of dimensions : 2

4. Machine Learning Models

4.1 Converting tags for multilabel problems

X	y1	y2	y3	y4
x1	0	1	1	0
x1	1	0	0	0
x1	0	1	0	0

```
In [40]: # binary='true' will give a binary vectorizer
vectorizer = CountVectorizer(tokenizer = lambda x: x.split(), binary='true')
multilabel_y = vectorizer.fit_transform(preprocessed_data['tags'])
```

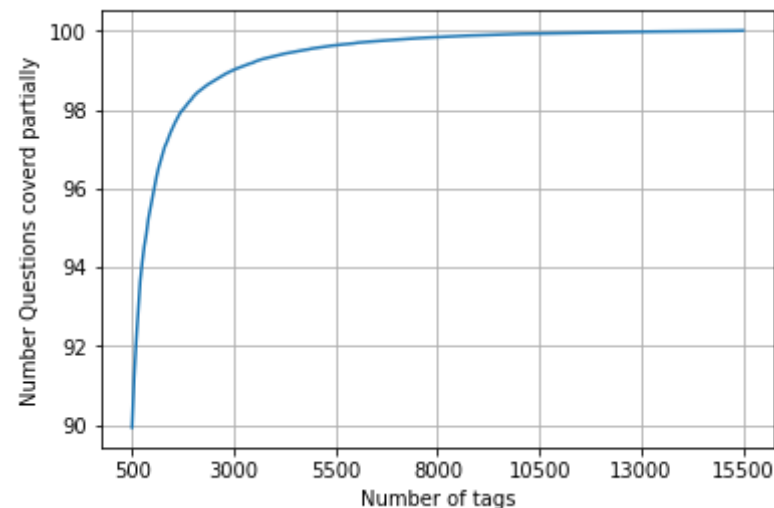
We will sample the number of tags instead considering all of them (due to limitation of computing power)

```
In [41]: def tags_to_choose(n):
          t = multilabel_y.sum(axis=0).tolist()[0]
          sorted_tags_i = sorted(range(len(t)), key=lambda i: t[i], reverse=True)
          multilabel_yn=multilabel_y[:,sorted_tags_i[:n]]
          return multilabel_yn

          def questions_explained_fn(n):
              multilabel_yn = tags_to_choose(n)
              x= multilabel_yn.sum(axis=1)
              return (np.count_nonzero(x==0))
```

```
In [42]: questions_explained = []
total_tags=multilabel_y.shape[1]
total_qs=preprocessed_data.shape[0]
for i in range(500, total_tags, 100):
    questions_explained.append(np.round(((total_qs-questions_explained_
fn(i))/total_qs)*100,3))
```

```
In [43]: fig, ax = plt.subplots()
ax.plot(questions_explained)
xlabel = list(500+np.array(range(-50,450,50))*50)
ax.set_xticklabels(xlabel)
plt.xlabel("Number of tags")
plt.ylabel("Number Questions covered partially")
plt.grid()
plt.show()
# you can choose any number of tags based on your computing power, mini
mun is 50(it covers 90% of the tags)
print("with ",5500,"tags we are covering ",questions_explained[50],"% o
f questions")
```



with 5500 tags we are covering 99.009 % of questions

```
In [44]: multilabel_yx = tags_to_choose(5500)
print("number of questions that are not covered :", questions_explained_
_fn(5500),"out of ", total_qs)
```

number of questions that are not covered : 4953 out of 500000

```
In [45]: print("Number of tags in sample :", multilabel_y.shape[1])
print("number of tags taken :", multilabel_yx.shape[1],"(",(multilabel_
yx.shape[1]/multilabel_y.shape[1])*100,"%")")
```

Number of tags in sample : 30505

number of tags taken : 5500 (18.02983117521718 %)

We consider top 15% tags which covers 99% of the questions

4.2 Split the data into test and train (80:20)

```
In [46]: total_size=preprocessed_data.shape[0]
train_size=int(0.80*total_size)

x_train=preprocessed_data.head(train_size)
x_test=preprocessed_data.tail(total_size - train_size)

y_train = multilabel_yx[0:train_size,:]
y_test = multilabel_yx[train_size:total_size,:]
```

```
In [47]: print("Number of data points in train data :", y_train.shape)
print("Number of data points in test data :", y_test.shape)
```

Number of data points in train data : (400000, 5500)

Number of data points in test data : (100000, 5500)

4.3 Featurizing data

```
In [48]: start = datetime.now()
```

```

vectorizer = TfidfVectorizer(min_df=0.00009, max_features=200000, smoot
h_idf=True, norm="l2", \
                           tokenizer = lambda x: x.split(), sublinear
_tf=False, ngram_range=(1,3))
x_train_multilabel = vectorizer.fit_transform(x_train['question'])
x_test_multilabel = vectorizer.transform(x_test['question'])
print("Time taken to run this cell :", datetime.now() - start)

```

Time taken to run this cell : 0:07:48.585754

```

In [49]: print("Dimensions of train data X:", x_train_multilabel.shape, "Y :", y_t
rain.shape)
print("Dimensions of test data X:", x_test_multilabel.shape, "Y:", y_test.
shape)

```

Dimensions of train data X: (400000, 89314) Y : (400000, 5500)
Dimensions of test data X: (100000, 89314) Y: (100000, 5500)

```

In [50]: # https://www.analyticsvidhya.com/blog/2017/08/introduction-to-multi-la
bel-classification/
#https://stats.stackexchange.com/questions/117796/scikit-multi-label-cl
assification
# classifier = LabelPowerset(GaussianNB())
"""

from skmultilearn.adapt import MLkNN
classifier = MLkNN(k=21)

# train
classifier.fit(x_train_multilabel, y_train)

# predict
predictions = classifier.predict(x_test_multilabel)
print(accuracy_score(y_test, predictions))
print(metrics.f1_score(y_test, predictions, average = 'macro'))
print(metrics.f1_score(y_test, predictions, average = 'micro'))
print(metrics.hamming_loss(y_test, predictions))

"""

# we are getting memory error because the multilearn package

```

```
# is trying to convert the data into dense matrix
# -----
#MemoryError                                Traceback (most recent call
#last)
#<ipython-input-170-f0e7c7f3e0be> in <module>()
#----> classifier.fit(x_train_multilabel, y_train)
```

```
Out[50]: "\nfrom skmultilearn.adapt import MLkNN\nnclassifier = MLkNN(k=21)\n\n#
train\nclassifier.fit(x_train_multilabel, y_train)\n\n# predict\npredic
tions = classifier.predict(x_test_multilabel)\n\nprint(accuracy_score(y_t
est,predictions))\n\nprint(metrics.f1_score(y_test, predictions, average
= 'macro'))\n\nprint(metrics.f1_score(y_test, predictions, average = 'mic
ro'))\n\nprint(metrics.hamming_loss(y_test,predictions))\n\n"
```

4.4 Applying Logistic Regression with OneVsRest Classifier

In []:

```
In [51]: # this will be taking so much time try not to run it, download the lr_w
ith_equal_weight.pkl file and use to predict
# This takes about 6-7 hours to run.
classifier = OneVsRestClassifier(SGDClassifier(loss='log', alpha=0.0000
1, penalty='l1'), n_jobs=-1)
classifier.fit(x_train_multilabel, y_train)
predictions = classifier.predict(x_test_multilabel)

print("accuracy :",metrics.accuracy_score(y_test,predictions))
print("macro f1 score :",metrics.f1_score(y_test, predictions, average
= 'macro'))
print("micro f1 scoore :",metrics.f1_score(y_test, predictions, average
= 'micro'))
print("hamming loss :",metrics.hamming_loss(y_test,predictions))
print("Precision recall report :\n",metrics.classification_report(y_tes
t, predictions))
```

```
accuracy : 0.08114
macro f1 score : 0.09382767228864447
micro f1 score : 0.3723898616951325
hamming loss : 0.0004130290909090909
```

```
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
```

Precision recall report :

	precision	recall	f1-score	support
0	0.62	0.22	0.33	7860
1	0.78	0.44	0.56	6960
2	0.82	0.55	0.66	6808
3	0.74	0.43	0.55	6366
4	0.94	0.75	0.83	5589
5	0.85	0.65	0.74	5240
6	0.69	0.30	0.41	3307
7	0.87	0.60	0.71	3210
8	0.70	0.38	0.50	3052
9	0.78	0.42	0.55	2967
10	0.84	0.60	0.70	2902
11	0.53	0.19	0.28	2967
12	0.51	0.09	0.15	2659
13	0.59	0.24	0.34	2424
14	0.64	0.21	0.31	2413
15	0.79	0.55	0.65	2293
16	0.57	0.29	0.38	2229
17	0.78	0.52	0.63	1950
18	0.65	0.26	0.38	1887
19	0.60	0.17	0.27	1691
20	0.35	0.07	0.12	1485
21	0.74	0.36	0.48	1254
22	0.56	0.28	0.38	1237
23	0.62	0.38	0.47	1086
24	0.86	0.61	0.71	1095
25	0.65	0.36	0.47	1080
26	0.31	0.06	0.10	980
27	0.62	0.32	0.42	999
28	0.86	0.63	0.73	938
29	0.68	0.21	0.32	940
30	0.93	0.78	0.85	891
31	0.52	0.25	0.34	873
32	0.52	0.14	0.22	794
33	0.56	0.22	0.32	807
34	0.80	0.33	0.47	761
35	0.74	0.48	0.58	753
36	0.74	0.53	0.62	723

37	0.73	0.60	0.66	736
38	0.36	0.10	0.16	747
39	0.43	0.13	0.20	650
40	0.70	0.25	0.36	665
41	0.60	0.38	0.46	598
42	0.37	0.09	0.14	638
43	0.67	0.34	0.45	616
44	0.42	0.10	0.16	602
45	0.31	0.10	0.15	593
46	0.23	0.06	0.09	571
47	0.53	0.10	0.17	547
48	0.67	0.41	0.51	599
49	0.37	0.01	0.02	583
50	0.46	0.14	0.21	556
51	0.79	0.42	0.55	560
52	0.56	0.18	0.28	515
53	0.53	0.11	0.19	552
54	0.89	0.70	0.78	508
55	0.60	0.34	0.43	518
56	0.27	0.05	0.09	534
57	0.42	0.13	0.20	486
58	0.35	0.10	0.15	508
59	0.76	0.43	0.55	528
60	0.19	0.02	0.04	483
61	0.76	0.46	0.57	465
62	0.90	0.78	0.84	472
63	0.78	0.24	0.37	474
64	0.89	0.57	0.70	502
65	0.42	0.14	0.21	476
66	0.67	0.26	0.38	466
67	0.51	0.16	0.25	437
68	0.43	0.01	0.02	508
69	0.71	0.35	0.47	452
70	0.78	0.48	0.59	419
71	0.73	0.44	0.55	442
72	0.80	0.36	0.49	410
73	0.72	0.21	0.32	427
74	0.86	0.64	0.73	418
75	0.70	0.38	0.49	394

76	0.45	0.29	0.35	403
77	0.62	0.37	0.46	383
78	0.08	0.00	0.01	421
79	0.81	0.51	0.62	357
80	0.33	0.08	0.13	403
81	0.37	0.09	0.15	386
82	0.59	0.22	0.32	402
83	0.68	0.33	0.45	354
84	0.91	0.55	0.69	349
85	0.81	0.54	0.65	364
86	0.95	0.56	0.70	360
87	0.44	0.21	0.29	371
88	0.75	0.46	0.57	338
89	0.82	0.43	0.57	351
90	0.57	0.26	0.36	329
91	0.36	0.04	0.07	367
92	0.56	0.09	0.16	341
93	0.90	0.66	0.76	348
94	0.17	0.02	0.04	330
95	0.61	0.12	0.21	338
96	0.48	0.11	0.18	336
97	0.63	0.37	0.47	357
98	0.68	0.40	0.51	315
99	0.32	0.04	0.08	315
100	0.66	0.42	0.51	343
101	0.93	0.54	0.69	329
102	0.51	0.19	0.27	319
103	0.95	0.66	0.78	295
104	0.35	0.12	0.18	299
105	0.88	0.50	0.64	321
106	0.91	0.66	0.77	329
107	0.70	0.41	0.52	300
108	0.34	0.17	0.23	284
109	0.24	0.02	0.04	303
110	0.63	0.35	0.45	304
111	0.47	0.23	0.31	268
112	0.59	0.25	0.35	288
113	0.92	0.68	0.79	268
114	0.56	0.36	0.44	274

115	0.50	0.20	0.29	264
116	0.57	0.08	0.14	283
117	0.59	0.25	0.35	251
118	0.37	0.14	0.20	253
119	0.33	0.11	0.17	258
120	0.22	0.07	0.10	257
121	0.75	0.40	0.52	279
122	0.96	0.67	0.79	294
123	0.45	0.08	0.13	255
124	0.36	0.07	0.12	280
125	0.55	0.16	0.25	269
126	0.87	0.58	0.69	284
127	0.96	0.64	0.77	273
128	0.31	0.06	0.10	273
129	0.33	0.11	0.17	269
130	0.64	0.39	0.49	261
131	0.33	0.12	0.18	234
132	0.58	0.29	0.39	285
133	0.21	0.04	0.06	255
134	0.33	0.03	0.06	252
135	0.75	0.49	0.59	248
136	0.65	0.31	0.42	275
137	0.61	0.29	0.39	261
138	0.26	0.07	0.11	239
139	0.74	0.31	0.44	251
140	0.29	0.02	0.04	257
141	0.43	0.08	0.13	264
142	0.74	0.50	0.60	231
143	0.41	0.12	0.19	250
144	0.53	0.24	0.33	256
145	0.75	0.17	0.27	247
146	0.00	0.00	0.00	217
147	0.44	0.06	0.11	236
148	0.84	0.62	0.71	247
149	0.28	0.04	0.06	248
150	0.27	0.05	0.09	255
151	0.57	0.10	0.17	236
152	0.60	0.26	0.37	244
153	0.88	0.60	0.71	246

154	0.44	0.08	0.13	232
155	0.48	0.26	0.33	237
156	0.68	0.45	0.54	219
157	0.40	0.09	0.15	225
158	0.35	0.17	0.23	212
159	0.91	0.73	0.81	207
160	0.36	0.08	0.13	262
161	0.48	0.30	0.37	194
162	0.39	0.17	0.24	227
163	0.55	0.26	0.36	236
164	0.75	0.49	0.60	227
165	0.72	0.28	0.40	243
166	0.64	0.39	0.48	219
167	0.45	0.13	0.20	239
168	0.25	0.03	0.05	232
169	0.54	0.20	0.30	210
170	0.27	0.07	0.12	228
171	0.91	0.68	0.78	221
172	0.43	0.12	0.18	217
173	0.41	0.10	0.16	214
174	0.89	0.65	0.75	200
175	0.72	0.26	0.39	219
176	0.65	0.37	0.47	213
177	0.88	0.64	0.74	218
178	0.95	0.62	0.75	220
179	0.67	0.46	0.55	196
180	0.43	0.11	0.17	209
181	0.13	0.01	0.02	198
182	0.33	0.14	0.19	205
183	0.66	0.35	0.45	202
184	0.44	0.04	0.08	189
185	0.54	0.10	0.17	192
186	0.32	0.10	0.15	205
187	0.25	0.02	0.04	196
188	0.57	0.30	0.39	180
189	0.47	0.19	0.27	207
190	0.51	0.17	0.25	195
191	0.87	0.56	0.68	187
192	0.93	0.56	0.70	183

193	0.87	0.54	0.67	192
194	0.96	0.71	0.81	214
195	0.33	0.04	0.08	201
196	0.34	0.08	0.13	199
197	0.72	0.34	0.46	188
198	0.47	0.15	0.22	193
199	0.55	0.06	0.12	171
200	0.70	0.25	0.36	215
201	0.83	0.41	0.55	196
202	0.33	0.08	0.13	170
203	0.48	0.18	0.26	194
204	0.25	0.02	0.04	187
205	0.23	0.06	0.10	189
206	0.29	0.05	0.08	189
207	0.12	0.02	0.03	182
208	0.64	0.42	0.50	183
209	0.96	0.73	0.83	209
210	0.66	0.32	0.43	185
211	0.23	0.03	0.05	180
212	0.80	0.38	0.51	193
213	0.33	0.01	0.01	187
214	0.71	0.30	0.42	175
215	0.75	0.33	0.46	162
216	0.33	0.03	0.06	194
217	0.54	0.31	0.39	175
218	0.99	0.62	0.76	173
219	0.60	0.17	0.26	193
220	0.67	0.34	0.45	168
221	0.91	0.68	0.78	170
222	0.72	0.48	0.57	168
223	0.75	0.32	0.45	165
224	0.48	0.05	0.10	182
225	0.59	0.38	0.46	158
226	0.54	0.25	0.34	149
227	0.38	0.08	0.13	183
228	0.00	0.00	0.00	176
229	0.42	0.07	0.12	180
230	0.74	0.37	0.49	170
231	0.61	0.48	0.54	160

232	0.25	0.04	0.07	176
233	0.37	0.11	0.16	180
234	0.11	0.01	0.01	156
235	0.59	0.15	0.24	152
236	0.58	0.35	0.43	168
237	0.33	0.01	0.02	166
238	0.42	0.14	0.21	143
239	0.86	0.52	0.65	180
240	0.79	0.44	0.56	155
241	0.16	0.05	0.08	137
242	0.51	0.14	0.22	153
243	0.82	0.44	0.57	170
244	0.20	0.07	0.10	145
245	0.22	0.01	0.03	150
246	0.70	0.44	0.54	156
247	0.47	0.27	0.34	158
248	0.66	0.42	0.51	151
249	0.52	0.11	0.17	152
250	0.56	0.25	0.35	152
251	0.46	0.07	0.12	162
252	0.29	0.04	0.07	141
253	0.79	0.51	0.62	148
254	0.60	0.36	0.45	160
255	0.00	0.00	0.00	172
256	0.77	0.31	0.45	156
257	0.72	0.25	0.38	165
258	0.53	0.33	0.41	145
259	0.81	0.46	0.59	148
260	0.00	0.00	0.00	155
261	0.14	0.02	0.04	137
262	0.39	0.04	0.08	162
263	0.55	0.08	0.15	142
264	0.88	0.55	0.68	125
265	0.56	0.26	0.36	134
266	0.62	0.27	0.38	139
267	0.23	0.05	0.08	132
268	0.73	0.25	0.37	165
269	0.50	0.18	0.27	141
270	0.86	0.67	0.75	142

271	0.00	0.00	0.00	139
272	0.70	0.21	0.32	144
273	0.33	0.05	0.09	123
274	0.29	0.02	0.03	123
275	0.32	0.10	0.15	144
276	0.55	0.24	0.33	118
277	0.40	0.14	0.21	156
278	0.91	0.51	0.66	152
279	0.38	0.05	0.08	128
280	0.00	0.00	0.00	118
281	0.33	0.12	0.18	120
282	0.20	0.01	0.01	137
283	0.73	0.49	0.58	136
284	0.00	0.00	0.00	144
285	0.70	0.50	0.59	133
286	0.75	0.51	0.61	150
287	0.70	0.28	0.40	136
288	0.58	0.05	0.09	147
289	0.49	0.12	0.20	137
290	0.72	0.24	0.36	143
291	0.21	0.02	0.04	124
292	0.00	0.00	0.00	124
293	0.00	0.00	0.00	136
294	0.41	0.09	0.14	128
295	0.94	0.67	0.79	126
296	0.58	0.25	0.35	145
297	0.00	0.00	0.00	127
298	0.26	0.08	0.12	125
299	0.32	0.08	0.13	124
300	0.00	0.00	0.00	133
301	0.83	0.55	0.66	128
302	0.89	0.72	0.80	114
303	0.41	0.09	0.14	125
304	0.64	0.37	0.47	118
305	0.26	0.04	0.07	123
306	0.35	0.11	0.16	122
307	0.73	0.27	0.39	124
308	0.38	0.11	0.17	104
309	0.61	0.14	0.23	123

310	0.50	0.10	0.16	136
311	0.00	0.00	0.00	131
312	0.59	0.08	0.14	130
313	0.62	0.04	0.07	139
314	0.45	0.10	0.17	134
315	0.80	0.54	0.65	125
316	0.46	0.20	0.28	120
317	0.00	0.00	0.00	111
318	0.88	0.55	0.67	128
319	0.43	0.20	0.27	117
320	0.18	0.03	0.06	123
321	0.19	0.03	0.05	108
322	0.63	0.39	0.48	118
323	0.08	0.01	0.02	109
324	0.50	0.27	0.35	116
325	0.22	0.03	0.05	130
326	0.52	0.23	0.32	101
327	0.35	0.05	0.09	124
328	0.43	0.18	0.26	103
329	0.54	0.29	0.37	98
330	0.82	0.27	0.41	115
331	0.58	0.32	0.41	104
332	0.23	0.04	0.07	129
333	0.20	0.05	0.08	103
334	0.40	0.15	0.22	114
335	0.38	0.11	0.17	126
336	0.57	0.17	0.26	102
337	0.80	0.43	0.56	121
338	0.33	0.03	0.05	108
339	0.39	0.17	0.24	109
340	0.43	0.15	0.22	125
341	0.65	0.29	0.41	109
342	0.00	0.00	0.00	117
343	0.62	0.33	0.43	107
344	0.18	0.02	0.03	118
345	0.44	0.14	0.22	119
346	0.33	0.10	0.16	96
347	0.28	0.04	0.07	122
348	0.68	0.27	0.38	112

349	0.26	0.05	0.09	110
350	0.86	0.35	0.50	103
351	0.58	0.17	0.27	109
352	0.59	0.29	0.39	112
353	0.17	0.01	0.02	100
354	0.48	0.20	0.28	116
355	0.75	0.45	0.56	105
356	0.74	0.28	0.41	93
357	0.12	0.01	0.02	116
358	0.39	0.11	0.17	102
359	0.94	0.44	0.60	109
360	0.17	0.02	0.03	106
361	0.80	0.32	0.46	108
362	0.11	0.03	0.04	113
363	0.89	0.45	0.60	87
364	0.60	0.29	0.39	105
365	0.64	0.44	0.52	93
366	0.19	0.07	0.10	98
367	0.57	0.04	0.08	94
368	0.50	0.16	0.24	103
369	0.10	0.02	0.03	104
370	0.52	0.11	0.18	108
371	0.50	0.27	0.35	104
372	0.53	0.08	0.14	126
373	0.42	0.11	0.17	92
374	0.96	0.70	0.81	111
375	0.42	0.20	0.27	95
376	0.30	0.12	0.17	106
377	0.24	0.06	0.09	122
378	0.85	0.54	0.66	102
379	0.57	0.31	0.40	101
380	0.94	0.34	0.50	91
381	0.00	0.00	0.00	98
382	0.56	0.10	0.17	101
383	0.96	0.65	0.78	115
384	0.52	0.16	0.24	94
385	0.57	0.25	0.34	106
386	0.26	0.09	0.13	93
387	0.96	0.71	0.82	115

388	0.38	0.05	0.10	92
389	0.54	0.12	0.19	121
390	0.17	0.04	0.07	96
391	0.76	0.37	0.50	91
392	0.09	0.01	0.02	92
393	0.30	0.03	0.06	96
394	0.31	0.04	0.07	102
395	0.77	0.26	0.39	92
396	0.36	0.20	0.26	95
397	0.27	0.03	0.06	90
398	0.33	0.06	0.10	106
399	0.29	0.02	0.04	87
400	0.24	0.07	0.11	82
401	0.42	0.11	0.18	90
402	0.00	0.00	0.00	104
403	0.22	0.05	0.08	100
404	0.48	0.12	0.20	96
405	0.40	0.15	0.21	116
406	0.15	0.04	0.07	89
407	0.62	0.27	0.37	90
408	0.86	0.36	0.50	84
409	0.36	0.05	0.09	103
410	0.00	0.00	0.00	95
411	0.62	0.05	0.09	98
412	0.25	0.04	0.06	108
413	0.44	0.17	0.24	102
414	0.73	0.49	0.59	87
415	0.13	0.02	0.04	95
416	0.29	0.08	0.12	104
417	1.00	0.01	0.02	103
418	0.69	0.45	0.55	93
419	0.31	0.06	0.10	84
420	0.79	0.42	0.55	101
421	0.80	0.43	0.56	96
422	0.33	0.02	0.04	83
423	0.91	0.44	0.59	93
424	0.75	0.14	0.23	88
425	0.75	0.51	0.60	87
426	0.56	0.22	0.32	90

427	0.75	0.09	0.17	96
428	0.25	0.01	0.02	94
429	0.67	0.37	0.47	90
430	0.00	0.00	0.00	84
431	0.60	0.32	0.42	93
432	0.42	0.09	0.15	112
433	0.38	0.10	0.16	89
434	0.47	0.28	0.35	85
435	0.82	0.56	0.66	95
436	0.00	0.00	0.00	88
437	0.00	0.00	0.00	85
438	0.46	0.19	0.26	86
439	0.87	0.55	0.67	95
440	0.71	0.39	0.50	96
441	0.61	0.11	0.18	102
442	0.94	0.51	0.66	96
443	0.85	0.52	0.64	87
444	0.25	0.04	0.06	108
445	0.75	0.43	0.55	92
446	0.62	0.09	0.16	88
447	0.71	0.37	0.49	100
448	0.09	0.01	0.02	87
449	0.56	0.18	0.27	84
450	0.00	0.00	0.00	95
451	0.50	0.03	0.06	91
452	0.41	0.19	0.26	91
453	0.13	0.03	0.04	77
454	0.27	0.12	0.17	80
455	0.43	0.15	0.22	109
456	0.79	0.25	0.38	91
457	0.53	0.25	0.34	96
458	0.71	0.42	0.53	84
459	0.64	0.34	0.44	94
460	0.25	0.05	0.08	98
461	0.93	0.57	0.70	90
462	0.13	0.03	0.05	94
463	0.98	0.63	0.76	83
464	0.38	0.12	0.18	91
465	0.18	0.04	0.06	77

466	0.15	0.04	0.06	82
467	0.38	0.13	0.19	87
468	0.85	0.64	0.73	87
469	0.83	0.46	0.59	95
470	0.57	0.16	0.25	80
471	0.32	0.14	0.20	85
472	0.48	0.16	0.24	83
473	0.00	0.00	0.00	87
474	0.62	0.17	0.27	93
475	0.00	0.00	0.00	85
476	0.26	0.06	0.10	84
477	0.52	0.12	0.20	90
478	0.47	0.09	0.15	99
479	0.91	0.58	0.71	72
480	0.44	0.23	0.30	70
481	0.57	0.17	0.26	93
482	0.00	0.00	0.00	87
483	0.30	0.10	0.15	80
484	0.00	0.00	0.00	83
485	0.26	0.09	0.13	92
486	0.50	0.22	0.31	76
487	0.50	0.06	0.11	83
488	0.58	0.24	0.34	74
489	0.29	0.07	0.12	95
490	0.81	0.51	0.63	82
491	0.65	0.43	0.52	83
492	0.74	0.18	0.29	76
493	0.71	0.44	0.54	89
494	0.11	0.01	0.02	78
495	0.26	0.09	0.13	80
496	0.56	0.27	0.37	85
497	0.41	0.14	0.21	77
498	0.72	0.32	0.44	88
499	0.62	0.21	0.31	87
500	0.81	0.51	0.63	94
501	0.57	0.27	0.37	78
502	0.88	0.49	0.63	94
503	0.00	0.00	0.00	95
504	0.33	0.12	0.18	74

505	0.71	0.40	0.51	80
506	0.14	0.01	0.02	83
507	0.57	0.10	0.17	78
508	0.40	0.12	0.18	86
509	0.93	0.71	0.81	79
510	0.80	0.59	0.68	82
511	0.22	0.02	0.04	85
512	0.25	0.05	0.08	79
513	0.32	0.12	0.18	74
514	0.83	0.57	0.67	76
515	0.61	0.23	0.34	86
516	0.83	0.25	0.39	79
517	0.45	0.22	0.29	79
518	0.00	0.00	0.00	72
519	0.95	0.42	0.58	86
520	0.67	0.14	0.24	84
521	0.29	0.05	0.09	73
522	0.00	0.00	0.00	80
523	0.39	0.14	0.20	80
524	0.61	0.23	0.33	97
525	0.58	0.09	0.16	76
526	0.20	0.05	0.07	65
527	0.37	0.24	0.29	70
528	0.60	0.14	0.22	66
529	0.38	0.14	0.20	74
530	0.00	0.00	0.00	76
531	0.79	0.30	0.44	89
532	0.79	0.22	0.34	68
533	0.79	0.55	0.65	77
534	0.46	0.14	0.21	93
535	0.95	0.51	0.67	80
536	0.20	0.06	0.09	67
537	0.72	0.28	0.40	75
538	0.52	0.31	0.39	71
539	0.50	0.06	0.10	72
540	0.78	0.56	0.65	72
541	0.24	0.14	0.17	66
542	0.22	0.03	0.06	60
543	0.38	0.07	0.12	73

544	0.33	0.22	0.27	63
545	0.20	0.02	0.04	83
546	0.96	0.57	0.72	86
547	0.60	0.16	0.25	77
548	0.38	0.15	0.22	66
549	0.52	0.24	0.33	67
550	0.21	0.05	0.08	79
551	0.97	0.36	0.53	85
552	0.00	0.00	0.00	81
553	0.23	0.07	0.11	67
554	1.00	0.53	0.69	72
555	0.71	0.14	0.24	85
556	0.95	0.52	0.67	77
557	0.72	0.27	0.40	66
558	0.41	0.22	0.29	81
559	0.00	0.00	0.00	80
560	0.43	0.13	0.20	78
561	0.78	0.34	0.47	82
562	0.59	0.20	0.30	80
563	0.38	0.04	0.07	72
564	0.38	0.21	0.27	68
565	0.17	0.03	0.05	74
566	0.29	0.03	0.06	64
567	0.56	0.17	0.27	80
568	0.53	0.15	0.23	68
569	0.55	0.29	0.38	75
570	0.00	0.00	0.00	76
571	0.88	0.09	0.16	78
572	0.73	0.34	0.46	71
573	0.09	0.01	0.02	89
574	0.00	0.00	0.00	75
575	0.29	0.06	0.11	62
576	0.55	0.25	0.34	69
577	0.33	0.01	0.02	78
578	0.86	0.44	0.59	72
579	0.68	0.40	0.50	63
580	0.28	0.13	0.17	71
581	0.73	0.23	0.35	69
582	0.33	0.16	0.22	69

583	0.24	0.06	0.10	63
584	0.50	0.01	0.03	77
585	0.71	0.38	0.49	77
586	0.56	0.21	0.30	68
587	0.00	0.00	0.00	75
588	0.07	0.02	0.03	63
589	0.61	0.32	0.42	69
590	0.86	0.20	0.33	59
591	0.73	0.34	0.46	65
592	0.22	0.04	0.06	57
593	0.00	0.00	0.00	70
594	0.31	0.06	0.09	72
595	0.46	0.18	0.26	72
596	0.84	0.62	0.72	61
597	0.00	0.00	0.00	66
598	0.00	0.00	0.00	77
599	0.83	0.34	0.48	70
600	0.48	0.16	0.24	73
601	0.69	0.13	0.21	87
602	0.73	0.39	0.51	77
603	0.06	0.02	0.02	66
604	0.00	0.00	0.00	80
605	0.72	0.36	0.48	73
606	0.40	0.14	0.20	74
607	0.15	0.04	0.06	57
608	0.98	0.63	0.76	67
609	0.44	0.15	0.22	82
610	0.08	0.02	0.03	66
611	0.50	0.13	0.21	75
612	0.00	0.00	0.00	62
613	0.00	0.00	0.00	66
614	0.44	0.11	0.18	63
615	0.67	0.03	0.06	68
616	0.77	0.30	0.43	67
617	0.67	0.06	0.11	64
618	0.31	0.07	0.11	71
619	0.81	0.19	0.31	68
620	0.83	0.47	0.60	64
621	0.12	0.01	0.03	67

622	0.95	0.63	0.76	59
623	0.00	0.00	0.00	57
624	0.25	0.03	0.05	69
625	0.20	0.05	0.07	66
626	0.24	0.07	0.11	59
627	0.85	0.48	0.61	71
628	0.69	0.42	0.52	65
629	0.48	0.26	0.34	58
630	0.68	0.30	0.41	44
631	0.50	0.07	0.12	56
632	0.61	0.23	0.33	61
633	0.50	0.11	0.17	76
634	0.27	0.12	0.16	51
635	0.53	0.35	0.42	54
636	0.33	0.02	0.03	61
637	0.40	0.07	0.12	56
638	0.85	0.57	0.68	72
639	0.45	0.09	0.16	53
640	0.11	0.01	0.02	81
641	0.58	0.14	0.23	50
642	0.11	0.02	0.03	61
643	0.47	0.26	0.34	61
644	0.86	0.42	0.56	74
645	0.71	0.19	0.29	54
646	0.00	0.00	0.00	57
647	0.20	0.04	0.07	45
648	1.00	0.02	0.03	58
649	0.38	0.04	0.08	67
650	0.96	0.62	0.75	84
651	0.80	0.47	0.60	59
652	0.84	0.49	0.62	55
653	0.21	0.04	0.07	68
654	0.00	0.00	0.00	63
655	0.80	0.46	0.59	69
656	0.48	0.21	0.29	58
657	0.21	0.05	0.08	61
658	0.00	0.00	0.00	48
659	0.61	0.19	0.29	75
660	0.00	0.00	0.00	72

661	0.88	0.58	0.70	65
662	0.33	0.08	0.13	60
663	0.64	0.25	0.36	63
664	0.50	0.18	0.27	49
665	0.54	0.27	0.36	51
666	0.00	0.00	0.00	65
667	0.07	0.02	0.03	57
668	0.92	0.53	0.67	62
669	0.38	0.09	0.14	57
670	0.68	0.36	0.47	70
671	0.64	0.12	0.21	72
672	0.47	0.14	0.21	58
673	0.23	0.04	0.07	67
674	0.00	0.00	0.00	62
675	0.16	0.06	0.09	50
676	0.00	0.00	0.00	60
677	0.69	0.28	0.40	65
678	0.41	0.23	0.29	62
679	0.69	0.39	0.49	62
680	0.00	0.00	0.00	55
681	0.33	0.01	0.02	80
682	0.60	0.05	0.10	57
683	0.00	0.00	0.00	62
684	0.65	0.32	0.43	63
685	0.33	0.05	0.08	44
686	0.96	0.44	0.61	52
687	0.39	0.19	0.25	59
688	0.61	0.21	0.31	53
689	0.57	0.18	0.28	66
690	0.35	0.14	0.20	50
691	0.71	0.29	0.42	51
692	0.00	0.00	0.00	47
693	0.60	0.06	0.11	52
694	0.71	0.34	0.46	59
695	0.33	0.06	0.11	62
696	0.30	0.05	0.09	60
697	0.00	0.00	0.00	56
698	0.40	0.03	0.05	68
699	0.50	0.04	0.07	57

700	0.00	0.00	0.00	78
701	0.20	0.02	0.03	60
702	0.62	0.26	0.37	57
703	0.77	0.16	0.27	61
704	0.36	0.09	0.15	44
705	0.00	0.00	0.00	58
706	0.25	0.02	0.03	64
707	0.36	0.07	0.11	61
708	1.00	0.10	0.18	60
709	0.27	0.06	0.09	54
710	0.00	0.00	0.00	50
711	0.44	0.07	0.12	56
712	0.33	0.05	0.09	55
713	0.70	0.25	0.37	55
714	0.00	0.00	0.00	56
715	0.70	0.12	0.21	58
716	0.81	0.26	0.39	50
717	0.91	0.33	0.49	63
718	0.55	0.14	0.22	44
719	0.00	0.00	0.00	41
720	0.39	0.16	0.23	55
721	0.00	0.00	0.00	49
722	0.00	0.00	0.00	56
723	0.33	0.03	0.05	71
724	0.60	0.06	0.11	50
725	0.87	0.25	0.39	51
726	0.67	0.13	0.22	60
727	0.59	0.29	0.39	58
728	0.29	0.13	0.18	62
729	0.29	0.09	0.14	55
730	0.58	0.25	0.35	57
731	0.36	0.07	0.12	54
732	0.48	0.20	0.29	49
733	0.31	0.07	0.12	55
734	0.50	0.05	0.10	55
735	0.29	0.16	0.20	45
736	0.25	0.02	0.03	55
737	0.32	0.12	0.18	49
738	0.40	0.13	0.20	61

739	0.55	0.12	0.19	52
740	0.14	0.04	0.06	54
741	0.10	0.02	0.04	45
742	0.65	0.18	0.29	60
743	1.00	0.02	0.03	59
744	0.22	0.04	0.06	57
745	0.00	0.00	0.00	47
746	0.50	0.03	0.06	63
747	0.00	0.00	0.00	64
748	0.81	0.62	0.70	55
749	0.52	0.20	0.29	55
750	0.00	0.00	0.00	58
751	0.89	0.46	0.61	52
752	0.00	0.00	0.00	53
753	0.48	0.28	0.35	50
754	0.94	0.60	0.73	52
755	0.36	0.11	0.17	46
756	0.25	0.02	0.04	52
757	0.81	0.30	0.44	56
758	0.00	0.00	0.00	61
759	0.76	0.25	0.38	52
760	0.29	0.12	0.16	52
761	0.71	0.26	0.38	57
762	0.72	0.38	0.49	56
763	0.00	0.00	0.00	58
764	0.43	0.05	0.10	56
765	0.57	0.33	0.41	52
766	0.00	0.00	0.00	58
767	0.60	0.11	0.19	53
768	0.50	0.08	0.14	49
769	0.61	0.36	0.45	61
770	0.60	0.12	0.20	49
771	0.53	0.20	0.29	46
772	0.67	0.21	0.32	47
773	0.50	0.14	0.22	51
774	0.00	0.00	0.00	48
775	0.17	0.02	0.03	53
776	0.00	0.00	0.00	50
777	0.87	0.25	0.39	51

778	0.25	0.02	0.03	54
779	0.88	0.29	0.43	49
780	0.00	0.00	0.00	56
781	0.00	0.00	0.00	39
782	0.73	0.38	0.50	50
783	0.33	0.14	0.20	43
784	0.40	0.09	0.15	66
785	0.69	0.18	0.28	51
786	1.00	0.09	0.16	45
787	0.00	0.00	0.00	51
788	0.38	0.16	0.23	49
789	0.36	0.11	0.17	45
790	0.86	0.51	0.64	61
791	0.43	0.17	0.24	53
792	0.50	0.02	0.03	60
793	0.36	0.21	0.26	43
794	0.46	0.10	0.16	60
795	0.00	0.00	0.00	55
796	0.24	0.13	0.17	46
797	0.36	0.10	0.16	40
798	0.00	0.00	0.00	43
799	0.28	0.11	0.16	46
800	0.00	0.00	0.00	53
801	0.31	0.08	0.12	51
802	0.70	0.29	0.41	49
803	0.00	0.00	0.00	47
804	0.17	0.02	0.04	50
805	0.67	0.05	0.09	42
806	0.81	0.28	0.41	47
807	0.84	0.43	0.57	49
808	0.79	0.54	0.64	50
809	0.52	0.29	0.37	52
810	0.38	0.16	0.23	49
811	0.62	0.14	0.23	58
812	0.33	0.02	0.03	60
813	0.33	0.04	0.07	51
814	0.25	0.02	0.04	43
815	0.00	0.00	0.00	37
816	0.92	0.49	0.64	49

817	0.74	0.33	0.46	42
818	0.60	0.06	0.10	54
819	0.00	0.00	0.00	47
820	0.33	0.08	0.13	36
821	0.00	0.00	0.00	55
822	0.25	0.02	0.04	49
823	0.68	0.32	0.43	41
824	0.95	0.48	0.63	42
825	0.33	0.07	0.11	45
826	0.20	0.04	0.06	54
827	0.57	0.09	0.15	47
828	0.68	0.46	0.55	41
829	0.17	0.02	0.03	53
830	0.26	0.11	0.15	47
831	0.59	0.20	0.30	49
832	0.00	0.00	0.00	51
833	0.33	0.22	0.26	41
834	0.12	0.02	0.04	48
835	0.96	0.50	0.66	44
836	0.00	0.00	0.00	37
837	0.60	0.20	0.30	30
838	0.88	0.17	0.29	41
839	0.29	0.04	0.07	47
840	0.96	0.50	0.66	44
841	0.88	0.13	0.23	53
842	0.35	0.16	0.22	49
843	0.00	0.00	0.00	44
844	0.00	0.00	0.00	39
845	0.64	0.15	0.24	47
846	1.00	0.19	0.32	42
847	0.69	0.33	0.45	33
848	0.93	0.70	0.80	40
849	0.88	0.37	0.52	41
850	0.50	0.10	0.17	39
851	0.00	0.00	0.00	40
852	0.50	0.02	0.04	53
853	0.50	0.28	0.36	43
854	0.00	0.00	0.00	43
855	0.00	0.00	0.00	41

