

In [5]:

```
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 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/nNDqbUhtlRg>

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 al=1; al<n+1; al++)\n
    {\n\n
        e[al][0] = m[al];\n
        e[al][1] = m[al]+1;\n
        e[al][2] = u[al]-1;\n
        e[al][3] = u[al];\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
    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          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 [6]:

```

#Creating db file from csv

```

```
#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 = 10000
    j = 0
    index_start = 1
    for df in pd.read_csv('D:\\Train_stack.csv', names=['Id', 'Title', 'Body', 'Tags'], chunksize=c
hunksize, iterator=True, encoding='utf-8', nrows = 50000 ):
        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)
```

```
10000 rows
20000 rows
30000 rows
40000 rows
50000 rows
Time taken to run this cell : 0:00:12.948169
```

3.1.2 Counting the number of rows

In [7]:

```
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 above cell to generate train.db
file")
```

```
Number of rows in the database :
50000
Time taken to count the number of rows : 0:00:00.047986
```

3.1.3 Checking for duplicates

In [8]:

```
#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(*) as 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 first to generate train.db file
")
```

```
Time taken to run this cell : 0:00:01.840181
```

In [18]:

```
df_no_dup.loc[24:30]
# we can observe that there are duplicates
```

Out[18]:

	Title	Body	Tags	cnt_dup
24	"Classic" activity monitor in SQL Server Manag...	<p>Right now I'm using SQL Server Management S...	sql-server dba ssms-2008	1
25	"Closures are poor man's objects and vice vers...	<blockquote>\n <p>Closures are poor man's obj...	functional-programming object oop closures	2
26	"Connection to SQL server files require SQL Se...	<p>I am very much new to the .net framework an...	visual-studio visual-studio-2008 sql-server-2005	1
27	"Content Not Supposed to Be Outside 'Script' o...	<p>I'm starting to learn ASP.NET and it's the ...	asp.net .net	1
28	"Could not find or load main class" OS X M.Lion	<p>I'm having a problem running example code t...	java osx runtime-error	1
29	"Couldn't find valid filesystem superblock" wh...	<p>I've a shiny new Ubuntu 11.04 installation....	ubuntu	1
30	"Cut and Paste" - moving nodes in the DOM with...	<p>I have html code that looks roughly like th...	javascript dom	1

In [19]:

```
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 : 143 (0.28599999999999737 %)

In [20]:

```
# number of times each question appeared in our database
df_no_dup.cnt_dup.value_counts()
```

Out[20]:

```
1    49714
2     143
Name: cnt_dup, dtype: int64
```

In [21]:

```
start = datetime.now()
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 : 0:00:00.067982

Out[21]:

	Title	Body	Tags	cnt_dup	tag_count
0	Accessing @Local Session Bean from an exposed...	<p>What I am trying to do should be very strai...	ejb resteasy	1	2
1	Encoding of sent data not working	<p>I've got a little chatbox, everything's wor...	php jquery ajax encoding	1	4
2	Google Map location based on address	<p>Im using Google Map in my application, it i...	android google-maps	1	2
3	How to insert custom field in typo3 Dam modul...	<p>I introduced my custom field in Dam modules...	typo3 dam	1	2
4	How to preserve case using re.IGNORECASE and ...	<pre><code>import re\n\ndef bold_partial(long_...	python regex	1	2

In [22]:

```
# distribution of number of tags per question
df_no_dup.tag_count.value_counts()
```

Out[22]:

```
Out[22]:
3      14435
2      13233
4       9536
1       6828
5       5825
Name: tag_count, dtype: int64
```

So here we have

- 14435 rows with 3 tags
- 13233 rows with 2 tags
- 9536 rows with 4 tags
- 6828 rows with 1 tag
- 5825 rows with 5 tags

In [23]:

```
#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 [24]:

```
no_dup.shape
```

Out[24]:

```
(49857, 3)
```

In [25]:

```
no_dup.head(2)
```

Out[25]:

	Title	Body	Tags
0	Accessing @Local Session Bean from an exposed...	<p>What I am trying to do should be very strai...	ejb resteasy
1	Encoding of sent data not working	<p>I've got a little chatbox, everything's wor...	php jquery ajax encoding

In [33]:

```
#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.d
b file")
```

Time taken to run this cell : 0:00:00.284752

In [34]:

```
tag_data.head()
```

Out[34]:

	Tags
0	ejb resteasy
1	php jquery ajax encoding
2	android google-maps
3	typo3 dam
4	python regex

In [35]:

```
tag_data.shape
```

Out[35]:

```
(49857, 1)
```

3.2 Analysis of Tags

3.2.1 Total number of unique tags

In [36]:

```
# 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 [37]:

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

Number of data points : 49857

Number of unique tags : 13892

In [42]:

```
# '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 : ['.class-file', '.each', '.emf', '.hgtags', '.htaccess', '.htpasswd', '.mov', '.net', '.net-1.1', '.net-2.0']