856	0.19	0.06	0.09	51
857	0.67	0.04	0.08	47
858	0.00	0.00	0.00	46
859	0.20	0.03	0.05	37
860	0.00	0.00	0.00	48
861	0.60	0.06	0.10	54
862	0.33	0.08	0.12	39
863	0.93	0.57	0.71	49
864	0.65	0.25	0.36	44
865	0.40	0.04	0.07	54
866	0.58	0.11	0.19	63
867	0.38	0.14	0.20	43
868	0.94	0.39	0.55	41
869	0.27	0.07	0.11	44
870	0.19	0.08	0.12	36
871	1.00	0.40	0.57	43
872	0.92	0.49	0.64	45
873	0.00	0.00	0.00	54
874	0.00	0.00	0.00	54
875	0.12	0.03	0.04	40
876	0.15	0.06	0.09	34
877	0.22	0.06	0.09	34
878	0.75	0.07	0.13	42
879	0.00	0.00	0.00	36
880	0.62	0.42	0.50	38
881	0.00	0.00	0.00	38
882	0.00	0.00	0.00	48
883	0.56	0.14	0.22	37
884	0.50	0.04	0.08	49
885	0.73	0.21	0.33	52
886	0.33	0.02	0.04	46
887	0.94	0.62	0.74	47
888	0.50	0.13	0.21	45
889	0.18	0.06	0.09	36
890	0.89	0.60	0.72	40
891	0.88	0.51	0.65	41
892	0.78	0.15	0.25	46
893	0.25	0.03	0.05	39
894	0.00	0.00	0.00	30

895	0.77	0.19	0.30	53
896	0.64	0.16	0.25	45
897	0.60	0.17	0.26	53
898	0.45	0.24	0.32	41
899	0.42	0.22	0.29	36
900	0.14	0.03	0.04	38
901	0.00	0.00	0.00	45
902	0.64	0.16	0.25	45
903	0.00	0.00	0.00	43
904	0.67	0.05	0.09	43
905	0.33	0.03	0.05	40
906	0.10	0.03	0.05	33
907	1.00	0.45	0.62	42
908	0.55	0.15	0.24	40
909	0.29	0.04	0.07	50
910	0.33	0.02	0.04	51
911	0.33	0.02	0.05	41
912	0.25	0.04	0.07	52
913	0.33	0.03	0.05	36
914	0.57	0.14	0.23	57
915	0.30	0.07	0.11	44
916	0.57	0.09	0.16	43
917	0.64	0.20	0.30	46
918	0.69	0.23	0.35	39
919	0.65	0.29	0.40	45
920	0.46	0.18	0.26	33
921	0.00	0.00	0.00	43
922	0.95	0.69	0.80	51
923	0.00	0.00	0.00	47
924	0.96	0.55	0.70	49
925	0.47	0.21	0.29	38
926	0.50	0.12	0.19	42
927	0.00	0.00	0.00	38
928	0.25	0.02	0.04	44
929	0.60	0.08	0.14	39
930	0.29	0.05	0.09	40
931	0.00	0.00	0.00	39
932	0.00	0.00	0.00	42
933	1.00	0.23	0.38	39

934	1.00	0.45	0.62	42
935	0.90	0.47	0.62	38
936	0.00	0.00	0.00	50
937	0.96	0.55	0.70	47
938	0.17	0.05	0.08	41
939	0.88	0.35	0.50	40
940	0.88	0.21	0.33	34
941	0.00	0.00	0.00	33
942	0.50	0.06	0.11	34
943	0.00	0.00	0.00	39
944	1.00	0.28	0.44	46
945	0.00	0.00	0.00	40
946	1.00	0.28	0.44	43
947	0.50	0.13	0.21	31
948	0.25	0.02	0.04	45
949	0.00	0.00	0.00	39
950	0.25	0.03	0.05	36
951	0.44	0.30	0.36	27
952	0.50	0.15	0.24	39
953	0.50	0.16	0.24	45
954	0.76	0.28	0.41	46
955	0.25	0.03	0.05	37
956	0.69	0.29	0.41	31
957	0.83	0.32	0.47	31
958	0.80	0.35	0.48	46
959	0.00	0.00	0.00	50
960	0.00	0.00	0.00	37
961	0.00	0.00	0.00	41
962	0.50	0.11	0.18	36
963	0.94	0.55	0.69	31
964	0.50	0.12	0.20	40
965	1.00	0.07	0.12	46
966	0.80	0.21	0.33	38
967	0.14	0.02	0.04	42
968	0.38	0.16	0.23	31
969	0.33	0.18	0.24	38
970	0.91	0.48	0.62	42
971	0.56	0.11	0.19	44
972	0.30	0.22	0.25	36

973	1.00	0.41	0.58	51
974	0.14	0.03	0.05	36
975	0.94	0.44	0.60	36
976	0.42	0.12	0.19	41
977	0.00	0.00	0.00	43
978	0.58	0.20	0.30	35
979	0.00	0.00	0.00	37
980	0.90	0.41	0.56	44
981	0.50	0.04	0.08	49
982	0.95	0.54	0.69	39
983	0.00	0.00	0.00	37
984	0.33	0.07	0.12	41
985	0.00	0.00	0.00	39
986	0.64	0.21	0.31	34
987	0.00	0.00	0.00	41
988	0.50	0.02	0.04	51
989	0.84	0.40	0.54	40
990	0.67	0.06	0.11	32
991	0.50	0.03	0.06	32
992	0.50	0.04	0.08	45
993	0.86	0.46	0.60	41
994	0.00	0.00	0.00	48
995	0.00	0.00	0.00	41
996	0.40	0.05	0.09	40
997	0.86	0.30	0.44	40
998	0.00	0.00	0.00	48
999	0.25	0.09	0.13	35
1000	0.81	0.29	0.43	45
1001	0.83	0.51	0.63	37
1002	0.00	0.00	0.00	46
1003	0.50	0.08	0.13	39
1004	0.20	0.02	0.04	51
1005	0.20	0.03	0.05	36
1006	0.78	0.23	0.35	31
1007	0.53	0.26	0.35	34
1008	0.00	0.00	0.00	38
1009	0.50	0.15	0.23	40
1010	0.00	0.00	0.00	37
1011	0.96	0.68	0.79	37

1012	0.14	0.02	0.04	41
1013	0.60	0.18	0.28	33
1014	0.00	0.00	0.00	39
1015	0.86	0.18	0.29	34
1016	0.55	0.15	0.24	40
1017	0.91	0.46	0.61	46
1018	0.67	0.04	0.08	46
1019	0.93	0.33	0.48	40
1020	0.00	0.00	0.00	40
1021	0.78	0.18	0.30	38
1022	0.50	0.08	0.14	37
1023	0.52	0.24	0.33	46
1024	0.56	0.11	0.19	45
1025	0.79	0.31	0.45	35
1026	0.00	0.00	0.00	35
1027	0.50	0.03	0.05	38
1028	0.30	0.10	0.15	29
1029	0.00	0.00	0.00	29
1030	0.00	0.00	0.00	33
1031	0.53	0.26	0.35	31
1032	0.00	0.00	0.00	30
1033	0.81	0.50	0.62	42
1034	0.87	0.57	0.69	35
1035	0.91	0.25	0.39	40
1036	0.00	0.00	0.00	30
1037	0.86	0.35	0.50	34
1038	0.60	0.11	0.18	28
1039	0.33	0.02	0.04	43
1040	0.00	0.00	0.00	29
1041	0.00	0.00	0.00	35
1042	0.42	0.12	0.19	41
1043	0.61	0.28	0.38	40
1044	0.86	0.43	0.57	28
1045	0.50	0.12	0.19	42
1046	0.86	0.43	0.58	44
1047	0.00	0.00	0.00	32
1048	0.00	0.00	0.00	36
1049	1.00	0.28	0.44	25
1050	0.00	0.00	0.00	33

1051	0.25	0.08	0.12	37
1052	0.00	0.00	0.00	35
1053	0.60	0.19	0.29	32
1054	0.00	0.00	0.00	30
1055	0.00	0.00	0.00	22
1056	0.26	0.20	0.23	25
1057	0.00	0.00	0.00	33
1058	0.33	0.04	0.07	27
1059	0.75	0.27	0.40	33
1060	0.56	0.14	0.22	37
1061	0.71	0.29	0.41	42
1062	1.00	0.03	0.06	33
1063	0.00	0.00	0.00	33
1064	0.77	0.34	0.48	29
1065	0.00	0.00	0.00	26
1066	1.00	0.02	0.05	41
1067	0.50	0.07	0.12	44
1068	0.00	0.00	0.00	25
1069	0.60	0.08	0.15	36
1070	0.00	0.00	0.00	31
1071	0.50	0.06	0.10	35
1072	0.60	0.08	0.14	38
1073	0.50	0.12	0.20	40
1074	0.00	0.00	0.00	37
1075	0.00	0.00	0.00	42
1076	0.67	0.06	0.11	32
1077	0.00	0.00	0.00	29
1078	0.29	0.06	0.10	32
1079	0.56	0.14	0.22	37
1080	0.25	0.03	0.06	31
1081	0.70	0.22	0.33	32
1082	0.94	0.49	0.64	35
1083	0.20	0.03	0.05	37
1084	0.54	0.24	0.33	29
1085	0.00	0.00	0.00	36
1086	0.00	0.00	0.00	27
1087	0.00	0.00	0.00	32
1088	0.67	0.16	0.26	25
1089	0.00	0.00	0.00	44

1090	0.00	0.00	0.00	38
1091	0.00	0.00	0.00	37
1092	1.00	0.39	0.56	31
1093	0.80	0.14	0.24	29
1094	0.00	0.00	0.00	42
1095	0.00	0.00	0.00	37
1096	0.00	0.00	0.00	35
1097	0.00	0.00	0.00	37
1098	0.60	0.08	0.14	37
1099	0.73	0.34	0.47	32
1100	0.40	0.12	0.18	34
1101	0.00	0.00	0.00	41
1102	0.36	0.13	0.19	31
1103	0.29	0.16	0.20	32
1104	0.79	0.33	0.47	33
1105	0.00	0.00	0.00	34
1106	0.00	0.00	0.00	33
1107	1.00	0.12	0.22	32
1108	0.79	0.32	0.46	34
1109	1.00	0.06	0.12	31
1110	0.00	0.00	0.00	34
1111	1.00	0.03	0.06	30
1112	0.55	0.16	0.25	37
1113	0.00	0.00	0.00	25
1114	0.00	0.00	0.00	31
1115	0.00	0.00	0.00	31
1116	0.71	0.29	0.41	42
1117	0.25	0.05	0.08	22
1118	0.75	0.08	0.15	37
1119	0.78	0.19	0.31	36
1120	0.00	0.00	0.00	40
1121	0.00	0.00	0.00	41
1122	0.00	0.00	0.00	30
1123	0.25	0.03	0.05	40
1124	0.33	0.06	0.10	34
1125	0.00	0.00	0.00	44
1126	0.25	0.04	0.06	27
1127	1.00	0.23	0.37	40
1128	0.62	0.31	0.41	26

1129	0.00	0.00	0.00	39
1130	0.20	0.03	0.05	36
1131	0.83	0.16	0.27	31
1132	0.00	0.00	0.00	33
1133	0.50	0.11	0.18	28
1134	0.74	0.45	0.56	38
1135	0.80	0.28	0.41	29
1136	0.00	0.00	0.00	24
1137	0.00	0.00	0.00	25
1138	0.60	0.08	0.15	36
1139	1.00	0.06	0.11	34
1140	0.79	0.29	0.42	38
1141	0.50	0.06	0.10	36
1142	0.00	0.00	0.00	35
1143	0.00	0.00	0.00	27
1144	0.00	0.00	0.00	27
1145	0.87	0.46	0.60	28
1146	0.50	0.03	0.06	34
1147	0.43	0.10	0.16	31
1148	0.00	0.00	0.00	38
1149	0.83	0.29	0.43	35
1150	0.44	0.25	0.32	32
1151	0.00	0.00	0.00	23
1152	0.00	0.00	0.00	27
1153	0.36	0.14	0.21	28
1154	0.00	0.00	0.00	40
1155	0.00	0.00	0.00	30
1156	0.00	0.00	0.00	31
1157	0.83	0.17	0.29	29
1158	0.00	0.00	0.00	38
1159	0.00	0.00	0.00	23
1160	0.25	0.03	0.06	31
1161	0.50	0.06	0.11	33
1162	0.46	0.22	0.30	27
1163	1.00	0.23	0.38	30
1164	0.86	0.21	0.33	29
1165	0.33	0.03	0.05	36
1166	0.89	0.21	0.34	38
1167	0.50	0.10	0.17	29

1168	0.94	0.41	0.57	39
1169	0.54	0.20	0.29	35
1170	0.00	0.00	0.00	31
1171	0.33	0.03	0.05	37
1172	0.00	0.00	0.00	35
1173	0.25	0.06	0.10	33
1174	0.50	0.05	0.09	40
1175	0.33	0.06	0.11	31
1176	0.00	0.00	0.00	36
1177	0.78	0.21	0.33	33
1178	0.00	0.00	0.00	28
1179	0.75	0.12	0.20	26
1180	0.00	0.00	0.00	29
1181	0.83	0.17	0.28	30
1182	0.60	0.07	0.13	41
1183	0.80	0.32	0.45	38
1184	0.64	0.21	0.32	33
1185	0.92	0.43	0.59	28
1186	0.00	0.00	0.00	35
1187	0.45	0.17	0.25	29
1188	0.67	0.34	0.45	29
1189	0.25	0.03	0.05	36
1190	0.00	0.00	0.00	27
1191	1.00	0.07	0.12	30
1192	0.00	0.00	0.00	29
1193	0.00	0.00	0.00	32
1194	0.00	0.00	0.00	25
1195	0.33	0.03	0.06	33
1196	0.67	0.07	0.13	28
1197	0.78	0.23	0.35	31
1198	0.00	0.00	0.00	32
1199	0.86	0.36	0.51	33
1200	0.50	0.03	0.06	32
1201	0.00	0.00	0.00	29
1202	0.65	0.49	0.56	35
1203	0.22	0.07	0.11	28
1204	0.08	0.06	0.07	17
1205	0.25	0.05	0.08	21
1206	0.00	0.00	0.00	41

1207	0.62	0.16	0.26	31
1208	0.86	0.38	0.52	32
1209	0.50	0.26	0.34	23
1210	0.00	0.00	0.00	29
1211	0.43	0.09	0.14	35
1212	0.00	0.00	0.00	38
1213	0.70	0.62	0.65	26
1214	0.73	0.31	0.43	26
1215	0.00	0.00	0.00	44
1216	0.25	0.03	0.05	35
1217	0.00	0.00	0.00	43
1218	0.00	0.00	0.00	27
1219	1.00	0.48	0.65	29
1220	0.67	0.24	0.35	25
1221	0.93	0.35	0.51	37
1222	0.00	0.00	0.00	35
1223	0.00	0.00	0.00	27
1224	0.95	0.58	0.72	31
1225	0.00	0.00	0.00	36
1226	0.00	0.00	0.00	30
1227	0.80	0.15	0.25	27
1228	0.64	0.23	0.33	31
1229	1.00	0.06	0.12	31
1230	0.43	0.10	0.16	31
1231	0.00	0.00	0.00	32
1232	0.38	0.09	0.15	33
1233	0.50	0.12	0.20	32
1234	0.93	0.52	0.67	27
1235	0.60	0.12	0.19	26
1236	0.25	0.04	0.06	28
1237	0.20	0.03	0.05	35
1238	0.40	0.07	0.12	29
1239	0.00	0.00	0.00	29
1240	0.00	0.00	0.00	29
1241	0.60	0.21	0.31	29
1242	0.00	0.00	0.00	39
1243	0.50	0.03	0.06	34
1244	0.00	0.00	0.00	28
1245	1.00	0.44	0.61	25

1246	0.92	0.37	0.52	30
1247	1.00	0.46	0.63	26
1248	0.60	0.13	0.21	23
1249	0.44	0.10	0.16	40
1250	1.00	0.52	0.68	29
1251	0.43	0.08	0.14	36
1252	0.68	0.45	0.54	29
1253	1.00	0.10	0.18	31
1254	0.70	0.28	0.40	25
1255	0.57	0.13	0.22	30
1256	0.75	0.09	0.15	35
1257	0.00	0.00	0.00	36
1258	0.00	0.00	0.00	23
1259	0.00	0.00	0.00	22
1260	0.70	0.24	0.36	29
1261	0.18	0.06	0.09	33
1262	0.00	0.00	0.00	29
1263	0.56	0.33	0.42	30
1264	0.00	0.00	0.00	34
1265	0.83	0.26	0.40	38
1266	0.92	0.46	0.62	26
1267	0.00	0.00	0.00	29
1268	0.80	0.35	0.49	34
1269	0.85	0.31	0.46	35
1270	0.92	0.39	0.55	28
1271	0.47	0.23	0.30	31
1272	0.67	0.07	0.12	29
1273	0.67	0.07	0.12	29
1274	0.60	0.11	0.19	27
1275	0.90	0.39	0.55	23
1276	0.00	0.00	0.00	33
1277	1.00	0.42	0.59	31
1278	0.42	0.15	0.22	34
1279	0.93	0.36	0.52	36
1280	0.67	0.06	0.11	33
1281	1.00	0.52	0.68	31
1282	0.00	0.00	0.00	23
1283	0.45	0.18	0.26	28
1284	0.00	0.00	0.00	28

1285	0.93	0.43	0.59	30
1286	0.39	0.30	0.34	23
1287	0.00	0.00	0.00	33
1288	0.20	0.04	0.06	27
1289	0.50	0.11	0.19	35
1290	0.00	0.00	0.00	21
1291	0.86	0.36	0.51	33
1292	0.00	0.00	0.00	30
1293	0.33	0.05	0.08	22
1294	0.00	0.00	0.00	31
1295	0.00	0.00	0.00	29
1296	0.60	0.18	0.27	34
1297	0.14	0.03	0.05	31
1298	0.50	0.18	0.26	34
1299	0.67	0.07	0.12	30
1300	1.00	0.32	0.48	22
1301	0.67	0.07	0.13	27
1302	0.55	0.17	0.26	35
1303	0.67	0.07	0.13	28
1304	0.43	0.07	0.13	40
1305	0.00	0.00	0.00	30
1306	0.00	0.00	0.00	23
1307	0.67	0.05	0.09	40
1308	0.91	0.54	0.68	37
1309	0.20	0.05	0.08	20
1310	0.40	0.06	0.11	31
1311	0.00	0.00	0.00	26
1312	0.00	0.00	0.00	32
1313	0.00	0.00	0.00	28
1314	0.00	0.00	0.00	26
1315	0.50	0.12	0.20	32
1316	0.00	0.00	0.00	34
1317	0.50	0.04	0.07	26
1318	0.75	0.10	0.18	30
1319	0.71	0.14	0.23	36
1320	0.00	0.00	0.00	25
1321	0.67	0.24	0.35	25
1322	0.25	0.03	0.05	34
1323	0.00	0.00	0.00	19

1324	0.62	0.18	0.28	28
1325	0.00	0.00	0.00	30
1326	0.00	0.00	0.00	26
1327	0.92	0.30	0.45	37
1328	1.00	0.43	0.60	28
1329	0.25	0.04	0.07	23
1330	0.00	0.00	0.00	25
1331	1.00	0.29	0.45	31
1332	0.33	0.08	0.12	26
1333	0.67	0.13	0.22	31
1334	0.62	0.48	0.54	21
1335	0.92	0.36	0.52	33
1336	0.50	0.15	0.23	20
1337	1.00	0.07	0.12	30
1338	0.00	0.00	0.00	25
1339	0.00	0.00	0.00	32
1340	1.00	0.13	0.23	31
1341	0.00	0.00	0.00	34
1342	1.00	0.30	0.47	33
1343	0.00	0.00	0.00	30
1344	0.00	0.00	0.00	39
1345	1.00	0.31	0.47	26
1346	0.86	0.25	0.39	24
1347	0.50	0.05	0.09	21
1348	0.20	0.03	0.05	33
1349	1.00	0.28	0.44	25
1350	0.12	0.04	0.06	28
1351	0.67	0.08	0.14	26
1352	0.00	0.00	0.00	31
1353	0.50	0.04	0.08	24
1354	0.33	0.10	0.15	20
1355	0.33	0.03	0.06	29
1356	0.00	0.00	0.00	33
1357	1.00	0.03	0.06	31
1358	0.00	0.00	0.00	32
1359	1.00	0.12	0.21	34
1360	0.93	0.62	0.74	21
1361	0.17	0.04	0.06	26
1362	1.00	0.28	0.44	25

1363	0.45	0.17	0.24	30
1364	0.46	0.23	0.31	26
1365	0.00	0.00	0.00	31
1366	0.00	0.00	0.00	36
1367	0.00	0.00	0.00	37
1368	0.33	0.03	0.06	29
1369	0.00	0.00	0.00	28
1370	1.00	0.20	0.33	20
1371	0.00	0.00	0.00	28
1372	0.00	0.00	0.00	26
1373	0.33	0.03	0.06	30
1374	0.00	0.00	0.00	37
1375	0.00	0.00	0.00	28
1376	0.71	0.20	0.31	25
1377	0.93	0.42	0.58	33
1378	1.00	0.04	0.08	25
1379	0.40	0.08	0.13	25
1380	0.00	0.00	0.00	24
1381	0.73	0.23	0.35	35
1382	1.00	0.08	0.15	24
1383	0.72	0.45	0.55	29
1384	0.60	0.14	0.23	21
1385	0.25	0.04	0.06	28
1386	0.00	0.00	0.00	39
1387	0.00	0.00	0.00	28
1388	0.88	0.37	0.52	19
1389	0.20	0.04	0.06	27
1390	0.00	0.00	0.00	24
1391	0.87	0.50	0.63	26
1392	0.79	0.41	0.54	27
1393	0.33	0.15	0.21	20
1394	0.00	0.00	0.00	24
1395	1.00	0.07	0.14	27
1396	0.00	0.00	0.00	24
1397	0.33	0.08	0.12	26
1398	0.00	0.00	0.00	17
1399	0.83	0.19	0.30	27
1400	0.00	0.00	0.00	24
1401	0.60	0.11	0.18	28

1402	0.00	0.00	0.00	26
1403	0.00	0.00	0.00	32
1404	0.92	0.44	0.59	25
1405	1.00	0.33	0.50	24
1406	1.00	0.10	0.17	21
1407	0.00	0.00	0.00	25
1408	0.83	0.22	0.34	23
1409	0.00	0.00	0.00	26
1410	0.67	0.07	0.13	28
1411	0.29	0.11	0.15	19
1412	0.85	0.68	0.76	25
1413	0.87	0.31	0.46	42
1414	0.00	0.00	0.00	32
1415	0.67	0.12	0.20	17
1416	0.75	0.09	0.16	33
1417	0.00	0.00	0.00	23
1418	0.00	0.00	0.00	19
1419	0.57	0.15	0.24	26
1420	0.55	0.26	0.35	23
1421	0.00	0.00	0.00	33
1422	0.00	0.00	0.00	31
1423	0.67	0.09	0.16	22
1424	0.00	0.00	0.00	23
1425	0.00	0.00	0.00	22
1426	0.00	0.00	0.00	20
1427	0.71	0.18	0.29	28
1428	0.40	0.18	0.25	22
1429	0.86	0.58	0.69	31
1430	0.00	0.00	0.00	24
1431	1.00	0.03	0.06	31
1432	0.00	0.00	0.00	26
1433	0.67	0.20	0.31	20
1434	0.80	0.39	0.52	31
1435	0.00	0.00	0.00	23
1436	0.80	0.17	0.28	24
1437	0.75	0.18	0.29	17
1438	0.80	0.15	0.26	26
1439	0.00	0.00	0.00	26
1440	0.83	0.14	0.24	36

1441	0.50	0.05	0.08	22
1442	0.00	0.00	0.00	28
1443	1.00	0.62	0.76	21
1444	0.40	0.10	0.15	21
1445	0.00	0.00	0.00	19
1446	0.70	0.32	0.44	22
1447	0.00	0.00	0.00	32
1448	0.00	0.00	0.00	23
1449	0.71	0.31	0.43	16
1450	0.00	0.00	0.00	27
1451	0.00	0.00	0.00	24
1452	1.00	0.03	0.06	33
1453	1.00	0.10	0.19	29
1454	0.00	0.00	0.00	22
1455	1.00	0.11	0.20	36
1456	0.92	0.35	0.51	34
1457	1.00	0.21	0.34	29
1458	1.00	0.06	0.11	34
1459	0.50	0.07	0.13	27
1460	0.00	0.00	0.00	31
1461	0.85	0.35	0.50	31
1462	0.67	0.08	0.14	26
1463	0.56	0.20	0.29	25
1464	0.75	0.10	0.17	31
1465	0.00	0.00	0.00	21
1466	0.00	0.00	0.00	22
1467	0.83	0.21	0.33	24
1468	0.00	0.00	0.00	26
1469	0.00	0.00	0.00	26
1470	0.50	0.03	0.06	31
1471	0.50	0.03	0.06	31
1472	0.00	0.00	0.00	22
1473	0.00	0.00	0.00	21
1474	0.00	0.00	0.00	24
1475	1.00	0.14	0.24	22
1476	0.20	0.03	0.06	29
1477	0.88	0.24	0.38	29
1478	0.33	0.08	0.13	25
1479	0.00	0.00	0.00	27

1480	0.78	0.25	0.38	28
1481	0.11	0.05	0.07	20
1482	0.83	0.16	0.27	31
1483	0.43	0.12	0.18	26
1484	1.00	0.30	0.46	20
1485	0.56	0.17	0.26	30
1486	1.00	0.03	0.06	31
1487	1.00	0.03	0.06	30
1488	1.00	0.62	0.77	29
1489	0.77	0.50	0.61	20
1490	0.36	0.19	0.25	21
1491	1.00	0.16	0.27	32
1492	0.86	0.55	0.67	22
1493	0.00	0.00	0.00	26
1494	0.00	0.00	0.00	27
1495	0.50	0.11	0.18	27
1496	0.00	0.00	0.00	29
1497	0.00	0.00	0.00	29
1498	1.00	0.03	0.07	29
1499	0.00	0.00	0.00	25
1500	0.86	0.33	0.48	18
1501	1.00	0.12	0.21	17
1502	0.00	0.00	0.00	22
1503	0.00	0.00	0.00	24
1504	1.00	0.48	0.65	27
1505	0.00	0.00	0.00	19
1506	0.50	0.07	0.13	27
1507	0.00	0.00	0.00	25
1508	1.00	0.18	0.31	22
1509	0.00	0.00	0.00	28
1510	0.00	0.00	0.00	32
1511	0.00	0.00	0.00	21
1512	0.00	0.00	0.00	24
1513	0.56	0.29	0.38	17
1514	0.00	0.00	0.00	24
1515	0.00	0.00	0.00	22
1516	0.00	0.00	0.00	25
1517	1.00	0.52	0.69	21
1518	0.82	0.30	0.44	30

1519	1.00	0.52	0.69	23
1520	0.00	0.00	0.00	19
1521	0.75	0.12	0.21	24
1522	0.33	0.04	0.07	24
1523	1.00	0.11	0.19	28
1524	1.00	0.07	0.13	29
1525	0.50	0.25	0.33	20
1526	0.00	0.00	0.00	21
1527	0.77	0.48	0.59	21
1528	0.70	0.29	0.41	24
1529	0.91	0.56	0.69	18
1530	0.00	0.00	0.00	26
1531	0.56	0.22	0.31	23
1532	0.00	0.00	0.00	22
1533	0.71	0.15	0.25	33
1534	0.00	0.00	0.00	31
1535	0.50	0.12	0.20	16
1536	0.50	0.05	0.09	20
1537	0.50	0.03	0.06	32
1538	1.00	0.07	0.14	27
1539	0.40	0.08	0.14	24
1540	0.25	0.09	0.13	23
1541	1.00	0.35	0.52	20
1542	1.00	0.07	0.13	29
1543	0.88	0.29	0.44	24
1544	1.00	0.15	0.26	27
1545	0.00	0.00	0.00	21
1546	0.00	0.00	0.00	24
1547	0.57	0.17	0.26	24
1548	0.35	0.25	0.29	24
1549	1.00	0.05	0.09	21
1550	0.50	0.04	0.08	23
1551	0.00	0.00	0.00	22
1552	0.00	0.00	0.00	20
1553	0.17	0.05	0.08	19
1554	0.50	0.04	0.07	26
1555	0.00	0.00	0.00	34
1556	0.83	0.20	0.32	25
1557	1.00	0.15	0.26	20

1558	0.57	0.20	0.30	20
1559	0.00	0.00	0.00	25
1560	0.67	0.18	0.29	22
1561	0.00	0.00	0.00	19
1562	0.00	0.00	0.00	25
1563	0.00	0.00	0.00	22
1564	0.00	0.00	0.00	23
1565	0.00	0.00	0.00	23
1566	0.60	0.09	0.16	33
1567	0.00	0.00	0.00	9
1568	0.80	0.26	0.39	31
1569	0.00	0.00	0.00	19
1570	1.00	0.52	0.69	23
1571	1.00	0.03	0.07	29
1572	0.80	0.21	0.33	19
1573	0.00	0.00	0.00	17
1574	0.00	0.00	0.00	17
1575	0.17	0.05	0.08	19
1576	1.00	0.13	0.23	23
1577	0.00	0.00	0.00	25
1578	0.00	0.00	0.00	24
1579	0.00	0.00	0.00	31
1580	0.17	0.10	0.12	21
1581	0.89	0.44	0.59	18
1582	1.00	0.29	0.45	24
1583	1.00	0.32	0.48	19
1584	0.00	0.00	0.00	24
1585	1.00	0.09	0.16	23
1586	0.00	0.00	0.00	19
1587	0.36	0.14	0.20	29
1588	0.84	0.64	0.73	25
1589	0.00	0.00	0.00	18
1590	1.00	0.19	0.32	21
1591	1.00	0.52	0.68	29
1592	0.86	0.30	0.44	20
1593	0.00	0.00	0.00	27
1594	0.73	0.46	0.56	24
1595	1.00	0.05	0.10	20
1596	0.50	0.25	0.33	16

1597	0.00	0.00	0.00	20
1598	0.50	0.07	0.13	27
1599	0.00	0.00	0.00	22
1600	0.67	0.11	0.19	18
1601	0.00	0.00	0.00	18
1602	0.84	0.46	0.59	35
1603	0.50	0.08	0.14	24
1604	0.50	0.07	0.13	27
1605	0.00	0.00	0.00	25
1606	0.00	0.00	0.00	19
1607	0.67	0.07	0.12	29
1608	0.00	0.00	0.00	28
1609	0.25	0.04	0.07	26
1610	0.50	0.05	0.09	20
1611	0.60	0.12	0.19	26
1612	0.00	0.00	0.00	22
1613	0.00	0.00	0.00	20
1614	0.67	0.11	0.18	19
1615	1.00	0.11	0.20	27
1616	0.00	0.00	0.00	22
1617	0.00	0.00	0.00	23
1618	1.00	0.04	0.08	23
1619	0.00	0.00	0.00	22
1620	0.00	0.00	0.00	25
1621	0.67	0.08	0.15	24
1622	0.75	0.17	0.27	18
1623	0.00	0.00	0.00	24
1624	0.00	0.00	0.00	30
1625	0.80	0.16	0.27	25
1626	0.20	0.05	0.08	19
1627	0.50	0.16	0.24	25
1628	0.00	0.00	0.00	24
1629	0.43	0.32	0.36	19
1630	0.00	0.00	0.00	22
1631	0.33	0.22	0.27	18
1632	0.88	0.47	0.61	15
1633	0.88	0.52	0.65	27
1634	0.89	0.28	0.42	29
1635	0.67	0.17	0.27	24

1636	0.50	0.06	0.10	18
1637	0.00	0.00	0.00	28
1638	0.00	0.00	0.00	21
1639	0.73	0.40	0.52	20
1640	0.00	0.00	0.00	24
1641	0.00	0.00	0.00	20
1642	0.00	0.00	0.00	24
1643	0.70	0.32	0.44	22
1644	0.00	0.00	0.00	25
1645	1.00	0.17	0.29	18
1646	0.00	0.00	0.00	26
1647	0.00	0.00	0.00	26
1648	1.00	0.46	0.63	24
1649	0.00	0.00	0.00	21
1650	0.60	0.20	0.30	15
1651	0.80	0.15	0.26	26
1652	0.00	0.00	0.00	28
1653	0.00	0.00	0.00	27
1654	0.00	0.00	0.00	20
1655	0.43	0.19	0.26	16
1656	0.00	0.00	0.00	31
1657	1.00	0.05	0.10	20
1658	0.00	0.00	0.00	27
1659	0.00	0.00	0.00	26
1660	0.00	0.00	0.00	19
1661	0.00	0.00	0.00	20
1662	0.00	0.00	0.00	26
1663	0.00	0.00	0.00	14
1664	0.93	0.68	0.79	19
1665	0.00	0.00	0.00	27
1666	1.00	0.26	0.41	23
1667	1.00	0.42	0.59	19
1668	0.00	0.00	0.00	23
1669	0.50	0.08	0.13	26
1670	0.00	0.00	0.00	27
1671	0.50	0.04	0.08	24
1672	0.33	0.11	0.17	18
1673	0.00	0.00	0.00	21
1674	0.00	0.00	0.00	24

1675	0.00	0.00	0.00	21
1676	0.00	0.00	0.00	12
1677	0.00	0.00	0.00	22
1678	0.25	0.05	0.09	19
1679	0.00	0.00	0.00	21
1680	0.00	0.00	0.00	23
1681	0.00	0.00	0.00	24
1682	0.00	0.00	0.00	27
1683	1.00	0.14	0.25	21
1684	1.00	0.08	0.14	13
1685	0.00	0.00	0.00	21
1686	0.00	0.00	0.00	16
1687	0.00	0.00	0.00	21
1688	0.67	0.11	0.19	18
1689	0.00	0.00	0.00	26
1690	1.00	0.11	0.20	18
1691	0.33	0.05	0.08	21
1692	0.00	0.00	0.00	19
1693	0.00	0.00	0.00	20
1694	0.00	0.00	0.00	28
1695	0.00	0.00	0.00	26
1696	0.00	0.00	0.00	29
1697	0.00	0.00	0.00	16
1698	1.00	0.09	0.17	22
1699	1.00	0.05	0.09	21
1700	0.00	0.00	0.00	17
1701	0.00	0.00	0.00	19
1702	0.86	0.19	0.31	32
1703	0.00	0.00	0.00	20
1704	0.00	0.00	0.00	16
1705	0.00	0.00	0.00	20
1706	0.00	0.00	0.00	23
1707	1.00	0.29	0.44	21
1708	0.50	0.04	0.07	28
1709	0.00	0.00	0.00	20
1710	0.50	0.09	0.15	22
1711	0.00	0.00	0.00	20
1712	1.00	0.17	0.29	30
1713	0.00	0.00	0.00	23

1714	0.00	0.00	0.00	21
1715	0.00	0.00	0.00	28
1716	0.00	0.00	0.00	20
1717	0.00	0.00	0.00	23
1718	0.67	0.20	0.31	20
1719	0.33	0.04	0.08	23
1720	0.00	0.00	0.00	30
1721	1.00	0.30	0.46	20
1722	0.90	0.45	0.60	20
1723	1.00	0.27	0.43	22
1724	0.00	0.00	0.00	15
1725	0.91	0.40	0.56	25
1726	0.00	0.00	0.00	19
1727	1.00	0.23	0.37	22
1728	0.00	0.00	0.00	19
1729	0.00	0.00	0.00	23
1730	0.00	0.00	0.00	20
1731	0.00	0.00	0.00	23
1732	0.50	0.29	0.36	14
1733	0.67	0.12	0.20	17
1734	1.00	0.13	0.23	23
1735	0.91	0.42	0.57	24
1736	0.00	0.00	0.00	17
1737	0.00	0.00	0.00	27
1738	1.00	0.16	0.28	25
1739	0.00	0.00	0.00	17
1740	0.00	0.00	0.00	21
1741	1.00	0.32	0.48	19
1742	0.00	0.00	0.00	19
1743	0.25	0.13	0.17	15
1744	1.00	0.19	0.32	21
1745	0.00	0.00	0.00	24
1746	0.00	0.00	0.00	18
1747	0.00	0.00	0.00	24
1748	0.89	0.28	0.42	29
1749	0.67	0.19	0.30	21
1750	0.00	0.00	0.00	18
1751	0.00	0.00	0.00	24
1752	0.00	0.00	0.00	20

1753	0.00	0.00	0.00	14
1754	0.00	0.00	0.00	18
1755	0.00	0.00	0.00	20
1756	0.00	0.00	0.00	13
1757	1.00	0.21	0.34	24
1758	1.00	0.35	0.52	20
1759	0.60	0.15	0.24	20
1760	0.00	0.00	0.00	17
1761	0.00	0.00	0.00	22
1762	0.33	0.12	0.18	16
1763	0.00	0.00	0.00	13
1764	1.00	0.06	0.11	18
1765	0.00	0.00	0.00	17
1766	0.50	0.09	0.15	23
1767	1.00	0.14	0.24	22
1768	0.00	0.00	0.00	24
1769	1.00	0.05	0.10	20
1770	0.00	0.00	0.00	22
1771	0.83	0.18	0.29	28
1772	0.00	0.00	0.00	17
1773	0.20	0.05	0.08	19
1774	1.00	0.07	0.14	27
1775	0.20	0.06	0.09	18
1776	0.00	0.00	0.00	26
1777	0.00	0.00	0.00	23
1778	0.00	0.00	0.00	13
1779	0.50	0.24	0.32	17
1780	0.75	0.15	0.25	20
1781	0.00	0.00	0.00	17
1782	1.00	0.07	0.13	14
1783	0.00	0.00	0.00	23
1784	1.00	0.40	0.57	20
1785	0.00	0.00	0.00	18
1786	0.57	0.21	0.31	19
1787	0.00	0.00	0.00	18
1788	0.00	0.00	0.00	25
1789	0.00	0.00	0.00	21
1790	0.00	0.00	0.00	24
1791	0.00	0.00	0.00	24

1792	1.00	0.19	0.32	26
1793	0.89	0.35	0.50	23
1794	1.00	0.11	0.20	18
1795	0.00	0.00	0.00	18
1796	0.00	0.00	0.00	15
1797	0.67	0.11	0.19	18
1798	0.00	0.00	0.00	19
1799	0.00	0.00	0.00	21
1800	0.00	0.00	0.00	20
1801	0.00	0.00	0.00	17
1802	0.00	0.00	0.00	23
1803	0.25	0.05	0.08	21
1804	0.00	0.00	0.00	25
1805	0.86	0.38	0.52	16
1806	0.00	0.00	0.00	18
1807	0.00	0.00	0.00	26
1808	0.86	0.27	0.41	22
1809	0.00	0.00	0.00	21
1810	0.00	0.00	0.00	22
1811	0.50	0.04	0.08	23
1812	1.00	0.14	0.25	21
1813	0.50	0.06	0.11	16
1814	0.85	0.48	0.61	23
1815	0.00	0.00	0.00	19
1816	0.00	0.00	0.00	26
1817	0.00	0.00	0.00	15
1818	0.00	0.00	0.00	24
1819	0.80	0.40	0.53	20
1820	0.75	0.25	0.38	24
1821	1.00	0.22	0.36	18
1822	0.55	0.24	0.33	25
1823	0.88	0.28	0.42	25
1824	0.83	0.19	0.30	27
1825	0.62	0.24	0.34	21
1826	0.00	0.00	0.00	19
1827	0.00	0.00	0.00	18
1828	0.50	0.13	0.21	15
1829	0.00	0.00	0.00	17
1830	0.00	0.00	0.00	37

1831	0.00	0.00	0.00	21
1832	0.75	0.17	0.27	18
1833	0.00	0.00	0.00	24
1834	0.00	0.00	0.00	21
1835	0.00	0.00	0.00	13
1836	0.00	0.00	0.00	22
1837	0.00	0.00	0.00	16
1838	0.00	0.00	0.00	26
1839	0.00	0.00	0.00	18
1840	0.00	0.00	0.00	15
1841	0.80	0.18	0.30	22
1842	1.00	0.30	0.46	20
1843	0.57	0.20	0.30	20
1844	0.00	0.00	0.00	21
1845	0.88	0.29	0.44	24
1846	0.00	0.00	0.00	23
1847	1.00	0.04	0.08	23
1848	0.25	0.04	0.07	23
1849	0.00	0.00	0.00	24
1850	0.92	0.52	0.67	23
1851	0.00	0.00	0.00	12
1852	0.00	0.00	0.00	19
1853	0.75	0.13	0.22	23
1854	0.33	0.06	0.10	17
1855	0.00	0.00	0.00	22
1856	0.86	0.29	0.43	21
1857	0.67	0.14	0.24	14
1858	0.00	0.00	0.00	23
1859	0.00	0.00	0.00	17
1860	0.00	0.00	0.00	17
1861	0.00	0.00	0.00	30
1862	0.00	0.00	0.00	21
1863	0.67	0.18	0.29	22
1864	0.00	0.00	0.00	14
1865	0.50	0.24	0.32	21
1866	0.00	0.00	0.00	22
1867	1.00	0.40	0.57	15
1868	0.00	0.00	0.00	19
1869	0.00	0.00	0.00	21

1870	0.00	0.00	0.00	17
1871	0.50	0.20	0.29	15
1872	1.00	0.06	0.11	17
1873	0.00	0.00	0.00	22
1874	0.75	0.14	0.23	22
1875	0.00	0.00	0.00	25
1876	0.00	0.00	0.00	25
1877	0.90	0.39	0.55	23
1878	0.80	0.21	0.33	19
1879	0.00	0.00	0.00	12
1880	0.00	0.00	0.00	17
1881	0.00	0.00	0.00	15
1882	0.00	0.00	0.00	24
1883	0.89	0.38	0.53	21
1884	0.00	0.00	0.00	16
1885	1.00	0.12	0.22	24
1886	1.00	0.19	0.32	26
1887	1.00	0.46	0.63	24
1888	0.89	0.35	0.50	23
1889	0.00	0.00	0.00	22
1890	0.00	0.00	0.00	14
1891	0.62	0.22	0.32	23
1892	0.00	0.00	0.00	17
1893	1.00	0.10	0.18	20
1894	0.60	0.18	0.27	17
1895	0.50	0.12	0.19	17
1896	0.00	0.00	0.00	18
1897	0.00	0.00	0.00	15
1898	0.00	0.00	0.00	20
1899	0.00	0.00	0.00	22
1900	1.00	0.57	0.73	21
1901	0.33	0.08	0.12	13
1902	0.80	0.27	0.40	15
1903	0.00	0.00	0.00	21
1904	0.00	0.00	0.00	19
1905	0.88	0.35	0.50	20
1906	0.00	0.00	0.00	17
1907	0.90	0.56	0.69	16
1908	1.00	0.36	0.53	22

1909	0.00	0.00	0.00	19
1910	0.00	0.00	0.00	19
1911	0.75	0.43	0.55	14
1912	0.00	0.00	0.00	22
1913	0.00	0.00	0.00	23
1914	0.40	0.15	0.22	13
1915	0.00	0.00	0.00	19
1916	0.00	0.00	0.00	19
1917	0.00	0.00	0.00	21
1918	1.00	0.29	0.45	17
1919	0.25	0.12	0.17	16
1920	0.50	0.10	0.17	20
1921	0.00	0.00	0.00	20
1922	0.00	0.00	0.00	17
1923	0.00	0.00	0.00	12
1924	0.00	0.00	0.00	13
1925	0.33	0.05	0.09	19
1926	0.00	0.00	0.00	16
1927	0.86	0.40	0.55	15
1928	1.00	0.17	0.29	24
1929	0.00	0.00	0.00	16
1930	0.00	0.00	0.00	20
1931	1.00	0.04	0.08	23
1932	0.00	0.00	0.00	24
1933	0.00	0.00	0.00	19
1934	0.00	0.00	0.00	18
1935	0.00	0.00	0.00	24
1936	0.00	0.00	0.00	17
1937	0.00	0.00	0.00	13
1938	1.00	0.10	0.18	20
1939	0.00	0.00	0.00	16
1940	0.00	0.00	0.00	14
1941	0.00	0.00	0.00	20
1942	0.00	0.00	0.00	20
1943	0.00	0.00	0.00	16
1944	0.20	0.06	0.10	16
1945	0.00	0.00	0.00	24
1946	0.67	0.40	0.50	15
1947	0.50	0.08	0.13	13

1948	0.00	0.00	0.00	23
1949	0.00	0.00	0.00	23
1950	1.00	0.23	0.37	22
1951	0.00	0.00	0.00	15
1952	0.50	0.12	0.20	16
1953	0.00	0.00	0.00	15
1954	1.00	0.05	0.10	19
1955	0.86	0.35	0.50	17
1956	0.00	0.00	0.00	16
1957	0.00	0.00	0.00	19
1958	0.00	0.00	0.00	18
1959	0.00	0.00	0.00	21
1960	0.00	0.00	0.00	19
1961	0.38	0.15	0.21	20
1962	0.00	0.00	0.00	10
1963	0.00	0.00	0.00	25
1964	0.00	0.00	0.00	19
1965	0.86	0.25	0.39	24
1966	0.00	0.00	0.00	21
1967	0.00	0.00	0.00	18
1968	0.40	0.12	0.18	17
1969	1.00	0.26	0.42	19
1970	1.00	0.05	0.09	22
1971	0.56	0.25	0.34	20
1972	0.00	0.00	0.00	21
1973	0.00	0.00	0.00	18
1974	0.00	0.00	0.00	25
1975	1.00	0.07	0.12	15
1976	0.00	0.00	0.00	14
1977	0.33	0.07	0.11	15
1978	0.00	0.00	0.00	18
1979	0.00	0.00	0.00	24
1980	0.00	0.00	0.00	18
1981	0.00	0.00	0.00	21
1982	1.00	0.07	0.13	14
1983	1.00	0.30	0.46	20
1984	0.67	0.13	0.22	15
1985	0.57	0.27	0.36	15
1986	0.00	0.00	0.00	12

1987	0.00	0.00	0.00	17
1988	0.00	0.00	0.00	18
1989	0.33	0.05	0.08	21
1990	1.00	0.05	0.10	20
1991	0.00	0.00	0.00	11
1992	0.00	0.00	0.00	20
1993	0.00	0.00	0.00	14
1994	1.00	0.05	0.10	20
1995	0.50	0.05	0.09	20
1996	0.80	0.21	0.33	19
1997	1.00	0.33	0.50	15
1998	0.50	0.13	0.21	15
1999	0.00	0.00	0.00	16
2000	0.00	0.00	0.00	18
2001	0.00	0.00	0.00	22
2002	0.20	0.10	0.13	10
2003	0.40	0.15	0.22	13
2004	1.00	0.14	0.25	14
2005	0.75	0.14	0.23	22
2006	0.00	0.00	0.00	18
2007	1.00	0.11	0.19	19
2008	0.00	0.00	0.00	13
2009	0.60	0.46	0.52	13
2010	1.00	0.09	0.16	23
2011	0.00	0.00	0.00	13
2012	0.00	0.00	0.00	22
2013	0.00	0.00	0.00	24
2014	0.80	0.22	0.35	18
2015	0.67	0.11	0.18	19
2016	1.00	0.05	0.10	19
2017	0.00	0.00	0.00	17
2018	0.00	0.00	0.00	24
2019	1.00	0.19	0.32	16
2020	0.00	0.00	0.00	12
2021	0.33	0.06	0.11	16
2022	0.50	0.07	0.12	15
2023	0.00	0.00	0.00	12
2024	0.89	0.50	0.64	16
2025	0.00	0.00	0.00	16

2026	1.00	0.06	0.11	17
2027	0.00	0.00	0.00	18
2028	0.00	0.00	0.00	20
2029	0.57	0.31	0.40	13
2030	1.00	0.07	0.13	14
2031	0.00	0.00	0.00	20
2032	0.00	0.00	0.00	17
2033	0.56	0.42	0.48	12
2034	0.00	0.00	0.00	12
2035	0.00	0.00	0.00	19
2036	0.00	0.00	0.00	16
2037	0.50	0.30	0.37	10
2038	0.50	0.11	0.18	18
2039	1.00	0.25	0.40	20
2040	0.00	0.00	0.00	19
2041	0.50	0.04	0.08	24
2042	0.00	0.00	0.00	16
2043	0.00	0.00	0.00	17
2044	0.00	0.00	0.00	19
2045	0.00	0.00	0.00	22
2046	1.00	0.05	0.10	19
2047	0.00	0.00	0.00	24
2048	0.00	0.00	0.00	14
2049	0.00	0.00	0.00	19
2050	1.00	0.07	0.12	15
2051	0.67	0.20	0.31	20
2052	0.00	0.00	0.00	18
2053	0.00	0.00	0.00	13
2054	1.00	0.14	0.25	21
2055	0.00	0.00	0.00	12
2056	1.00	0.14	0.25	7
2057	0.00	0.00	0.00	16
2058	0.00	0.00	0.00	14
2059	0.00	0.00	0.00	23
2060	0.88	0.37	0.52	19
2061	1.00	0.09	0.17	22
2062	0.00	0.00	0.00	18
2063	0.00	0.00	0.00	20
2064	0.00	0.00	0.00	14

2065	0.00	0.00	0.00	17
2066	0.00	0.00	0.00	21
2067	0.00	0.00	0.00	15
2068	0.00	0.00	0.00	18
2069	1.00	0.32	0.48	19
2070	1.00	0.10	0.17	21
2071	1.00	0.22	0.36	9
2072	0.00	0.00	0.00	18
2073	0.00	0.00	0.00	17
2074	0.67	0.09	0.16	22
2075	1.00	0.60	0.75	20
2076	0.00	0.00	0.00	16
2077	0.00	0.00	0.00	15
2078	0.00	0.00	0.00	20
2079	0.00	0.00	0.00	13
2080	0.00	0.00	0.00	17
2081	0.20	0.05	0.08	20
2082	0.00	0.00	0.00	20
2083	0.75	0.18	0.29	17
2084	0.00	0.00	0.00	20
2085	0.33	0.06	0.10	17
2086	0.00	0.00	0.00	15
2087	0.00	0.00	0.00	16
2088	1.00	0.46	0.63	26
2089	0.00	0.00	0.00	24
2090	0.00	0.00	0.00	10
2091	0.00	0.00	0.00	18
2092	0.00	0.00	0.00	18
2093	0.57	0.20	0.30	20
2094	0.00	0.00	0.00	13
2095	0.00	0.00	0.00	20
2096	0.00	0.00	0.00	17
2097	0.00	0.00	0.00	13
2098	1.00	0.05	0.09	21
2099	0.00	0.00	0.00	17
2100	1.00	0.16	0.27	19
2101	0.00	0.00	0.00	18
2102	0.00	0.00	0.00	15
2103	1.00	0.25	0.40	16

2104	0.50	0.20	0.29	15
2105	1.00	0.21	0.35	19
2106	0.00	0.00	0.00	19
2107	1.00	0.05	0.09	21
2108	1.00	0.20	0.33	20
2109	0.50	0.08	0.14	12
2110	0.00	0.00	0.00	22
2111	1.00	0.05	0.10	19
2112	0.00	0.00	0.00	22
2113	0.00	0.00	0.00	20
2114	0.00	0.00	0.00	24
2115	1.00	0.15	0.26	20
2116	0.00	0.00	0.00	20
2117	0.50	0.07	0.12	15
2118	0.00	0.00	0.00	16
2119	0.75	0.19	0.30	16
2120	0.50	0.06	0.11	17
2121	0.00	0.00	0.00	18
2122	0.75	0.20	0.32	15
2123	0.00	0.00	0.00	17
2124	0.60	0.14	0.23	21
2125	0.00	0.00	0.00	18
2126	0.00	0.00	0.00	17
2127	1.00	0.28	0.43	18
2128	0.25	0.15	0.19	13
2129	0.00	0.00	0.00	18
2130	1.00	0.06	0.11	18
2131	0.00	0.00	0.00	19
2132	0.00	0.00	0.00	23
2133	0.50	0.06	0.11	17
2134	0.00	0.00	0.00	18
2135	1.00	0.08	0.15	12
2136	0.00	0.00	0.00	19
2137	1.00	0.29	0.45	17
2138	0.00	0.00	0.00	21
2139	0.00	0.00	0.00	20
2140	1.00	0.06	0.11	17
2141	0.00	0.00	0.00	17
2142	0.00	0.00	0.00	14

2143	0.00	0.00	0.00	11
2144	0.00	0.00	0.00	18
2145	0.00	0.00	0.00	16
2146	0.00	0.00	0.00	15
2147	0.00	0.00	0.00	12
2148	0.00	0.00	0.00	20
2149	0.00	0.00	0.00	12
2150	0.50	0.12	0.20	16
2151	1.00	0.06	0.11	18
2152	0.00	0.00	0.00	19
2153	0.00	0.00	0.00	13
2154	0.00	0.00	0.00	18
2155	0.00	0.00	0.00	19
2156	0.00	0.00	0.00	9
2157	0.00	0.00	0.00	17
2158	0.00	0.00	0.00	17
2159	0.00	0.00	0.00	14
2160	0.00	0.00	0.00	13
2161	1.00	0.12	0.22	8
2162	0.25	0.08	0.12	13
2163	0.00	0.00	0.00	11
2164	1.00	0.31	0.48	16
2165	0.00	0.00	0.00	21
2166	0.00	0.00	0.00	16
2167	0.00	0.00	0.00	18
2168	0.00	0.00	0.00	22
2169	0.86	0.46	0.60	13
2170	0.00	0.00	0.00	13
2171	0.00	0.00	0.00	14
2172	1.00	0.14	0.25	14
2173	0.33	0.05	0.09	20
2174	0.00	0.00	0.00	16
2175	0.00	0.00	0.00	18
2176	0.00	0.00	0.00	10
2177	0.50	0.12	0.19	17
2178	0.00	0.00	0.00	19
2179	0.00	0.00	0.00	14
2180	0.80	0.29	0.42	14
2181	0.00	0.00	0.00	18

2182	1.00	0.38	0.56	13
2183	1.00	0.06	0.11	17
2184	0.00	0.00	0.00	16
2185	1.00	0.26	0.41	23
2186	0.00	0.00	0.00	16
2187	0.00	0.00	0.00	18
2188	0.00	0.00	0.00	25
2189	0.00	0.00	0.00	19
2190	0.75	0.17	0.27	18
2191	0.33	0.06	0.10	18
2192	0.20	0.08	0.12	12
2193	0.00	0.00	0.00	13
2194	0.00	0.00	0.00	17
2195	0.00	0.00	0.00	18
2196	0.00	0.00	0.00	19
2197	0.00	0.00	0.00	16
2198	0.20	0.07	0.11	14
2199	0.00	0.00	0.00	8
2200	0.17	0.08	0.11	13
2201	0.00	0.00	0.00	16
2202	0.00	0.00	0.00	15
2203	1.00	0.11	0.20	9
2204	0.00	0.00	0.00	15
2205	0.00	0.00	0.00	17
2206	0.50	0.06	0.11	16
2207	0.00	0.00	0.00	13
2208	0.00	0.00	0.00	14
2209	0.67	0.15	0.25	13
2210	0.57	0.27	0.36	15
2211	0.00	0.00	0.00	17
2212	0.00	0.00	0.00	13
2213	1.00	0.06	0.11	18
2214	0.80	0.25	0.38	16
2215	0.89	0.47	0.62	17
2216	0.64	0.32	0.42	22
2217	0.67	0.25	0.36	16
2218	0.00	0.00	0.00	21
2219	0.00	0.00	0.00	18
2220	0.00	0.00	0.00	12

2221	0.00	0.00	0.00	18
2222	0.00	0.00	0.00	15
2223	0.00	0.00	0.00	9
2224	0.00	0.00	0.00	22
2225	0.50	0.09	0.15	11
2226	0.00	0.00	0.00	16
2227	0.00	0.00	0.00	13
2228	1.00	0.06	0.11	18
2229	0.00	0.00	0.00	17
2230	0.00	0.00	0.00	10
2231	1.00	0.31	0.48	16
2232	0.00	0.00	0.00	20
2233	0.00	0.00	0.00	17
2234	1.00	0.11	0.20	18
2235	0.00	0.00	0.00	25
2236	1.00	0.17	0.29	12
2237	0.00	0.00	0.00	17
2238	0.00	0.00	0.00	12
2239	0.00	0.00	0.00	15
2240	0.00	0.00	0.00	12
2241	0.00	0.00	0.00	16
2242	1.00	0.12	0.22	8
2243	0.00	0.00	0.00	15
2244	0.00	0.00	0.00	16
2245	1.00	0.11	0.20	18
2246	0.00	0.00	0.00	20
2247	0.00	0.00	0.00	10
2248	0.00	0.00	0.00	20
2249	0.00	0.00	0.00	15
2250	0.00	0.00	0.00	23
2251	0.00	0.00	0.00	16
2252	0.50	0.15	0.24	13
2253	0.00	0.00	0.00	11
2254	1.00	0.36	0.53	11
2255	0.00	0.00	0.00	15
2256	1.00	0.05	0.10	19
2257	0.00	0.00	0.00	11
2258	0.00	0.00	0.00	22
2259	0.33	0.05	0.08	22

2260	0.00	0.00	0.00	14
2261	0.00	0.00	0.00	16
2262	0.00	0.00	0.00	13
2263	0.00	0.00	0.00	10
2264	0.00	0.00	0.00	15
2265	1.00	0.11	0.19	19
2266	0.33	0.12	0.17	17
2267	0.00	0.00	0.00	13
2268	1.00	0.06	0.11	18
2269	0.00	0.00	0.00	12
2270	1.00	0.07	0.12	15
2271	0.86	0.38	0.52	16
2272	0.00	0.00	0.00	13
2273	0.00	0.00	0.00	13
2274	1.00	0.06	0.11	17
2275	0.00	0.00	0.00	16
2276	0.00	0.00	0.00	15
2277	0.00	0.00	0.00	18
2278	0.75	0.30	0.43	10
2279	1.00	0.26	0.42	19
2280	0.00	0.00	0.00	17
2281	0.00	0.00	0.00	18
2282	0.00	0.00	0.00	16
2283	0.00	0.00	0.00	12
2284	0.00	0.00	0.00	19
2285	1.00	0.12	0.22	16
2286	0.00	0.00	0.00	17
2287	0.75	0.19	0.30	16
2288	0.25	0.04	0.07	23
2289	1.00	0.14	0.25	14
2290	0.00	0.00	0.00	23
2291	0.17	0.06	0.08	18
2292	0.50	0.10	0.17	10
2293	0.67	0.35	0.46	17
2294	1.00	0.10	0.17	21
2295	0.00	0.00	0.00	11
2296	0.00	0.00	0.00	14
2297	0.00	0.00	0.00	21
2298	0.33	0.07	0.12	14

2299	0.00	0.00	0.00	14
2300	0.00	0.00	0.00	13
2301	0.00	0.00	0.00	17
2302	0.00	0.00	0.00	15
2303	0.00	0.00	0.00	14
2304	0.00	0.00	0.00	14
2305	0.00	0.00	0.00	15
2306	0.00	0.00	0.00	20
2307	0.00	0.00	0.00	10
2308	0.00	0.00	0.00	15
2309	1.00	0.08	0.15	12
2310	0.00	0.00	0.00	21
2311	1.00	0.25	0.40	8
2312	0.00	0.00	0.00	10
2313	0.00	0.00	0.00	12
2314	0.00	0.00	0.00	10
2315	0.00	0.00	0.00	11
2316	0.67	0.12	0.20	17
2317	0.00	0.00	0.00	11
2318	0.00	0.00	0.00	19
2319	1.00	0.46	0.63	13
2320	0.00	0.00	0.00	18
2321	0.00	0.00	0.00	19
2322	0.33	0.05	0.09	20
2323	1.00	0.36	0.53	14
2324	0.67	0.15	0.25	13
2325	1.00	0.21	0.35	14
2326	0.00	0.00	0.00	22
2327	0.75	0.12	0.21	24
2328	0.00	0.00	0.00	17
2329	0.00	0.00	0.00	14
2330	0.00	0.00	0.00	14
2331	0.00	0.00	0.00	17
2332	1.00	0.08	0.14	13
2333	0.00	0.00	0.00	13
2334	0.00	0.00	0.00	13
2335	0.00	0.00	0.00	15
2336	0.00	0.00	0.00	21
2337	0.00	0.00	0.00	11

2338	0.00	0.00	0.00	12
2339	0.00	0.00	0.00	20
2340	0.50	0.07	0.12	14
2341	0.00	0.00	0.00	10
2342	0.00	0.00	0.00	17
2343	0.00	0.00	0.00	8
2344	0.00	0.00	0.00	17
2345	0.00	0.00	0.00	15
2346	0.67	0.11	0.19	18
2347	0.00	0.00	0.00	19
2348	0.00	0.00	0.00	11
2349	0.00	0.00	0.00	14
2350	0.00	0.00	0.00	15
2351	0.00	0.00	0.00	14
2352	0.75	0.23	0.35	13
2353	1.00	0.50	0.67	12
2354	0.50	0.05	0.10	19
2355	0.00	0.00	0.00	20
2356	0.00	0.00	0.00	15
2357	0.00	0.00	0.00	12
2358	0.00	0.00	0.00	20
2359	0.33	0.09	0.14	11
2360	0.00	0.00	0.00	24
2361	0.00	0.00	0.00	12
2362	1.00	0.05	0.10	19
2363	0.00	0.00	0.00	16
2364	0.50	0.05	0.10	19
2365	0.00	0.00	0.00	12
2366	0.00	0.00	0.00	14
2367	0.00	0.00	0.00	16
2368	0.00	0.00	0.00	17
2369	0.00	0.00	0.00	10
2370	0.00	0.00	0.00	14
2371	0.25	0.09	0.13	11
2372	0.00	0.00	0.00	10
2373	0.67	0.09	0.15	23
2374	1.00	0.07	0.13	14
2375	0.00	0.00	0.00	12
2376	0.00	0.00	0.00	14

2377	0.00	0.00	0.00	15
2378	0.00	0.00	0.00	10
2379	0.50	0.09	0.15	11
2380	0.00	0.00	0.00	15
2381	0.00	0.00	0.00	12
2382	0.00	0.00	0.00	18
2383	0.00	0.00	0.00	16
2384	0.00	0.00	0.00	14
2385	0.00	0.00	0.00	17
2386	0.00	0.00	0.00	20
2387	0.00	0.00	0.00	16
2388	0.00	0.00	0.00	11
2389	0.00	0.00	0.00	17
2390	0.00	0.00	0.00	18
2391	0.00	0.00	0.00	14
2392	0.00	0.00	0.00	14
2393	0.00	0.00	0.00	8
2394	0.00	0.00	0.00	16
2395	0.00	0.00	0.00	10
2396	0.00	0.00	0.00	18
2397	0.00	0.00	0.00	16
2398	0.00	0.00	0.00	19
2399	1.00	0.24	0.39	25
2400	0.00	0.00	0.00	13
2401	0.00	0.00	0.00	9
2402	0.00	0.00	0.00	17
2403	0.00	0.00	0.00	17
2404	0.67	0.12	0.21	16
2405	0.00	0.00	0.00	19
2406	0.00	0.00	0.00	13
2407	0.00	0.00	0.00	12
2408	0.00	0.00	0.00	20
2409	1.00	0.14	0.25	21
2410	0.33	0.06	0.10	18
2411	0.00	0.00	0.00	19
2412	1.00	0.40	0.57	20
2413	1.00	0.47	0.64	15
2414	0.00	0.00	0.00	7
2415	0.00	0.00	0.00	16

2416	1.00	0.15	0.26	20
2417	0.00	0.00	0.00	14
2418	0.00	0.00	0.00	18
2419	0.00	0.00	0.00	20
2420	0.00	0.00	0.00	22
2421	0.00	0.00	0.00	17
2422	0.00	0.00	0.00	11
2423	0.00	0.00	0.00	9
2424	0.00	0.00	0.00	13
2425	0.00	0.00	0.00	18
2426	0.00	0.00	0.00	14
2427	0.00	0.00	0.00	14
2428	0.00	0.00	0.00	14
2429	0.00	0.00	0.00	17
2430	0.00	0.00	0.00	11
2431	0.00	0.00	0.00	14
2432	0.00	0.00	0.00	17
2433	0.00	0.00	0.00	13
2434	0.00	0.00	0.00	17
2435	0.00	0.00	0.00	17
2436	0.00	0.00	0.00	7
2437	0.00	0.00	0.00	14
2438	0.00	0.00	0.00	15
2439	0.00	0.00	0.00	15
2440	0.00	0.00	0.00	12
2441	1.00	0.07	0.13	14
2442	0.00	0.00	0.00	16
2443	0.00	0.00	0.00	17
2444	0.00	0.00	0.00	12
2445	0.50	0.06	0.10	18
2446	0.00	0.00	0.00	18
2447	0.00	0.00	0.00	10
2448	0.00	0.00	0.00	16
2449	0.00	0.00	0.00	8
2450	1.00	0.22	0.36	18
2451	0.67	0.11	0.19	18
2452	0.25	0.06	0.10	16
2453	0.00	0.00	0.00	11
2454	0.00	0.00	0.00	8

2455	0.00	0.00	0.00	17
2456	1.00	0.24	0.38	17
2457	0.00	0.00	0.00	18
2458	0.00	0.00	0.00	16
2459	0.00	0.00	0.00	10
2460	0.00	0.00	0.00	16
2461	0.00	0.00	0.00	14
2462	0.00	0.00	0.00	12
2463	0.00	0.00	0.00	9
2464	0.00	0.00	0.00	12
2465	0.00	0.00	0.00	14
2466	1.00	0.08	0.15	12
2467	0.00	0.00	0.00	13
2468	0.00	0.00	0.00	13
2469	0.00	0.00	0.00	15
2470	0.00	0.00	0.00	15
2471	0.00	0.00	0.00	18
2472	1.00	0.05	0.09	21
2473	0.00	0.00	0.00	13
2474	1.00	0.40	0.57	10
2475	0.00	0.00	0.00	21
2476	0.00	0.00	0.00	10
2477	0.50	0.08	0.14	12
2478	0.50	0.07	0.12	14
2479	0.00	0.00	0.00	12
2480	0.00	0.00	0.00	13
2481	0.00	0.00	0.00	12
2482	0.00	0.00	0.00	15
2483	0.00	0.00	0.00	9
2484	0.00	0.00	0.00	16
2485	0.67	0.22	0.33	9
2486	0.80	0.25	0.38	16
2487	0.00	0.00	0.00	11
2488	0.00	0.00	0.00	15
2489	0.00	0.00	0.00	13
2490	0.00	0.00	0.00	14
2491	0.00	0.00	0.00	10
2492	1.00	0.11	0.20	9
2493	0.00	0.00	0.00	17

2494	0.00	0.00	0.00	17
2495	1.00	0.35	0.52	20
2496	0.00	0.00	0.00	15
2497	1.00	0.36	0.53	11
2498	1.00	0.07	0.13	14
2499	0.00	0.00	0.00	8
2500	0.00	0.00	0.00	18
2501	1.00	0.25	0.40	12
2502	0.00	0.00	0.00	9
2503	0.00	0.00	0.00	11
2504	1.00	0.12	0.21	17
2505	0.00	0.00	0.00	16
2506	0.00	0.00	0.00	16
2507	0.00	0.00	0.00	14
2508	0.00	0.00	0.00	23
2509	0.67	0.18	0.29	11
2510	0.00	0.00	0.00	14
2511	0.00	0.00	0.00	14
2512	0.50	0.09	0.15	11
2513	0.00	0.00	0.00	14
2514	0.00	0.00	0.00	13
2515	0.00	0.00	0.00	15
2516	1.00	0.29	0.44	7
2517	0.00	0.00	0.00	11
2518	0.00	0.00	0.00	11
2519	0.00	0.00	0.00	12
2520	0.00	0.00	0.00	11
2521	0.00	0.00	0.00	17
2522	0.00	0.00	0.00	15
2523	1.00	0.22	0.36	9
2524	0.00	0.00	0.00	15
2525	0.00	0.00	0.00	17
2526	0.67	0.22	0.33	9
2527	0.00	0.00	0.00	11
2528	1.00	0.10	0.18	10
2529	0.00	0.00	0.00	12
2530	0.00	0.00	0.00	17
2531	0.78	0.78	0.78	9
2532	0.00	0.00	0.00	11

2533	0.00	0.00	0.00	10
2534	0.00	0.00	0.00	8
2535	1.00	0.17	0.29	12
2536	0.00	0.00	0.00	5
2537	0.00	0.00	0.00	15
2538	0.00	0.00	0.00	17
2539	0.00	0.00	0.00	11
2540	0.00	0.00	0.00	12
2541	0.00	0.00	0.00	15
2542	0.00	0.00	0.00	16
2543	0.00	0.00	0.00	13
2544	0.00	0.00	0.00	12
2545	1.00	0.10	0.18	10
2546	1.00	0.44	0.62	18
2547	0.00	0.00	0.00	12
2548	0.00	0.00	0.00	10
2549	0.00	0.00	0.00	9
2550	0.00	0.00	0.00	14
2551	0.00	0.00	0.00	11
2552	0.00	0.00	0.00	16
2553	1.00	0.17	0.29	12
2554	0.00	0.00	0.00	12
2555	0.67	0.18	0.29	11
2556	0.00	0.00	0.00	14
2557	0.00	0.00	0.00	12
2558	0.00	0.00	0.00	9
2559	1.00	0.27	0.43	11
2560	0.00	0.00	0.00	15
2561	0.00	0.00	0.00	11
2562	0.00	0.00	0.00	11
2563	0.00	0.00	0.00	14
2564	0.00	0.00	0.00	12
2565	0.00	0.00	0.00	15
2566	0.00	0.00	0.00	7
2567	0.00	0.00	0.00	10
2568	0.00	0.00	0.00	12
2569	0.00	0.00	0.00	15
2570	0.00	0.00	0.00	16
2571	0.00	0.00	0.00	11

2572	0.00	0.00	0.00	12
2573	0.00	0.00	0.00	14
2574	0.00	0.00	0.00	8
2575	0.50	0.06	0.11	17
2576	0.00	0.00	0.00	15
2577	0.00	0.00	0.00	12
2578	1.00	0.20	0.33	15
2579	1.00	0.08	0.15	12
2580	0.00	0.00	0.00	11
2581	1.00	0.20	0.33	15
2582	0.00	0.00	0.00	17
2583	1.00	0.21	0.35	14
2584	0.00	0.00	0.00	14
2585	0.71	0.33	0.45	15
2586	1.00	0.33	0.50	15
2587	0.00	0.00	0.00	11
2588	0.00	0.00	0.00	10
2589	0.00	0.00	0.00	17
2590	0.00	0.00	0.00	10
2591	0.00	0.00	0.00	9
2592	0.00	0.00	0.00	11
2593	0.00	0.00	0.00	8
2594	0.00	0.00	0.00	12
2595	0.00	0.00	0.00	13
2596	0.00	0.00	0.00	8
2597	0.00	0.00	0.00	22
2598	0.00	0.00	0.00	10
2599	0.00	0.00	0.00	12
2600	0.00	0.00	0.00	13
2601	0.67	0.13	0.22	15
2602	0.00	0.00	0.00	12
2603	0.00	0.00	0.00	11
2604	0.00	0.00	0.00	12
2605	0.00	0.00	0.00	11
2606	0.00	0.00	0.00	9
2607	0.00	0.00	0.00	9
2608	1.00	0.11	0.20	9
2609	0.00	0.00	0.00	11
2610	0.00	0.00	0.00	14

2611	0.00	0.00	0.00	8
2612	0.00	0.00	0.00	14
2613	0.00	0.00	0.00	13
2614	1.00	0.31	0.47	13
2615	0.50	0.09	0.15	11
2616	0.00	0.00	0.00	14
2617	0.00	0.00	0.00	16
2618	0.33	0.08	0.13	12
2619	0.00	0.00	0.00	8
2620	0.50	0.17	0.25	12
2621	0.00	0.00	0.00	17
2622	0.00	0.00	0.00	9
2623	0.00	0.00	0.00	10
2624	0.00	0.00	0.00	18
2625	0.00	0.00	0.00	8
2626	0.00	0.00	0.00	15
2627	0.00	0.00	0.00	8
2628	0.00	0.00	0.00	13
2629	0.00	0.00	0.00	13
2630	0.00	0.00	0.00	15
2631	0.00	0.00	0.00	15
2632	0.00	0.00	0.00	15
2633	0.00	0.00	0.00	12
2634	0.00	0.00	0.00	11
2635	1.00	0.42	0.59	12
2636	0.00	0.00	0.00	11
2637	0.00	0.00	0.00	10
2638	0.00	0.00	0.00	6
2639	0.00	0.00	0.00	14
2640	0.00	0.00	0.00	11
2641	0.00	0.00	0.00	15
2642	1.00	0.18	0.30	17
2643	0.00	0.00	0.00	15
2644	0.00	0.00	0.00	17
2645	0.00	0.00	0.00	12
2646	0.00	0.00	0.00	12
2647	0.00	0.00	0.00	13
2648	0.50	0.17	0.25	12
2649	0.00	0.00	0.00	9

2650	0.00	0.00	0.00	18
2651	0.00	0.00	0.00	9
2652	0.00	0.00	0.00	11
2653	0.00	0.00	0.00	11
2654	1.00	0.61	0.76	18
2655	0.00	0.00	0.00	12
2656	0.00	0.00	0.00	6
2657	0.00	0.00	0.00	11
2658	0.67	0.40	0.50	5
2659	1.00	0.10	0.18	10
2660	0.00	0.00	0.00	18
2661	0.00	0.00	0.00	14
2662	0.00	0.00	0.00	12
2663	0.00	0.00	0.00	16
2664	0.00	0.00	0.00	15
2665	1.00	0.07	0.13	14
2666	0.00	0.00	0.00	11
2667	0.80	0.33	0.47	12
2668	0.00	0.00	0.00	11
2669	0.00	0.00	0.00	10
2670	0.00	0.00	0.00	4
2671	1.00	0.07	0.13	14
2672	0.00	0.00	0.00	16
2673	0.00	0.00	0.00	12
2674	0.00	0.00	0.00	10
2675	0.00	0.00	0.00	13
2676	0.00	0.00	0.00	11
2677	0.00	0.00	0.00	17
2678	0.00	0.00	0.00	11
2679	0.00	0.00	0.00	16
2680	0.50	0.15	0.24	13
2681	0.00	0.00	0.00	8
2682	0.00	0.00	0.00	11
2683	0.00	0.00	0.00	15
2684	0.00	0.00	0.00	10
2685	0.00	0.00	0.00	11
2686	1.00	0.17	0.29	12
2687	1.00	0.44	0.62	9
2688	0.67	0.13	0.22	15

2689	1.00	0.44	0.62	9
2690	0.00	0.00	0.00	7
2691	0.00	0.00	0.00	13
2692	0.00	0.00	0.00	10
2693	0.00	0.00	0.00	12
2694	0.00	0.00	0.00	10
2695	0.00	0.00	0.00	10
2696	0.00	0.00	0.00	14
2697	0.00	0.00	0.00	16
2698	0.00	0.00	0.00	13
2699	0.00	0.00	0.00	9
2700	0.00	0.00	0.00	15
2701	0.00	0.00	0.00	14
2702	0.00	0.00	0.00	8
2703	0.00	0.00	0.00	8
2704	0.00	0.00	0.00	13
2705	0.00	0.00	0.00	20
2706	0.00	0.00	0.00	13
2707	0.00	0.00	0.00	18
2708	0.00	0.00	0.00	6
2709	0.00	0.00	0.00	13
2710	0.00	0.00	0.00	15
2711	0.00	0.00	0.00	13
2712	0.00	0.00	0.00	15
2713	0.00	0.00	0.00	18
2714	0.00	0.00	0.00	15
2715	0.00	0.00	0.00	8
2716	0.00	0.00	0.00	15
2717	0.00	0.00	0.00	13
2718	1.00	0.12	0.21	17
2719	0.00	0.00	0.00	12
2720	0.00	0.00	0.00	12
2721	0.00	0.00	0.00	12
2722	0.00	0.00	0.00	8
2723	0.00	0.00	0.00	10
2724	0.00	0.00	0.00	7
2725	0.00	0.00	0.00	15
2726	0.00	0.00	0.00	10
2727	0.00	0.00	0.00	13

2728	0.00	0.00	0.00	17
2729	0.00	0.00	0.00	13
2730	0.00	0.00	0.00	11
2731	0.00	0.00	0.00	11
2732	1.00	0.07	0.12	15
2733	0.00	0.00	0.00	20
2734	0.00	0.00	0.00	14
2735	0.00	0.00	0.00	7
2736	0.25	0.08	0.12	12
2737	1.00	0.44	0.62	9
2738	0.00	0.00	0.00	14
2739	0.00	0.00	0.00	15
2740	0.00	0.00	0.00	11
2741	0.00	0.00	0.00	16
2742	0.00	0.00	0.00	12
2743	0.00	0.00	0.00	17
2744	0.00	0.00	0.00	9
2745	0.00	0.00	0.00	10
2746	0.00	0.00	0.00	13
2747	0.50	0.09	0.15	11
2748	0.00	0.00	0.00	11
2749	0.00	0.00	0.00	12
2750	0.00	0.00	0.00	12
2751	0.00	0.00	0.00	14
2752	0.00	0.00	0.00	13
2753	0.00	0.00	0.00	6
2754	0.00	0.00	0.00	13
2755	1.00	0.20	0.33	10
2756	0.00	0.00	0.00	11
2757	0.00	0.00	0.00	10
2758	0.00	0.00	0.00	10
2759	0.00	0.00	0.00	6
2760	1.00	0.14	0.25	7
2761	0.00	0.00	0.00	11
2762	0.50	0.08	0.14	12
2763	1.00	0.17	0.29	12
2764	0.00	0.00	0.00	18
2765	0.00	0.00	0.00	14
2766	0.00	0.00	0.00	15

2767	0.00	0.00	0.00	15
2768	0.00	0.00	0.00	16
2769	0.00	0.00	0.00	5
2770	0.00	0.00	0.00	6
2771	1.00	0.08	0.14	13
2772	0.00	0.00	0.00	12
2773	0.00	0.00	0.00	9
2774	0.00	0.00	0.00	10
2775	0.67	0.20	0.31	10
2776	0.00	0.00	0.00	13
2777	0.00	0.00	0.00	9
2778	1.00	0.11	0.20	9
2779	1.00	0.10	0.18	10
2780	0.00	0.00	0.00	14
2781	0.00	0.00	0.00	11
2782	1.00	0.10	0.18	10
2783	0.00	0.00	0.00	19
2784	0.00	0.00	0.00	13
2785	1.00	0.60	0.75	5
2786	1.00	0.18	0.31	11
2787	1.00	0.38	0.55	8
2788	0.00	0.00	0.00	11
2789	0.00	0.00	0.00	14
2790	0.00	0.00	0.00	14
2791	0.00	0.00	0.00	13
2792	1.00	0.18	0.31	11
2793	0.00	0.00	0.00	9
2794	1.00	0.33	0.50	12
2795	0.00	0.00	0.00	11
2796	0.00	0.00	0.00	12
2797	0.00	0.00	0.00	15
2798	0.00	0.00	0.00	14
2799	0.00	0.00	0.00	7
2800	0.00	0.00	0.00	14
2801	0.00	0.00	0.00	8
2802	0.00	0.00	0.00	9
2803	0.00	0.00	0.00	12
2804	0.00	0.00	0.00	10
2805	0.00	0.00	0.00	16

2806	0.00	0.00	0.00	15
2807	0.00	0.00	0.00	16
2808	0.00	0.00	0.00	12
2809	0.00	0.00	0.00	16
2810	0.00	0.00	0.00	16
2811	0.00	0.00	0.00	10
2812	0.00	0.00	0.00	11
2813	0.00	0.00	0.00	9
2814	0.00	0.00	0.00	6
2815	0.00	0.00	0.00	17
2816	0.00	0.00	0.00	9
2817	0.00	0.00	0.00	15
2818	0.00	0.00	0.00	10
2819	0.00	0.00	0.00	9
2820	0.00	0.00	0.00	11
2821	0.00	0.00	0.00	14
2822	0.00	0.00	0.00	10
2823	0.00	0.00	0.00	15
2824	0.00	0.00	0.00	10
2825	0.00	0.00	0.00	14
2826	0.00	0.00	0.00	6
2827	0.86	0.75	0.80	8
2828	0.00	0.00	0.00	16
2829	0.00	0.00	0.00	9
2830	0.00	0.00	0.00	14
2831	0.00	0.00	0.00	10
2832	0.00	0.00	0.00	11
2833	0.00	0.00	0.00	12
2834	0.00	0.00	0.00	11
2835	0.00	0.00	0.00	10
2836	0.00	0.00	0.00	11
2837	0.00	0.00	0.00	7
2838	0.00	0.00	0.00	8
2839	1.00	0.29	0.44	7
2840	0.00	0.00	0.00	7
2841	1.00	0.21	0.35	14
2842	0.00	0.00	0.00	15
2843	0.00	0.00	0.00	15
2844	1.00	0.13	0.24	15