3.2.3 Number of times a tag appeared

In [44]:

```
# 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))
```



```
x = np.matrix(np.arange(12).reshape((3,4))); x
matrix([[ 0,  1,  2,  3],
        [ 4,  5,  6,  7],
        [ 8,  9, 10, 11]])
x.getA1()
array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11])
```

In [62]:

freqs

Out[62]:

```
array([1, 6, 1, ..., 1, 1, 4], dtype=int64)
```

In [73]:

```
result
```

Out [73]:

```
{'.class-file': 1,  
 '.each': 6,  
 '.emf': 1,  
 '.hgtags': 1,  
 '.htaccess': 175,  
 '.httpasswd': 1,  
 '.mov': 1,  
 '.net': 1318,  
 '.net-1.1': 1,  
 '.net-2.0': 17,  
 '.net-3.5': 40,  
 '.net-4.0': 62,  
 '.net-4.5': 8,  
 '.net-assembly': 12,  
 '.net-cf-3.5': 1,  
 '.net-framework': 2,  
 '.net-remoting': 1,  
 '.net2.0': 1,  
 '.net4.0': 2,  
 '.nettiers': 1,  
 '.obj': 1,  
 '.post': 2,  
 '.refresh': 1,  
 '.war': 1,  
 '.x': 2,  
 '1080p': 2,  
 '10gbethernet': 1,  
 '10gige': 1,  
 '1and1': 2,  
 '2003': 1,  
 '2007': 43,  
 '2010': 63,  
 '2013': 8,  
 '24bit': 1,  
 '2d': 19,  
 '2d-array': 7,  
 '2d-games': 1,  
 '2wire': 1,  
 '3-tier': 1,  
 '3.0': 9,  
 '3.0.1': 1,  
 '301-redirect': 1,  
 '32-bit': 6,  
 '32bit': 2,  
 '32bit-64bit': 9,  
 '3d': 46,  
 '3d-engine': 1,  
 '3d-model': 2,  
 '3d-modelling': 1,  
 '3des': 2,  
 '3dsmax': 3,  
 '3g': 8,  
 '3rd-party-library': 1,  
 '401': 1,  
 '403': 1,  
 '404': 1,
```

'404-error': 5,
'4d': 1,
'5.1': 1,
'500-error': 1,
'64-bit': 36,
'64bit': 17,
'6502': 1,
'6510': 1,
'68000': 1,
'7-zip': 5,
'70-667': 1,
'7zip': 5,
'802.11': 1,
'802.11n': 1,
'8086': 3,
'8bit': 1,
'9-bit-serial': 1,
'9p': 1,
'a-record': 3,
'a-star': 1,
'aabb': 1,
'aapt': 1,
'abaddressbook': 3,
'abap': 4,
'abelian-groups': 5,
'aberration': 1,
'abpersonviewController': 1,
'abrecord': 1,
'absolute-path': 4,
'absolute-positioning': 6,
'absolute-value': 3,
'abstract': 8,
'abstract-algebra': 79,
'abstract-class': 9,
'abstract-data-type': 1,
'abstract-syntax-tree': 2,
'abstract-type': 1,
'abstraction': 3,
'abstracttablemodel': 1,
'abtest': 1,
'ac-adapter': 1,
'acc': 1,
'accelerate-framework': 1,
'accelerated-c++': 1,
'acceleration': 1,
'accelerometer': 8,
'accented-strings': 1,
'accept': 1,
'acceptance-testing': 1,
'access': 9,
'access-control': 6,
'access-denied': 2,
'access-list': 1,
'access-log': 1,
'access-modifiers': 3,
'access-point': 1,
'access-specifier': 1,
'access-token': 3,
'access-vba': 10,
'access-violation': 4,
'accessibility': 20,
'accessor': 4,
'accessory': 1,
'accordion': 10,
'accordionpane': 1,
'account': 3,
'account-restrictions': 1,
'accounting': 1,
'accountmanager': 2,
'accounts': 1,
'accuracy': 1,
'accurev': 1,
'ace': 2,
'acer-aspire': 2,
'acer-revo': 1,
'achartengine': 6,
'achemso': 1,
'achemso': 1,