2845	1.00	0.12	0.22	8
2846	0.00	0.00	0.00	10
2847	0.00	0.00	0.00	13
2848	0.00	0.00	0.00	11
2849	0.00	0.00	0.00	6
2850	0.00	0.00	0.00	10
2851	0.00	0.00	0.00	12
2852	0.00	0.00	0.00	7
2853	0.00	0.00	0.00	7
2854	0.00	0.00	0.00	8
2855	0.00	0.00	0.00	16
2856	0.00	0.00	0.00	10
2857	0.00	0.00	0.00	5
2858	0.00	0.00	0.00	10
2859	0.00	0.00	0.00	7
2860	0.00	0.00	0.00	8
2861	0.00	0.00	0.00	12
2862	0.00	0.00	0.00	9
2863	0.00	0.00	0.00	12
2864	0.00	0.00	0.00	8
2865	1.00	0.07	0.13	14
2866	0.00	0.00	0.00	11
2867	0.00	0.00	0.00	15
2868	0.00	0.00	0.00	11
2869	0.00	0.00	0.00	11
2870	0.00	0.00	0.00	13
2871	0.00	0.00	0.00	11
2872	0.00	0.00	0.00	12
2873	0.00	0.00	0.00	13
2874	0.00	0.00	0.00	17
2875	0.00	0.00	0.00	11
2876	0.00	0.00	0.00	16
2877	0.00	0.00	0.00	12
2878	0.00	0.00	0.00	11
2879	0.00	0.00	0.00	11
2880	1.00	0.27	0.43	11
2881	0.00	0.00	0.00	10
2882	0.00	0.00	0.00	13
2883	0.00	0.00	0.00	17

2884	1.00	0.17	0.29	6
2885	0.00	0.00	0.00	10
2886	1.00	0.25	0.40	12
2887	0.00	0.00	0.00	9
2888	0.00	0.00	0.00	9
2889	1.00	0.10	0.18	10
2890	0.00	0.00	0.00	5
2891	0.00	0.00	0.00	12
2892	0.00	0.00	0.00	15
2893	0.00	0.00	0.00	8
2894	0.00	0.00	0.00	10
2895	0.50	0.09	0.15	11
2896	1.00	0.12	0.22	8
2897	0.00	0.00	0.00	15
2898	0.00	0.00	0.00	10
2899	0.00	0.00	0.00	7
2900	1.00	0.11	0.20	9
2901	1.00	0.09	0.17	11
2902	0.00	0.00	0.00	10
2903	0.00	0.00	0.00	6
2904	0.86	0.43	0.57	14
2905	0.00	0.00	0.00	13
2906	0.00	0.00	0.00	7
2907	0.00	0.00	0.00	15
2908	0.00	0.00	0.00	7
2909	0.00	0.00	0.00	11
2910	0.00	0.00	0.00	11
2911	0.00	0.00	0.00	10
2912	0.00	0.00	0.00	14
2913	0.00	0.00	0.00	13
2914	1.00	0.10	0.18	10
2915	0.00	0.00	0.00	12
2916	0.00	0.00	0.00	9
2917	0.00	0.00	0.00	3
2918	0.00	0.00	0.00	21
2919	0.00	0.00	0.00	6
2920	0.00	0.00	0.00	9
2921	1.00	0.10	0.18	10
2922	0.00	0.00	0.00	8

2923	0.00	0.00	0.00	12
2924	0.00	0.00	0.00	10
2925	0.50	0.06	0.11	16
2926	0.00	0.00	0.00	10
2927	0.00	0.00	0.00	15
2928	0.00	0.00	0.00	5
2929	0.00	0.00	0.00	15
2930	0.00	0.00	0.00	13
2931	0.00	0.00	0.00	12
2932	0.00	0.00	0.00	7
2933	0.00	0.00	0.00	11
2934	0.00	0.00	0.00	11
2935	1.00	0.10	0.18	10
2936	1.00	0.07	0.12	15
2937	0.00	0.00	0.00	11
2938	0.00	0.00	0.00	11
2939	0.00	0.00	0.00	16
2940	0.00	0.00	0.00	12
2941	0.00	0.00	0.00	9
2942	0.00	0.00	0.00	12
2943	0.00	0.00	0.00	14
2944	0.00	0.00	0.00	14
2945	0.50	0.12	0.20	8
2946	1.00	0.08	0.14	13
2947	0.00	0.00	0.00	12
2948	0.00	0.00	0.00	11
2949	0.00	0.00	0.00	12
2950	0.00	0.00	0.00	12
2951	0.00	0.00	0.00	18
2952	0.00	0.00	0.00	14
2953	0.00	0.00	0.00	11
2954	0.00	0.00	0.00	11
2955	0.00	0.00	0.00	6
2956	0.00	0.00	0.00	10
2957	0.00	0.00	0.00	6
2958	0.00	0.00	0.00	12
2959	0.00	0.00	0.00	6
2960	0.00	0.00	0.00	10
2961	0.00	0.00	0.00	11

2962	0.00	0.00	0.00	14
2963	0.00	0.00	0.00	12
2964	0.00	0.00	0.00	12
2965	0.00	0.00	0.00	11
2966	0.00	0.00	0.00	13
2967	0.00	0.00	0.00	14
2968	0.00	0.00	0.00	9
2969	0.00	0.00	0.00	14
2970	1.00	0.10	0.18	10
2971	0.00	0.00	0.00	11
2972	0.00	0.00	0.00	12
2973	0.00	0.00	0.00	11
2974	0.00	0.00	0.00	9
2975	0.00	0.00	0.00	12
2976	0.00	0.00	0.00	11
2977	1.00	0.17	0.29	6
2978	0.00	0.00	0.00	17
2979	0.00	0.00	0.00	10
2980	0.00	0.00	0.00	12
2981	0.00	0.00	0.00	5
2982	0.00	0.00	0.00	7
2983	0.00	0.00	0.00	10
2984	0.00	0.00	0.00	10
2985	0.00	0.00	0.00	14
2986	1.00	0.30	0.46	10
2987	0.00	0.00	0.00	18
2988	0.00	0.00	0.00	12
2989	0.00	0.00	0.00	8
2990	0.75	0.38	0.50	8
2991	0.00	0.00	0.00	11
2992	0.00	0.00	0.00	12
2993	0.00	0.00	0.00	6
2994	0.00	0.00	0.00	12
2995	0.00	0.00	0.00	15
2996	0.00	0.00	0.00	11
2997	0.00	0.00	0.00	8
2998	0.00	0.00	0.00	15
2999	0.00	0.00	0.00	6
3000	0.00	0.00	0.00	10

3001	0.00	0.00	0.00	10
3002	0.00	0.00	0.00	11
3003	0.00	0.00	0.00	15
3004	0.00	0.00	0.00	7
3005	0.00	0.00	0.00	9
3006	0.00	0.00	0.00	14
3007	0.00	0.00	0.00	10
3008	0.00	0.00	0.00	14
3009	0.00	0.00	0.00	10
3010	0.00	0.00	0.00	11
3011	0.00	0.00	0.00	7
3012	0.00	0.00	0.00	10
3013	0.00	0.00	0.00	11
3014	0.00	0.00	0.00	7
3015	0.00	0.00	0.00	12
3016	0.00	0.00	0.00	12
3017	0.00	0.00	0.00	12
3018	0.00	0.00	0.00	9
3019	0.00	0.00	0.00	6
3020	0.00	0.00	0.00	5
3021	0.00	0.00	0.00	16
3022	0.00	0.00	0.00	8
3023	0.00	0.00	0.00	14
3024	0.83	0.36	0.50	14
3025	0.00	0.00	0.00	12
3026	0.00	0.00	0.00	16
3027	0.00	0.00	0.00	12
3028	0.00	0.00	0.00	8
3029	0.00	0.00	0.00	6
3030	1.00	0.36	0.53	14
3031	0.00	0.00	0.00	11
3032	0.00	0.00	0.00	17
3033	0.00	0.00	0.00	12
3034	0.00	0.00	0.00	7
3035	0.00	0.00	0.00	11
3036	0.00	0.00	0.00	13
3037	0.00	0.00	0.00	10
3038	0.00	0.00	0.00	11
3039	0.00	0.00	0.00	10

3040	0.00	0.00	0.00	7
3041	0.00	0.00	0.00	10
3042	0.00	0.00	0.00	15
3043	0.00	0.00	0.00	6
3044	0.00	0.00	0.00	8
3045	0.00	0.00	0.00	15
3046	0.00	0.00	0.00	16
3047	0.00	0.00	0.00	10
3048	0.00	0.00	0.00	19
3049	1.00	0.45	0.62	11
3050	1.00	0.33	0.50	6
3051	0.00	0.00	0.00	13
3052	0.00	0.00	0.00	8
3053	0.00	0.00	0.00	12
3054	0.00	0.00	0.00	9
3055	0.00	0.00	0.00	11
3056	0.00	0.00	0.00	10
3057	0.00	0.00	0.00	9
3058	0.00	0.00	0.00	12
3059	0.00	0.00	0.00	9
3060	0.00	0.00	0.00	12
3061	1.00	0.69	0.82	13
3062	0.00	0.00	0.00	13
3063	0.00	0.00	0.00	10
3064	0.00	0.00	0.00	6
3065	0.00	0.00	0.00	13
3066	0.00	0.00	0.00	8
3067	0.00	0.00	0.00	11
3068	0.00	0.00	0.00	10
3069	0.00	0.00	0.00	12
3070	0.00	0.00	0.00	9
3071	0.00	0.00	0.00	15
3072	0.00	0.00	0.00	6
3073	0.00	0.00	0.00	8
3074	0.00	0.00	0.00	8
3075	1.00	0.10	0.18	10
3076	0.00	0.00	0.00	8
3077	0.00	0.00	0.00	12
3078	0.00	0.00	0.00	17

3079	0.00	0.00	0.00	5
3080	0.00	0.00	0.00	16
3081	0.00	0.00	0.00	13
3082	0.33	0.11	0.17	9
3083	0.00	0.00	0.00	15
3084	0.00	0.00	0.00	10
3085	0.00	0.00	0.00	10
3086	0.00	0.00	0.00	13
3087	0.00	0.00	0.00	12
3088	0.00	0.00	0.00	13
3089	0.00	0.00	0.00	8
3090	0.00	0.00	0.00	12
3091	0.00	0.00	0.00	12
3092	0.00	0.00	0.00	8
3093	0.00	0.00	0.00	10
3094	0.00	0.00	0.00	11
3095	0.80	0.57	0.67	7
3096	0.00	0.00	0.00	12
3097	0.00	0.00	0.00	14
3098	0.00	0.00	0.00	8
3099	0.00	0.00	0.00	7
3100	0.00	0.00	0.00	13
3101	0.00	0.00	0.00	9
3102	0.00	0.00	0.00	13
3103	0.00	0.00	0.00	6
3104	0.00	0.00	0.00	6
3105	0.00	0.00	0.00	6
3106	0.00	0.00	0.00	12
3107	0.00	0.00	0.00	7
3108	0.00	0.00	0.00	13
3109	0.00	0.00	0.00	11
3110	0.00	0.00	0.00	12
3111	0.00	0.00	0.00	13
3112	0.00	0.00	0.00	12
3113	1.00	0.22	0.36	9
3114	0.00	0.00	0.00	6
3115	0.00	0.00	0.00	15
3116	0.00	0.00	0.00	12
3117	0.00	0.00	0.00	8

3118	0.00	0.00	0.00	12
3119	0.00	0.00	0.00	14
3120	0.00	0.00	0.00	12
3121	0.00	0.00	0.00	17
3122	0.00	0.00	0.00	10
3123	0.00	0.00	0.00	7
3124	0.00	0.00	0.00	7
3125	0.00	0.00	0.00	8
3126	0.00	0.00	0.00	9
3127	0.00	0.00	0.00	14
3128	0.00	0.00	0.00	10
3129	0.00	0.00	0.00	11
3130	0.00	0.00	0.00	11
3131	0.00	0.00	0.00	12
3132	0.00	0.00	0.00	14
3133	0.00	0.00	0.00	8
3134	0.00	0.00	0.00	6
3135	0.00	0.00	0.00	9
3136	0.00	0.00	0.00	10
3137	0.00	0.00	0.00	9
3138	1.00	0.38	0.55	8
3139	0.00	0.00	0.00	7
3140	0.00	0.00	0.00	16
3141	0.00	0.00	0.00	8
3142	0.00	0.00	0.00	14
3143	0.00	0.00	0.00	8
3144	0.00	0.00	0.00	12
3145	0.00	0.00	0.00	15
3146	0.00	0.00	0.00	6
3147	0.00	0.00	0.00	11
3148	0.00	0.00	0.00	10
3149	0.00	0.00	0.00	12
3150	0.00	0.00	0.00	9
3151	0.00	0.00	0.00	12
3152	0.00	0.00	0.00	13
3153	0.00	0.00	0.00	7
3154	0.00	0.00	0.00	14
3155	0.00	0.00	0.00	12
3156	0.00	0.00	0.00	7

3157	0.00	0.00	0.00	12
3158	0.00	0.00	0.00	13
3159	1.00	0.71	0.83	7
3160	0.00	0.00	0.00	12
3161	0.00	0.00	0.00	13
3162	0.00	0.00	0.00	8
3163	1.00	0.18	0.31	11
3164	0.00	0.00	0.00	13
3165	0.00	0.00	0.00	9
3166	0.00	0.00	0.00	9
3167	0.00	0.00	0.00	13
3168	0.00	0.00	0.00	11
3169	0.00	0.00	0.00	17
3170	0.00	0.00	0.00	5
3171	0.00	0.00	0.00	10
3172	0.00	0.00	0.00	10
3173	0.00	0.00	0.00	4
3174	0.00	0.00	0.00	10
3175	0.00	0.00	0.00	10
3176	0.00	0.00	0.00	8
3177	0.50	0.20	0.29	5
3178	0.00	0.00	0.00	8
3179	0.00	0.00	0.00	15
3180	0.00	0.00	0.00	15
3181	0.00	0.00	0.00	12
3182	0.00	0.00	0.00	6
3183	0.00	0.00	0.00	12
3184	0.00	0.00	0.00	11
3185	0.00	0.00	0.00	8
3186	0.00	0.00	0.00	8
3187	0.00	0.00	0.00	9
3188	0.00	0.00	0.00	11
3189	0.00	0.00	0.00	7
3190	0.00	0.00	0.00	11
3191	0.00	0.00	0.00	6
3192	0.00	0.00	0.00	8
3193	0.00	0.00	0.00	6
3194	0.00	0.00	0.00	18
3195	0.00	0.00	0.00	7

3196	0.00	0.00	0.00	10
3197	0.00	0.00	0.00	11
3198	0.00	0.00	0.00	17
3199	0.00	0.00	0.00	6
3200	0.00	0.00	0.00	10
3201	0.00	0.00	0.00	10
3202	0.50	0.10	0.17	10
3203	0.00	0.00	0.00	10
3204	0.00	0.00	0.00	9
3205	0.00	0.00	0.00	9
3206	0.00	0.00	0.00	11
3207	0.00	0.00	0.00	14
3208	0.00	0.00	0.00	12
3209	0.00	0.00	0.00	11
3210	0.00	0.00	0.00	10
3211	0.00	0.00	0.00	10
3212	0.00	0.00	0.00	8
3213	0.00	0.00	0.00	14
3214	0.00	0.00	0.00	12
3215	0.00	0.00	0.00	7
3216	0.00	0.00	0.00	14
3217	0.00	0.00	0.00	6
3218	0.00	0.00	0.00	9
3219	0.00	0.00	0.00	9
3220	0.00	0.00	0.00	13
3221	0.00	0.00	0.00	15
3222	0.00	0.00	0.00	15
3223	0.00	0.00	0.00	19
3224	0.00	0.00	0.00	10
3225	0.00	0.00	0.00	12
3226	0.00	0.00	0.00	9
3227	1.00	0.18	0.31	11
3228	0.00	0.00	0.00	12
3229	0.00	0.00	0.00	10
3230	0.00	0.00	0.00	5
3231	0.00	0.00	0.00	11
3232	0.00	0.00	0.00	11
3233	0.00	0.00	0.00	9
3234	0.00	0.00	0.00	14

3235	0.00	0.00	0.00	4
3236	0.00	0.00	0.00	14
3237	0.00	0.00	0.00	12
3238	0.00	0.00	0.00	6
3239	0.00	0.00	0.00	7
3240	0.00	0.00	0.00	11
3241	0.00	0.00	0.00	8
3242	0.00	0.00	0.00	3
3243	0.00	0.00	0.00	12
3244	0.00	0.00	0.00	7
3245	0.00	0.00	0.00	6
3246	0.00	0.00	0.00	9
3247	0.00	0.00	0.00	9
3248	0.00	0.00	0.00	10
3249	0.00	0.00	0.00	8
3250	0.00	0.00	0.00	8
3251	0.00	0.00	0.00	4
3252	0.00	0.00	0.00	10
3253	0.00	0.00	0.00	9
3254	0.00	0.00	0.00	12
3255	0.00	0.00	0.00	8
3256	0.00	0.00	0.00	9
3257	0.00	0.00	0.00	7
3258	0.00	0.00	0.00	7
3259	0.00	0.00	0.00	8
3260	0.00	0.00	0.00	9
3261	0.00	0.00	0.00	8
3262	0.00	0.00	0.00	9
3263	0.00	0.00	0.00	8
3264	0.00	0.00	0.00	12
3265	0.00	0.00	0.00	8
3266	0.00	0.00	0.00	12
3267	0.00	0.00	0.00	11
3268	0.00	0.00	0.00	13
3269	0.00	0.00	0.00	7
3270	0.00	0.00	0.00	15
3271	0.00	0.00	0.00	8
3272	0.00	0.00	0.00	19
3273	1.00	0.11	0.20	9

3274	1.00	0.17	0.29	12
3275	0.00	0.00	0.00	6
3276	0.00	0.00	0.00	10
3277	0.00	0.00	0.00	5
3278	0.00	0.00	0.00	14
3279	0.00	0.00	0.00	7
3280	0.00	0.00	0.00	11
3281	0.00	0.00	0.00	16
3282	0.00	0.00	0.00	12
3283	0.00	0.00	0.00	7
3284	0.00	0.00	0.00	10
3285	0.00	0.00	0.00	8
3286	0.00	0.00	0.00	11
3287	0.00	0.00	0.00	9
3288	0.00	0.00	0.00	7
3289	0.00	0.00	0.00	7
3290	0.00	0.00	0.00	10
3291	0.00	0.00	0.00	8
3292	0.50	0.08	0.13	13
3293	0.00	0.00	0.00	6
3294	0.00	0.00	0.00	12
3295	0.00	0.00	0.00	10
3296	0.00	0.00	0.00	9
3297	0.00	0.00	0.00	13
3298	0.00	0.00	0.00	13
3299	0.00	0.00	0.00	15
3300	0.00	0.00	0.00	13
3301	0.00	0.00	0.00	10
3302	0.00	0.00	0.00	12
3303	0.00	0.00	0.00	9
3304	0.00	0.00	0.00	9
3305	0.00	0.00	0.00	11
3306	0.00	0.00	0.00	9
3307	0.50	0.17	0.25	12
3308	0.00	0.00	0.00	7
3309	0.00	0.00	0.00	9
3310	0.00	0.00	0.00	10
3311	0.00	0.00	0.00	10
3312	0.00	0.00	0.00	8

3313	0.00	0.00	0.00	9
3314	0.00	0.00	0.00	10
3315	0.00	0.00	0.00	8
3316	0.00	0.00	0.00	9
3317	0.00	0.00	0.00	8
3318	0.00	0.00	0.00	10
3319	0.00	0.00	0.00	11
3320	0.00	0.00	0.00	9
3321	0.00	0.00	0.00	10
3322	0.00	0.00	0.00	11
3323	0.00	0.00	0.00	12
3324	0.00	0.00	0.00	10
3325	0.00	0.00	0.00	6
3326	1.00	0.17	0.29	6
3327	0.00	0.00	0.00	7
3328	0.00	0.00	0.00	13
3329	1.00	0.25	0.40	8
3330	0.00	0.00	0.00	7
3331	0.00	0.00	0.00	6
3332	0.00	0.00	0.00	11
3333	0.00	0.00	0.00	7
3334	0.00	0.00	0.00	12
3335	0.00	0.00	0.00	7
3336	0.00	0.00	0.00	9
3337	0.00	0.00	0.00	10
3338	0.00	0.00	0.00	11
3339	0.00	0.00	0.00	14
3340	0.00	0.00	0.00	13
3341	0.00	0.00	0.00	6
3342	0.00	0.00	0.00	7
3343	0.00	0.00	0.00	10
3344	0.00	0.00	0.00	7
3345	0.00	0.00	0.00	6
3346	0.00	0.00	0.00	12
3347	0.00	0.00	0.00	10
3348	0.00	0.00	0.00	7
3349	0.00	0.00	0.00	9
3350	0.00	0.00	0.00	9
3351	0.00	0.00	0.00	9

3352	0.00	0.00	0.00	7
3353	0.00	0.00	0.00	7
3354	0.00	0.00	0.00	8
3355	0.00	0.00	0.00	12
3356	0.00	0.00	0.00	11
3357	0.00	0.00	0.00	6
3358	0.00	0.00	0.00	9
3359	0.00	0.00	0.00	9
3360	0.00	0.00	0.00	10
3361	1.00	0.20	0.33	10
3362	0.00	0.00	0.00	10
3363	0.00	0.00	0.00	14
3364	1.00	0.11	0.20	9
3365	0.00	0.00	0.00	10
3366	0.00	0.00	0.00	10
3367	0.00	0.00	0.00	11
3368	0.00	0.00	0.00	12
3369	1.00	0.17	0.29	12
3370	0.00	0.00	0.00	14
3371	0.00	0.00	0.00	11
3372	0.00	0.00	0.00	10
3373	0.00	0.00	0.00	11
3374	0.00	0.00	0.00	2
3375	0.00	0.00	0.00	10
3376	0.00	0.00	0.00	8
3377	0.00	0.00	0.00	9
3378	0.00	0.00	0.00	6
3379	0.00	0.00	0.00	14
3380	0.00	0.00	0.00	11
3381	0.00	0.00	0.00	12
3382	0.00	0.00	0.00	6
3383	0.00	0.00	0.00	12
3384	0.00	0.00	0.00	11
3385	0.00	0.00	0.00	11
3386	0.00	0.00	0.00	5
3387	0.00	0.00	0.00	7
3388	0.00	0.00	0.00	7
3389	0.00	0.00	0.00	9
3390	0.00	0.00	0.00	8

3391	0.00	0.00	0.00	7
3392	0.00	0.00	0.00	12
3393	0.00	0.00	0.00	5
3394	0.00	0.00	0.00	7
3395	0.00	0.00	0.00	6
3396	0.00	0.00	0.00	13
3397	0.00	0.00	0.00	6
3398	0.00	0.00	0.00	11
3399	0.00	0.00	0.00	10
3400	0.00	0.00	0.00	6
3401	0.00	0.00	0.00	6
3402	0.00	0.00	0.00	12
3403	0.00	0.00	0.00	7
3404	0.00	0.00	0.00	14
3405	0.00	0.00	0.00	10
3406	0.00	0.00	0.00	7
3407	0.00	0.00	0.00	12
3408	0.00	0.00	0.00	13
3409	0.00	0.00	0.00	6
3410	0.00	0.00	0.00	10
3411	0.00	0.00	0.00	13
3412	0.00	0.00	0.00	9
3413	0.00	0.00	0.00	5
3414	0.00	0.00	0.00	4
3415	0.00	0.00	0.00	10
3416	0.00	0.00	0.00	7
3417	0.00	0.00	0.00	12
3418	0.00	0.00	0.00	8
3419	0.00	0.00	0.00	10
3420	0.00	0.00	0.00	6
3421	0.00	0.00	0.00	8
3422	0.00	0.00	0.00	12
3423	0.00	0.00	0.00	8
3424	0.00	0.00	0.00	12
3425	0.00	0.00	0.00	9
3426	0.00	0.00	0.00	8
3427	0.00	0.00	0.00	10
3428	0.00	0.00	0.00	9
3429	0.00	0.00	0.00	10

3430	0.00	0.00	0.00	9
3431	0.00	0.00	0.00	8
3432	0.00	0.00	0.00	10
3433	0.00	0.00	0.00	9
3434	0.00	0.00	0.00	11
3435	0.00	0.00	0.00	9
3436	0.00	0.00	0.00	8
3437	0.00	0.00	0.00	15
3438	0.00	0.00	0.00	3
3439	0.00	0.00	0.00	7
3440	0.00	0.00	0.00	10
3441	0.00	0.00	0.00	13
3442	0.00	0.00	0.00	7
3443	0.00	0.00	0.00	6
3444	0.00	0.00	0.00	4
3445	0.00	0.00	0.00	6
3446	0.00	0.00	0.00	9
3447	0.00	0.00	0.00	12
3448	0.00	0.00	0.00	7
3449	0.00	0.00	0.00	9
3450	0.00	0.00	0.00	9
3451	0.00	0.00	0.00	5
3452	0.00	0.00	0.00	6
3453	0.00	0.00	0.00	8
3454	0.00	0.00	0.00	7
3455	0.00	0.00	0.00	8
3456	0.00	0.00	0.00	7
3457	0.00	0.00	0.00	5
3458	0.00	0.00	0.00	11
3459	0.00	0.00	0.00	13
3460	0.00	0.00	0.00	14
3461	0.00	0.00	0.00	10
3462	0.00	0.00	0.00	6
3463	0.00	0.00	0.00	5
3464	0.00	0.00	0.00	14
3465	0.00	0.00	0.00	9
3466	0.00	0.00	0.00	7
3467	0.00	0.00	0.00	12
3468	0.00	0.00	0.00	8

3469	0.00	0.00	0.00	10
3470	0.00	0.00	0.00	5
3471	0.00	0.00	0.00	13
3472	0.00	0.00	0.00	7
3473	0.00	0.00	0.00	7
3474	0.00	0.00	0.00	7
3475	0.00	0.00	0.00	11
3476	0.00	0.00	0.00	9
3477	0.00	0.00	0.00	11
3478	0.00	0.00	0.00	8
3479	0.00	0.00	0.00	9
3480	0.00	0.00	0.00	11
3481	0.00	0.00	0.00	12
3482	0.00	0.00	0.00	15
3483	0.00	0.00	0.00	9
3484	0.00	0.00	0.00	5
3485	0.00	0.00	0.00	6
3486	0.00	0.00	0.00	7
3487	0.00	0.00	0.00	7
3488	0.33	0.09	0.14	11
3489	0.00	0.00	0.00	9
3490	0.00	0.00	0.00	7
3491	0.00	0.00	0.00	8
3492	0.00	0.00	0.00	8
3493	0.00	0.00	0.00	11
3494	0.00	0.00	0.00	8
3495	0.00	0.00	0.00	10
3496	0.00	0.00	0.00	8
3497	0.00	0.00	0.00	13
3498	0.00	0.00	0.00	13
3499	0.00	0.00	0.00	6
3500	0.00	0.00	0.00	8
3501	0.00	0.00	0.00	8
3502	1.00	0.12	0.22	8
3503	0.00	0.00	0.00	16
3504	0.00	0.00	0.00	10
3505	0.00	0.00	0.00	10
3506	0.00	0.00	0.00	8
3507	0.00	0.00	0.00	8

3508	0.00	0.00	0.00	6
3509	0.00	0.00	0.00	8
3510	0.00	0.00	0.00	9
3511	0.00	0.00	0.00	8
3512	0.00	0.00	0.00	14
3513	0.00	0.00	0.00	5
3514	0.00	0.00	0.00	3
3515	0.00	0.00	0.00	10
3516	0.00	0.00	0.00	14
3517	0.00	0.00	0.00	9
3518	0.00	0.00	0.00	4
3519	0.00	0.00	0.00	15
3520	0.00	0.00	0.00	5
3521	0.00	0.00	0.00	12
3522	0.00	0.00	0.00	8
3523	0.00	0.00	0.00	10
3524	0.00	0.00	0.00	9
3525	0.00	0.00	0.00	7
3526	1.00	0.10	0.18	10
3527	0.00	0.00	0.00	9
3528	0.00	0.00	0.00	5
3529	0.00	0.00	0.00	6
3530	0.00	0.00	0.00	12
3531	0.00	0.00	0.00	9
3532	0.00	0.00	0.00	7
3533	0.00	0.00	0.00	14
3534	0.00	0.00	0.00	8
3535	0.00	0.00	0.00	7
3536	0.00	0.00	0.00	8
3537	0.00	0.00	0.00	10
3538	0.00	0.00	0.00	6
3539	0.00	0.00	0.00	12
3540	0.00	0.00	0.00	14
3541	0.00	0.00	0.00	9
3542	0.00	0.00	0.00	11
3543	0.00	0.00	0.00	10
3544	0.00	0.00	0.00	7
3545	0.00	0.00	0.00	8
3546	0.00	0.00	0.00	9

3547	0.00	0.00	0.00	5
3548	0.00	0.00	0.00	11
3549	0.00	0.00	0.00	7
3550	0.00	0.00	0.00	10
3551	0.00	0.00	0.00	3
3552	0.00	0.00	0.00	5
3553	0.00	0.00	0.00	10
3554	0.00	0.00	0.00	7
3555	0.00	0.00	0.00	5
3556	0.00	0.00	0.00	8
3557	0.00	0.00	0.00	8
3558	0.00	0.00	0.00	9
3559	0.00	0.00	0.00	9
3560	0.00	0.00	0.00	8
3561	0.00	0.00	0.00	10
3562	0.00	0.00	0.00	10
3563	0.00	0.00	0.00	5
3564	0.00	0.00	0.00	8
3565	0.00	0.00	0.00	6
3566	0.00	0.00	0.00	10
3567	1.00	0.25	0.40	8
3568	0.00	0.00	0.00	11
3569	0.00	0.00	0.00	10
3570	0.00	0.00	0.00	6
3571	0.00	0.00	0.00	12
3572	0.00	0.00	0.00	12
3573	0.00	0.00	0.00	11
3574	0.00	0.00	0.00	7
3575	0.00	0.00	0.00	6
3576	0.00	0.00	0.00	8
3577	0.00	0.00	0.00	9
3578	0.00	0.00	0.00	10
3579	0.00	0.00	0.00	10
3580	0.00	0.00	0.00	11
3581	1.00	0.20	0.33	5
3582	0.00	0.00	0.00	8
3583	0.00	0.00	0.00	13
3584	0.00	0.00	0.00	9
3585	0.00	0.00	0.00	11

3586	0.00	0.00	0.00	9
3587	0.00	0.00	0.00	12
3588	0.00	0.00	0.00	12
3589	0.00	0.00	0.00	7
3590	0.00	0.00	0.00	4
3591	0.00	0.00	0.00	6
3592	0.00	0.00	0.00	6
3593	0.00	0.00	0.00	16
3594	0.00	0.00	0.00	9
3595	0.00	0.00	0.00	4
3596	1.00	0.20	0.33	10
3597	0.00	0.00	0.00	6
3598	0.00	0.00	0.00	4
3599	0.00	0.00	0.00	3
3600	0.00	0.00	0.00	7
3601	0.00	0.00	0.00	8
3602	0.00	0.00	0.00	13
3603	0.00	0.00	0.00	8
3604	0.00	0.00	0.00	6
3605	0.00	0.00	0.00	9
3606	0.00	0.00	0.00	12
3607	0.00	0.00	0.00	8
3608	0.00	0.00	0.00	8
3609	0.00	0.00	0.00	8
3610	0.00	0.00	0.00	5
3611	0.00	0.00	0.00	7
3612	0.00	0.00	0.00	9
3613	0.00	0.00	0.00	7
3614	0.00	0.00	0.00	4
3615	0.00	0.00	0.00	7
3616	0.00	0.00	0.00	9
3617	0.00	0.00	0.00	14
3618	0.00	0.00	0.00	9
3619	0.00	0.00	0.00	6
3620	0.00	0.00	0.00	8
3621	0.00	0.00	0.00	8
3622	0.00	0.00	0.00	10
3623	0.00	0.00	0.00	6
3624	0.00	0.00	0.00	8

3625	0.00	0.00	0.00	13
3626	0.00	0.00	0.00	10
3627	0.00	0.00	0.00	7
3628	0.00	0.00	0.00	10
3629	0.00	0.00	0.00	5
3630	0.00	0.00	0.00	8
3631	1.00	0.20	0.33	5
3632	0.00	0.00	0.00	7
3633	0.00	0.00	0.00	7
3634	0.00	0.00	0.00	6
3635	0.00	0.00	0.00	4
3636	0.00	0.00	0.00	11
3637	0.00	0.00	0.00	5
3638	0.00	0.00	0.00	8
3639	0.00	0.00	0.00	7
3640	0.00	0.00	0.00	8
3641	0.00	0.00	0.00	14
3642	0.00	0.00	0.00	8
3643	0.00	0.00	0.00	9
3644	0.00	0.00	0.00	11
3645	0.00	0.00	0.00	6
3646	0.00	0.00	0.00	8
3647	0.00	0.00	0.00	6
3648	0.00	0.00	0.00	9
3649	0.00	0.00	0.00	9
3650	0.00	0.00	0.00	9
3651	0.00	0.00	0.00	11
3652	0.00	0.00	0.00	13
3653	0.00	0.00	0.00	8
3654	0.00	0.00	0.00	9
3655	0.00	0.00	0.00	7
3656	0.00	0.00	0.00	9
3657	1.00	0.10	0.18	10
3658	0.00	0.00	0.00	8
3659	0.00	0.00	0.00	13
3660	0.00	0.00	0.00	12
3661	0.00	0.00	0.00	8
3662	0.00	0.00	0.00	5
3663	0.00	0.00	0.00	12

3664	0.00	0.00	0.00	7
3665	0.00	0.00	0.00	9
3666	0.00	0.00	0.00	9
3667	0.00	0.00	0.00	9
3668	0.00	0.00	0.00	6
3669	1.00	0.12	0.22	8
3670	0.00	0.00	0.00	11
3671	0.00	0.00	0.00	10
3672	0.00	0.00	0.00	9
3673	0.00	0.00	0.00	4
3674	0.00	0.00	0.00	10
3675	0.00	0.00	0.00	11
3676	0.00	0.00	0.00	7
3677	0.00	0.00	0.00	6
3678	0.00	0.00	0.00	9
3679	0.00	0.00	0.00	9
3680	0.00	0.00	0.00	8
3681	0.00	0.00	0.00	3
3682	0.00	0.00	0.00	10
3683	0.00	0.00	0.00	8
3684	0.00	0.00	0.00	7
3685	0.00	0.00	0.00	9
3686	0.00	0.00	0.00	9
3687	0.00	0.00	0.00	8
3688	0.00	0.00	0.00	7
3689	0.00	0.00	0.00	5
3690	0.00	0.00	0.00	9
3691	0.00	0.00	0.00	6
3692	0.00	0.00	0.00	12
3693	0.00	0.00	0.00	4
3694	0.00	0.00	0.00	4
3695	0.00	0.00	0.00	7
3696	0.00	0.00	0.00	9
3697	0.00	0.00	0.00	3
3698	0.00	0.00	0.00	6
3699	0.00	0.00	0.00	11
3700	0.00	0.00	0.00	9
3701	0.00	0.00	0.00	6
3702	0.00	0.00	0.00	10

3703	0.00	0.00	0.00	13
3704	0.00	0.00	0.00	9
3705	0.00	0.00	0.00	9
3706	0.00	0.00	0.00	11
3707	0.00	0.00	0.00	6
3708	0.00	0.00	0.00	8
3709	0.00	0.00	0.00	7
3710	0.00	0.00	0.00	10
3711	0.00	0.00	0.00	7
3712	1.00	0.25	0.40	8
3713	0.00	0.00	0.00	5
3714	0.00	0.00	0.00	5
3715	0.00	0.00	0.00	8
3716	0.00	0.00	0.00	11
3717	0.00	0.00	0.00	9
3718	0.00	0.00	0.00	9
3719	0.00	0.00	0.00	5
3720	1.00	0.25	0.40	4
3721	0.67	0.18	0.29	11
3722	0.75	0.33	0.46	9
3723	0.00	0.00	0.00	14
3724	0.00	0.00	0.00	9
3725	0.00	0.00	0.00	10
3726	0.00	0.00	0.00	7
3727	0.00	0.00	0.00	8
3728	0.00	0.00	0.00	9
3729	0.00	0.00	0.00	8
3730	0.00	0.00	0.00	6
3731	0.00	0.00	0.00	6
3732	0.00	0.00	0.00	11
3733	0.00	0.00	0.00	3
3734	0.00	0.00	0.00	8
3735	0.00	0.00	0.00	8
3736	0.00	0.00	0.00	9
3737	0.00	0.00	0.00	7
3738	0.00	0.00	0.00	3
3739	0.00	0.00	0.00	10
3740	0.00	0.00	0.00	9
3741	0.00	0.00	0.00	5

3742	0.00	0.00	0.00	3
3743	0.00	0.00	0.00	13
3744	0.00	0.00	0.00	7
3745	0.00	0.00	0.00	9
3746	0.00	0.00	0.00	5
3747	0.00	0.00	0.00	6
3748	0.00	0.00	0.00	4
3749	0.00	0.00	0.00	9
3750	0.00	0.00	0.00	11
3751	0.00	0.00	0.00	13
3752	0.00	0.00	0.00	4
3753	0.00	0.00	0.00	6
3754	0.00	0.00	0.00	8
3755	0.00	0.00	0.00	6
3756	0.00	0.00	0.00	11
3757	0.00	0.00	0.00	6
3758	0.00	0.00	0.00	7
3759	0.00	0.00	0.00	8
3760	0.00	0.00	0.00	10
3761	0.00	0.00	0.00	13
3762	0.00	0.00	0.00	12
3763	0.00	0.00	0.00	11
3764	0.00	0.00	0.00	11
3765	0.00	0.00	0.00	3
3766	0.00	0.00	0.00	7
3767	0.00	0.00	0.00	7
3768	0.00	0.00	0.00	6
3769	0.00	0.00	0.00	7
3770	0.00	0.00	0.00	6
3771	0.00	0.00	0.00	6
3772	0.00	0.00	0.00	7
3773	0.00	0.00	0.00	9
3774	0.00	0.00	0.00	10
3775	0.00	0.00	0.00	7
3776	0.00	0.00	0.00	7
3777	0.00	0.00	0.00	9
3778	0.00	0.00	0.00	7
3779	0.00	0.00	0.00	4
3780	0.00	0.00	0.00	5

3781	0.00	0.00	0.00	13
3782	0.00	0.00	0.00	7
3783	0.00	0.00	0.00	7
3784	0.00	0.00	0.00	5
3785	0.00	0.00	0.00	9
3786	0.00	0.00	0.00	6
3787	0.00	0.00	0.00	12
3788	0.00	0.00	0.00	9
3789	1.00	0.12	0.22	8
3790	0.00	0.00	0.00	4
3791	0.00	0.00	0.00	5
3792	0.00	0.00	0.00	6
3793	0.00	0.00	0.00	6
3794	0.00	0.00	0.00	12
3795	0.00	0.00	0.00	3
3796	1.00	0.14	0.25	7
3797	0.00	0.00	0.00	5
3798	0.00	0.00	0.00	9
3799	0.00	0.00	0.00	14
3800	0.00	0.00	0.00	8
3801	0.00	0.00	0.00	4
3802	1.00	0.29	0.44	7
3803	0.00	0.00	0.00	8
3804	0.00	0.00	0.00	12
3805	0.00	0.00	0.00	10
3806	0.00	0.00	0.00	10
3807	0.00	0.00	0.00	13
3808	0.00	0.00	0.00	5
3809	0.00	0.00	0.00	6
3810	0.00	0.00	0.00	8
3811	0.00	0.00	0.00	8
3812	0.00	0.00	0.00	6
3813	0.00	0.00	0.00	2
3814	0.00	0.00	0.00	10
3815	0.00	0.00	0.00	11
3816	0.00	0.00	0.00	11
3817	0.00	0.00	0.00	7
3818	0.00	0.00	0.00	8
3819	0.00	0.00	0.00	9