'ack': 1,
'ackermann': 2,
'acl': 8,
'acm': 1,
'acpi': 2,
'acrobat': 5,
'acronis': 1,
'acronyms': 6,
'acs': 1,
'action': 19,
'action-filter': 4,
'actionbarsherlock': 7,
'actionfilterattribute': 1,
'actionform': 1,
'actionlink': 6,
'actionlistener': 5,
'actionmailer': 9,
'actionmethod': 1,
'actions': 1,
'actionscript': 59,
'actionscrip-2': 12,
'actionscrip-3': 252,
'actionview': 2,
'activation': 5,
'active': 1,
'active-directory': 83,
'active-directory-group': 1,
'active-relation': 1,
'activeadmin': 7,
'activemerchant': 2,
'activemodel': 2,
'activemq': 14,
'activerecord': 90,
'activerereports': 1,
'activestate': 1,
'activesync': 3,
'activex': 20,
'activex-exe': 1,
'activexobject': 4,
'activity': 49,
'activity-diagram': 1,
'activity-feed': 1,
'activity-finish': 1,
'activity-indicator': 1,
'activity-lifecycle': 2,
'activity-stack': 2,
'activity-state': 1,
'activitydesigner': 1,
'activitygroup': 1,
'actor': 5,
'acts-as-list': 2,
'ad-certificate-services': 3,
'ad-hoc': 1,
'ad-hoc-distribution': 1,
'ad-hoc-network': 3,
'ada': 7,
'adam': 1,
'adaptec': 1,
'adapter': 17,
'adb': 11,
'add': 8,
'add-action': 2,
'add-filter': 1,
'add-in': 21,
'add-on': 4,
'add-rewrite-rule': 2,
'add-settings-field': 1,
'add-settings-section': 1,
'addchild': 3,
'addclass': 2,
'addeventlistener': 1,
'adding': 5,
'addition': 1,
'addremoveprograms': 1,
'address': 6,
'address-bar': 1,
'address-book': 1,

'address-space': 1,
'addressbook': 4,
'addressing': 1,
'addsubview': 5,
'addthis': 2,
'adfs': 4,
'adfs2.0': 4,
'adhoc': 2,
'adhoc-network': 1,
'adium': 1,
'adjoint': 2,
'admin': 28,
'admin-bar': 4,
'admin-generator': 1,
'admin-menu': 2,
'adminhtml': 1,
'administration': 16,
'administrator': 12,
'admob': 13,
'ado': 11,
'ado-net-dataservices': 1,
'ado.net': 47,
'ado.net-entity-data-model': 6,
'adobe': 34,
'adobe-acrobat': 2,
'adobe-contribute': 1,
'adobe-cs4': 1,
'adobe-cs5': 2,
'adobe-fireworks': 1,
'adobe-flash': 2,
'adobe-illustrator': 9,
'adobe-indesign': 2,
'adobe-lightroom': 1,
'adobe-photoshop': 10,
'adobe-reader': 7,
'adodb': 4,
'adolf-hitler': 1,
'adomd.net': 1,
'adorner': 1,
'adrotator': 1,
'ads': 7,
'adsense': 6,
'adserver': 1,
'adsi': 1,
'adsl': 4,
'adt': 8,
'advanced-custom-fields': 2,
'advanced-format': 1,
'advanced-search': 1,
'advanceddatagrid': 3,
'advancements': 1,
'advantage-database-server': 2,
'adventureworks': 1,
'advertisement': 2,
'advertisements': 1,
'advertising': 2,
'advice': 4,
'adware': 1,
'adwhirl': 2,
'adwords': 3,
'aec': 1,
'aero': 5,
'aero-glass': 1,
'aero-snap': 1,
'aes': 20,
'affiliate': 1,
'affine-geometry': 1,
'affinity': 2,
'afnetworking': 3,
'aforge': 4,
'afp': 1,
'africa': 1,
'after-effects': 1,
'agda': 1,
'agent': 3,
'agents': 1,
'agents-jade': 1,

'aggregate': 15,
'aggregate-functions': 8,
'aggregation': 2,
'agile': 18,
'agpl': 2,
'aide': 1,
'aidl': 4,
'aif': 1,
'aio-write': 1,
'air': 48,
'air-conditioning': 1,
'air-native-extension': 2,
'aironet': 1,
'airplay': 2,
'airport': 2,
'airport-express': 1,
'airport-extreme': 1,
'airprint': 1,
'aix': 9,
'ajax': 480,
'ajax-upload': 4,
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    ...}

```

In [45]:

```

#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[45]:

	Tags	Counts
0	.class-file	1
1	.each	6
2	.emf	1
3	.hgtags	1
4	.htaccess	175

In [46]:

```

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

```

In [47]:

```

tag_df_sorted.head()

```

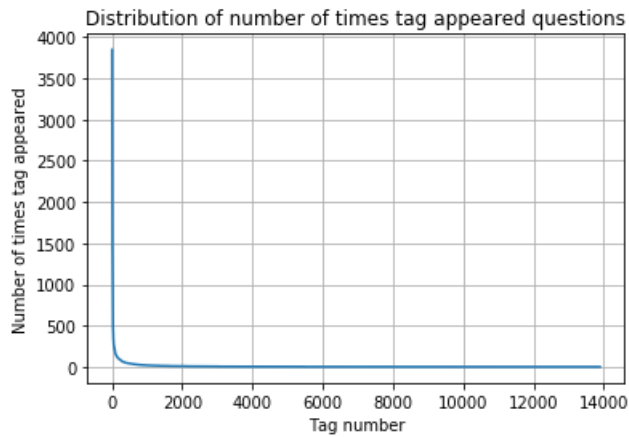
Out[47]:

	Tags	Counts
1520	c#	3845
6021	java	3399
8927	php	3232
6056	javascript	3089
419	android	2673

Here, we can see that c#, java , php, javascript, android has more nuber of tag counts