3820	0.00	0.00	0.00	9
3821	0.00	0.00	0.00	10
3822	0.00	0.00	0.00	7
3823	0.00	0.00	0.00	7
3824	0.00	0.00	0.00	7
3825	0.00	0.00	0.00	10
3826	0.00	0.00	0.00	7
3827	0.00	0.00	0.00	10
3828	0.00	0.00	0.00	7
3829	0.00	0.00	0.00	12
3830	0.00	0.00	0.00	9
3831	0.00	0.00	0.00	6
3832	1.00	0.14	0.25	7
3833	0.00	0.00	0.00	4
3834	0.00	0.00	0.00	9
3835	0.00	0.00	0.00	9
3836	0.00	0.00	0.00	7
3837	0.00	0.00	0.00	8
3838	0.00	0.00	0.00	7
3839	0.00	0.00	0.00	7
3840	0.00	0.00	0.00	10
3841	0.00	0.00	0.00	10
3842	0.00	0.00	0.00	8
3843	0.00	0.00	0.00	5
3844	0.00	0.00	0.00	5
3845	0.00	0.00	0.00	8
3846	0.00	0.00	0.00	7
3847	0.00	0.00	0.00	7
3848	1.00	0.17	0.29	6
3849	0.00	0.00	0.00	4
3850	0.00	0.00	0.00	8
3851	0.00	0.00	0.00	11
3852	0.00	0.00	0.00	6
3853	0.00	0.00	0.00	2
3854	0.00	0.00	0.00	9
3855	0.00	0.00	0.00	7
3856	0.00	0.00	0.00	9
3857	0.00	0.00	0.00	3
3858	0.00	0.00	0.00	7

3859	0.00	0.00	0.00	7
3860	0.00	0.00	0.00	9
3861	0.00	0.00	0.00	7
3862	0.00	0.00	0.00	7
3863	0.00	0.00	0.00	15
3864	0.00	0.00	0.00	10
3865	0.00	0.00	0.00	6
3866	0.00	0.00	0.00	16
3867	0.00	0.00	0.00	4
3868	0.00	0.00	0.00	9
3869	0.00	0.00	0.00	9
3870	0.00	0.00	0.00	5
3871	0.00	0.00	0.00	6
3872	0.00	0.00	0.00	12
3873	0.00	0.00	0.00	8
3874	0.00	0.00	0.00	6
3875	0.00	0.00	0.00	7
3876	0.00	0.00	0.00	8
3877	0.00	0.00	0.00	12
3878	0.00	0.00	0.00	3
3879	0.00	0.00	0.00	6
3880	1.00	0.14	0.25	7
3881	0.00	0.00	0.00	8
3882	0.00	0.00	0.00	8
3883	0.00	0.00	0.00	6
3884	0.00	0.00	0.00	10
3885	0.00	0.00	0.00	8
3886	0.00	0.00	0.00	10
3887	0.00	0.00	0.00	9
3888	0.00	0.00	0.00	7
3889	0.00	0.00	0.00	6
3890	0.00	0.00	0.00	9
3891	0.00	0.00	0.00	6
3892	0.00	0.00	0.00	9
3893	0.00	0.00	0.00	6
3894	0.00	0.00	0.00	7
3895	0.00	0.00	0.00	5
3896	0.00	0.00	0.00	12
3897	0.00	0.00	0.00	5

3898	0.00	0.00	0.00	7
3899	0.00	0.00	0.00	7
3900	1.00	0.25	0.40	8
3901	0.00	0.00	0.00	12
3902	0.00	0.00	0.00	5
3903	0.00	0.00	0.00	6
3904	0.00	0.00	0.00	12
3905	0.00	0.00	0.00	9
3906	0.00	0.00	0.00	7
3907	0.00	0.00	0.00	11
3908	0.00	0.00	0.00	6
3909	0.00	0.00	0.00	5
3910	0.00	0.00	0.00	7
3911	0.00	0.00	0.00	8
3912	0.00	0.00	0.00	8
3913	0.00	0.00	0.00	9
3914	0.00	0.00	0.00	8
3915	0.00	0.00	0.00	3
3916	0.00	0.00	0.00	6
3917	0.00	0.00	0.00	7
3918	0.00	0.00	0.00	12
3919	0.00	0.00	0.00	7
3920	0.00	0.00	0.00	8
3921	0.00	0.00	0.00	8
3922	0.00	0.00	0.00	9
3923	0.00	0.00	0.00	9
3924	0.00	0.00	0.00	7
3925	0.00	0.00	0.00	10
3926	0.00	0.00	0.00	6
3927	0.00	0.00	0.00	5
3928	0.00	0.00	0.00	6
3929	0.00	0.00	0.00	12
3930	0.00	0.00	0.00	9
3931	0.00	0.00	0.00	4
3932	0.00	0.00	0.00	3
3933	0.00	0.00	0.00	4
3934	0.00	0.00	0.00	4
3935	0.00	0.00	0.00	9
3936	0.00	0.00	0.00	8

3937	0.00	0.00	0.00	9
3938	0.00	0.00	0.00	9
3939	0.00	0.00	0.00	8
3940	0.00	0.00	0.00	4
3941	0.00	0.00	0.00	4
3942	0.00	0.00	0.00	5
3943	0.00	0.00	0.00	11
3944	0.00	0.00	0.00	6
3945	0.00	0.00	0.00	13
3946	0.00	0.00	0.00	5
3947	0.00	0.00	0.00	3
3948	0.00	0.00	0.00	9
3949	0.00	0.00	0.00	6
3950	0.00	0.00	0.00	9
3951	0.00	0.00	0.00	5
3952	0.00	0.00	0.00	11
3953	0.00	0.00	0.00	4
3954	0.00	0.00	0.00	7
3955	0.00	0.00	0.00	3
3956	0.00	0.00	0.00	8
3957	0.00	0.00	0.00	8
3958	0.00	0.00	0.00	5
3959	0.00	0.00	0.00	5
3960	0.00	0.00	0.00	5
3961	0.00	0.00	0.00	6
3962	0.00	0.00	0.00	7
3963	0.00	0.00	0.00	4
3964	0.00	0.00	0.00	8
3965	0.00	0.00	0.00	4
3966	0.00	0.00	0.00	2
3967	0.00	0.00	0.00	5
3968	0.00	0.00	0.00	6
3969	0.00	0.00	0.00	9
3970	0.00	0.00	0.00	6
3971	0.00	0.00	0.00	5
3972	0.00	0.00	0.00	8
3973	0.00	0.00	0.00	7
3974	0.00	0.00	0.00	5
3975	0.00	0.00	0.00	5

3976	0.00	0.00	0.00	5
3977	0.00	0.00	0.00	7
3978	0.00	0.00	0.00	7
3979	0.00	0.00	0.00	4
3980	0.00	0.00	0.00	6
3981	0.00	0.00	0.00	7
3982	0.00	0.00	0.00	7
3983	0.00	0.00	0.00	10
3984	0.00	0.00	0.00	6
3985	0.00	0.00	0.00	8
3986	0.00	0.00	0.00	6
3987	0.00	0.00	0.00	3
3988	0.00	0.00	0.00	6
3989	0.00	0.00	0.00	4
3990	0.00	0.00	0.00	12
3991	0.00	0.00	0.00	9
3992	0.00	0.00	0.00	7
3993	0.00	0.00	0.00	10
3994	0.00	0.00	0.00	7
3995	0.00	0.00	0.00	13
3996	0.00	0.00	0.00	7
3997	0.00	0.00	0.00	7
3998	0.00	0.00	0.00	8
3999	0.00	0.00	0.00	7
4000	0.00	0.00	0.00	4
4001	0.00	0.00	0.00	12
4002	0.00	0.00	0.00	7
4003	0.00	0.00	0.00	8
4004	0.00	0.00	0.00	5
4005	0.00	0.00	0.00	11
4006	0.00	0.00	0.00	7
4007	0.00	0.00	0.00	5
4008	0.00	0.00	0.00	8
4009	0.00	0.00	0.00	7
4010	0.00	0.00	0.00	9
4011	0.00	0.00	0.00	8
4012	0.00	0.00	0.00	11
4013	0.00	0.00	0.00	6
4014	0.00	0.00	0.00	8

4015	0.00	0.00	0.00	7
4016	0.00	0.00	0.00	10
4017	0.00	0.00	0.00	7
4018	0.00	0.00	0.00	7
4019	0.00	0.00	0.00	11
4020	0.00	0.00	0.00	4
4021	0.00	0.00	0.00	10
4022	0.00	0.00	0.00	5
4023	0.00	0.00	0.00	6
4024	0.00	0.00	0.00	7
4025	0.00	0.00	0.00	12
4026	0.00	0.00	0.00	9
4027	0.00	0.00	0.00	4
4028	0.00	0.00	0.00	4
4029	0.00	0.00	0.00	5
4030	0.00	0.00	0.00	8
4031	0.00	0.00	0.00	8
4032	0.00	0.00	0.00	8
4033	0.00	0.00	0.00	7
4034	0.00	0.00	0.00	10
4035	0.00	0.00	0.00	8
4036	0.00	0.00	0.00	6
4037	0.00	0.00	0.00	10
4038	0.00	0.00	0.00	10
4039	1.00	0.12	0.22	8
4040	0.00	0.00	0.00	8
4041	0.00	0.00	0.00	9
4042	0.00	0.00	0.00	4
4043	0.00	0.00	0.00	9
4044	0.00	0.00	0.00	9
4045	0.00	0.00	0.00	7
4046	0.00	0.00	0.00	4
4047	0.00	0.00	0.00	3
4048	0.00	0.00	0.00	4
4049	0.00	0.00	0.00	8
4050	0.00	0.00	0.00	9
4051	0.00	0.00	0.00	4
4052	0.00	0.00	0.00	4
4053	0.00	0.00	0.00	7

4054	0.00	0.00	0.00	6
4055	0.00	0.00	0.00	8
4056	0.00	0.00	0.00	8
4057	0.00	0.00	0.00	8
4058	0.00	0.00	0.00	5
4059	0.00	0.00	0.00	8
4060	0.00	0.00	0.00	8
4061	0.00	0.00	0.00	10
4062	0.00	0.00	0.00	8
4063	0.00	0.00	0.00	9
4064	0.00	0.00	0.00	6
4065	0.00	0.00	0.00	5
4066	0.00	0.00	0.00	7
4067	0.00	0.00	0.00	9
4068	0.00	0.00	0.00	5
4069	0.00	0.00	0.00	11
4070	0.00	0.00	0.00	8
4071	0.00	0.00	0.00	5
4072	0.00	0.00	0.00	7
4073	0.00	0.00	0.00	7
4074	0.00	0.00	0.00	3
4075	0.00	0.00	0.00	9
4076	0.00	0.00	0.00	7
4077	0.00	0.00	0.00	11
4078	0.00	0.00	0.00	5
4079	0.00	0.00	0.00	5
4080	0.00	0.00	0.00	5
4081	0.00	0.00	0.00	7
4082	0.00	0.00	0.00	7
4083	0.00	0.00	0.00	4
4084	0.00	0.00	0.00	8
4085	0.00	0.00	0.00	5
4086	0.00	0.00	0.00	6
4087	0.00	0.00	0.00	4
4088	0.00	0.00	0.00	7
4089	0.00	0.00	0.00	6
4090	0.00	0.00	0.00	6
4091	0.00	0.00	0.00	6
4092	0.00	0.00	0.00	10

4093	0.00	0.00	0.00	6
4094	0.00	0.00	0.00	8
4095	0.00	0.00	0.00	7
4096	0.00	0.00	0.00	11
4097	0.00	0.00	0.00	8
4098	0.00	0.00	0.00	9
4099	0.00	0.00	0.00	5
4100	0.00	0.00	0.00	7
4101	1.00	0.50	0.67	4
4102	0.00	0.00	0.00	8
4103	0.00	0.00	0.00	10
4104	0.00	0.00	0.00	12
4105	0.00	0.00	0.00	3
4106	0.00	0.00	0.00	6
4107	0.00	0.00	0.00	9
4108	0.00	0.00	0.00	10
4109	0.00	0.00	0.00	10
4110	0.00	0.00	0.00	9
4111	0.00	0.00	0.00	6
4112	0.00	0.00	0.00	6
4113	0.00	0.00	0.00	8
4114	0.00	0.00	0.00	4
4115	0.00	0.00	0.00	10
4116	0.00	0.00	0.00	6
4117	0.00	0.00	0.00	8
4118	0.00	0.00	0.00	5
4119	0.00	0.00	0.00	9
4120	0.00	0.00	0.00	5
4121	0.00	0.00	0.00	8
4122	0.00	0.00	0.00	7
4123	0.00	0.00	0.00	5
4124	0.00	0.00	0.00	6
4125	0.00	0.00	0.00	8
4126	0.00	0.00	0.00	8
4127	0.00	0.00	0.00	12
4128	0.00	0.00	0.00	5
4129	0.00	0.00	0.00	7
4130	0.00	0.00	0.00	10
4131	0.00	0.00	0.00	5

4132	0.00	0.00	0.00	4
4133	0.00	0.00	0.00	11
4134	0.00	0.00	0.00	11
4135	0.00	0.00	0.00	5
4136	0.00	0.00	0.00	6
4137	0.00	0.00	0.00	6
4138	0.00	0.00	0.00	4
4139	0.00	0.00	0.00	10
4140	0.00	0.00	0.00	7
4141	0.00	0.00	0.00	10
4142	0.00	0.00	0.00	6
4143	0.00	0.00	0.00	8
4144	0.00	0.00	0.00	6
4145	0.00	0.00	0.00	7
4146	0.00	0.00	0.00	4
4147	0.00	0.00	0.00	5
4148	0.00	0.00	0.00	9
4149	0.00	0.00	0.00	11
4150	0.00	0.00	0.00	7
4151	0.00	0.00	0.00	3
4152	0.00	0.00	0.00	4
4153	0.00	0.00	0.00	11
4154	0.00	0.00	0.00	7
4155	0.00	0.00	0.00	2
4156	0.00	0.00	0.00	6
4157	0.00	0.00	0.00	8
4158	0.00	0.00	0.00	8
4159	0.00	0.00	0.00	8
4160	0.00	0.00	0.00	6
4161	0.00	0.00	0.00	9
4162	0.00	0.00	0.00	5
4163	0.00	0.00	0.00	7
4164	0.00	0.00	0.00	7
4165	0.00	0.00	0.00	7
4166	0.00	0.00	0.00	9
4167	0.00	0.00	0.00	4
4168	0.00	0.00	0.00	5
4169	0.00	0.00	0.00	6
4170	0.00	0.00	0.00	8

4171	0.00	0.00	0.00	5
4172	0.00	0.00	0.00	5
4173	0.00	0.00	0.00	7
4174	0.00	0.00	0.00	8
4175	1.00	0.25	0.40	4
4176	1.00	0.25	0.40	4
4177	0.00	0.00	0.00	9
4178	0.00	0.00	0.00	5
4179	0.00	0.00	0.00	5
4180	0.00	0.00	0.00	6
4181	0.00	0.00	0.00	4
4182	0.00	0.00	0.00	8
4183	0.00	0.00	0.00	8
4184	0.00	0.00	0.00	7
4185	0.00	0.00	0.00	7
4186	0.00	0.00	0.00	3
4187	0.00	0.00	0.00	6
4188	0.50	0.20	0.29	5
4189	0.00	0.00	0.00	5
4190	0.00	0.00	0.00	7
4191	0.00	0.00	0.00	4
4192	0.00	0.00	0.00	5
4193	0.00	0.00	0.00	2
4194	0.00	0.00	0.00	9
4195	0.00	0.00	0.00	8
4196	0.00	0.00	0.00	11
4197	0.00	0.00	0.00	12
4198	0.00	0.00	0.00	3
4199	0.00	0.00	0.00	5
4200	0.00	0.00	0.00	12
4201	0.00	0.00	0.00	7
4202	0.00	0.00	0.00	3
4203	0.00	0.00	0.00	5
4204	0.00	0.00	0.00	10
4205	0.00	0.00	0.00	7
4206	0.00	0.00	0.00	6
4207	0.00	0.00	0.00	4
4208	0.00	0.00	0.00	10
4209	0.00	0.00	0.00	5

4210	0.00	0.00	0.00	7
4211	0.00	0.00	0.00	7
4212	0.00	0.00	0.00	6
4213	0.00	0.00	0.00	4
4214	0.00	0.00	0.00	6
4215	0.00	0.00	0.00	5
4216	0.00	0.00	0.00	10
4217	0.00	0.00	0.00	5
4218	0.00	0.00	0.00	13
4219	0.00	0.00	0.00	7
4220	0.00	0.00	0.00	7
4221	0.00	0.00	0.00	5
4222	0.00	0.00	0.00	5
4223	0.00	0.00	0.00	6
4224	0.00	0.00	0.00	4
4225	0.00	0.00	0.00	7
4226	0.00	0.00	0.00	12
4227	0.00	0.00	0.00	2
4228	0.00	0.00	0.00	8
4229	0.00	0.00	0.00	9
4230	0.00	0.00	0.00	8
4231	0.00	0.00	0.00	5
4232	0.00	0.00	0.00	5
4233	0.00	0.00	0.00	6
4234	0.00	0.00	0.00	8
4235	0.00	0.00	0.00	9
4236	0.00	0.00	0.00	3
4237	0.00	0.00	0.00	5
4238	0.00	0.00	0.00	5
4239	0.00	0.00	0.00	5
4240	0.00	0.00	0.00	11
4241	0.00	0.00	0.00	6
4242	0.00	0.00	0.00	5
4243	0.00	0.00	0.00	7
4244	0.00	0.00	0.00	10
4245	0.00	0.00	0.00	7
4246	0.00	0.00	0.00	12
4247	0.00	0.00	0.00	8
4248	0.00	0.00	0.00	6

4249	0.00	0.00	0.00	5
4250	0.00	0.00	0.00	5
4251	0.00	0.00	0.00	6
4252	0.00	0.00	0.00	10
4253	0.00	0.00	0.00	5
4254	0.00	0.00	0.00	7
4255	0.00	0.00	0.00	6
4256	0.00	0.00	0.00	8
4257	1.00	0.29	0.44	7
4258	0.00	0.00	0.00	4
4259	0.00	0.00	0.00	6
4260	0.00	0.00	0.00	9
4261	0.00	0.00	0.00	9
4262	0.00	0.00	0.00	3
4263	0.00	0.00	0.00	8
4264	0.00	0.00	0.00	6
4265	0.00	0.00	0.00	5
4266	0.00	0.00	0.00	7
4267	0.00	0.00	0.00	7
4268	0.00	0.00	0.00	10
4269	0.00	0.00	0.00	4
4270	0.00	0.00	0.00	5
4271	0.00	0.00	0.00	3
4272	0.00	0.00	0.00	2
4273	0.00	0.00	0.00	6
4274	0.00	0.00	0.00	6
4275	0.00	0.00	0.00	10
4276	0.00	0.00	0.00	7
4277	0.00	0.00	0.00	9
4278	0.00	0.00	0.00	10
4279	0.00	0.00	0.00	2
4280	0.00	0.00	0.00	6
4281	0.00	0.00	0.00	7
4282	0.00	0.00	0.00	4
4283	0.00	0.00	0.00	8
4284	0.00	0.00	0.00	9
4285	0.00	0.00	0.00	4
4286	0.00	0.00	0.00	7
4287	0.00	0.00	0.00	7

4288	0.00	0.00	0.00	3
4289	0.00	0.00	0.00	6
4290	0.00	0.00	0.00	5
4291	0.00	0.00	0.00	9
4292	0.00	0.00	0.00	10
4293	0.00	0.00	0.00	6
4294	0.00	0.00	0.00	8
4295	0.00	0.00	0.00	3
4296	0.00	0.00	0.00	10
4297	0.00	0.00	0.00	5
4298	0.00	0.00	0.00	3
4299	0.00	0.00	0.00	6
4300	0.00	0.00	0.00	5
4301	0.00	0.00	0.00	7
4302	0.00	0.00	0.00	6
4303	0.00	0.00	0.00	5
4304	0.00	0.00	0.00	10
4305	0.00	0.00	0.00	5
4306	0.00	0.00	0.00	4
4307	0.00	0.00	0.00	10
4308	0.00	0.00	0.00	11
4309	0.00	0.00	0.00	6
4310	0.00	0.00	0.00	8
4311	0.00	0.00	0.00	9
4312	0.00	0.00	0.00	5
4313	0.00	0.00	0.00	12
4314	0.00	0.00	0.00	4
4315	0.00	0.00	0.00	8
4316	0.00	0.00	0.00	9
4317	0.00	0.00	0.00	5
4318	0.00	0.00	0.00	6
4319	0.00	0.00	0.00	9
4320	0.00	0.00	0.00	3
4321	0.00	0.00	0.00	6
4322	0.00	0.00	0.00	6
4323	0.00	0.00	0.00	4
4324	0.00	0.00	0.00	6
4325	0.00	0.00	0.00	7
4326	0.00	0.00	0.00	4

4327	0.00	0.00	0.00	14
4328	0.00	0.00	0.00	4
4329	0.00	0.00	0.00	3
4330	0.00	0.00	0.00	5
4331	0.00	0.00	0.00	4
4332	0.00	0.00	0.00	9
4333	0.00	0.00	0.00	8
4334	0.00	0.00	0.00	5
4335	0.00	0.00	0.00	5
4336	0.00	0.00	0.00	6
4337	0.00	0.00	0.00	6
4338	0.00	0.00	0.00	4
4339	0.00	0.00	0.00	6
4340	0.00	0.00	0.00	3
4341	0.00	0.00	0.00	6
4342	0.00	0.00	0.00	6
4343	0.00	0.00	0.00	5
4344	0.00	0.00	0.00	9
4345	0.00	0.00	0.00	7
4346	0.00	0.00	0.00	5
4347	0.00	0.00	0.00	7
4348	0.00	0.00	0.00	7
4349	0.00	0.00	0.00	8
4350	0.00	0.00	0.00	8
4351	0.00	0.00	0.00	5
4352	0.00	0.00	0.00	6
4353	0.00	0.00	0.00	7
4354	0.00	0.00	0.00	5
4355	0.00	0.00	0.00	5
4356	0.00	0.00	0.00	7
4357	0.00	0.00	0.00	6
4358	0.00	0.00	0.00	7
4359	0.00	0.00	0.00	4
4360	0.00	0.00	0.00	5
4361	0.00	0.00	0.00	6
4362	0.00	0.00	0.00	4
4363	0.00	0.00	0.00	4
4364	0.00	0.00	0.00	6
4365	0.00	0.00	0.00	7

4366	0.00	0.00	0.00	7
4367	0.00	0.00	0.00	4
4368	0.00	0.00	0.00	7
4369	0.00	0.00	0.00	3
4370	0.00	0.00	0.00	4
4371	0.00	0.00	0.00	10
4372	0.00	0.00	0.00	7
4373	0.00	0.00	0.00	7
4374	0.00	0.00	0.00	5
4375	0.00	0.00	0.00	8
4376	0.00	0.00	0.00	8
4377	0.00	0.00	0.00	7
4378	0.00	0.00	0.00	7
4379	0.00	0.00	0.00	6
4380	0.00	0.00	0.00	7
4381	0.00	0.00	0.00	10
4382	0.00	0.00	0.00	5
4383	0.00	0.00	0.00	8
4384	0.00	0.00	0.00	6
4385	0.00	0.00	0.00	2
4386	0.00	0.00	0.00	4
4387	0.00	0.00	0.00	9
4388	0.00	0.00	0.00	4
4389	0.00	0.00	0.00	10
4390	0.00	0.00	0.00	9
4391	0.00	0.00	0.00	5
4392	0.00	0.00	0.00	4
4393	0.00	0.00	0.00	3
4394	0.00	0.00	0.00	4
4395	0.00	0.00	0.00	5
4396	0.00	0.00	0.00	10
4397	0.00	0.00	0.00	6
4398	0.00	0.00	0.00	2
4399	0.00	0.00	0.00	5
4400	0.00	0.00	0.00	6
4401	0.00	0.00	0.00	5
4402	0.00	0.00	0.00	8
4403	0.00	0.00	0.00	6
4404	0.00	0.00	0.00	5

4405	0.00	0.00	0.00	7
4406	0.00	0.00	0.00	9
4407	0.00	0.00	0.00	6
4408	0.00	0.00	0.00	4
4409	0.00	0.00	0.00	5
4410	0.00	0.00	0.00	9
4411	0.00	0.00	0.00	7
4412	0.00	0.00	0.00	5
4413	0.00	0.00	0.00	4
4414	0.00	0.00	0.00	1
4415	0.00	0.00	0.00	6
4416	0.00	0.00	0.00	7
4417	0.00	0.00	0.00	6
4418	0.00	0.00	0.00	7
4419	0.00	0.00	0.00	9
4420	0.00	0.00	0.00	8
4421	0.00	0.00	0.00	7
4422	0.00	0.00	0.00	4
4423	0.00	0.00	0.00	5
4424	0.00	0.00	0.00	2
4425	0.00	0.00	0.00	6
4426	0.00	0.00	0.00	6
4427	0.00	0.00	0.00	3
4428	0.00	0.00	0.00	7
4429	0.00	0.00	0.00	7
4430	0.00	0.00	0.00	3
4431	0.00	0.00	0.00	7
4432	0.00	0.00	0.00	8
4433	0.00	0.00	0.00	3
4434	0.00	0.00	0.00	7
4435	0.00	0.00	0.00	8
4436	0.00	0.00	0.00	5
4437	0.00	0.00	0.00	5
4438	0.00	0.00	0.00	11
4439	0.00	0.00	0.00	5
4440	0.00	0.00	0.00	7
4441	0.00	0.00	0.00	7
4442	0.00	0.00	0.00	5
4443	0.00	0.00	0.00	2

4444	0.00	0.00	0.00	8
4445	0.00	0.00	0.00	8
4446	0.00	0.00	0.00	7
4447	0.00	0.00	0.00	9
4448	0.00	0.00	0.00	4
4449	0.00	0.00	0.00	6
4450	0.00	0.00	0.00	6
4451	0.00	0.00	0.00	2
4452	0.00	0.00	0.00	7
4453	0.00	0.00	0.00	8
4454	0.00	0.00	0.00	5
4455	0.00	0.00	0.00	5
4456	0.00	0.00	0.00	8
4457	0.00	0.00	0.00	4
4458	0.00	0.00	0.00	9
4459	0.00	0.00	0.00	8
4460	0.00	0.00	0.00	4
4461	0.00	0.00	0.00	5
4462	0.00	0.00	0.00	6
4463	0.00	0.00	0.00	7
4464	0.00	0.00	0.00	7
4465	0.00	0.00	0.00	7
4466	0.00	0.00	0.00	5
4467	0.00	0.00	0.00	8
4468	0.00	0.00	0.00	7
4469	0.00	0.00	0.00	5
4470	0.00	0.00	0.00	5
4471	0.00	0.00	0.00	5
4472	0.00	0.00	0.00	5
4473	0.00	0.00	0.00	6
4474	0.00	0.00	0.00	3
4475	0.00	0.00	0.00	4
4476	0.00	0.00	0.00	2
4477	0.00	0.00	0.00	8
4478	0.00	0.00	0.00	3
4479	0.00	0.00	0.00	7
4480	0.00	0.00	0.00	7
4481	0.00	0.00	0.00	6
4482	0.00	0.00	0.00	3

4483	0.00	0.00	0.00	8
4484	0.00	0.00	0.00	10
4485	0.00	0.00	0.00	6
4486	0.00	0.00	0.00	6
4487	0.00	0.00	0.00	2
4488	0.00	0.00	0.00	3
4489	0.00	0.00	0.00	9
4490	0.00	0.00	0.00	5
4491	0.00	0.00	0.00	5
4492	0.00	0.00	0.00	3
4493	0.00	0.00	0.00	5
4494	0.00	0.00	0.00	2
4495	0.00	0.00	0.00	6
4496	0.00	0.00	0.00	7
4497	0.00	0.00	0.00	6
4498	0.00	0.00	0.00	7
4499	0.00	0.00	0.00	2
4500	0.00	0.00	0.00	4
4501	0.00	0.00	0.00	9
4502	0.00	0.00	0.00	6
4503	0.00	0.00	0.00	5
4504	0.00	0.00	0.00	6
4505	0.00	0.00	0.00	5
4506	0.00	0.00	0.00	3
4507	0.00	0.00	0.00	8
4508	0.00	0.00	0.00	4
4509	0.00	0.00	0.00	5
4510	0.00	0.00	0.00	9
4511	0.00	0.00	0.00	5
4512	0.00	0.00	0.00	4
4513	0.00	0.00	0.00	8
4514	0.00	0.00	0.00	6
4515	0.00	0.00	0.00	8
4516	0.00	0.00	0.00	10
4517	0.00	0.00	0.00	6
4518	0.00	0.00	0.00	8
4519	0.00	0.00	0.00	5
4520	0.00	0.00	0.00	3
4521	0.00	0.00	0.00	6

4522	0.00	0.00	0.00	7
4523	0.00	0.00	0.00	8
4524	0.00	0.00	0.00	4
4525	0.00	0.00	0.00	6
4526	0.00	0.00	0.00	3
4527	0.00	0.00	0.00	7
4528	0.00	0.00	0.00	9
4529	0.00	0.00	0.00	12
4530	0.00	0.00	0.00	2
4531	0.00	0.00	0.00	9
4532	0.00	0.00	0.00	5
4533	0.00	0.00	0.00	8
4534	0.00	0.00	0.00	5
4535	0.00	0.00	0.00	6
4536	0.00	0.00	0.00	5
4537	0.00	0.00	0.00	5
4538	0.00	0.00	0.00	6
4539	0.00	0.00	0.00	5
4540	0.00	0.00	0.00	3
4541	0.00	0.00	0.00	7
4542	0.00	0.00	0.00	4
4543	0.00	0.00	0.00	4
4544	0.00	0.00	0.00	4
4545	0.00	0.00	0.00	8
4546	0.00	0.00	0.00	5
4547	0.00	0.00	0.00	4
4548	0.00	0.00	0.00	11
4549	0.00	0.00	0.00	4
4550	0.00	0.00	0.00	6
4551	0.00	0.00	0.00	5
4552	0.00	0.00	0.00	7
4553	0.00	0.00	0.00	7
4554	0.00	0.00	0.00	4
4555	0.00	0.00	0.00	7
4556	0.00	0.00	0.00	4
4557	0.00	0.00	0.00	6
4558	0.00	0.00	0.00	7
4559	0.00	0.00	0.00	5
4560	0.00	0.00	0.00	4

4561	0.00	0.00	0.00	7
4562	0.00	0.00	0.00	8
4563	0.00	0.00	0.00	0
4564	0.00	0.00	0.00	5
4565	0.00	0.00	0.00	7
4566	0.00	0.00	0.00	7
4567	0.00	0.00	0.00	6
4568	0.00	0.00	0.00	8
4569	0.00	0.00	0.00	4
4570	0.00	0.00	0.00	4
4571	0.00	0.00	0.00	8
4572	0.00	0.00	0.00	6
4573	0.00	0.00	0.00	6
4574	0.00	0.00	0.00	7
4575	0.00	0.00	0.00	5
4576	0.00	0.00	0.00	4
4577	0.00	0.00	0.00	5
4578	0.00	0.00	0.00	6
4579	0.00	0.00	0.00	7
4580	0.00	0.00	0.00	4
4581	0.00	0.00	0.00	6
4582	0.00	0.00	0.00	5
4583	0.00	0.00	0.00	5
4584	0.00	0.00	0.00	7
4585	0.00	0.00	0.00	7
4586	0.00	0.00	0.00	6
4587	0.00	0.00	0.00	6
4588	0.00	0.00	0.00	4
4589	0.00	0.00	0.00	2
4590	0.00	0.00	0.00	7
4591	0.00	0.00	0.00	8
4592	0.00	0.00	0.00	5
4593	0.00	0.00	0.00	5
4594	0.00	0.00	0.00	2
4595	0.00	0.00	0.00	5
4596	0.00	0.00	0.00	5
4597	0.00	0.00	0.00	3
4598	0.00	0.00	0.00	3
4599	0.00	0.00	0.00	6

4600	0.00	0.00	0.00	7
4601	0.00	0.00	0.00	7
4602	0.00	0.00	0.00	7
4603	0.00	0.00	0.00	9
4604	0.00	0.00	0.00	6
4605	0.00	0.00	0.00	4
4606	0.00	0.00	0.00	5
4607	0.00	0.00	0.00	8
4608	0.00	0.00	0.00	8
4609	0.00	0.00	0.00	5
4610	0.00	0.00	0.00	6
4611	0.00	0.00	0.00	9
4612	0.00	0.00	0.00	7
4613	0.00	0.00	0.00	5
4614	0.00	0.00	0.00	4
4615	0.00	0.00	0.00	8
4616	0.00	0.00	0.00	3
4617	0.00	0.00	0.00	6
4618	0.00	0.00	0.00	7
4619	0.00	0.00	0.00	5
4620	0.00	0.00	0.00	4
4621	0.00	0.00	0.00	1
4622	0.00	0.00	0.00	5
4623	0.00	0.00	0.00	8
4624	0.00	0.00	0.00	5
4625	0.00	0.00	0.00	9
4626	0.00	0.00	0.00	8
4627	0.00	0.00	0.00	4
4628	0.00	0.00	0.00	7
4629	0.00	0.00	0.00	6
4630	0.00	0.00	0.00	4
4631	0.00	0.00	0.00	10
4632	0.00	0.00	0.00	7
4633	0.00	0.00	0.00	7
4634	0.00	0.00	0.00	3
4635	0.00	0.00	0.00	5
4636	0.00	0.00	0.00	7
4637	0.00	0.00	0.00	7
4638	0.00	0.00	0.00	6

4639	0.00	0.00	0.00	6
4640	0.00	0.00	0.00	6
4641	0.00	0.00	0.00	4
4642	0.00	0.00	0.00	4
4643	0.00	0.00	0.00	8
4644	0.00	0.00	0.00	8
4645	0.00	0.00	0.00	7
4646	0.00	0.00	0.00	7
4647	0.00	0.00	0.00	3
4648	0.00	0.00	0.00	5
4649	0.00	0.00	0.00	10
4650	0.00	0.00	0.00	7
4651	0.00	0.00	0.00	5
4652	0.00	0.00	0.00	4
4653	0.00	0.00	0.00	7
4654	0.00	0.00	0.00	4
4655	0.00	0.00	0.00	7
4656	0.00	0.00	0.00	5
4657	0.00	0.00	0.00	5
4658	0.00	0.00	0.00	4
4659	0.00	0.00	0.00	8
4660	0.00	0.00	0.00	3
4661	0.00	0.00	0.00	6
4662	0.00	0.00	0.00	5
4663	0.00	0.00	0.00	4
4664	0.00	0.00	0.00	6
4665	0.00	0.00	0.00	9
4666	0.00	0.00	0.00	8
4667	0.00	0.00	0.00	3
4668	0.00	0.00	0.00	5
4669	0.00	0.00	0.00	9
4670	0.00	0.00	0.00	5
4671	0.00	0.00	0.00	2
4672	0.00	0.00	0.00	4
4673	0.00	0.00	0.00	5
4674	0.00	0.00	0.00	8
4675	0.00	0.00	0.00	6
4676	0.00	0.00	0.00	7
4677	0.00	0.00	0.00	2

4678	0.00	0.00	0.00	7
4679	0.00	0.00	0.00	7
4680	0.00	0.00	0.00	7
4681	0.00	0.00	0.00	5
4682	0.00	0.00	0.00	7
4683	0.00	0.00	0.00	4
4684	0.00	0.00	0.00	8
4685	0.00	0.00	0.00	3
4686	0.00	0.00	0.00	8
4687	0.00	0.00	0.00	7
4688	0.00	0.00	0.00	11
4689	0.00	0.00	0.00	6
4690	0.00	0.00	0.00	7
4691	0.00	0.00	0.00	5
4692	0.00	0.00	0.00	7
4693	0.00	0.00	0.00	8
4694	0.00	0.00	0.00	6
4695	0.00	0.00	0.00	5
4696	0.00	0.00	0.00	5
4697	0.00	0.00	0.00	5
4698	0.00	0.00	0.00	9
4699	0.00	0.00	0.00	12
4700	0.00	0.00	0.00	3
4701	0.00	0.00	0.00	6
4702	1.00	0.14	0.25	7
4703	0.00	0.00	0.00	6
4704	0.00	0.00	0.00	8
4705	0.00	0.00	0.00	8
4706	0.00	0.00	0.00	2
4707	0.00	0.00	0.00	4
4708	0.00	0.00	0.00	11
4709	0.00	0.00	0.00	7
4710	0.00	0.00	0.00	6
4711	0.00	0.00	0.00	8
4712	0.00	0.00	0.00	7
4713	0.00	0.00	0.00	8
4714	0.00	0.00	0.00	3
4715	0.00	0.00	0.00	5
4716	0.00	0.00	0.00	6

4717	0.00	0.00	0.00	4
4718	0.00	0.00	0.00	7
4719	0.00	0.00	0.00	4
4720	0.00	0.00	0.00	3
4721	0.00	0.00	0.00	6
4722	0.00	0.00	0.00	6
4723	0.00	0.00	0.00	4
4724	0.00	0.00	0.00	8
4725	0.00	0.00	0.00	3
4726	0.00	0.00	0.00	9
4727	0.00	0.00	0.00	3
4728	0.00	0.00	0.00	5
4729	0.00	0.00	0.00	5
4730	0.00	0.00	0.00	7
4731	0.00	0.00	0.00	7
4732	0.00	0.00	0.00	3
4733	0.00	0.00	0.00	3
4734	0.00	0.00	0.00	7
4735	0.00	0.00	0.00	6
4736	0.00	0.00	0.00	4
4737	0.00	0.00	0.00	6
4738	0.00	0.00	0.00	8
4739	0.00	0.00	0.00	5
4740	0.00	0.00	0.00	7
4741	0.00	0.00	0.00	7
4742	0.00	0.00	0.00	8
4743	0.00	0.00	0.00	6
4744	0.00	0.00	0.00	6
4745	0.00	0.00	0.00	5
4746	0.00	0.00	0.00	6
4747	0.00	0.00	0.00	6
4748	0.00	0.00	0.00	3
4749	0.00	0.00	0.00	2
4750	0.00	0.00	0.00	5
4751	0.00	0.00	0.00	5
4752	0.00	0.00	0.00	7
4753	0.00	0.00	0.00	5
4754	0.00	0.00	0.00	4
4755	0.00	0.00	0.00	4

4756	0.00	0.00	0.00	8
4757	0.00	0.00	0.00	3
4758	0.00	0.00	0.00	3
4759	0.00	0.00	0.00	5
4760	0.00	0.00	0.00	4
4761	0.00	0.00	0.00	2
4762	0.00	0.00	0.00	5
4763	0.00	0.00	0.00	4
4764	0.00	0.00	0.00	4
4765	0.00	0.00	0.00	12
4766	0.00	0.00	0.00	9
4767	0.00	0.00	0.00	8
4768	0.00	0.00	0.00	6
4769	0.00	0.00	0.00	4
4770	0.00	0.00	0.00	7
4771	0.00	0.00	0.00	1
4772	0.00	0.00	0.00	5
4773	0.00	0.00	0.00	10
4774	0.00	0.00	0.00	8
4775	0.00	0.00	0.00	5
4776	0.00	0.00	0.00	3
4777	0.00	0.00	0.00	6
4778	0.00	0.00	0.00	4
4779	0.00	0.00	0.00	4
4780	0.00	0.00	0.00	5
4781	0.00	0.00	0.00	4
4782	0.00	0.00	0.00	4
4783	0.00	0.00	0.00	6
4784	0.00	0.00	0.00	4
4785	0.00	0.00	0.00	3
4786	0.00	0.00	0.00	5
4787	0.00	0.00	0.00	7
4788	0.00	0.00	0.00	2
4789	0.00	0.00	0.00	5
4790	0.00	0.00	0.00	5
4791	0.00	0.00	0.00	5
4792	0.00	0.00	0.00	3
4793	0.00	0.00	0.00	5
4794	0.00	0.00	0.00	6

4795	0.00	0.00	0.00	4
4796	0.00	0.00	0.00	5
4797	0.00	0.00	0.00	4
4798	0.00	0.00	0.00	4
4799	0.00	0.00	0.00	6
4800	0.00	0.00	0.00	4
4801	0.00	0.00	0.00	8
4802	0.00	0.00	0.00	5
4803	0.00	0.00	0.00	6
4804	0.00	0.00	0.00	4
4805	0.00	0.00	0.00	5
4806	0.00	0.00	0.00	4
4807	0.00	0.00	0.00	6
4808	0.00	0.00	0.00	7
4809	0.00	0.00	0.00	5
4810	0.00	0.00	0.00	3
4811	0.00	0.00	0.00	5
4812	0.00	0.00	0.00	12
4813	0.00	0.00	0.00	6
4814	0.00	0.00	0.00	4
4815	0.00	0.00	0.00	4
4816	0.00	0.00	0.00	4
4817	0.00	0.00	0.00	5
4818	0.00	0.00	0.00	3
4819	0.00	0.00	0.00	3
4820	0.00	0.00	0.00	10
4821	0.00	0.00	0.00	2
4822	0.00	0.00	0.00	7
4823	0.00	0.00	0.00	5
4824	0.00	0.00	0.00	7
4825	0.00	0.00	0.00	10
4826	0.00	0.00	0.00	2
4827	0.00	0.00	0.00	4
4828	0.00	0.00	0.00	10
4829	0.00	0.00	0.00	3
4830	0.00	0.00	0.00	3
4831	0.00	0.00	0.00	3
4832	0.00	0.00	0.00	3
4833	0.00	0.00	0.00	12