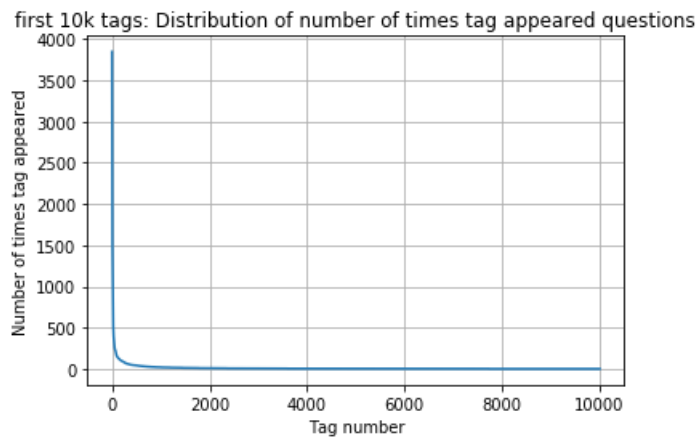
In [48]:

```
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 [49]:

```
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])
```

[illegible]

```

1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1]

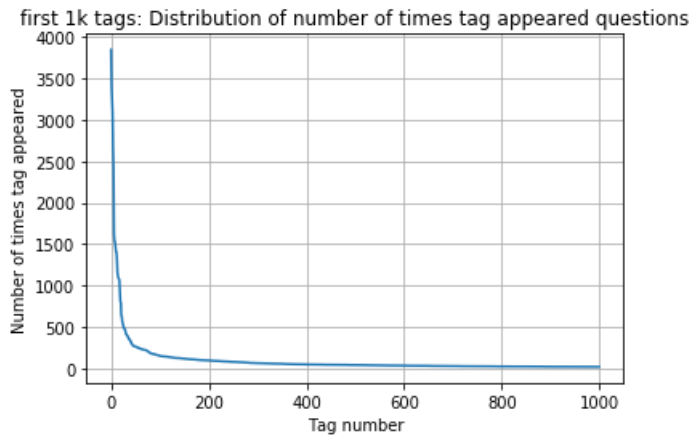
```

In [50]:

```

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 [3845 2423 1410 1092 792 516 434 383 323 276 263 253 239 230
224 211 189 177 172 161 152 148 145 142 136 132 128 127
125 122 120 115 112 111 109 106 103 101 100 99 97 95
93 92 90 88 86 85 84 81 80 79 77 76 74 72
70 68 67 66 65 64 63 62 62 61 59 59 58 57
57 55 54 53 52 52 51 51 50 50 49 49 49 48
47 47 47 46 46 46 46 46 45 45 44 44 44 43
43 43 42 42 41 41 41 40 40 40 40 39 39 38
37 37 36 36 36 36 36 35 35 34 34 34 34 34
33 33 32 32 32 31 31 31 31 31 30 30 30 30
30 29 29 28 28 28 28 28 27 27 27 27 26 26
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24 24 24 23 23 23 23 23 23 23 22 22 22 22
22 22 22 22 21 21 21 21 21 21 21 21 20 20
20 20 20 20]

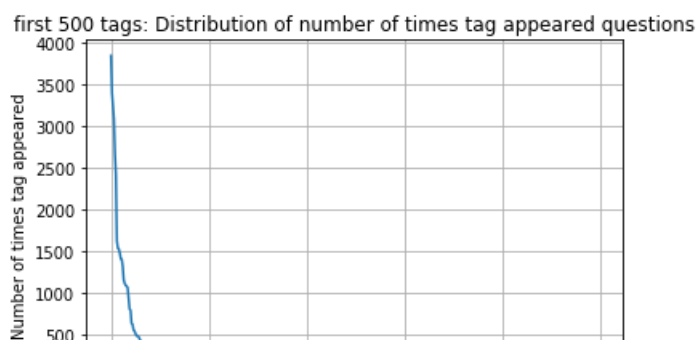
```

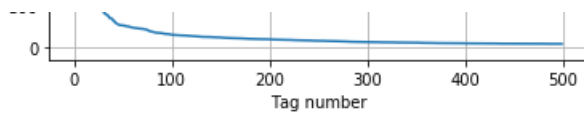
In [51]:

```

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])

```





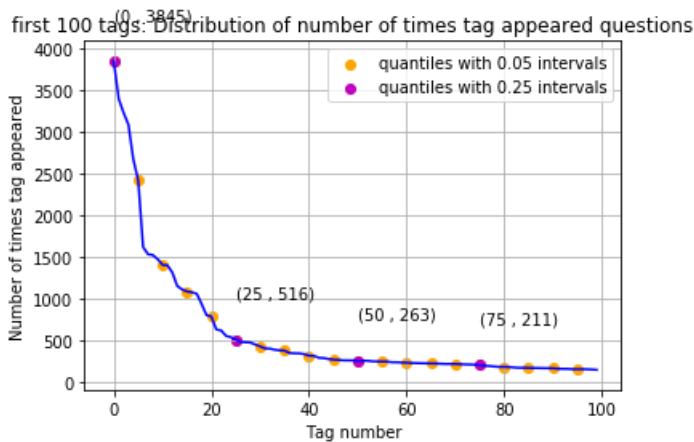
```
100 [3845 2423 1410 1092 792 516 434 383 323 276 263 253 239 230
    224 211 189 177 172 161 152 148 145 142 136 132 128 127
    125 122 120 115 112 111 109 106 103 101 100 99 97 95
    93 92 90 88 86 85 84 81 80 79 77 76 74 72
    70 68 67 66 65 64 63 62 62 61 59 59 58 57
    57 55 54 53 52 52 51 51 50 50 49 49 49 48
    47 47 47 46 46 46 46 46 45 45 44 44 44 43
    43 43]
```

In [76]:

```
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 i
ntervals")
# quantiles with 0.25 difference
plt.scatter(x=list(range(0,100,25)), y=tag_counts[0:100:25], c='m', label = "quantiles with 0.25 in
tervals")

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 [3845 2423 1410 1092 792 516 434 383 323 276 263 253 239 230
    224 211 189 177 172 161]
```

In [55]:

```
# Store tags greater than 10K in one list
lst_tags_gt_10k = tag_df[tag_df.Counts>100].Tags
#Print the length of the list
print ('{} Tags are used more than 100 times'.format(len(lst_tags_gt_10k)))
# Store tags greater than 100K in one list
lst_tags_gt_100k = tag_df[tag_df.Counts>1000].Tags
#Print the length of the list.
print ('{} Tags are used more than 1000 times'.format(len(lst_tags_gt_100k)))
```

```
188 Tags are used more than 100 times
18 Tags are used more than 1000 times
```

Observations:

1. There are total 188 tags which are used more than 100 times

1. There are total 188 tags which are used more than 100 times.
2. 18 tags are used more than 1000 times.
3. Most frequent tag (i.e. c#) is used 3845 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 [57]:

```
#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[:10])
```

We have total 49857 datapoints.
[2, 4, 2, 2, 2, 5, 4, 3, 3, 3]

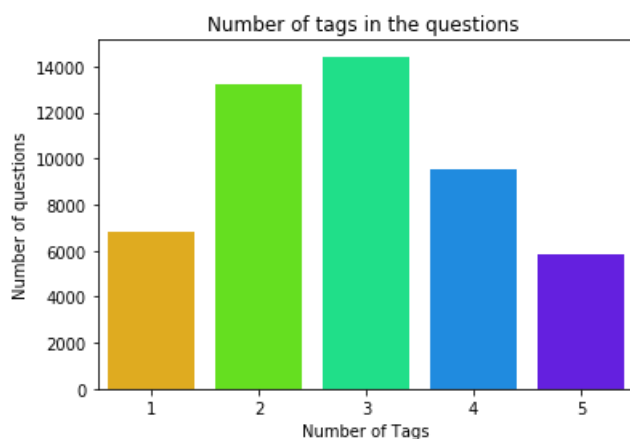
In [58]:

```
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: 2.885613

In [59]:

```
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

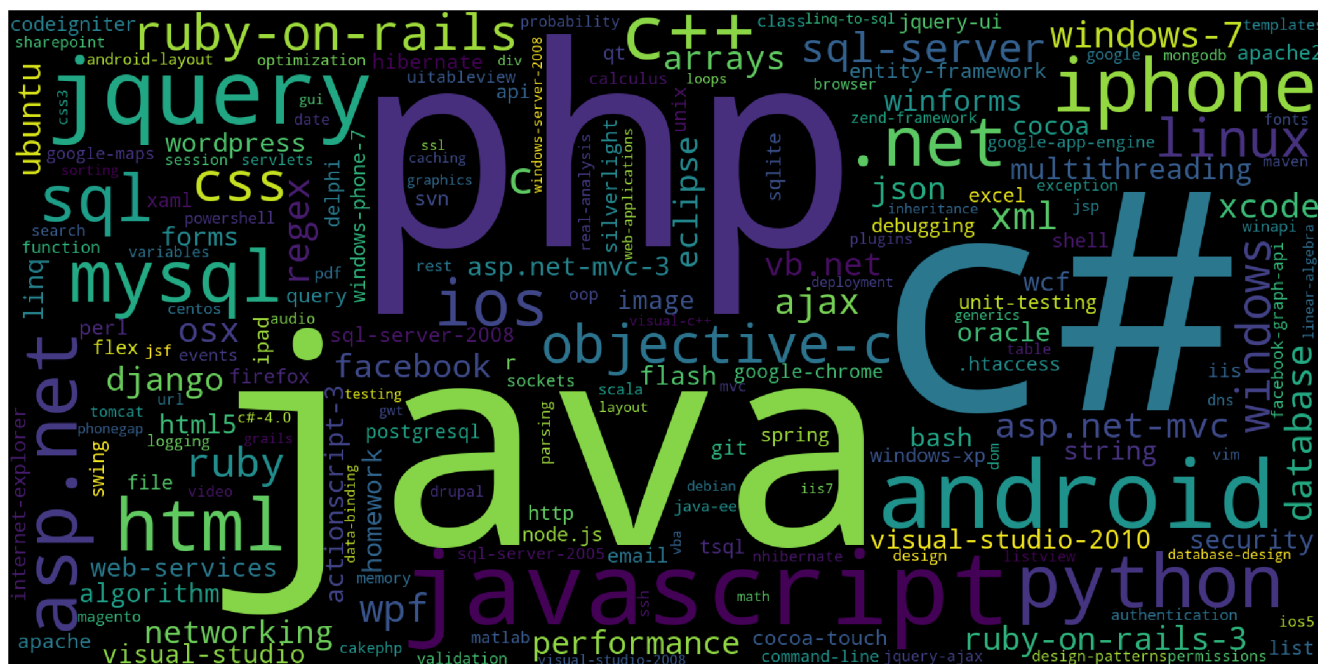
In [60]:

```
# 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)
```



Time taken to run this cell : 0:00:05.642980

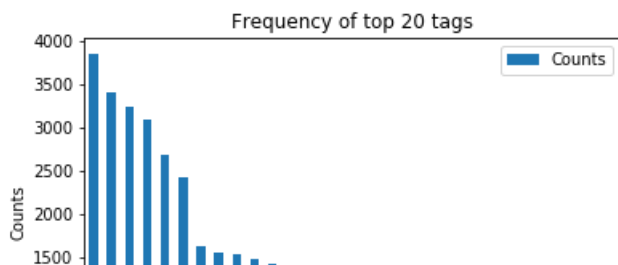
Observations:

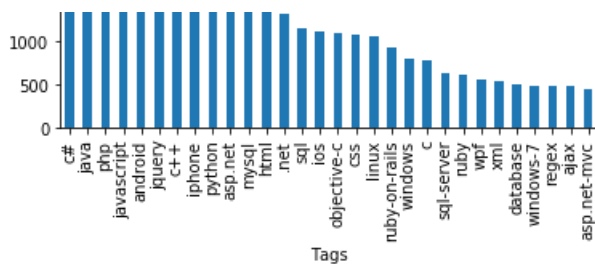
A look at the word cloud shows that "c#", "java", "php", "jquery", "javascript", "c++" are some of the most frequent tags.

3.2.6 The top 20 tags

In [61]:

```
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()
```





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 [78]:

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

In [79]:

```
#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 (question text NOT NULL, code
text, tags text, words_pre integer, words_post integer, is_code integer);"""
create_database_table("Processed.db", sql_create_table)

```

Tables in the database:
QuestionsProcessed

In [80]:

```

# 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 ORDER BY RANDOM();")

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 : 0:00:02.338703

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

In [82]:

```

import nltk
nltk.download('punkt')

```

```

[nltk_data] Downloading package punkt to
[nltk_data] C:\Users\rburr\AppData\Roaming\nltk_data...
[nltk_data] Unzipping tokenizers\punkt.zip.

```

Out[82]:

True

In [83]:

```

#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 stop_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,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)

```

Avg. length of questions(Title+Body) before processing: 1151
 Avg. length of questions(Title+Body) after processing: 328
 Percent of questions containing code: 55
 Time taken to run this cell : 0:01:40.387549

In [84]:

```

# 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 [85]:

```

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

('enforc distinct select multipl combobox bound common sourc wpf app combobox popul way datat alre
adi contain distinct name fetch record use name select combobox avail combobox list read question
wpf multipl combobox bound common sourc enforc distinct select find way',)

('access deni domain secur group creat sub site uniqu permiss add ad domain secur group sharepoint
group read permiss level tri login user group get access deni error add user direct read permiss a
bl access site domain ad group distribut group someth user profil synchron specif set ad secur gro
up prevent group access site',)

('save imag user prefer anyon experi save app prefer within app set app involv imag taken camera p
ref includ nsstring uiimag bool etc uiimag pic taken camera could store nsmutablearray someth like
array hold variet object bool strict object guess',)

('ie bug toggleclass overflow hidden issu difficulti ie test ie probabl scenario brief descript bl
og post insid restrict class set upon click expand link class remov jqueryi expand full height disp
lay entir blog post work beauti firefox chrome ie expand expect imag hidden expand still hidden ma
ke item appear ie resiz browser scroll viewport back jsfiddl showcas problem use code jqueryi magic
fix problem need somehow forc ie repaint hidden part expand idea',)

('fastest way trigger screensav window ideal like abl press button keyboard screensav come preview
actual screensav tri access comput show login screen per screensav set say last part particular wa
nt shortcut preview button seem requir log back preview contrari set look singl button possibl via
local map key whatnot perhap quick combin key els possibl would handi abl trigger screensav via sh
ortcut desktop doabl',)

('use xpathresult find littl document xpathresult mozilla developp site function list redirect mai
n page probabl document yet look way alert html tree path given use work give xpathresult nthre t
bodi bunch tr element beneath like see alert string function myfind use',)