4834	0.00	0.00	0.00	3
4835	0.00	0.00	0.00	5
4836	0.00	0.00	0.00	6
4837	0.00	0.00	0.00	4
4838	0.00	0.00	0.00	2
4839	0.00	0.00	0.00	6
4840	0.00	0.00	0.00	3
4841	0.00	0.00	0.00	8
4842	0.00	0.00	0.00	2
4843	0.00	0.00	0.00	8
4844	0.00	0.00	0.00	7
4845	0.00	0.00	0.00	8
4846	0.00	0.00	0.00	4
4847	0.00	0.00	0.00	8
4848	0.00	0.00	0.00	4
4849	0.00	0.00	0.00	9
4850	0.00	0.00	0.00	8
4851	0.00	0.00	0.00	8
4852	0.00	0.00	0.00	1
4853	0.00	0.00	0.00	5
4854	0.00	0.00	0.00	5
4855	0.00	0.00	0.00	6
4856	0.00	0.00	0.00	4
4857	0.00	0.00	0.00	8
4858	0.00	0.00	0.00	4
4859	0.00	0.00	0.00	4
4860	0.00	0.00	0.00	5
4861	0.00	0.00	0.00	4
4862	0.00	0.00	0.00	7
4863	0.00	0.00	0.00	5
4864	0.00	0.00	0.00	2
4865	0.00	0.00	0.00	4
4866	0.00	0.00	0.00	4
4867	0.00	0.00	0.00	6
4868	0.00	0.00	0.00	7
4869	0.00	0.00	0.00	4
4870	0.00	0.00	0.00	3
4871	0.00	0.00	0.00	9
4872	0.00	0.00	0.00	6

4873	0.00	0.00	0.00	4
4874	0.00	0.00	0.00	7
4875	0.00	0.00	0.00	6
4876	0.00	0.00	0.00	7
4877	0.00	0.00	0.00	6
4878	0.00	0.00	0.00	2
4879	0.00	0.00	0.00	7
4880	0.00	0.00	0.00	3
4881	0.00	0.00	0.00	6
4882	0.00	0.00	0.00	7
4883	0.00	0.00	0.00	8
4884	0.00	0.00	0.00	6
4885	0.00	0.00	0.00	7
4886	0.00	0.00	0.00	5
4887	0.00	0.00	0.00	9
4888	0.00	0.00	0.00	7
4889	0.00	0.00	0.00	7
4890	0.00	0.00	0.00	6
4891	0.00	0.00	0.00	5
4892	0.00	0.00	0.00	4
4893	0.00	0.00	0.00	8
4894	0.00	0.00	0.00	6
4895	0.00	0.00	0.00	4
4896	0.00	0.00	0.00	8
4897	0.00	0.00	0.00	5
4898	0.00	0.00	0.00	4
4899	0.00	0.00	0.00	5
4900	0.00	0.00	0.00	6
4901	0.00	0.00	0.00	7
4902	0.00	0.00	0.00	5
4903	0.00	0.00	0.00	9
4904	0.00	0.00	0.00	4
4905	0.00	0.00	0.00	7
4906	0.00	0.00	0.00	5
4907	0.00	0.00	0.00	3
4908	0.00	0.00	0.00	4
4909	0.00	0.00	0.00	7
4910	0.00	0.00	0.00	5
4911	0.00	0.00	0.00	7

4912	0.00	0.00	0.00	4
4913	0.00	0.00	0.00	6
4914	0.00	0.00	0.00	3
4915	0.00	0.00	0.00	9
4916	0.00	0.00	0.00	3
4917	0.00	0.00	0.00	11
4918	0.00	0.00	0.00	8
4919	0.00	0.00	0.00	4
4920	0.00	0.00	0.00	6
4921	0.00	0.00	0.00	7
4922	0.00	0.00	0.00	8
4923	0.00	0.00	0.00	2
4924	0.00	0.00	0.00	3
4925	0.00	0.00	0.00	5
4926	0.00	0.00	0.00	3
4927	0.00	0.00	0.00	3
4928	0.00	0.00	0.00	3
4929	0.00	0.00	0.00	4
4930	0.00	0.00	0.00	4
4931	0.00	0.00	0.00	5
4932	0.00	0.00	0.00	6
4933	0.00	0.00	0.00	7
4934	0.00	0.00	0.00	1
4935	0.00	0.00	0.00	8
4936	0.00	0.00	0.00	4
4937	0.00	0.00	0.00	5
4938	0.00	0.00	0.00	9
4939	0.00	0.00	0.00	3
4940	0.00	0.00	0.00	6
4941	0.00	0.00	0.00	6
4942	0.00	0.00	0.00	4
4943	0.00	0.00	0.00	5
4944	0.00	0.00	0.00	11
4945	0.00	0.00	0.00	5
4946	0.00	0.00	0.00	4
4947	0.00	0.00	0.00	3
4948	0.00	0.00	0.00	4
4949	0.00	0.00	0.00	6
4950	0.00	0.00	0.00	7

4951	0.00	0.00	0.00	6
4952	0.00	0.00	0.00	5
4953	0.00	0.00	0.00	1
4954	0.00	0.00	0.00	3
4955	0.00	0.00	0.00	5
4956	0.00	0.00	0.00	8
4957	0.00	0.00	0.00	5
4958	0.00	0.00	0.00	4
4959	0.00	0.00	0.00	2
4960	0.00	0.00	0.00	5
4961	0.00	0.00	0.00	6
4962	0.00	0.00	0.00	2
4963	0.00	0.00	0.00	5
4964	0.00	0.00	0.00	5
4965	0.00	0.00	0.00	7
4966	0.00	0.00	0.00	4
4967	0.00	0.00	0.00	5
4968	0.00	0.00	0.00	3
4969	0.00	0.00	0.00	5
4970	0.00	0.00	0.00	3
4971	0.00	0.00	0.00	8
4972	0.00	0.00	0.00	7
4973	0.00	0.00	0.00	4
4974	0.00	0.00	0.00	6
4975	0.00	0.00	0.00	4
4976	0.00	0.00	0.00	9
4977	0.00	0.00	0.00	4
4978	0.00	0.00	0.00	5
4979	0.00	0.00	0.00	8
4980	0.00	0.00	0.00	5
4981	0.00	0.00	0.00	5
4982	0.00	0.00	0.00	3
4983	0.00	0.00	0.00	5
4984	0.00	0.00	0.00	4
4985	0.00	0.00	0.00	5
4986	0.00	0.00	0.00	5
4987	0.00	0.00	0.00	4
4988	0.00	0.00	0.00	6
4989	0.00	0.00	0.00	3

4990	0.00	0.00	0.00	6
4991	0.00	0.00	0.00	7
4992	0.00	0.00	0.00	5
4993	0.00	0.00	0.00	5
4994	0.00	0.00	0.00	5
4995	0.00	0.00	0.00	5
4996	0.00	0.00	0.00	4
4997	0.00	0.00	0.00	5
4998	0.00	0.00	0.00	5
4999	0.00	0.00	0.00	5
5000	0.00	0.00	0.00	6
5001	0.00	0.00	0.00	3
5002	0.00	0.00	0.00	7
5003	0.00	0.00	0.00	6
5004	0.00	0.00	0.00	4
5005	0.00	0.00	0.00	7
5006	0.00	0.00	0.00	2
5007	0.00	0.00	0.00	4
5008	0.00	0.00	0.00	4
5009	0.00	0.00	0.00	2
5010	0.00	0.00	0.00	4
5011	0.00	0.00	0.00	6
5012	0.00	0.00	0.00	1
5013	0.00	0.00	0.00	2
5014	0.00	0.00	0.00	4
5015	0.00	0.00	0.00	4
5016	0.00	0.00	0.00	4
5017	0.00	0.00	0.00	5
5018	0.00	0.00	0.00	4
5019	0.00	0.00	0.00	4
5020	0.00	0.00	0.00	4
5021	0.00	0.00	0.00	8
5022	0.00	0.00	0.00	5
5023	0.00	0.00	0.00	5
5024	0.00	0.00	0.00	7
5025	0.00	0.00	0.00	0
5026	0.00	0.00	0.00	4
5027	0.00	0.00	0.00	3
5028	0.00	0.00	0.00	7

5029	0.00	0.00	0.00	4
5030	0.00	0.00	0.00	5
5031	0.00	0.00	0.00	5
5032	0.00	0.00	0.00	3
5033	0.00	0.00	0.00	6
5034	0.00	0.00	0.00	5
5035	0.00	0.00	0.00	3
5036	0.00	0.00	0.00	1
5037	0.00	0.00	0.00	5
5038	0.00	0.00	0.00	3
5039	0.00	0.00	0.00	4
5040	0.00	0.00	0.00	5
5041	0.00	0.00	0.00	6
5042	0.00	0.00	0.00	5
5043	0.00	0.00	0.00	7
5044	0.00	0.00	0.00	7
5045	0.00	0.00	0.00	7
5046	0.00	0.00	0.00	7
5047	0.00	0.00	0.00	6
5048	0.00	0.00	0.00	4
5049	0.00	0.00	0.00	6
5050	0.00	0.00	0.00	2
5051	0.00	0.00	0.00	6
5052	0.00	0.00	0.00	9
5053	0.00	0.00	0.00	6
5054	0.00	0.00	0.00	3
5055	0.00	0.00	0.00	7
5056	0.00	0.00	0.00	8
5057	0.00	0.00	0.00	9
5058	0.00	0.00	0.00	4
5059	0.00	0.00	0.00	6
5060	0.00	0.00	0.00	5
5061	0.00	0.00	0.00	5
5062	0.00	0.00	0.00	5
5063	0.00	0.00	0.00	3
5064	0.00	0.00	0.00	8
5065	0.00	0.00	0.00	4
5066	0.00	0.00	0.00	6
5067	0.00	0.00	0.00	4

5068	0.00	0.00	0.00	3
5069	0.00	0.00	0.00	5
5070	0.00	0.00	0.00	6
5071	0.00	0.00	0.00	3
5072	0.00	0.00	0.00	7
5073	0.00	0.00	0.00	6
5074	0.00	0.00	0.00	3
5075	0.00	0.00	0.00	4
5076	0.00	0.00	0.00	3
5077	0.00	0.00	0.00	5
5078	0.00	0.00	0.00	7
5079	0.00	0.00	0.00	2
5080	0.00	0.00	0.00	5
5081	0.00	0.00	0.00	7
5082	0.00	0.00	0.00	2
5083	0.00	0.00	0.00	7
5084	0.00	0.00	0.00	4
5085	0.00	0.00	0.00	6
5086	0.00	0.00	0.00	5
5087	0.00	0.00	0.00	4
5088	0.00	0.00	0.00	5
5089	0.00	0.00	0.00	6
5090	0.00	0.00	0.00	6
5091	0.00	0.00	0.00	6
5092	0.00	0.00	0.00	3
5093	0.00	0.00	0.00	5
5094	0.00	0.00	0.00	9
5095	0.00	0.00	0.00	9
5096	0.00	0.00	0.00	6
5097	0.00	0.00	0.00	2
5098	0.00	0.00	0.00	3
5099	0.00	0.00	0.00	6
5100	0.00	0.00	0.00	5
5101	0.00	0.00	0.00	4
5102	0.00	0.00	0.00	3
5103	0.00	0.00	0.00	1
5104	0.00	0.00	0.00	7
5105	0.00	0.00	0.00	6
5106	0.00	0.00	0.00	2

5107	0.00	0.00	0.00	7
5108	0.00	0.00	0.00	6
5109	0.00	0.00	0.00	4
5110	0.00	0.00	0.00	5
5111	0.00	0.00	0.00	3
5112	0.00	0.00	0.00	6
5113	0.00	0.00	0.00	7
5114	0.00	0.00	0.00	9
5115	0.00	0.00	0.00	4
5116	0.00	0.00	0.00	7
5117	0.00	0.00	0.00	3
5118	0.00	0.00	0.00	4
5119	0.00	0.00	0.00	10
5120	0.00	0.00	0.00	4
5121	0.00	0.00	0.00	6
5122	0.00	0.00	0.00	4
5123	0.00	0.00	0.00	2
5124	0.00	0.00	0.00	3
5125	0.00	0.00	0.00	6
5126	0.00	0.00	0.00	4
5127	0.00	0.00	0.00	3
5128	0.00	0.00	0.00	5
5129	0.00	0.00	0.00	4
5130	0.00	0.00	0.00	4
5131	0.00	0.00	0.00	6
5132	0.00	0.00	0.00	9
5133	0.00	0.00	0.00	8
5134	0.00	0.00	0.00	3
5135	0.00	0.00	0.00	5
5136	0.00	0.00	0.00	4
5137	0.00	0.00	0.00	6
5138	0.00	0.00	0.00	6
5139	0.00	0.00	0.00	4
5140	0.00	0.00	0.00	7
5141	0.00	0.00	0.00	4
5142	0.00	0.00	0.00	2
5143	0.00	0.00	0.00	5
5144	0.00	0.00	0.00	5
5145	0.00	0.00	0.00	6

5146	0.00	0.00	0.00	7
5147	0.00	0.00	0.00	5
5148	0.00	0.00	0.00	6
5149	0.00	0.00	0.00	5
5150	0.00	0.00	0.00	2
5151	0.00	0.00	0.00	9
5152	0.00	0.00	0.00	7
5153	0.00	0.00	0.00	2
5154	0.00	0.00	0.00	6
5155	0.00	0.00	0.00	6
5156	0.00	0.00	0.00	7
5157	0.00	0.00	0.00	8
5158	0.00	0.00	0.00	6
5159	0.00	0.00	0.00	6
5160	0.00	0.00	0.00	5
5161	0.00	0.00	0.00	8
5162	0.00	0.00	0.00	7
5163	0.00	0.00	0.00	1
5164	0.00	0.00	0.00	1
5165	0.00	0.00	0.00	4
5166	0.00	0.00	0.00	3
5167	0.00	0.00	0.00	4
5168	0.00	0.00	0.00	4
5169	0.00	0.00	0.00	7
5170	0.00	0.00	0.00	6
5171	0.00	0.00	0.00	4
5172	0.00	0.00	0.00	7
5173	0.00	0.00	0.00	3
5174	0.00	0.00	0.00	6
5175	0.00	0.00	0.00	6
5176	0.00	0.00	0.00	4
5177	0.00	0.00	0.00	5
5178	0.00	0.00	0.00	4
5179	0.00	0.00	0.00	4
5180	0.00	0.00	0.00	5
5181	0.00	0.00	0.00	6
5182	0.00	0.00	0.00	4
5183	0.00	0.00	0.00	6
5184	0.00	0.00	0.00	3

5185	0.00	0.00	0.00	3
5186	0.00	0.00	0.00	4
5187	0.00	0.00	0.00	7
5188	0.00	0.00	0.00	4
5189	0.00	0.00	0.00	6
5190	0.00	0.00	0.00	2
5191	0.00	0.00	0.00	10
5192	0.00	0.00	0.00	1
5193	0.00	0.00	0.00	5
5194	0.00	0.00	0.00	5
5195	0.00	0.00	0.00	4
5196	0.00	0.00	0.00	7
5197	0.00	0.00	0.00	7
5198	0.00	0.00	0.00	4
5199	0.00	0.00	0.00	5
5200	0.00	0.00	0.00	3
5201	0.00	0.00	0.00	2
5202	0.00	0.00	0.00	4
5203	0.00	0.00	0.00	3
5204	0.00	0.00	0.00	8
5205	0.00	0.00	0.00	6
5206	0.00	0.00	0.00	4
5207	0.00	0.00	0.00	6
5208	0.00	0.00	0.00	4
5209	0.00	0.00	0.00	3
5210	0.00	0.00	0.00	3
5211	0.00	0.00	0.00	2
5212	0.00	0.00	0.00	6
5213	0.00	0.00	0.00	3
5214	0.00	0.00	0.00	5
5215	0.00	0.00	0.00	9
5216	0.00	0.00	0.00	3
5217	0.00	0.00	0.00	8
5218	0.00	0.00	0.00	5
5219	0.00	0.00	0.00	3
5220	0.00	0.00	0.00	3
5221	0.00	0.00	0.00	3
5222	0.00	0.00	0.00	6
5223	0.00	0.00	0.00	5

5224	0.00	0.00	0.00	9
5225	0.00	0.00	0.00	3
5226	0.00	0.00	0.00	2
5227	0.00	0.00	0.00	6
5228	0.00	0.00	0.00	3
5229	0.00	0.00	0.00	7
5230	0.00	0.00	0.00	5
5231	0.00	0.00	0.00	2
5232	0.00	0.00	0.00	9
5233	0.00	0.00	0.00	4
5234	0.00	0.00	0.00	4
5235	0.00	0.00	0.00	3
5236	0.00	0.00	0.00	7
5237	0.00	0.00	0.00	7
5238	0.00	0.00	0.00	5
5239	0.00	0.00	0.00	5
5240	0.00	0.00	0.00	2
5241	0.00	0.00	0.00	5
5242	0.00	0.00	0.00	3
5243	0.00	0.00	0.00	4
5244	0.00	0.00	0.00	2
5245	0.00	0.00	0.00	7
5246	0.00	0.00	0.00	6
5247	0.00	0.00	0.00	8
5248	0.00	0.00	0.00	5
5249	0.00	0.00	0.00	5
5250	0.00	0.00	0.00	5
5251	0.00	0.00	0.00	4
5252	0.00	0.00	0.00	3
5253	0.00	0.00	0.00	1
5254	0.00	0.00	0.00	6
5255	0.00	0.00	0.00	4
5256	0.00	0.00	0.00	10
5257	0.00	0.00	0.00	3
5258	0.00	0.00	0.00	3
5259	0.00	0.00	0.00	7
5260	0.00	0.00	0.00	4
5261	0.00	0.00	0.00	2
5262	0.00	0.00	0.00	3

5263	0.00	0.00	0.00	3
5264	0.00	0.00	0.00	3
5265	0.00	0.00	0.00	8
5266	0.00	0.00	0.00	4
5267	0.00	0.00	0.00	8
5268	0.00	0.00	0.00	5
5269	0.00	0.00	0.00	5
5270	0.00	0.00	0.00	2
5271	0.00	0.00	0.00	5
5272	0.00	0.00	0.00	8
5273	0.00	0.00	0.00	7
5274	0.00	0.00	0.00	8
5275	0.00	0.00	0.00	1
5276	0.00	0.00	0.00	3
5277	0.00	0.00	0.00	4
5278	0.00	0.00	0.00	6
5279	0.00	0.00	0.00	6
5280	0.00	0.00	0.00	8
5281	0.00	0.00	0.00	5
5282	0.00	0.00	0.00	7
5283	0.00	0.00	0.00	5
5284	0.00	0.00	0.00	3
5285	0.00	0.00	0.00	5
5286	0.00	0.00	0.00	6
5287	0.00	0.00	0.00	7
5288	0.00	0.00	0.00	4
5289	0.00	0.00	0.00	5
5290	0.00	0.00	0.00	4
5291	0.00	0.00	0.00	8
5292	0.00	0.00	0.00	4
5293	0.00	0.00	0.00	6
5294	0.00	0.00	0.00	3
5295	0.00	0.00	0.00	5
5296	0.00	0.00	0.00	5
5297	0.00	0.00	0.00	5
5298	0.00	0.00	0.00	6
5299	0.00	0.00	0.00	4
5300	0.00	0.00	0.00	8
5301	0.00	0.00	0.00	2

5302	0.00	0.00	0.00	4
5303	0.00	0.00	0.00	8
5304	0.00	0.00	0.00	6
5305	0.00	0.00	0.00	6
5306	0.00	0.00	0.00	5
5307	0.00	0.00	0.00	4
5308	0.00	0.00	0.00	7
5309	0.00	0.00	0.00	3
5310	0.00	0.00	0.00	2
5311	0.00	0.00	0.00	6
5312	0.00	0.00	0.00	2
5313	0.00	0.00	0.00	6
5314	0.00	0.00	0.00	6
5315	0.00	0.00	0.00	3
5316	0.00	0.00	0.00	4
5317	0.00	0.00	0.00	5
5318	0.00	0.00	0.00	6
5319	0.00	0.00	0.00	9
5320	0.00	0.00	0.00	4
5321	0.00	0.00	0.00	1
5322	0.00	0.00	0.00	7
5323	0.00	0.00	0.00	8
5324	0.00	0.00	0.00	6
5325	0.00	0.00	0.00	4
5326	0.00	0.00	0.00	2
5327	0.00	0.00	0.00	3
5328	0.00	0.00	0.00	4
5329	0.00	0.00	0.00	6
5330	0.00	0.00	0.00	2
5331	0.00	0.00	0.00	2
5332	0.00	0.00	0.00	7
5333	0.00	0.00	0.00	3
5334	0.00	0.00	0.00	6
5335	0.00	0.00	0.00	4
5336	0.00	0.00	0.00	2
5337	0.00	0.00	0.00	4
5338	0.00	0.00	0.00	8
5339	0.00	0.00	0.00	5
5340	0.00	0.00	0.00	4

5341	0.00	0.00	0.00	7
5342	0.00	0.00	0.00	8
5343	0.00	0.00	0.00	3
5344	0.00	0.00	0.00	5
5345	0.00	0.00	0.00	7
5346	0.00	0.00	0.00	5
5347	0.00	0.00	0.00	4
5348	0.00	0.00	0.00	4
5349	0.00	0.00	0.00	6
5350	0.00	0.00	0.00	5
5351	0.00	0.00	0.00	7
5352	0.00	0.00	0.00	4
5353	0.00	0.00	0.00	6
5354	0.00	0.00	0.00	4
5355	0.00	0.00	0.00	6
5356	0.00	0.00	0.00	4
5357	0.00	0.00	0.00	6
5358	0.00	0.00	0.00	6
5359	0.00	0.00	0.00	3
5360	0.00	0.00	0.00	4
5361	0.00	0.00	0.00	4
5362	0.00	0.00	0.00	4
5363	0.00	0.00	0.00	8
5364	0.00	0.00	0.00	2
5365	0.00	0.00	0.00	5
5366	0.00	0.00	0.00	4
5367	0.00	0.00	0.00	4
5368	0.00	0.00	0.00	6
5369	0.00	0.00	0.00	5
5370	0.00	0.00	0.00	8
5371	0.00	0.00	0.00	8
5372	0.00	0.00	0.00	3
5373	0.00	0.00	0.00	9
5374	0.00	0.00	0.00	6
5375	0.00	0.00	0.00	3
5376	0.00	0.00	0.00	6
5377	0.00	0.00	0.00	5
5378	0.00	0.00	0.00	6
5379	0.00	0.00	0.00	4

5380	0.00	0.00	0.00	6
5381	0.00	0.00	0.00	3
5382	0.00	0.00	0.00	4
5383	0.00	0.00	0.00	5
5384	0.00	0.00	0.00	5
5385	0.00	0.00	0.00	4
5386	0.00	0.00	0.00	5
5387	0.00	0.00	0.00	5
5388	0.00	0.00	0.00	5
5389	0.00	0.00	0.00	5
5390	0.00	0.00	0.00	5
5391	0.00	0.00	0.00	6
5392	0.00	0.00	0.00	3
5393	0.00	0.00	0.00	3
5394	0.00	0.00	0.00	5
5395	0.00	0.00	0.00	5
5396	0.00	0.00	0.00	6
5397	0.00	0.00	0.00	8
5398	0.00	0.00	0.00	5
5399	0.00	0.00	0.00	8
5400	0.00	0.00	0.00	7
5401	0.00	0.00	0.00	5
5402	0.00	0.00	0.00	5
5403	0.00	0.00	0.00	5
5404	0.00	0.00	0.00	6
5405	0.00	0.00	0.00	6
5406	0.00	0.00	0.00	7
5407	0.00	0.00	0.00	4
5408	0.00	0.00	0.00	9
5409	0.00	0.00	0.00	4
5410	0.00	0.00	0.00	4
5411	0.00	0.00	0.00	4
5412	0.00	0.00	0.00	4
5413	0.00	0.00	0.00	5
5414	0.00	0.00	0.00	6
5415	0.00	0.00	0.00	7
5416	0.00	0.00	0.00	4
5417	0.00	0.00	0.00	7
5418	0.00	0.00	0.00	6

5419	0.00	0.00	0.00	6
5420	0.00	0.00	0.00	6
5421	0.00	0.00	0.00	7
5422	0.00	0.00	0.00	4
5423	0.00	0.00	0.00	4
5424	0.00	0.00	0.00	6
5425	0.00	0.00	0.00	5
5426	0.00	0.00	0.00	8
5427	0.00	0.00	0.00	4
5428	0.00	0.00	0.00	9
5429	0.00	0.00	0.00	7
5430	0.00	0.00	0.00	3
5431	0.00	0.00	0.00	5
5432	0.00	0.00	0.00	5
5433	0.00	0.00	0.00	4
5434	0.00	0.00	0.00	5
5435	0.00	0.00	0.00	9
5436	0.00	0.00	0.00	2
5437	0.00	0.00	0.00	5
5438	0.00	0.00	0.00	6
5439	0.00	0.00	0.00	5
5440	0.00	0.00	0.00	3
5441	0.00	0.00	0.00	6
5442	0.00	0.00	0.00	6
5443	0.00	0.00	0.00	4
5444	0.00	0.00	0.00	7
5445	0.00	0.00	0.00	13
5446	0.00	0.00	0.00	4
5447	0.00	0.00	0.00	3
5448	0.00	0.00	0.00	7
5449	0.00	0.00	0.00	4
5450	0.00	0.00	0.00	3
5451	0.00	0.00	0.00	4
5452	0.00	0.00	0.00	5
5453	0.00	0.00	0.00	4
5454	0.00	0.00	0.00	4
5455	1.00	0.40	0.57	5
5456	0.00	0.00	0.00	2
5457	0.00	0.00	0.00	8

5458	0.00	0.00	0.00	4
5459	0.00	0.00	0.00	5
5460	0.00	0.00	0.00	4
5461	0.00	0.00	0.00	5
5462	0.00	0.00	0.00	1
5463	0.00	0.00	0.00	6
5464	0.00	0.00	0.00	4
5465	0.00	0.00	0.00	3
5466	0.00	0.00	0.00	2
5467	0.00	0.00	0.00	4
5468	0.00	0.00	0.00	4
5469	0.00	0.00	0.00	4
5470	0.00	0.00	0.00	2
5471	0.00	0.00	0.00	2
5472	0.00	0.00	0.00	6
5473	0.00	0.00	0.00	8
5474	0.00	0.00	0.00	10
5475	0.00	0.00	0.00	5
5476	0.00	0.00	0.00	5
5477	0.00	0.00	0.00	2
5478	0.00	0.00	0.00	6
5479	0.00	0.00	0.00	5
5480	0.00	0.00	0.00	6
5481	0.00	0.00	0.00	4
5482	0.00	0.00	0.00	1
5483	0.00	0.00	0.00	6
5484	0.00	0.00	0.00	4
5485	0.00	0.00	0.00	5
5486	0.00	0.00	0.00	4
5487	0.00	0.00	0.00	5
5488	0.00	0.00	0.00	2
5489	0.00	0.00	0.00	2
5490	0.00	0.00	0.00	2
5491	0.00	0.00	0.00	7
5492	0.00	0.00	0.00	1
5493	0.00	0.00	0.00	6
5494	0.00	0.00	0.00	6
5495	0.00	0.00	0.00	6
5496	0.00	0.00	0.00	3

5497	0.00	0.00	0.00	3
5498	0.00	0.00	0.00	7
5499	0.00	0.00	0.00	3
micro avg	0.70	0.25	0.37	265254
macro avg	0.20	0.07	0.09	265254
weighted avg	0.53	0.25	0.33	265254
samples avg	0.46	0.28	0.32	265254

```
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in samples with no predicted labels.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in samples with no true labels.
'recall', 'true', average, warn_for)
```

```
In [52]: from sklearn.externals import joblib
joblib.dump(classifier, 'lr_with_equal_weight.pkl')
```

```
Out[52]: ['lr_with_equal_weight.pkl']
```

4.5 Modeling with less data points (0.5M data points) and more weight to title and 500 tags only.

```
In [53]: sql_create_table = """CREATE TABLE IF NOT EXISTS QuestionsProcessed (qu
estion text NOT NULL, code text, tags text, words_pre integer, words_po
st integer, is_code integer);"""
create_database_table("Titlmoreweight.db", sql_create_table)
```

```
Tables in the database:
QuestionsProcessed
```

```
In [54]: # http://www.sqlitetutorial.net/sqlite-delete/
# https://stackoverflow.com/questions/2279706/select-random-row-from-a-
```

sqlite-table

```
read_db = 'train_no_dup.db'
write_db = 'Titlmoreweight.db'
train_datasize = 200000
if os.path.isfile(read_db):
    conn_r = create_connection(read_db)
    if conn_r is not None:
        reader = conn_r.cursor()
        # for selecting first 0.5M rows
        reader.execute("SELECT Title, Body, Tags From no_dup_train LIMIT
T 200001;")
        # for selecting random points
        #reader.execute("SELECT Title, Body, Tags From no_dup_train ORD
ER BY RANDOM() LIMIT 500001;")

if os.path.isfile(write_db):
    conn_w = create_connection(write_db)
    if conn_w is not None:
        tables = checkTableExists(conn_w)
        writer = conn_w.cursor()
        if tables != 0:
            writer.execute("DELETE FROM QuestionsProcessed WHERE 1")
            print("Cleared All the rows")
```

Tables in the databse:
QuestionsProcessed
Cleared All the rows

4.5.1 Preprocessing of questions

1. Separate Code from Body
2. Remove Spcial characters from Question title and description (not in code)
3. **Give more weightage to title : Add title three times to the question**
4. Remove stop words (Except 'C')
5. Remove HTML Tags
6. Convert all the characters into small letters

7. Use SnowballStemmer to stem the words

```
In [55]: #http://www.bernzilla.com/2008/05/13/selecting-a-random-row-from-an-sql
ite-table/
start = datetime.now()
preprocessed_data_list=[]
reader.fetchone()
questions_with_code=0
len_pre=0
len_post=0
questions_proccesed = 0
for row in reader:

    is_code = 0

    title, question, tags = row[0], row[1], str(row[2])

    if '<code>' in question:
        questions_with_code+=1
        is_code = 1
    x = len(question)+len(title)
    len_pre+=x

    code = str(re.findall(r'<code>(.*?)</code>', question, flags=re.DOT
ALL))

    question=re.sub('<code>(.*?)</code>', '', question, flags=re.MULTIL
INE|re.DOTALL)
    question=stripthtml(question.encode('utf-8'))

    title=title.encode('utf-8')

    # adding title three time to the data to increase its weight
    # add tags string to the training data

    question=str(title)+" "+str(title)+" "+str(title)+" "+question

    #     if questions_proccesed<=train_datasize:
    #         question=str(title)+" "+str(title)+" "+str(title)+" "+questio
```



```

n+" "+str(tags)
#     else:
#         question=str(title)+" "+str(title)+" "+str(title)+" "+question
#         n

question=re.sub(r'^A-Za-z0-9#+.\-]+',' ',question)
words=word_tokenize(str(question.lower()))

#Removing all single letter and stopwords from question exceptt
for the letter 'c'
question=' '.join(str(stemmer.stem(j)) for j in words if j not in s
top_words and (len(j)!=1 or j=='c'))

len_post+=len(question)
tup = (question,code,tags,x,len(question),is_code)
questions_proccesed += 1
writer.execute("insert into QuestionsProcessed(question,code,tags,w
ords_pre,words_post,is_code) values (?,?,?,?,?,?)",tup)
if (questions_proccesed%100000==0):
    print("number of questions completed=",questions_proccesed)

no_dup_avg_len_pre=(len_pre*1.0)/questions_proccesed
no_dup_avg_len_post=(len_post*1.0)/questions_proccesed

print( "Avg. length of questions(Title+Body) before processing: %d"%no_
dup_avg_len_pre)
print( "Avg. length of questions(Title+Body) after processing: %d"%no_d
up_avg_len_post)
print( "Percent of questions containing code: %d"%((questions_with_code
*100.0)/questions_proccesed))

print("Time taken to run this cell :", datetime.now() - start)

number of questions completed= 100000
number of questions completed= 200000
Avg. length of questions(Title+Body) before processing: 1322
Avg. length of questions(Title+Body) after processing: 429
Percent of questions containing code: 57
Time taken to run this cell : 0:18:19.139061

```

```
In [56]: # never forget to close the connections or else we will end up with data
base locks
conn_r.commit()
conn_w.commit()
conn_r.close()
conn_w.close()
```

Sample quesitons after preprocessing of data

```
In [57]: if os.path.isfile(write_db):
conn_r = create_connection(write_db)
if conn_r is not None:
reader =conn_r.cursor()
reader.execute("SELECT question From QuestionsProcessed LIMIT 1
0")

print("Questions after preprocessed")
print('='*100)
reader.fetchone()
for row in reader:
print(row)
print('-'*100)
conn_r.commit()
conn_r.close()
```

Questions after preprocessed

```
=====
=====
('dynam datagrid bind silverlight dynam datagrid bind silverlight dynam
datagrid bind silverlight bind datagrid dynam code wrote code debug cod
e block seem bind correct grid come column form come grid column althou
gh necessari bind nthank repli advance..',)
-----
-----
('java.lang.noclassdeffounderror javax servlet jsp tagext taglibraryval
id java.lang.noclassdeffounderror javax servlet jsp tagext taglibraryva
lid java.lang.noclassdeffounderror javax servlet jsp tagext taglibraryv
alid follow guid link instal jstl got follow error tri launch jsp page
java.lang.noclassdeffounderror javax servlet jsp tagext taglibraryvalid
taglib declar instal jstl 1.1 tomcat webapp tri project work also tri v
```

```

ersion 1.2 jstl still messag caus solv',)
-----
-----
('java.sql.sqlexcept microsoft odbc driver manag invalid descriptor ind
ex java.sql.sqlexcept microsoft odbc driver manag invalid descriptor in
dex java.sql.sqlexcept microsoft odbc driver manag invalid descriptor i
ndex use follow code display caus solv',)
-----
-----
('better way updat feed fb php sdk better way updat feed fb php sdk bet
ter way updat feed fb php sdk novic facebook api read mani tutori still
confused.i find post feed api method like correct second way use curl s
ometh like way better',)
-----
-----
('btnadd click event open two window record ad btnadd click event open
two window record ad btnadd click event open two window record ad open
window search.aspx use code hav add button search.aspx nwhen insert rec
ord btnadd click event open anoth window nafter insert record close win
dow',)
-----
-----
('sql inject issu prevent correct form submit php sql inject issu prev
ent correct form submit php sql inject issu prevent correct form submi
ss php check everyth think make sure input field safe type sql inject g
ood news safe bad news one tag mess form submit place even touch life
figur exact html use templat file forgiv okay entir php script get exec
ut see data post none forum field post problem use someth titl field no
ne data get post current use print post see submit noth work flawless s
tatement though also mention script work flawless local machin use host
come across problem state list input test mess',)
-----
-----
('countabl subaddit lebesgu measur countabl subaddit lebesgu measur cou
ntabl subaddit lebesgu measur let lbrace rbrace sequenc set sigma -alge
bra mathcal want show left bigcup right leq sum left right countabl add
it measur defin set sigma algebra mathcal think use monoton properti so
mewher proof start appreci littl help nthank ad han answer make follow
addit construct given han answer clear bigcup bigcup cap emptyset neq l
eft bigcup right left bigcup right sum left right also construct subset

```

```

monoton left right leq left right final would sum leq sum result follo
w',)
-----
('hql equival sql queri hql equival sql queri hql equival sql queri hql
queri replac name class properti name error occur hql error',)
-----
('undefin symbol architectur i386 objc class skpsmtpmessag referenc err
or undefin symbol architectur i386 objc class skpsmtpmessag referenc er
ror undefin symbol architectur i386 objc class skpsmtpmessag referenc e
rror import framework send email applic background import framework i.e
skpsmtpmessag somebodi suggest get error collect2 ld return exit status
import framework correct sorc taken framework follow mfmcomposeviewc
ontrol question lock field updat answer drag drop folder project click
copi nthat',)
-----
-----

```

Saving Preprocessed data to a Database

```

In [58]: #Taking 0.5 Million entries to a dataframe.
write_db = 'Titlemoreweight.db'
if os.path.isfile(write_db):
    conn_r = create_connection(write_db)
    if conn_r is not None:
        preprocessed_data = pd.read_sql_query("""SELECT question, Tags
FROM QuestionsProcessed""", conn_r)
    conn_r.commit()
    conn_r.close()

```

```

In [59]: preprocessed_data.head()

```

Out[59]:

	question	tags
0	dynam datagrid bind silverlight dynam datagrid...	c# silverlight data-binding

	question	tags
1	dynam datagrid bind silverlight dynam datagrid...	c# silverlight data-binding columns
2	java.lang.noclassdeffoundererror javax servlet j...	jsp jstl
3	java.sql.sqlexcept microsoft odbc driver manag...	java jdbc
4	better way updat feed fb php sdk better way up...	facebook api facebook-php-sdk

```
In [60]: print("number of data points in sample :", preprocessed_data.shape[0])
print("number of dimensions :", preprocessed_data.shape[1])
```

```
number of data points in sample : 200000
number of dimensions : 2
```

Converting string Tags to multilable output variables

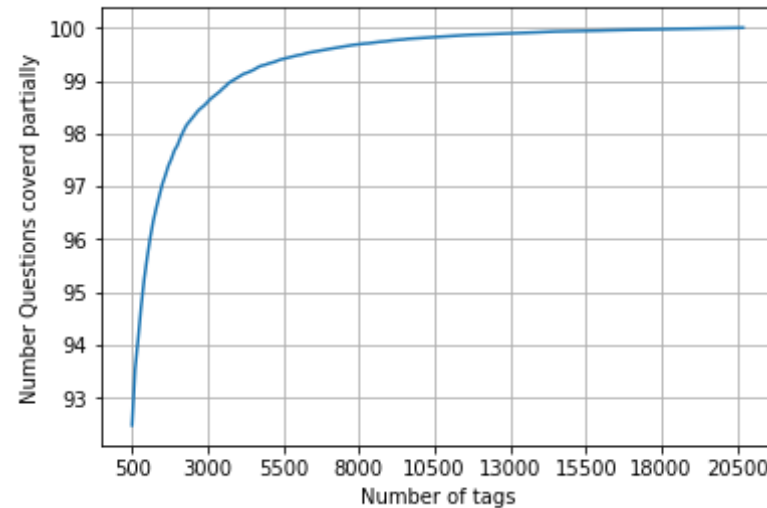
```
In [61]: vectorizer = CountVectorizer(tokenizer = lambda x: x.split(), binary='true')
multilabel_y = vectorizer.fit_transform(preprocessed_data['tags'])
```

Selecting 500 Tags

```
In [62]: questions_explained = []
total_tags=multilabel_y.shape[1]
total_qs=preprocessed_data.shape[0]
for i in range(500, total_tags, 100):
    questions_explained.append(np.round(((total_qs-questions_explained_
fn(i))/total_qs)*100,3))
```

```
In [63]: fig, ax = plt.subplots()
ax.plot(questions_explained)
xlabel = list(500+np.array(range(-50,450,50))*50)
ax.set_xticklabels(xlabel)
plt.xlabel("Number of tags")
plt.ylabel("Number Questions covered partially")
```

```
plt.grid()
plt.show()
# you can choose any number of tags based on your computing power, minimum is 500(it covers 90% of the tags)
print("with ",5500,"tags we are covering ",questions_explained[50],"% of questions")
print("with ",500,"tags we are covering ",questions_explained[0],"% of questions")
```



```
with 5500 tags we are covering 99.41 % of questions
with 500 tags we are covering 92.478 % of questions
```

```
In [64]: # we will be taking 500 tags
multilabel_yx = tags_to_choose(500)
print("number of questions that are not covered :", questions_explained_fn(500),"out of ", total_qs)
```

```
number of questions that are not covered : 15044 out of 200000
```

```
In [65]: train_datasize=160000
x_train=preprocessed_data.head(train_datasize)
x_test=preprocessed_data.tail(preprocessed_data.shape[0] - 160000)
```

```
y_train = multilabel_yx[0:train_datasize,:]  
y_test = multilabel_yx[train_datasize:preprocessed_data.shape[0],:]
```

```
In [66]: print("Number of data points in train data :", y_train.shape)  
         print("Number of data points in test data :", y_test.shape)
```

```
Number of data points in train data : (160000, 500)  
Number of data points in test data : (40000, 500)
```

4.5.2 Featurizing data with Tfidf vectorizer

```
In [92]: start = datetime.now()  
         vectorizer = TfidfVectorizer(min_df=0.00009, max_features=200000, smooth  
                                     h_idf=True, norm="l2", \  
                                     tokenizer = lambda x: x.split(), sublinear  
                                     _tf=False, ngram_range=(1,3))  
         x_train_multilabel = vectorizer.fit_transform(x_train['question'])  
         x_test_multilabel = vectorizer.transform(x_test['question'])  
         print("Time taken to run this cell :", datetime.now() - start)
```

```
Time taken to run this cell : 0:01:35.138565
```

```
In [93]: print("Dimensions of train data X:",x_train_multilabel.shape, "Y :",y_t  
         rain.shape)  
         print("Dimensions of test data X:",x_test_multilabel.shape,"Y:",y_test.  
         shape)
```

```
Dimensions of train data X: (160000, 95780) Y : (160000, 500)  
Dimensions of test data X: (40000, 95780) Y: (40000, 500)
```

4.5.3 Applying Logistic Regression with OneVsRest Classifier

```
In [69]: start = datetime.now()  
         classifier = OneVsRestClassifier(SGDClassifier(loss='log', alpha=0.0000  
1, penalty='l1'), n_jobs=-1)  
         classifier.fit(x_train_multilabel, y_train)
```

```

predictions = classifier.predict (x_test_multilabel)

print("Accuracy :",metrics.accuracy_score(y_test, predictions))
print("Hamming loss ",metrics.hamming_loss(y_test,predictions))

precision = precision_score(y_test, predictions, average='micro')
recall = recall_score(y_test, predictions, average='micro')
f1 = f1_score(y_test, predictions, average='micro')

print("Micro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

precision = precision_score(y_test, predictions, average='macro')
recall = recall_score(y_test, predictions, average='macro')
f1 = f1_score(y_test, predictions, average='macro')

print("Macro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

print (metrics.classification_report(y_test, predictions))
print("Time taken to run this cell :", datetime.now() - start)

```

```

Accuracy : 0.298775
Hamming loss  0.00231325
Micro-average quality numbers
Precision: 0.8394, Recall: 0.5643, F1-measure: 0.6749
Macro-average quality numbers
Precision: 0.3983, Recall: 0.1962, F1-measure: 0.2400

```

	precision	recall	f1-score	support
0	0.98	0.99	0.98	36915
1	0.53	0.07	0.13	140
2	0.67	0.22	0.33	37
3	0.44	0.12	0.19	4486
4	0.54	0.28	0.37	784
5	0.84	0.55	0.67	486

6	0.77	0.44	0.56	220
7	0.83	0.15	0.26	33
8	0.33	0.14	0.20	7
9	0.67	0.32	0.43	44
10	0.58	0.42	0.49	244
11	0.35	0.12	0.18	255
12	0.56	0.31	0.40	121
13	0.64	0.26	0.37	272
14	0.47	0.32	0.38	189
15	0.46	0.10	0.17	158
16	0.70	0.29	0.41	24
17	0.83	0.59	0.69	17
18	0.79	0.51	0.62	45
19	0.67	0.52	0.59	101
20	0.50	0.33	0.40	3
21	1.00	0.17	0.29	6
22	0.60	0.23	0.34	137
23	0.35	0.11	0.16	1654
24	0.51	0.31	0.38	740
25	0.50	0.15	0.23	82
26	0.57	0.06	0.11	65
27	0.63	0.36	0.46	971
28	0.14	0.08	0.10	13
29	1.00	0.02	0.04	51
30	0.56	0.38	0.45	50
31	0.67	0.29	0.40	7
32	0.43	0.13	0.20	428
33	0.55	0.45	0.49	1150
34	0.50	0.40	0.44	5
35	0.80	0.50	0.61	323
36	0.29	0.11	0.16	18
37	0.33	0.03	0.05	40
38	0.78	0.56	0.65	910
39	0.53	0.26	0.35	125
40	0.64	0.41	0.50	179
41	0.30	0.07	0.12	496
42	0.87	0.57	0.69	94
43	0.80	0.72	0.76	310
44	0.63	0.36	0.46	429

45	0.58	0.27	0.37	878
46	0.33	0.06	0.11	16
47	0.37	0.16	0.22	758
48	0.67	0.09	0.16	22
49	0.00	0.00	0.00	4
50	0.42	0.35	0.38	863
51	0.00	0.00	0.00	17
52	0.67	0.25	0.36	8
53	0.99	0.66	0.79	957
54	0.29	0.12	0.17	647
55	0.00	0.00	0.00	1
56	0.86	0.32	0.46	19
57	0.00	0.00	0.00	5
58	0.00	0.00	0.00	0
59	0.00	0.00	0.00	1
60	0.57	0.18	0.28	44
61	0.41	0.13	0.19	175
62	0.29	0.16	0.20	129
63	0.75	0.50	0.60	6
64	1.00	0.58	0.74	12
65	0.00	0.00	0.00	0
66	0.38	0.11	0.18	88
67	0.85	0.74	0.79	23
68	0.46	0.17	0.25	470
69	0.50	0.09	0.15	34
70	0.89	0.68	0.77	37
71	0.14	0.05	0.07	104
72	0.00	0.00	0.00	8
73	0.94	0.59	0.72	29
74	0.00	0.00	0.00	4
75	0.00	0.00	0.00	0
76	1.00	0.22	0.36	9
77	0.75	0.60	0.67	5
78	0.51	0.35	0.42	636
79	0.28	0.08	0.12	152
80	0.00	0.00	0.00	13
81	0.83	0.33	0.47	146
82	0.55	0.21	0.31	507
83	0.00	0.00	0.00	0

84	0.00	0.00	0.00	12
85	0.70	0.51	0.59	170
86	0.50	0.31	0.39	35
87	0.00	0.00	0.00	0
88	0.64	0.45	0.53	586
89	0.71	0.10	0.18	50
90	0.51	0.28	0.36	334
91	0.14	0.02	0.03	65
92	0.75	0.60	0.67	5
93	0.00	0.00	0.00	16
94	0.17	0.01	0.02	375
95	0.40	0.11	0.17	18
96	0.32	0.03	0.05	375
97	0.49	0.24	0.32	249
98	0.18	0.12	0.15	16
99	0.00	0.00	0.00	0
100	0.31	0.05	0.09	188
101	0.22	0.09	0.12	23
102	0.91	0.43	0.59	520
103	1.00	0.22	0.36	18
104	0.46	0.05	0.08	460
105	0.27	0.05	0.08	477
106	0.31	0.10	0.15	49
107	0.60	0.27	0.37	11
108	0.39	0.06	0.10	127
109	0.62	0.06	0.11	81
110	1.00	0.07	0.14	40
111	0.00	0.00	0.00	0
112	1.00	0.01	0.01	185
113	0.39	0.09	0.14	81
114	0.68	0.39	0.50	236
115	0.42	0.12	0.18	130
116	0.00	0.00	0.00	1
117	0.66	0.35	0.45	398
118	0.42	0.04	0.08	183
119	0.00	0.00	0.00	2
120	0.00	0.00	0.00	8
121	0.09	0.01	0.02	97
122	0.71	0.14	0.24	35

123	0.53	0.34	0.42	94
124	0.00	0.00	0.00	0
125	1.00	0.37	0.54	30
126	0.00	0.00	0.00	3
127	0.85	0.41	0.55	365
128	0.00	0.00	0.00	2
129	0.50	0.21	0.30	19
130	0.00	0.00	0.00	2
131	0.68	0.36	0.47	70
132	0.44	0.33	0.38	207
133	0.00	0.00	0.00	1
134	0.43	0.22	0.29	27
135	0.70	0.54	0.61	211
136	0.50	0.50	0.50	12
137	0.55	0.13	0.21	86
138	0.55	0.24	0.33	134
139	0.77	0.37	0.50	406
140	0.93	0.56	0.70	215
141	0.67	0.50	0.57	4
142	0.44	0.33	0.38	12
143	1.00	0.50	0.67	12
144	0.91	0.74	0.82	102
145	0.52	0.29	0.37	340
146	0.19	0.05	0.08	148
147	0.00	0.00	0.00	60
148	0.00	0.00	0.00	0
149	0.00	0.00	0.00	2
150	0.00	0.00	0.00	1
151	0.22	0.02	0.03	131
152	0.25	0.25	0.25	4
153	0.00	0.00	0.00	1
154	0.67	0.33	0.45	117
155	0.75	0.07	0.14	40
156	0.00	0.00	0.00	0
157	0.87	0.42	0.57	31
158	0.80	0.04	0.07	217
159	0.60	0.33	0.42	302
160	0.00	0.00	0.00	0
161	0.20	0.01	0.02	81

162	0.33	0.02	0.04	49
163	0.63	0.51	0.57	51
164	1.00	1.00	1.00	1
165	0.87	0.71	0.78	317
166	0.36	0.12	0.18	136
167	0.00	0.00	0.00	0
168	0.76	0.30	0.43	54
169	0.31	0.15	0.20	241
170	0.34	0.23	0.27	66
171	0.60	0.24	0.34	25
172	1.00	0.67	0.80	6
173	0.17	0.05	0.07	63
174	0.57	0.22	0.32	300
175	1.00	0.06	0.11	17
176	0.21	0.03	0.05	102
177	0.31	0.14	0.19	29
178	0.40	0.14	0.21	14
179	0.75	0.33	0.46	9
180	0.64	0.54	0.58	84
181	1.00	0.40	0.57	5
182	0.56	0.24	0.33	313
183	0.00	0.00	0.00	1
184	0.00	0.00	0.00	2
185	0.59	0.30	0.40	335
186	0.00	0.00	0.00	0
187	0.45	0.17	0.25	29
188	0.00	0.00	0.00	1
189	1.00	0.02	0.04	44
190	0.61	0.40	0.48	55
191	0.73	0.47	0.57	34
192	0.69	0.46	0.55	63
193	0.60	0.03	0.05	106
194	0.41	0.28	0.34	205
195	0.00	0.00	0.00	0
196	0.58	0.22	0.32	229
197	0.50	0.06	0.11	17
198	0.50	0.50	0.50	2
199	0.33	0.12	0.18	16
200	0.00	0.00	0.00	1

201	0.71	0.56	0.63	9
202	0.55	0.15	0.23	269
203	0.79	0.43	0.56	291
204	0.00	0.00	0.00	32
205	0.00	0.00	0.00	0
206	0.00	0.00	0.00	2
207	0.44	0.21	0.28	185
208	0.50	0.33	0.40	3
209	0.12	0.01	0.02	233
210	0.00	0.00	0.00	0
211	0.64	0.44	0.52	48
212	0.42	0.15	0.22	33
213	1.00	1.00	1.00	2
214	0.30	0.26	0.28	42
215	0.00	0.00	0.00	4
216	0.00	0.00	0.00	0
217	1.00	0.58	0.74	12
218	0.55	0.23	0.32	79
219	0.50	0.17	0.25	6
220	0.67	0.29	0.40	21
221	0.25	0.03	0.06	32
222	0.00	0.00	0.00	2
223	0.00	0.00	0.00	1
224	0.00	0.00	0.00	0
225	0.33	0.02	0.03	120
226	0.29	0.09	0.13	23
227	0.54	0.39	0.45	18
228	0.00	0.00	0.00	15
229	1.00	0.83	0.91	6
230	0.00	0.00	0.00	9
231	0.00	0.00	0.00	0
232	1.00	1.00	1.00	1
233	0.50	0.38	0.43	8
234	0.33	0.07	0.12	188
235	0.32	0.06	0.11	126
236	1.00	0.33	0.50	3
237	0.22	0.03	0.06	63
238	0.56	0.31	0.40	229
239	0.00	0.00	0.00	0

240	0.59	0.24	0.34	224
241	0.33	0.33	0.33	3
242	0.24	0.04	0.07	129
243	0.00	0.00	0.00	0
244	1.00	0.59	0.74	22
245	0.00	0.00	0.00	16
246	0.76	0.58	0.66	38
247	0.88	0.52	0.65	29
248	0.20	0.04	0.06	26
249	0.45	0.14	0.22	35
250	1.00	0.62	0.77	8
251	0.16	0.04	0.06	258
252	0.63	0.22	0.32	55
253	0.29	0.15	0.20	13
254	0.65	0.16	0.25	246
255	0.00	0.00	0.00	1
256	0.00	0.00	0.00	0
257	0.00	0.00	0.00	1
258	0.33	0.06	0.10	69
259	0.73	0.47	0.57	17
260	0.61	0.58	0.59	217
261	0.00	0.00	0.00	0
262	0.50	1.00	0.67	1
263	0.00	0.00	0.00	0
264	0.71	0.19	0.30	63
265	1.00	0.29	0.44	14
266	0.00	0.00	0.00	1
267	0.33	0.23	0.27	13
268	0.00	0.00	0.00	1
269	0.00	0.00	0.00	2
270	0.00	0.00	0.00	2
271	0.50	0.19	0.27	74
272	0.30	0.11	0.16	28
273	0.25	0.02	0.04	47
274	0.00	0.00	0.00	8
275	0.30	0.05	0.08	195
276	0.80	0.71	0.75	62
277	0.73	0.45	0.56	42
278	0.69	0.56	0.62	118

279	0.38	0.10	0.16	51
280	1.00	0.67	0.80	9
281	1.00	0.55	0.71	11
282	1.00	0.04	0.08	25
283	1.00	0.10	0.18	10
284	0.00	0.00	0.00	11
285	0.00	0.00	0.00	80
286	0.71	0.15	0.24	34
287	0.17	0.04	0.07	143
288	0.00	0.00	0.00	0
289	0.00	0.00	0.00	0
290	1.00	0.11	0.20	18
291	0.78	0.50	0.61	14
292	0.00	0.00	0.00	0
293	0.08	0.03	0.04	71
294	0.00	0.00	0.00	1
295	0.00	0.00	0.00	2
296	0.47	0.25	0.33	138
297	0.66	0.23	0.34	107
298	0.57	0.08	0.14	198
299	0.92	0.25	0.39	44
300	0.50	0.13	0.21	30
301	0.33	0.08	0.13	12
302	0.67	0.22	0.33	18
303	0.00	0.00	0.00	4
304	0.00	0.00	0.00	0
305	0.00	0.00	0.00	10
306	0.96	0.72	0.83	36
307	0.60	0.07	0.13	208
308	0.54	0.24	0.33	93
309	0.00	0.00	0.00	29
310	0.60	0.06	0.11	143
311	0.00	0.00	0.00	3
312	0.00	0.00	0.00	0
313	0.00	0.00	0.00	10
314	0.65	0.22	0.33	60
315	0.00	0.00	0.00	31
316	0.84	0.54	0.66	48
317	0.00	0.00	0.00	175

318	0.03	0.43	0.06	7
319	0.67	0.28	0.40	192
320	0.40	0.40	0.40	5
321	0.71	0.55	0.62	164
322	0.64	0.34	0.44	115
323	0.20	0.11	0.14	192
324	0.50	0.30	0.37	20
325	0.56	0.25	0.34	97
326	0.92	0.67	0.77	18
327	0.00	0.00	0.00	0
328	0.50	1.00	0.67	1
329	0.51	0.42	0.46	156
330	0.60	0.08	0.15	36
331	0.00	0.00	0.00	5
332	0.00	0.00	0.00	0
333	0.00	0.00	0.00	0
334	0.67	0.25	0.37	87
335	0.67	0.24	0.35	51
336	0.27	0.14	0.18	29
337	0.36	0.08	0.13	98
338	0.00	0.00	0.00	3
339	0.00	0.00	0.00	8
340	0.47	0.14	0.22	49
341	1.00	1.00	1.00	1
342	1.00	0.17	0.29	12
343	0.43	0.10	0.16	160
344	0.00	0.00	0.00	2
345	0.00	0.00	0.00	0
346	0.92	0.68	0.78	53
347	0.00	0.00	0.00	21
348	0.82	0.32	0.46	156
349	1.00	0.75	0.86	8
350	0.00	0.00	0.00	0
351	0.00	0.00	0.00	0
352	0.48	0.20	0.28	102
353	0.00	0.00	0.00	0
354	1.00	0.50	0.67	2
355	0.00	0.00	0.00	1
356	0.00	0.00	0.00	0

357	0.67	0.40	0.50	5
358	0.48	0.06	0.11	177
359	0.00	0.00	0.00	189
360	0.59	0.12	0.20	154
361	0.48	0.18	0.26	90
362	0.00	0.00	0.00	20
363	0.00	0.00	0.00	0
364	0.50	0.03	0.06	64
365	0.62	0.13	0.21	39
366	0.00	0.00	0.00	0
367	0.59	0.25	0.35	147
368	0.00	0.00	0.00	169
369	0.00	0.00	0.00	11
370	0.59	0.24	0.34	125
371	0.50	0.50	0.50	2
372	0.29	0.11	0.15	19
373	0.00	0.00	0.00	0
374	0.00	0.00	0.00	9
375	0.75	0.29	0.42	52
376	0.00	0.00	0.00	144
377	0.58	0.13	0.21	169
378	0.00	0.00	0.00	0
379	0.50	0.23	0.32	39
380	0.00	0.00	0.00	6
381	0.11	0.03	0.04	40
382	0.33	0.08	0.13	77
383	0.80	0.50	0.62	16
384	0.67	0.28	0.40	117
385	0.39	0.14	0.20	101
386	0.67	0.53	0.59	34
387	1.00	0.20	0.33	5
388	0.00	0.00	0.00	0
389	0.43	0.02	0.04	157
390	0.62	0.17	0.26	30
391	0.00	0.00	0.00	22
392	0.60	0.09	0.15	35
393	0.20	0.09	0.13	11
394	0.80	1.00	0.89	4
395	0.00	0.00	0.00	5

396	0.00	0.00	0.00	0
397	0.00	0.00	0.00	2
398	0.80	0.27	0.40	146
399	0.00	0.00	0.00	0
400	0.49	0.51	0.50	57
401	0.00	0.00	0.00	3
402	0.00	0.00	0.00	1
403	0.71	0.14	0.24	152
404	0.00	0.00	0.00	1
405	0.60	0.30	0.40	20
406	0.00	0.00	0.00	0
407	0.00	0.00	0.00	7
408	0.44	0.12	0.19	33
409	0.17	0.02	0.04	48
410	0.84	0.33	0.48	126
411	0.00	0.00	0.00	0
412	0.00	0.00	0.00	11
413	0.55	0.26	0.35	66
414	1.00	1.00	1.00	2
415	0.00	0.00	0.00	0
416	1.00	0.05	0.09	21
417	0.20	1.00	0.33	1
418	1.00	1.00	1.00	2
419	0.08	0.01	0.02	73
420	0.50	0.12	0.20	24
421	0.00	0.00	0.00	2
422	0.00	0.00	0.00	19
423	0.00	0.00	0.00	22
424	0.00	0.00	0.00	2
425	0.00	0.00	0.00	2
426	0.00	0.00	0.00	0
427	0.58	0.22	0.32	68
428	0.41	0.05	0.09	131
429	0.00	0.00	0.00	0
430	0.50	0.04	0.07	28
431	0.62	0.38	0.48	13
432	0.00	0.00	0.00	14
433	0.00	0.00	0.00	0
434	0.00	0.00	0.00	0

435	0.00	0.00	0.00	0
436	0.00	0.00	0.00	15
437	0.75	0.10	0.18	30
438	0.00	0.00	0.00	82
439	0.00	0.00	0.00	0
440	1.00	0.50	0.67	6
441	0.00	0.00	0.00	12
442	0.33	0.12	0.18	8
443	0.77	0.37	0.50	46
444	0.82	0.57	0.67	54
445	0.00	0.00	0.00	0
446	0.00	0.00	0.00	6
447	0.00	0.00	0.00	0
448	0.00	0.00	0.00	6
449	0.00	0.00	0.00	32
450	0.50	0.33	0.40	3
451	0.11	1.00	0.20	1
452	0.00	0.00	0.00	6
453	0.47	0.15	0.23	127
454	0.50	0.50	0.50	2
455	0.67	0.09	0.15	23
456	0.73	0.52	0.61	21
457	0.13	0.04	0.06	47
458	0.43	0.05	0.10	112
459	0.00	0.00	0.00	0
460	0.64	0.14	0.24	97
461	0.44	0.16	0.24	25
462	0.00	0.00	0.00	6
463	0.00	0.00	0.00	1
464	0.43	0.11	0.17	55
465	0.50	0.04	0.08	24
466	1.00	1.00	1.00	1
467	0.75	0.56	0.64	16
468	0.00	0.00	0.00	16
469	0.74	0.15	0.25	136
470	0.00	0.00	0.00	9
471	0.64	0.26	0.37	27
472	0.50	0.01	0.01	134
473	0.00	0.00	0.00	5

474	0.41	0.24	0.30	96
475	0.39	0.06	0.10	120
476	0.33	0.17	0.22	6
477	1.00	1.00	1.00	1
478	0.00	0.00	0.00	6
479	0.64	0.21	0.32	42
480	0.00	0.00	0.00	0
481	0.00	0.00	0.00	0
482	0.33	0.14	0.20	7
483	0.00	0.00	0.00	24
484	0.00	0.00	0.00	2
485	0.25	0.04	0.06	27
486	0.08	0.02	0.03	112
487	0.00	0.00	0.00	0
488	0.81	0.49	0.61	53
489	0.00	0.00	0.00	16
490	0.30	0.10	0.15	89
491	0.00	0.00	0.00	0
492	0.20	0.10	0.13	21
493	1.00	0.14	0.25	21
494	0.00	0.00	0.00	1
495	1.00	0.50	0.67	4
496	0.00	0.00	0.00	0
497	0.24	0.05	0.08	79
498	0.00	0.00	0.00	6
499	0.00	0.00	0.00	10
micro avg	0.84	0.56	0.67	85094
macro avg	0.40	0.20	0.24	85094
weighted avg	0.72	0.56	0.60	85094
samples avg	0.86	0.65	0.70	85094

Time taken to run this cell : 0:05:05.067372

```

/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision is ill-defined and being set
to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall is ill-defined and being set to

```

```

0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
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nd being set to 0.0 in labels with no predicted samples.
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'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in samples with no predicted labels.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p

```

```
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in samples with no true labels.
'recall', 'true', average, warn_for)
```

```
In [70]: joblib.dump(classifier, 'lr_with_more_title_weight.pkl')
```

```
Out[70]: ['lr_with_more_title_weight.pkl']
```

```
In [95]: '''from sklearn.calibration import CalibratedClassifierCV
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import log_loss
alpha = [10 ** x for x in range(-5, 1)]

tuned_parameters = [{'estimator__alpha':alpha}]
logistic_reg_clf = OneVsRestClassifier(SGDClassifier(loss='hinge', clas
s_weight='balanced'))
logistic_reg_gs = GridSearchCV(logistic_reg_clf, tuned_parameters,scori
ng = 'f1_micro', cv=2, verbose=3)
logistic_reg_gs.fit(x_train_multilabel, y_train)'''
```

```
Out[95]: "from sklearn.calibration import CalibratedClassifierCV\nfrom sklearn.l
inear_model import LogisticRegression\nfrom sklearn.metrics import log_
loss\nalpha = [10 ** x for x in range(-5, 1)]\n\ntuned_parameters =
[{'estimator__alpha':alpha}]\nlogistic_reg_clf = OneVsRestClassifier(SG
DClassifier(loss='hinge', class_weight='balanced'))\nlogistic_reg_gs =
GridSearchCV(logistic_reg_clf, tuned_parameters,scoring = 'f1_micro', c
v=2, verbose=3)\nlogistic_reg_gs.fit(x_train_multilabel, y_train)"
```

```
In [96]: '''start = datetime.now()
classifier_2 = OneVsRestClassifier(LogisticRegression(C=0.0001,penalty
='l1'), n_jobs=-1)
classifier_2.fit(x_train_multilabel, y_train)
predictions_2 = classifier_2.predict(x_test_multilabel)
print("Accuracy :",metrics.accuracy_score(y_test, predictions_2))
print("Hamming loss ",metrics.hamming_loss(y_test,predictions_2))

precision = precision_score(y_test, predictions_2, average='micro')
```

```

recall = recall_score(y_test, predictions_2, average='micro')
f1 = f1_score(y_test, predictions_2, average='micro')

print("Micro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

precision = precision_score(y_test, predictions_2, average='macro')
recall = recall_score(y_test, predictions_2, average='macro')
f1 = f1_score(y_test, predictions_2, average='macro')

print("Macro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

print(metrics.classification_report(y_test, predictions_2))
print("Time taken to run this cell :", datetime.now() - start)'''

```

```

Out[96]: 'start = datetime.now()\nclassifier_2 = OneVsRestClassifier(LogisticRegression(C=0.0001,penalty='l1'), n_jobs=-1)\nclassifier_2.fit(x_train_multilabel, y_train)\npredictions_2 = classifier_2.predict(x_test_multilabel)\nprint("Accuracy :",metrics.accuracy_score(y_test, predictions_2))\nprint("Hamming loss ",metrics.hamming_loss(y_test,predictions_2))\n\n\nprecision = precision_score(y_test, predictions_2, average='micro')\nrecall = recall_score(y_test, predictions_2, average='micro')\nf1 = f1_score(y_test, predictions_2, average='micro')\n\nprint("Micro-average quality numbers")\nprint("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))\n\nprecision = precision_score(y_test, predictions_2, average='macro')\nrecall = recall_score(y_test, predictions_2, average='macro')\nf1 = f1_score(y_test, predictions_2, average='macro')\n\nprint("Macro-average quality numbers")\nprint("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))\n\nprint(metrics.classification_report(y_test, predictions_2))\nprint("Time taken to run this cell :", datetime.now() - start)'

```

```

In [82]: alpha = [10 ** x for x in range(-5, 1)]

tuned_parameters = [{'estimator__alpha':alpha}]

```



```
logistic_reg_clf = OneVsRestClassifier(SGDClassifier(loss='hinge', clas
s_weight='balanced'))
logistic_reg_gs = GridSearchCV(logistic_reg_clf, tuned_parameters,scori
ng = 'f1_micro', cv=2, verbose=3)
logistic_reg_gs.fit(x_train_multilabel, y_train)
```

Fitting 2 folds for each of 6 candidates, totalling 12 fits

[CV] estimator__alpha=1e-05

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.

[CV] estimator__alpha=1e-05, score=0.472, total= 5.0min

[CV] estimator__alpha=1e-05

[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 5.0min remaining: 0.0s

[CV] estimator__alpha=1e-05, score=0.421, total= 5.3min

[CV] estimator__alpha=0.0001

[Parallel(n_jobs=1)]: Done 2 out of 2 | elapsed: 10.2min remaining: 0.0s

[CV] estimator__alpha=0.0001, score=0.415, total= 3.2min

[CV] estimator__alpha=0.0001

/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_gradient.py:561: ConvergenceWarning: Maximum number of iteration reached before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)

[CV] estimator__alpha=0.0001, score=0.358, total= 4.0min

[CV] estimator__alpha=0.001

/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_gradient.py:561: ConvergenceWarning: Maximum number of iteration reached before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)

[CV] estimator__alpha=0.001, score=0.281, total= 3.9min

[CV] estimator__alpha=0.001

```

/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_
gradient.py:561: ConvergenceWarning: Maximum number of iteration reache
d before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)
/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_
gradient.py:561: ConvergenceWarning: Maximum number of iteration reache
d before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)
/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_
gradient.py:561: ConvergenceWarning: Maximum number of iteration reache
d before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)
/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_
gradient.py:561: ConvergenceWarning: Maximum number of iteration reache
d before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)
/anaconda3/lib/python3.6/site-packages/sklearn/linear_model/stochastic_
gradient.py:561: ConvergenceWarning: Maximum number of iteration reache
d before convergence. Consider increasing max_iter to improve the fit.
ConvergenceWarning)

```

```

[CV] ..... estimator__alpha=0.001, score=0.215, total=951.9min
[CV] estimator__alpha=0.01 .....
[CV] ..... estimator__alpha=0.01, score=0.074, total=10.8min
[CV] estimator__alpha=0.01 .....
[CV] ..... estimator__alpha=0.01, score=0.084, total= 9.9min
[CV] estimator__alpha=0.1 .....
[CV] ..... estimator__alpha=0.1, score=0.020, total= 2.2min
[CV] estimator__alpha=0.1 .....
[CV] ..... estimator__alpha=0.1, score=0.021, total= 2.2min
[CV] estimator__alpha=1 .....
[CV] ..... estimator__alpha=1, score=0.020, total= 1.6min
[CV] estimator__alpha=1 .....
[CV] ..... estimator__alpha=1, score=0.017, total= 1.6min

```

```

[Parallel(n_jobs=1)]: Done 12 out of 12 | elapsed: 1001.5min finished

```

```

Out[82]: GridSearchCV(cv=2, error_score='raise-deprecating',
                    estimator=OneVsRestClassifier(estimator=SGDClassifier(alph
a=0.0001,

```

aver

```
age=False,  
s_weight='balanced',  
y_stopping=False,  
lon=0.1,  
=0.0,  
intercept=True,  
atio=0.15,  
ning_rate='optimal',  
='hinge',  
iter=1000,  
er_no_change=5,  
bs=None,  
lty='l2',  
r_t=0.5,  
om_state=None,  
fle=True,  
0.001,  
dation_fraction=0.1,  
ose=0,  
_start=False),
```

```
clas  
earl  
epsi  
eta0  
fit_  
ll_r  
lear  
loss  
max_  
n_it  
n_jo  
pena  
powe  
rand  
shuf  
tol=  
vali  
verb  
warm
```

```

n_jobs=None),
iid='warn', n_jobs=None,
param_grid=[{'estimator__alpha': [1e-05, 0.0001, 0.001, 0.
01, 0.1,
1]}],
pre_dispatch='2*n_jobs', refit=True, return_train_score=Fa
lse,
scoring='f1_micro', verbose=3)

```

```

In [97]: '''model_to_set = OneVsRestClassifier(SGDClassifier(loss='hinge', penal
ty='l1'),n_jobs=-1)
alpha=[10**x for x in range(-3,3)]
parameters=[{'estimator__alpha':alpha}]

model_tunning = GridSearchCV(model_to_set,parameters,score_func='f1_mic
ro',n_jobs=-1)

model_tunning.fit(x_train_multilabel, y_train)
optimal_alpha=model_tunning.best_params_.alpha
print(model_tunning.best_score_)
print(model_tunning.best_params_)'''

```

```

Out[97]: "model_to_set = OneVsRestClassifier(SGDClassifier(loss='hinge', penalty
='l1'),n_jobs=-1)\nalpha=[10**x for x in range(-3,3)]\nparameters=[{'es
timator__alpha':alpha}]\n\nmodel_tunning = GridSearchCV(model_to_set,pa

```

```
rameters,score_func='f1_micro',n_jobs=-1)\n
\n\nmodel_tunning.fit(x_train_multilabel, y_train)\noptimal_alpha=model
_tunning.best_params_.alpha\nprint(model_tunning.best_score_)\nprint(mo
del_tunning.best_params_)"
```

```
In [83]: start = datetime.now()
classifier = OneVsRestClassifier(SGDClassifier(loss='hinge', alpha=0.00
01, penalty='l1'), n_jobs=-1)
classifier.fit(x_train_multilabel, y_train)
predictions = classifier.predict (x_test_multilabel)

print("Accuracy :",metrics.accuracy_score(y_test, predictions))
print("Hamming loss ",metrics.hamming_loss(y_test,predictions))

precision = precision_score(y_test, predictions, average='micro')
recall = recall_score(y_test, predictions, average='micro')
f1 = f1_score(y_test, predictions, average='micro')

print("Micro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(pr
ecision, recall, f1))

precision = precision_score(y_test, predictions, average='macro')
recall = recall_score(y_test, predictions, average='macro')
f1 = f1_score(y_test, predictions, average='macro')

print("Macro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(pr
ecision, recall, f1))

print (metrics.classification_report(y_test, predictions))
print("Time taken to run this cell :", datetime.now() - start)
```

```
Accuracy : 0.28395
Hamming loss  0.00234455
Micro-average quality numbers
Precision: 0.9392, Recall: 0.4800, F1-measure: 0.6353
```

Macro-average quality numbers

Precision: 0.1577, Recall: 0.1037, F1-measure: 0.1148

	precision	recall	f1-score	support
0	0.98	0.99	0.98	36915
1	0.56	0.04	0.07	140
2	0.19	0.32	0.24	37
3	0.55	0.09	0.16	4486
4	0.68	0.17	0.27	784
5	0.83	0.48	0.61	486
6	0.64	0.61	0.62	220
7	0.33	0.30	0.32	33
8	0.22	0.29	0.25	7
9	0.62	0.55	0.58	44
10	0.58	0.25	0.35	244
11	0.00	0.00	0.00	255
12	0.47	0.33	0.39	121
13	0.47	0.17	0.25	272
14	0.57	0.26	0.36	189
15	0.73	0.05	0.09	158
16	0.58	0.29	0.39	24
17	0.63	0.71	0.67	17
18	0.71	0.64	0.67	45
19	0.63	0.56	0.60	101
20	1.00	0.33	0.50	3
21	0.00	0.00	0.00	6
22	0.00	0.00	0.00	137
23	0.00	0.00	0.00	1654
24	0.55	0.26	0.35	740
25	0.52	0.17	0.26	82
26	0.00	0.00	0.00	65
27	0.66	0.32	0.43	971
28	0.18	0.23	0.20	13
29	0.00	0.00	0.00	51
30	0.40	0.04	0.07	50
31	0.67	0.29	0.40	7
32	0.00	0.00	0.00	428
33	0.69	0.01	0.02	1150
34	0.50	0.40	0.44	5

35	0.76	0.54	0.63	323
36	0.00	0.00	0.00	18
37	0.50	0.07	0.13	40
38	0.79	0.55	0.65	910
39	0.00	0.00	0.00	125
40	0.63	0.36	0.46	179
41	0.00	0.00	0.00	496
42	0.91	0.44	0.59	94
43	0.77	0.84	0.80	310
44	0.77	0.15	0.25	429
45	0.00	0.00	0.00	878
46	0.00	0.00	0.00	16
47	0.00	0.00	0.00	758
48	0.00	0.00	0.00	22
49	0.00	0.00	0.00	4
50	0.00	0.00	0.00	863
51	0.00	0.00	0.00	17
52	1.00	0.38	0.55	8
53	1.00	0.07	0.13	957
54	0.00	0.00	0.00	647
55	0.00	0.00	0.00	1
56	0.88	0.37	0.52	19
57	0.00	0.00	0.00	5
58	0.00	0.00	0.00	0
59	0.00	0.00	0.00	1
60	0.00	0.00	0.00	44
61	0.00	0.00	0.00	175
62	0.00	0.00	0.00	129
63	0.80	0.67	0.73	6
64	0.78	0.58	0.67	12
65	0.00	0.00	0.00	0
66	0.00	0.00	0.00	88
67	0.75	0.78	0.77	23
68	0.00	0.00	0.00	470
69	0.00	0.00	0.00	34
70	0.90	0.70	0.79	37
71	0.00	0.00	0.00	104
72	0.00	0.00	0.00	8
73	0.89	0.55	0.68	29

74	0.00	0.00	0.00	4
75	0.00	0.00	0.00	0
76	0.00	0.00	0.00	9
77	0.50	0.60	0.55	5
78	0.00	0.00	0.00	636
79	0.00	0.00	0.00	152
80	0.00	0.00	0.00	13
81	0.81	0.30	0.44	146
82	0.00	0.00	0.00	507
83	0.00	0.00	0.00	0
84	0.00	0.00	0.00	12
85	0.67	0.62	0.65	170
86	0.62	0.14	0.23	35
87	0.00	0.00	0.00	0
88	0.00	0.00	0.00	586
89	0.00	0.00	0.00	50
90	0.51	0.30	0.38	334
91	0.00	0.00	0.00	65
92	0.80	0.80	0.80	5
93	0.00	0.00	0.00	16
94	0.00	0.00	0.00	375
95	0.50	0.11	0.18	18
96	0.00	0.00	0.00	375
97	0.00	0.00	0.00	249
98	0.00	0.00	0.00	16
99	0.00	0.00	0.00	0
100	0.00	0.00	0.00	188
101	0.00	0.00	0.00	23
102	0.00	0.00	0.00	520
103	0.00	0.00	0.00	18
104	0.00	0.00	0.00	460
105	0.00	0.00	0.00	477
106	0.00	0.00	0.00	49
107	0.62	0.45	0.53	11
108	0.00	0.00	0.00	127
109	0.00	0.00	0.00	81
110	0.00	0.00	0.00	40
111	0.00	0.00	0.00	0
112	0.00	0.00	0.00	185

113	0.00	0.00	0.00	81
114	0.73	0.29	0.42	236
115	0.00	0.00	0.00	130
116	0.00	0.00	0.00	1
117	0.00	0.00	0.00	398
118	0.00	0.00	0.00	183
119	0.00	0.00	0.00	2
120	0.00	0.00	0.00	8
121	0.00	0.00	0.00	97
122	0.00	0.00	0.00	35
123	0.00	0.00	0.00	94
124	0.00	0.00	0.00	0
125	1.00	0.47	0.64	30
126	0.00	0.00	0.00	3
127	0.00	0.00	0.00	365
128	0.00	0.00	0.00	2
129	0.00	0.00	0.00	19
130	0.00	0.00	0.00	2
131	0.00	0.00	0.00	70
132	0.00	0.00	0.00	207
133	0.00	0.00	0.00	1
134	0.00	0.00	0.00	27
135	0.73	0.43	0.54	211
136	0.21	0.50	0.30	12
137	0.00	0.00	0.00	86
138	0.00	0.00	0.00	134
139	0.00	0.00	0.00	406
140	0.92	0.60	0.72	215
141	0.67	0.50	0.57	4
142	0.43	0.50	0.46	12
143	0.00	0.00	0.00	12
144	0.90	0.85	0.87	102
145	0.00	0.00	0.00	340
146	0.00	0.00	0.00	148
147	0.00	0.00	0.00	60
148	0.00	0.00	0.00	0
149	0.00	0.00	0.00	2
150	0.00	0.00	0.00	1
151	0.00	0.00	0.00	131

152	0.00	0.00	0.00	4
153	0.00	0.00	0.00	1
154	0.79	0.22	0.35	117
155	0.00	0.00	0.00	40
156	0.00	0.00	0.00	0
157	0.00	0.00	0.00	31
158	0.00	0.00	0.00	217
159	0.00	0.00	0.00	302
160	0.00	0.00	0.00	0
161	0.00	0.00	0.00	81
162	0.00	0.00	0.00	49
163	0.00	0.00	0.00	51
164	0.00	0.00	0.00	1
165	0.85	0.74	0.79	317
166	0.00	0.00	0.00	136
167	0.00	0.00	0.00	0
168	0.00	0.00	0.00	54
169	0.00	0.00	0.00	241
170	0.00	0.00	0.00	66
171	0.00	0.00	0.00	25
172	1.00	0.83	0.91	6
173	0.00	0.00	0.00	63
174	0.00	0.00	0.00	300
175	0.00	0.00	0.00	17
176	0.00	0.00	0.00	102
177	0.00	0.00	0.00	29
178	0.00	0.00	0.00	14
179	0.00	0.00	0.00	9
180	0.80	0.42	0.55	84
181	1.00	0.40	0.57	5
182	0.00	0.00	0.00	313
183	0.00	0.00	0.00	1
184	0.00	0.00	0.00	2
185	0.00	0.00	0.00	335
186	0.00	0.00	0.00	0
187	0.00	0.00	0.00	29
188	0.00	0.00	0.00	1
189	0.00	0.00	0.00	44
190	0.00	0.00	0.00	55

191	0.92	0.35	0.51	34
192	0.74	0.32	0.44	63
193	0.00	0.00	0.00	106
194	0.00	0.00	0.00	205
195	0.00	0.00	0.00	0
196	0.00	0.00	0.00	229
197	0.00	0.00	0.00	17
198	0.50	0.50	0.50	2
199	0.00	0.00	0.00	16
200	0.00	0.00	0.00	1
201	0.75	0.67	0.71	9
202	0.00	0.00	0.00	269
203	0.00	0.00	0.00	291
204	0.00	0.00	0.00	32
205	0.00	0.00	0.00	0
206	0.00	0.00	0.00	2
207	0.00	0.00	0.00	185
208	0.50	0.33	0.40	3
209	0.00	0.00	0.00	233
210	0.00	0.00	0.00	0
211	0.00	0.00	0.00	48
212	0.00	0.00	0.00	33
213	0.00	0.00	0.00	2
214	0.00	0.00	0.00	42
215	0.00	0.00	0.00	4
216	0.00	0.00	0.00	0
217	1.00	0.58	0.74	12
218	0.00	0.00	0.00	79
219	0.60	0.50	0.55	6
220	0.00	0.00	0.00	21
221	0.00	0.00	0.00	32
222	0.00	0.00	0.00	2
223	0.00	0.00	0.00	1
224	0.00	0.00	0.00	0
225	0.00	0.00	0.00	120
226	0.00	0.00	0.00	23
227	0.00	0.00	0.00	18
228	0.00	0.00	0.00	15
229	1.00	0.83	0.91	6

230	0.00	0.00	0.00	9
231	0.00	0.00	0.00	0
232	0.00	0.00	0.00	1
233	0.38	0.38	0.38	8
234	0.00	0.00	0.00	188
235	0.00	0.00	0.00	126
236	1.00	0.33	0.50	3
237	0.00	0.00	0.00	63
238	0.00	0.00	0.00	229
239	0.00	0.00	0.00	0
240	0.00	0.00	0.00	224
241	0.00	0.00	0.00	3
242	0.00	0.00	0.00	129
243	0.00	0.00	0.00	0
244	1.00	0.59	0.74	22
245	0.00	0.00	0.00	16
246	0.76	0.58	0.66	38
247	1.00	0.24	0.39	29
248	0.00	0.00	0.00	26
249	0.00	0.00	0.00	35
250	1.00	0.62	0.77	8
251	0.00	0.00	0.00	258
252	0.00	0.00	0.00	55
253	0.00	0.00	0.00	13
254	0.00	0.00	0.00	246
255	0.00	0.00	0.00	1
256	0.00	0.00	0.00	0
257	0.50	1.00	0.67	1
258	0.00	0.00	0.00	69
259	0.75	0.53	0.62	17
260	0.00	0.00	0.00	217
261	0.00	0.00	0.00	0
262	0.50	1.00	0.67	1
263	0.00	0.00	0.00	0
264	0.00	0.00	0.00	63
265	1.00	0.14	0.25	14
266	0.00	0.00	0.00	1
267	0.00	0.00	0.00	13
268	0.00	0.00	0.00	1

269	0.00	0.00	0.00	2
270	0.50	0.50	0.50	2
271	0.00	0.00	0.00	74
272	0.00	0.00	0.00	28
273	0.00	0.00	0.00	47
274	0.00	0.00	0.00	8
275	0.00	0.00	0.00	195
276	0.78	0.73	0.75	62
277	0.83	0.12	0.21	42
278	0.00	0.00	0.00	118
279	0.00	0.00	0.00	51
280	1.00	0.11	0.20	9
281	1.00	0.45	0.62	11
282	0.00	0.00	0.00	25
283	0.00	0.00	0.00	10
284	0.00	0.00	0.00	11
285	0.00	0.00	0.00	80
286	0.00	0.00	0.00	34
287	0.00	0.00	0.00	143
288	0.00	0.00	0.00	0
289	0.00	0.00	0.00	0
290	0.00	0.00	0.00	18
291	0.77	0.71	0.74	14
292	0.00	0.00	0.00	0
293	0.00	0.00	0.00	71
294	0.00	0.00	0.00	1
295	0.00	0.00	0.00	2
296	0.00	0.00	0.00	138
297	0.00	0.00	0.00	107
298	0.00	0.00	0.00	198
299	0.93	0.30	0.45	44
300	0.00	0.00	0.00	30
301	0.00	0.00	0.00	12
302	0.00	0.00	0.00	18
303	0.00	0.00	0.00	4
304	0.00	0.00	0.00	0
305	0.00	0.00	0.00	10
306	0.96	0.75	0.84	36
307	0.00	0.00	0.00	208

308	0.00	0.00	0.00	93
309	0.00	0.00	0.00	29
310	0.00	0.00	0.00	143
311	0.00	0.00	0.00	3
312	0.00	0.00	0.00	0
313	0.00	0.00	0.00	10
314	0.00	0.00	0.00	60
315	0.00	0.00	0.00	31
316	0.84	0.56	0.68	48
317	0.00	0.00	0.00	175
318	0.00	0.00	0.00	7
319	0.00	0.00	0.00	192
320	0.00	0.00	0.00	5
321	0.00	0.00	0.00	164
322	0.00	0.00	0.00	115
323	0.00	0.00	0.00	192
324	0.00	0.00	0.00	20
325	0.00	0.00	0.00	97
326	1.00	0.61	0.76	18
327	0.00	0.00	0.00	0
328	0.50	1.00	0.67	1
329	0.00	0.00	0.00	156
330	0.00	0.00	0.00	36
331	0.00	0.00	0.00	5
332	0.00	0.00	0.00	0
333	0.00	0.00	0.00	0
334	0.00	0.00	0.00	87
335	0.00	0.00	0.00	51
336	0.00	0.00	0.00	29
337	0.00	0.00	0.00	98
338	0.00	0.00	0.00	3
339	0.00	0.00	0.00	8
340	0.00	0.00	0.00	49
341	1.00	1.00	1.00	1
342	0.00	0.00	0.00	12
343	0.00	0.00	0.00	160
344	0.00	0.00	0.00	2
345	0.00	0.00	0.00	0
346	0.93	0.72	0.81	53

347	0.00	0.00	0.00	21
348	0.00	0.00	0.00	156
349	1.00	0.75	0.86	8
350	0.00	0.00	0.00	0
351	0.00	0.00	0.00	0
352	0.00	0.00	0.00	102
353	0.00	0.00	0.00	0
354	1.00	0.50	0.67	2
355	0.00	0.00	0.00	1
356	0.00	0.00	0.00	0
357	0.00	0.00	0.00	5
358	0.00	0.00	0.00	177
359	0.00	0.00	0.00	189
360	0.00	0.00	0.00	154
361	0.00	0.00	0.00	90
362	0.00	0.00	0.00	20
363	0.00	0.00	0.00	0
364	0.00	0.00	0.00	64
365	0.00	0.00	0.00	39
366	0.00	0.00	0.00	0
367	0.00	0.00	0.00	147
368	0.00	0.00	0.00	169
369	0.00	0.00	0.00	11
370	0.00	0.00	0.00	125
371	0.50	0.50	0.50	2
372	0.00	0.00	0.00	19
373	0.00	0.00	0.00	0
374	0.00	0.00	0.00	9
375	0.00	0.00	0.00	52
376	0.00	0.00	0.00	144
377	0.00	0.00	0.00	169
378	0.00	0.00	0.00	0
379	0.00	0.00	0.00	39
380	0.00	0.00	0.00	6
381	0.00	0.00	0.00	40
382	0.00	0.00	0.00	77
383	0.67	0.50	0.57	16
384	0.65	0.33	0.44	117
385	0.00	0.00	0.00	101

386	0.00	0.00	0.00	34
387	1.00	0.20	0.33	5
388	0.00	0.00	0.00	0
389	0.00	0.00	0.00	157
390	0.00	0.00	0.00	30
391	0.00	0.00	0.00	22
392	0.00	0.00	0.00	35
393	0.00	0.00	0.00	11
394	0.75	0.75	0.75	4
395	0.00	0.00	0.00	5
396	0.00	0.00	0.00	0
397	0.00	0.00	0.00	2
398	0.00	0.00	0.00	146
399	0.00	0.00	0.00	0
400	0.00	0.00	0.00	57
401	0.00	0.00	0.00	3
402	0.00	0.00	0.00	1
403	0.00	0.00	0.00	152
404	0.00	0.00	0.00	1
405	0.64	0.35	0.45	20
406	0.00	0.00	0.00	0
407	0.00	0.00	0.00	7
408	0.00	0.00	0.00	33
409	0.00	0.00	0.00	48
410	0.00	0.00	0.00	126
411	0.00	0.00	0.00	0
412	0.00	0.00	0.00	11
413	0.00	0.00	0.00	66
414	1.00	1.00	1.00	2
415	0.00	0.00	0.00	0
416	0.00	0.00	0.00	21
417	0.00	0.00	0.00	1
418	1.00	1.00	1.00	2
419	0.00	0.00	0.00	73
420	0.00	0.00	0.00	24
421	0.00	0.00	0.00	2
422	0.00	0.00	0.00	19
423	0.00	0.00	0.00	22
424	0.00	0.00	0.00	2

425	0.00	0.00	0.00	2
426	0.00	0.00	0.00	0
427	0.00	0.00	0.00	68
428	0.00	0.00	0.00	131
429	0.00	0.00	0.00	0
430	0.00	0.00	0.00	28
431	0.00	0.00	0.00	13
432	0.00	0.00	0.00	14
433	0.00	0.00	0.00	0
434	0.00	0.00	0.00	0
435	0.00	0.00	0.00	0
436	0.00	0.00	0.00	15
437	0.00	0.00	0.00	30
438	0.00	0.00	0.00	82
439	0.00	0.00	0.00	0
440	0.00	0.00	0.00	6
441	0.00	0.00	0.00	12
442	0.00	0.00	0.00	8
443	0.00	0.00	0.00	46
444	0.00	0.00	0.00	54
445	0.00	0.00	0.00	0
446	0.00	0.00	0.00	6
447	0.00	0.00	0.00	0
448	0.00	0.00	0.00	6
449	0.00	0.00	0.00	32
450	0.00	0.00	0.00	3
451	0.09	1.00	0.17	1
452	0.00	0.00	0.00	6
453	0.00	0.00	0.00	127
454	0.50	0.50	0.50	2
455	0.00	0.00	0.00	23
456	0.00	0.00	0.00	21
457	0.00	0.00	0.00	47
458	0.00	0.00	0.00	112
459	0.00	0.00	0.00	0
460	0.00	0.00	0.00	97
461	0.00	0.00	0.00	25
462	0.00	0.00	0.00	6
463	0.00	0.00	0.00	1

464	0.00	0.00	0.00	55
465	0.00	0.00	0.00	24
466	0.00	0.00	0.00	1
467	0.00	0.00	0.00	16
468	0.00	0.00	0.00	16
469	0.00	0.00	0.00	136
470	0.00	0.00	0.00	9
471	0.00	0.00	0.00	27
472	0.00	0.00	0.00	134
473	0.00	0.00	0.00	5
474	0.00	0.00	0.00	96
475	0.00	0.00	0.00	120
476	0.00	0.00	0.00	6
477	1.00	1.00	1.00	1
478	0.00	0.00	0.00	6
479	0.00	0.00	0.00	42
480	0.00	0.00	0.00	0
481	0.00	0.00	0.00	0
482	0.00	0.00	0.00	7
483	0.00	0.00	0.00	24
484	0.00	0.00	0.00	2
485	0.00	0.00	0.00	27
486	0.00	0.00	0.00	112
487	0.00	0.00	0.00	0
488	0.80	0.15	0.25	53
489	0.00	0.00	0.00	16
490	0.00	0.00	0.00	89
491	0.00	0.00	0.00	0
492	0.00	0.00	0.00	21
493	0.00	0.00	0.00	21
494	0.00	0.00	0.00	1
495	0.00	0.00	0.00	4
496	0.00	0.00	0.00	0
497	0.00	0.00	0.00	79
498	0.00	0.00	0.00	6
499	0.00	0.00	0.00	10

micro avg	0.94	0.48	0.64	85094
macro avg	0.16	0.10	0.11	85094

weighted avg	0.56	0.48	0.49	85094
samples avg	0.91	0.57	0.66	85094

Time taken to run this cell : 0:02:50.275522

```
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision is ill-defined and being set
to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
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'recall', 'true', average, warn_for)
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being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
```

```

'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
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nd being set to 0.0 in samples with no predicted labels.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in samples with no true labels.
'recall', 'true', average, warn_for)

```

```

In [87]: start = datetime.now()
vectorizer = CountVectorizer(min_df=0.00009, max_features=200000, \
                             tokenizer = lambda x: x.split(), ngram_ran
ge=(1,4))
x_train_multilabel = vectorizer.fit_transform(x_train['question'])
x_test_multilabel = vectorizer.transform(x_test['question'])
print("Time taken to run this cell :", datetime.now() - start)

```

Time taken to run this cell : 0:02:36.054710

```

In [88]: print("Dimensions of train data X:",x_train_multilabel.shape, "Y :",y_t
rain.shape)
print("Dimensions of test data X:",x_test_multilabel.shape,"Y:",y_test.
shape)

```

Dimensions of train data X: (160000, 96789) Y : (160000, 500)
Dimensions of test data X: (40000, 96789) Y: (40000, 500)

```

In [98]: '''model_to_set = OneVsRestClassifier(logisticregression(penalty='l1'),
n_jobs=-1)
alpha=[10**x for x in range(-3,3)]
parameters=[{'estimator__C':alpha}]

model_tunning = GridSearchCV(model_to_set,parameters,score_func='f1_mic
ro',n_jobs=-1)

```

```
model_tunning.fit(x_train_multilabel, y_train)
```

```
print model_tunning.best_score_  
print model_tunning.best_estimators_'''
```

```
Out[98]: "model_to_set = OneVsRestClassifier(logisticregression(penalty='l1'),n_  
jobs=-1)\nalpha=[10**x for x in range(-3,3)]\nparameters=[{'estimator__  
C':alpha}]\n\nmodel_tunning = GridSearchCV(model_to_set,parameters,score_  
e_func='f1_micro',n_jobs=-1)\n\nmodel_tunning.fit(x_train_multilabel, y_train)\n\nprint model_tunning.best_score_  
_  
print model_tunning.best_estimators_"
```

```
In [90]: alpha = [10 ** x for x in range(-5, 1)]  
  
tuned_parameters = [{'estimator__C':alpha}]  
logistic_reg_clf = OneVsRestClassifier(LogisticRegression(penalty='l1',  
class_weight='balanced'))  
logistic_reg_gs = GridSearchCV(logistic_reg_clf, tuned_parameters,scori  
ng = 'f1_micro', cv=2, verbose=3)  
logistic_reg_gs.fit(x_train_multilabel, y_train)
```

Fitting 2 folds for each of 6 candidates, totalling 12 fits

[CV] estimator__C=1e-05

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.

[CV] estimator__C=1e-05, score=0.013, total= 1.7min

[CV] estimator__C=1e-05

[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 1.7min remaining: 0.0s

[CV] estimator__C=1e-05, score=0.024, total= 1.8min

[CV] estimator__C=0.0001

[Parallel(n_jobs=1)]: Done 2 out of 2 | elapsed: 3.5min remaining: 0.0s

[CV] estimator__C=0.0001, score=0.104, total= 6.1min

```
[CV] estimator__C=0.0001 .....
[CV] ..... estimator__C=0.0001, score=0.102, total= 6.3min
[CV] estimator__C=0.001 .....
[CV] ..... estimator__C=0.001, score=0.163, total=10.6min
[CV] estimator__C=0.001 .....
[CV] ..... estimator__C=0.001, score=0.149, total=10.6min
[CV] estimator__C=0.01 .....
[CV] ..... estimator__C=0.01, score=0.274, total=20.6min
[CV] estimator__C=0.01 .....
```

```
/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:929: Converge
nceWarning: Liblinear failed to converge, increase the number of itera
tions.
```

```
"the number of iterations.", ConvergenceWarning)
```

```
[CV] ..... estimator__C=0.01, score=0.273, total=23.4min
[CV] estimator__C=0.1 .....
[CV] ..... estimator__C=0.1, score=0.426, total=27.6min
[CV] estimator__C=0.1 .....
[CV] ..... estimator__C=0.1, score=0.423, total=1024.1min
[CV] estimator__C=1 .....
[CV] ..... estimator__C=1, score=0.453, total=29.1min
[CV] estimator__C=1 .....
[CV] ..... estimator__C=1, score=0.441, total=34.7min
```

```
[Parallel(n_jobs=1)]: Done 12 out of 12 | elapsed: 1196.6min finished
```

```
Out[90]: GridSearchCV(cv=2, error_score='raise-deprecating',
                    estimator=OneVsRestClassifier(estimator=LogisticRegression
                    (C=1.0,
                    class_weight='balanced',
                    dual=False,
                    fit_intercept=True,
                    intercept_scaling=1,
                    l1_ratio=None,
```

```

max_iter=100,
multi_class='warn',
n_jobs=None,
penalty='l1',
random_state=None,
solver='warn',
tol=0.0001,
verbose=0,
warm_start=False),
                                n_jobs=None),
                                iid='warn', n_jobs=None,
                                param_grid=[{'estimator__C': [1e-05, 0.0001, 0.001, 0.01,
0.1,
                                1]}],
                                pre_dispatch='2*n_jobs', refit=True, return_train_score=Fa
lse,
                                scoring='f1_micro', verbose=3)

```

```

In [91]: start = datetime.now()
classifier_2 = OneVsRestClassifier(LogisticRegression(C=1.0,penalty='l
1'), n_jobs=-1)
classifier_2.fit(x_train_multilabel, y_train)
predictions_2 = classifier_2.predict(x_test_multilabel)
print("Accuracy :",metrics.accuracy_score(y_test, predictions_2))
print("Hamming loss ",metrics.hamming_loss(y_test,predictions_2))

precision = precision_score(y_test, predictions_2, average='micro')
recall = recall_score(y_test, predictions_2, average='micro')
f1 = f1_score(y_test, predictions_2, average='micro')

```

```

print("Micro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

precision = precision_score(y_test, predictions_2, average='macro')
recall = recall_score(y_test, predictions_2, average='macro')
f1 = f1_score(y_test, predictions_2, average='macro')

print("Macro-average quality numbers")
print("Precision: {:.4f}, Recall: {:.4f}, F1-measure: {:.4f}".format(precision, recall, f1))

print(metrics.classification_report(y_test, predictions_2))
print("Time taken to run this cell :", datetime.now() - start)

```

```

/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.

```

```

    "timeout or by a memory leak.", UserWarning

```

```

/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.

```

```

    "timeout or by a memory leak.", UserWarning

```

```

/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.

```

```

    "timeout or by a memory leak.", UserWarning

```

```

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```

```

    "timeout or by a memory leak.", UserWarning

```

```

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```

```

    "timeout or by a memory leak.", UserWarning

```



```
/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.  
    "timeout or by a memory leak.", UserWarning  
/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.  
    "timeout or by a memory leak.", UserWarning  
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/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.  
    "timeout or by a memory leak.", UserWarning  
/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.  
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/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.  
    "timeout or by a memory leak.", UserWarning
```

```
"timeout or by a memory leak.", UserWarning
/anaconda3/lib/python3.6/site-packages/joblib/externals/loky/process_executor.py:706: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a too short worker timeout or by a memory leak.
```

```
"timeout or by a memory leak.", UserWarning
```

Accuracy : 0.258325

Hamming loss 0.002697

Micro-average quality numbers

Precision: 0.7179, Recall: 0.6030, F1-measure: 0.6555

Macro-average quality numbers

Precision: 0.3021, Recall: 0.2338, F1-measure: 0.2509

	precision	recall	f1-score	support
0	0.98	0.98	0.98	36915
1	0.22	0.13	0.16	140
2	0.31	0.22	0.25	37
3	0.25	0.18	0.21	4486
4	0.46	0.43	0.44	784
5	0.75	0.57	0.65	486
6	0.58	0.44	0.50	220
7	0.16	0.15	0.16	33
8	0.12	0.14	0.13	7
9	0.45	0.30	0.36	44
10	0.43	0.44	0.44	244
11	0.29	0.21	0.24	255
12	0.35	0.41	0.38	121
13	0.53	0.36	0.43	272
14	0.41	0.38	0.39	189
15	0.36	0.22	0.27	158
16	0.38	0.33	0.36	24
17	0.45	0.53	0.49	17
18	0.62	0.56	0.59	45
19	0.57	0.50	0.53	101
20	0.00	0.00	0.00	3
21	0.20	0.17	0.18	6
22	0.23	0.28	0.25	137
23	0.22	0.13	0.17	1654

24	0.41	0.29	0.34	740
25	0.33	0.20	0.24	82
26	0.28	0.20	0.23	65
27	0.48	0.37	0.42	971
28	0.00	0.00	0.00	13
29	0.07	0.02	0.03	51
30	0.49	0.48	0.48	50
31	0.50	0.29	0.36	7
32	0.35	0.21	0.26	428
33	0.52	0.47	0.50	1150
34	0.17	0.20	0.18	5
35	0.73	0.58	0.65	323
36	0.27	0.17	0.21	18
37	0.10	0.05	0.07	40
38	0.73	0.65	0.69	910
39	0.41	0.22	0.29	125
40	0.49	0.31	0.38	179
41	0.25	0.17	0.20	496
42	0.82	0.64	0.72	94
43	0.78	0.70	0.74	310
44	0.59	0.40	0.48	429
45	0.42	0.30	0.35	878
46	0.14	0.06	0.09	16
47	0.28	0.23	0.25	758
48	0.50	0.09	0.15	22
49	0.00	0.00	0.00	4
50	0.43	0.42	0.42	863
51	0.17	0.06	0.09	17
52	0.38	0.38	0.38	8
53	0.98	0.91	0.94	957
54	0.26	0.16	0.20	647
55	0.00	0.00	0.00	1
56	0.55	0.32	0.40	19
57	0.00	0.00	0.00	5
58	0.00	0.00	0.00	0
59	0.00	0.00	0.00	1
60	0.19	0.09	0.12	44
61	0.34	0.26	0.29	175
62	0.24	0.16	0.20	129

63	1.00	0.17	0.29	6
64	0.88	0.58	0.70	12
65	0.00	0.00	0.00	0
66	0.38	0.17	0.24	88
67	0.61	0.74	0.67	23
68	0.33	0.22	0.26	470
69	0.40	0.12	0.18	34
70	0.85	0.59	0.70	37
71	0.13	0.09	0.10	104
72	0.00	0.00	0.00	8
73	0.83	0.52	0.64	29
74	0.00	0.00	0.00	4
75	0.00	0.00	0.00	0
76	0.50	0.11	0.18	9
77	0.40	0.40	0.40	5
78	0.40	0.36	0.38	636
79	0.37	0.25	0.30	152
80	0.40	0.15	0.22	13
81	0.49	0.34	0.40	146
82	0.52	0.37	0.43	507
83	0.00	0.00	0.00	0
84	0.20	0.08	0.12	12
85	0.62	0.41	0.50	170
86	0.46	0.34	0.39	35
87	0.00	0.00	0.00	0
88	0.61	0.59	0.60	586
89	0.13	0.16	0.15	50
90	0.49	0.40	0.44	334
91	0.17	0.08	0.11	65
92	0.50	0.40	0.44	5
93	0.25	0.06	0.10	16
94	0.13	0.04	0.06	375
95	0.75	0.33	0.46	18
96	0.21	0.13	0.16	375
97	0.39	0.35	0.37	249
98	0.17	0.12	0.14	16
99	0.00	0.00	0.00	0
100	0.23	0.12	0.16	188
101	0.44	0.17	0.25	23

102	0.78	0.64	0.70	520
103	0.50	0.22	0.31	18
104	0.16	0.10	0.12	460
105	0.22	0.13	0.16	477
106	0.43	0.12	0.19	49
107	0.50	0.18	0.27	11
108	0.31	0.16	0.21	127
109	0.33	0.12	0.18	81
110	0.47	0.17	0.25	40
111	0.00	0.00	0.00	0
112	0.24	0.10	0.14	185
113	0.20	0.10	0.13	81
114	0.59	0.40	0.47	236
115	0.34	0.21	0.26	130
116	0.00	0.00	0.00	1
117	0.56	0.46	0.50	398
118	0.21	0.07	0.11	183
119	0.00	0.00	0.00	2
120	0.00	0.00	0.00	8
121	0.24	0.09	0.13	97
122	0.71	0.43	0.54	35
123	0.56	0.37	0.45	94
124	0.00	0.00	0.00	0
125	0.68	0.57	0.62	30
126	0.14	0.33	0.20	3
127	0.76	0.49	0.60	365
128	0.00	0.00	0.00	2
129	0.50	0.16	0.24	19
130	0.00	0.00	0.00	2
131	0.57	0.46	0.51	70
132	0.41	0.43	0.42	207
133	0.00	0.00	0.00	1
134	0.35	0.26	0.30	27
135	0.59	0.57	0.58	211
136	0.75	0.25	0.38	12
137	0.47	0.20	0.28	86
138	0.39	0.26	0.31	134
139	0.70	0.46	0.55	406
140	0.86	0.63	0.73	215

141	0.67	0.50	0.57	4
142	0.54	0.58	0.56	12
143	0.78	0.58	0.67	12
144	0.79	0.81	0.80	102
145	0.41	0.29	0.34	340
146	0.15	0.05	0.08	148
147	0.19	0.15	0.17	60
148	0.00	0.00	0.00	0
149	0.00	0.00	0.00	2
150	0.00	0.00	0.00	1
151	0.13	0.12	0.13	131
152	0.25	0.50	0.33	4
153	0.00	0.00	0.00	1
154	0.55	0.43	0.48	117
155	0.19	0.07	0.11	40
156	0.00	0.00	0.00	0
157	0.58	0.45	0.51	31
158	0.20	0.09	0.12	217
159	0.53	0.50	0.51	302
160	0.00	0.00	0.00	0
161	0.13	0.09	0.11	81
162	0.29	0.10	0.15	49
163	0.60	0.57	0.59	51
164	0.00	0.00	0.00	1
165	0.82	0.78	0.80	317
166	0.27	0.11	0.16	136
167	0.00	0.00	0.00	0
168	0.50	0.39	0.44	54
169	0.21	0.14	0.17	241
170	0.33	0.24	0.28	66
171	0.29	0.16	0.21	25
172	0.75	0.50	0.60	6
173	0.24	0.14	0.18	63
174	0.47	0.38	0.42	300
175	0.00	0.00	0.00	17
176	0.12	0.07	0.09	102
177	0.23	0.17	0.20	29
178	0.12	0.07	0.09	14
179	1.00	0.44	0.62	9

180	0.53	0.56	0.55	84
181	1.00	0.40	0.57	5
182	0.45	0.33	0.38	313
183	0.50	1.00	0.67	1
184	0.00	0.00	0.00	2
185	0.52	0.29	0.37	335
186	0.00	0.00	0.00	0
187	0.17	0.10	0.13	29
188	0.00	0.00	0.00	1
189	0.00	0.00	0.00	44
190	0.63	0.47	0.54	55
191	0.74	0.68	0.71	34
192	0.65	0.57	0.61	63
193	0.24	0.08	0.12	106
194	0.38	0.39	0.38	205
195	0.00	0.00	0.00	0
196	0.45	0.31	0.37	229
197	0.00	0.00	0.00	17
198	0.17	0.50	0.25	2
199	0.00	0.00	0.00	16
200	0.00	0.00	0.00	1
201	0.62	0.56	0.59	9
202	0.53	0.33	0.41	269
203	0.68	0.56	0.62	291
204	0.00	0.00	0.00	32
205	0.00	0.00	0.00	0
206	0.00	0.00	0.00	2
207	0.31	0.25	0.28	185
208	0.50	0.33	0.40	3
209	0.13	0.09	0.10	233
210	0.00	0.00	0.00	0
211	0.58	0.38	0.46	48
212	0.30	0.18	0.23	33
213	0.67	1.00	0.80	2
214	0.30	0.38	0.33	42
215	0.00	0.00	0.00	4
216	0.00	0.00	0.00	0
217	0.73	0.67	0.70	12
218	0.41	0.28	0.33	79

219	0.50	0.33	0.40	6
220	0.44	0.33	0.38	21
221	0.37	0.22	0.27	32
222	0.00	0.00	0.00	2
223	1.00	1.00	1.00	1
224	0.00	0.00	0.00	0
225	0.13	0.04	0.06	120
226	0.18	0.09	0.12	23
227	0.33	0.39	0.36	18
228	0.00	0.00	0.00	15
229	0.67	0.67	0.67	6
230	0.14	0.11	0.12	9
231	0.00	0.00	0.00	0
232	0.25	1.00	0.40	1
233	0.33	0.38	0.35	8
234	0.19	0.20	0.19	188
235	0.48	0.24	0.32	126
236	0.50	0.33	0.40	3
237	0.08	0.05	0.06	63
238	0.54	0.49	0.51	229
239	0.00	0.00	0.00	0
240	0.56	0.32	0.41	224
241	0.00	0.00	0.00	3
242	0.26	0.12	0.17	129
243	0.00	0.00	0.00	0
244	0.92	0.55	0.69	22
245	0.00	0.00	0.00	16
246	0.74	0.37	0.49	38
247	0.76	0.55	0.64	29
248	0.33	0.12	0.17	26
249	0.33	0.14	0.20	35
250	0.83	0.62	0.71	8
251	0.28	0.21	0.24	258
252	0.48	0.22	0.30	55
253	0.50	0.31	0.38	13
254	0.48	0.37	0.42	246
255	0.00	0.00	0.00	1
256	0.00	0.00	0.00	0
257	0.20	1.00	0.33	1

258	0.27	0.25	0.26	69
259	1.00	0.47	0.64	17
260	0.58	0.57	0.58	217
261	0.00	0.00	0.00	0
262	0.33	1.00	0.50	1
263	0.00	0.00	0.00	0
264	0.38	0.16	0.22	63
265	0.58	0.50	0.54	14
266	0.00	0.00	0.00	1
267	0.20	0.08	0.11	13
268	0.00	0.00	0.00	1
269	0.00	0.00	0.00	2
270	0.33	0.50	0.40	2
271	0.39	0.18	0.24	74
272	0.13	0.14	0.14	28
273	0.17	0.11	0.13	47
274	0.00	0.00	0.00	8
275	0.20	0.15	0.17	195
276	0.70	0.79	0.74	62
277	0.57	0.31	0.40	42
278	0.59	0.54	0.57	118
279	0.17	0.16	0.16	51
280	0.83	0.56	0.67	9
281	0.78	0.64	0.70	11
282	0.17	0.08	0.11	25
283	0.33	0.10	0.15	10
284	0.00	0.00	0.00	11
285	0.05	0.01	0.02	80
286	0.23	0.09	0.13	34
287	0.18	0.09	0.12	143
288	0.00	0.00	0.00	0
289	0.00	0.00	0.00	0
290	0.33	0.06	0.10	18
291	0.62	0.57	0.59	14
292	0.00	0.00	0.00	0
293	0.17	0.07	0.10	71
294	0.00	0.00	0.00	1
295	0.00	0.00	0.00	2
296	0.43	0.40	0.42	138

297	0.59	0.36	0.44	107
298	0.48	0.32	0.38	198
299	0.52	0.32	0.39	44
300	0.06	0.03	0.04	30
301	0.00	0.00	0.00	12
302	0.50	0.28	0.36	18
303	0.00	0.00	0.00	4
304	0.00	0.00	0.00	0
305	0.50	0.40	0.44	10
306	0.86	0.83	0.85	36
307	0.32	0.27	0.29	208
308	0.46	0.30	0.36	93
309	0.06	0.03	0.04	29
310	0.43	0.16	0.23	143
311	0.00	0.00	0.00	3
312	0.00	0.00	0.00	0
313	0.25	0.10	0.14	10
314	0.49	0.37	0.42	60
315	0.00	0.00	0.00	31
316	0.74	0.58	0.65	48
317	0.12	0.06	0.08	175
318	0.11	0.43	0.17	7
319	0.53	0.35	0.42	192
320	0.50	0.20	0.29	5
321	0.67	0.65	0.66	164
322	0.57	0.60	0.58	115
323	0.20	0.15	0.17	192
324	0.52	0.55	0.54	20
325	0.48	0.35	0.40	97
326	0.73	0.61	0.67	18
327	0.00	0.00	0.00	0
328	0.00	0.00	0.00	1
329	0.49	0.40	0.44	156
330	0.33	0.11	0.17	36
331	0.33	0.20	0.25	5
332	0.00	0.00	0.00	0
333	0.00	0.00	0.00	0
334	0.57	0.34	0.43	87
335	0.38	0.39	0.39	51

336	0.23	0.10	0.14	29
337	0.29	0.14	0.19	98
338	0.00	0.00	0.00	3
339	0.00	0.00	0.00	8
340	0.33	0.16	0.22	49
341	0.50	1.00	0.67	1
342	0.33	0.08	0.13	12
343	0.51	0.29	0.37	160
344	1.00	0.50	0.67	2
345	0.00	0.00	0.00	0
346	0.86	0.79	0.82	53
347	0.21	0.14	0.17	21
348	0.68	0.60	0.64	156
349	0.60	0.75	0.67	8
350	0.00	0.00	0.00	0
351	0.00	0.00	0.00	0
352	0.44	0.27	0.34	102
353	0.00	0.00	0.00	0
354	1.00	0.50	0.67	2
355	0.00	0.00	0.00	1
356	0.00	0.00	0.00	0
357	0.14	0.40	0.21	5
358	0.30	0.12	0.18	177
359	0.20	0.10	0.13	189
360	0.34	0.16	0.21	154
361	0.39	0.27	0.32	90
362	0.00	0.00	0.00	20
363	0.00	0.00	0.00	0
364	0.24	0.08	0.12	64
365	0.47	0.23	0.31	39
366	0.00	0.00	0.00	0
367	0.50	0.43	0.46	147
368	0.14	0.07	0.09	169
369	0.00	0.00	0.00	11
370	0.53	0.50	0.52	125
371	0.25	0.50	0.33	2
372	0.08	0.05	0.06	19
373	0.00	0.00	0.00	0
374	0.00	0.00	0.00	9

375	0.64	0.58	0.61	52
376	0.21	0.09	0.13	144
377	0.43	0.31	0.36	169
378	0.00	0.00	0.00	0
379	0.24	0.13	0.17	39
380	0.00	0.00	0.00	6
381	0.18	0.05	0.08	40
382	0.33	0.19	0.25	77
383	0.80	0.50	0.62	16
384	0.61	0.50	0.55	117
385	0.29	0.16	0.21	101
386	0.63	0.50	0.56	34
387	0.25	0.20	0.22	5
388	0.00	0.00	0.00	0
389	0.36	0.18	0.24	157
390	0.29	0.17	0.21	30
391	0.00	0.00	0.00	22
392	0.18	0.06	0.09	35
393	0.20	0.18	0.19	11
394	0.80	1.00	0.89	4
395	0.00	0.00	0.00	5
396	0.00	0.00	0.00	0
397	0.00	0.00	0.00	2
398	0.61	0.38	0.47	146
399	0.00	0.00	0.00	0
400	0.46	0.49	0.47	57
401	0.40	0.67	0.50	3
402	0.00	0.00	0.00	1
403	0.60	0.55	0.57	152
404	0.00	0.00	0.00	1
405	0.33	0.25	0.29	20
406	0.00	0.00	0.00	0
407	0.00	0.00	0.00	7
408	0.29	0.18	0.22	33
409	0.09	0.06	0.07	48
410	0.61	0.55	0.58	126
411	0.00	0.00	0.00	0
412	0.00	0.00	0.00	11
413	0.53	0.30	0.38	66

414	0.67	1.00	0.80	2
415	0.00	0.00	0.00	0
416	0.25	0.05	0.08	21
417	0.00	0.00	0.00	1
418	1.00	1.00	1.00	2
419	0.06	0.03	0.04	73
420	0.00	0.00	0.00	24
421	0.00	0.00	0.00	2
422	0.12	0.05	0.07	19
423	0.00	0.00	0.00	22
424	0.00	0.00	0.00	2
425	0.00	0.00	0.00	2
426	0.00	0.00	0.00	0
427	0.40	0.15	0.22	68
428	0.43	0.16	0.23	131
429	0.00	0.00	0.00	0
430	0.17	0.04	0.06	28
431	0.41	0.54	0.47	13
432	0.00	0.00	0.00	14
433	0.00	0.00	0.00	0
434	0.00	0.00	0.00	0
435	0.00	0.00	0.00	0
436	0.00	0.00	0.00	15
437	0.41	0.30	0.35	30
438	0.05	0.01	0.02	82
439	0.00	0.00	0.00	0
440	0.50	0.17	0.25	6
441	0.00	0.00	0.00	12
442	0.10	0.12	0.11	8
443	0.67	0.39	0.49	46
444	0.64	0.46	0.54	54
445	0.00	0.00	0.00	0
446	0.20	0.17	0.18	6
447	0.00	0.00	0.00	0
448	0.12	0.17	0.14	6
449	0.20	0.06	0.10	32
450	0.25	0.33	0.29	3
451	0.00	0.00	0.00	1
452	0.00	0.00	0.00	6

453	0.42	0.36	0.39	127
454	0.33	0.50	0.40	2
455	0.30	0.13	0.18	23
456	0.60	0.57	0.59	21
457	0.26	0.11	0.15	47
458	0.31	0.17	0.22	112
459	0.00	0.00	0.00	0
460	0.54	0.36	0.43	97
461	0.43	0.12	0.19	25
462	0.22	0.33	0.27	6
463	0.00	0.00	0.00	1
464	0.23	0.09	0.13	55
465	0.26	0.21	0.23	24
466	0.33	1.00	0.50	1
467	0.60	0.75	0.67	16
468	0.00	0.00	0.00	16
469	0.62	0.49	0.55	136
470	0.00	0.00	0.00	9
471	0.56	0.37	0.44	27
472	0.22	0.19	0.20	134
473	0.00	0.00	0.00	5
474	0.49	0.39	0.43	96
475	0.41	0.25	0.31	120
476	0.33	0.33	0.33	6
477	0.33	1.00	0.50	1
478	0.00	0.00	0.00	6
479	0.33	0.43	0.37	42
480	0.00	0.00	0.00	0
481	0.00	0.00	0.00	0
482	0.40	0.29	0.33	7
483	0.00	0.00	0.00	24
484	0.00	0.00	0.00	2
485	0.11	0.04	0.06	27
486	0.16	0.09	0.12	112
487	0.00	0.00	0.00	0
488	0.77	0.51	0.61	53
489	0.18	0.12	0.15	16
490	0.26	0.10	0.15	89
491	0.00	0.00	0.00	0

492	0.17	0.10	0.12	21
493	0.55	0.29	0.37	21
494	0.00	0.00	0.00	1
495	0.00	0.00	0.00	4
496	0.00	0.00	0.00	0
497	0.12	0.08	0.09	79
498	0.00	0.00	0.00	6
499	0.00	0.00	0.00	10
micro avg	0.72	0.60	0.66	85094
macro avg	0.30	0.23	0.25	85094
weighted avg	0.66	0.60	0.63	85094
samples avg	0.79	0.68	0.68	85094

Time taken to run this cell : 17:45:20.791000

```

/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision is ill-defined and being set
to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: F-score is ill-defined and being set to
0.0 in labels with no true samples.
'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
'recall', 'true', average, warn_for)

```

```

/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
    'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
    'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in labels with no predicted samples.
    'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in labels with no true samples.
    'recall', 'true', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1437: UndefinedMetricWarning: Precision and F-score are ill-defined a
nd being set to 0.0 in samples with no predicted labels.
    'precision', 'predicted', average, warn_for)
/anaconda3/lib/python3.6/site-packages/sklearn/metrics/classification.p
y:1439: UndefinedMetricWarning: Recall and F-score are ill-defined and
being set to 0.0 in samples with no true labels.
    'recall', 'true', average, warn_for)

```

```

In [3]: from prettytable import PrettyTable
x=PrettyTable()
x.field_names=(['Model', 'Alpha or C', 'Accuracy', 'Hamming Loss', 'Micro-A
veraged Precision', 'Micro-Averaged Recall', 'Micro-Averaged F1 measure',
'Macro-Averaged Precision', 'Macro-Averaged Recall', 'Macro-Averaged F1 m
easure'])
x.add_row(['Logistic Regression with OneVsRest Classifier(SGD Classifie
r with log loss)', 0.00001, 0.298775, 0.00231325, 0.8394, 0.5643, 0.6749,
0.3983, 0.1962, 0.2400])
x.add_row(['OneVsRestClassifier with Linear-SVM', 0.0001, 0.28395, 0.002
34455, 0.9392, 0.4800, 0.6353, 0.1577, 0.1037, 0.1148])
x.add_row(['Logistic Regression with OneVsRest Classifier', 1, 0.258325,
0.002697, 0.7179, 0.6030, 0.6555, 0.3021, 0.2338, 0.2509])
print(x)

```



```

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+-----+-----+-----+-----+-----+
|
|                               Model
|   | Alpha or C | Accuracy | Hamming Loss | Micro-Averaged Precisi
n | Micro-Averaged Recall | Micro-Averaged F1 measure | Macro-Averaged
Precision | Macro-Averaged Recall | Macro-Averaged F1 measure |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| Logistic Regression with OneVsRest Classifier(SGD Classifier with log
loss) | 1e-05 | 0.298775 | 0.00231325 | 0.8394
| 0.5643 | | 0.6749 | | 0.3983
| | 0.1962 | | 0.24 | | |
| | | | | | |
| | | | | | |
| | 0.0001 | 0.28395 | 0.00234455 | 0.9392
| | 0.48 | | 0.6353 | | 0.1577
| | | 0.1037 | | 0.1148 | |
| | | | | | |
| | | | | | |
| | 1 | 0.258325 | 0.002697 | 0.7179
| | 0.603 | | 0.6555 | | 0.3021
| | | 0.2338 | | 0.2509 | |
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```