('easi program websocket server start read websocket find good websocket server easi program
exempl complet beginn need server support big concurr want someth tri exempl help thank',)

('modx list resourc group year subgroup month specif question modx make list group publishedon yea
r subgroup publishedon month someth like look archivist seem give lot option possibl use
getresourc write snippet thank',)

('use extens method project entiti framework possibl use extens method project entiti framework ri
ght get follow error ling entiti recogn method asprojectdto method method translat store express l
ing sql seem abl handl entiti framework certain way need write extens method work ef extens method
,')



In [86]:

```

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 [90]:

```
preprocessed_data.head()
```

Out[90]:

	question	tags
0	two word initi mean exampl two word initi mean...	logic propositional-calculus first-order-logic
1	enforc distinct select multipl combobox bound ...	c# wpf combobox wpf-controls
		permissions user-profile-service securitv-

2	access deni domain secur group creat sub site ...	permissions user proms service security
3	save imag user prefer anyon experi save app pr...	iphone objective-c uiimage preferences
4	ie bug toggleclass overflow hidden issu diffic...	jquery css internet-explorer debugging

In [89]:

```
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 : 49854
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 [91]:

```
# 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 [92]:

```
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 [93]:

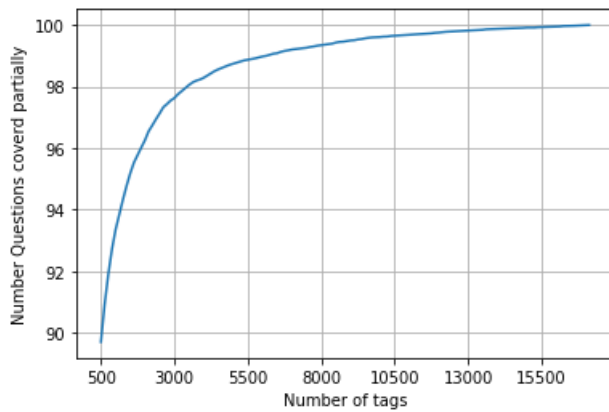
```
questions_explained = []
total_tags=multilabel_y.shape[1]
total_qs=preprocessed_data.shape[0]
for i in range(500, total_tags, 100):
    questions_explained.append(np.round(((total_qs-questions_explained_fn(i))/total_qs)*100,3))
```

In [111]:

```
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, minimun is 50(it covers 90% of the tags)
```



```
print("with ",5500,"tags we are covering ",questions_explained[50],"% of questions")
```



with 5500 tags we are covering 99.152 % of questions

In [112]:

```
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 : 423 out of 49854

In [113]:

```
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.sha
pe[1])*100,"%")")
```

Number of tags in sample : 13892
number of tags taken : 5500 (39.59113158652462 %)

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

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

In [114]:

```
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 [115]:

```
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 : (39883, 5500)
Number of data points in test data : (9971, 5500)

4.3 Featurizing data

In [116]:

```
start = datetime.now()
```

```
vectorizer = TfidfVectorizer(min_df=0.00009, smooth_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 : 0:00:24.510481

In [117]:

```
print("Dimensions of train data X:",x_train_multilabel.shape, "Y :",y_train.shape)
print("Dimensions of test data X:",x_test_multilabel.shape,"Y:",y_test.shape)
```

Dimensions of train data X: (39883, 105703) Y : (39883, 5500)
Dimensions of test data X: (9971, 105703) Y: (9971, 5500)

In [0]:

```
# https://www.analyticsvidhya.com/blog/2017/08/introduction-to-multi-label-classification/
#https://stats.stackexchange.com/questions/117796/scikit-multi-label-classification
# 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[0]:

```
"\nfrom skmultilearn.adapt import MLkNN\nnclassifier = MLkNN(k=21)\n\n#
train\nclassifier.fit(x_train_multilabel, y_train)\n\n# predict\npredictions =
classifier.predict(x_test_multilabel)\nprint(accuracy_score(y_test,predictions))\nprint(metrics.f1_
e(y_test, predictions, average = 'macro'))\nprint(metrics.f1_score(y_test, predictions, average =
'micro'))\nprint(metrics.hamming_loss(y_test,predictions))\n\n"
```

4.4 Applying Logistic Regression with OneVsRest Classifier

In [118]:

```
# this will be taking so much time try not to run it, download the lr_with_equal_weight.pkl file a
nd use to predict
# This takes about 6-7 hours to run.
classifier = OneVsRestClassifier(SGDClassifier(loss='log', alpha=0.00001, 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_test, predictions))
```

accuracy : 0.07491726005415705
macro f1 score : 0.06885152416621966

micro f1 score : 0.3656687932820764

hamming loss : 0.0004242485024753604

Precision recall report :

	precision	recall	f1-score	support
0	0.56	0.24	0.33	764
1	0.73	0.44	0.55	699
2	0.83	0.55	0.66	686
3	0.76	0.46	0.57	622
4	0.94	0.75	0.83	538
5	0.86	0.64	0.73	487
6	0.59	0.28	0.38	314
7	0.64	0.44	0.52	302
8	0.87	0.61	0.72	281
9	0.83	0.47	0.60	324
10	0.89	0.60	0.71	288
11	0.47	0.20	0.28	266
12	0.40	0.12	0.18	259
13	0.56	0.31	0.40	236
14	0.55	0.27	0.36	237
15	0.51	0.17	0.26	219
16	0.79	0.58	0.67	209
17	0.71	0.34	0.46	211
18	0.81	0.50	0.62	188
19	0.32	0.08	0.12	155
20	0.56	0.19	0.29	149
21	0.61	0.36	0.45	123
22	0.75	0.39	0.51	124
23	0.84	0.62	0.71	94
24	0.59	0.52	0.55	106
25	0.32	0.08	0.13	97
26	0.56	0.19	0.29	103
27	0.85	0.70	0.77	90
28	0.60	0.34	0.44	96
29	0.64	0.30	0.41	98
30	0.69	0.29	0.41	92
31	0.53	0.36	0.43	81
32	0.65	0.18	0.28	83
33	0.91	0.65	0.76	66
34	0.76	0.39	0.51	72
35	0.67	0.50	0.57	86
36	0.33	0.11	0.17	80
37	0.70	0.50	0.58	66
38	0.20	0.05	0.08	59
39	0.61	0.39	0.48	71
40	0.43	0.15	0.22	62
41	0.77	0.55	0.64	66
42	0.52	0.43	0.47	58
43	0.74	0.28	0.40	61
44	0.22	0.10	0.14	59
45	0.67	0.26	0.37	62
46	0.50	0.11	0.19	61
47	0.18	0.07	0.10	45
48	0.55	0.11	0.19	53
49	0.93	0.58	0.71	66
50	0.73	0.48	0.58	56
51	0.15	0.04	0.06	53
52	0.00	0.00	0.00	52
53	0.74	0.52	0.61	50
54	0.63	0.22	0.33	54
55	0.65	0.42	0.51	48
56	0.55	0.13	0.21	45
57	0.56	0.14	0.23	69
58	0.61	0.26	0.36	54
59	0.62	0.39	0.48	46
60	0.39	0.26	0.31	43
61	0.43	0.12	0.19	50
62	0.19	0.11	0.14	37
63	0.09	0.02	0.04	46
64	0.53	0.45	0.49	44
65	0.82	0.18	0.30	49
66	0.78	0.57	0.66	44
67	0.46	0.14	0.22	42
68	0.93	0.83	0.88	48
69	0.91	0.63	0.75	49
70	0.29	0.05	0.08	42
71	0.43	0.23	0.30	40

72	0.67	0.39	0.49	41
73	0.97	0.65	0.78	49
74	0.47	0.20	0.28	40
75	0.00	0.00	0.00	44
76	0.63	0.50	0.56	48
77	0.86	0.41	0.56	29
78	0.00	0.00	0.00	37
79	0.70	0.18	0.29	39
80	0.75	0.49	0.59	49
81	0.50	0.16	0.25	43
82	0.60	0.38	0.46	40
83	0.81	0.41	0.55	41
84	0.60	0.35	0.44	43
85	1.00	0.07	0.13	28
86	0.70	0.58	0.64	36
87	0.64	0.35	0.45	40
88	0.62	0.13	0.22	38
89	0.86	0.45	0.59	40
90	0.17	0.07	0.10	30
91	0.90	0.69	0.78	39
92	0.38	0.15	0.22	33
93	0.72	0.50	0.59	26
94	0.76	0.56	0.64	34
95	0.80	0.52	0.63	23
96	0.82	0.32	0.46	28
97	0.40	0.16	0.23	38
98	0.89	0.50	0.64	32
99	0.43	0.10	0.16	30
100	0.88	0.45	0.60	31
101	0.72	0.48	0.58	27
102	0.38	0.12	0.19	24
103	1.00	0.47	0.64	34
104	0.87	0.41	0.55	32
105	1.00	0.54	0.70	26
106	0.55	0.19	0.29	31
107	1.00	0.10	0.18	30
108	0.17	0.04	0.06	27
109	0.40	0.20	0.27	20
110	0.68	0.54	0.60	35
111	0.22	0.08	0.11	26
112	0.00	0.00	0.00	35
113	0.86	0.82	0.84	22
114	0.64	0.54	0.58	26
115	0.38	0.10	0.15	31
116	0.30	0.12	0.17	26
117	0.56	0.47	0.51	19
118	0.00	0.00	0.00	27
119	0.96	0.67	0.79	36
120	0.74	0.64	0.68	22
121	0.33	0.09	0.14	22
122	0.56	0.29	0.38	31
123	0.00	0.00	0.00	27
124	0.92	0.71	0.80	31
125	0.25	0.11	0.15	27
126	0.00	0.00	0.00	20
127	0.62	0.36	0.46	22
128	0.57	0.24	0.33	34
129	0.43	0.18	0.25	17
130	1.00	0.04	0.08	23
131	0.33	0.11	0.16	28
132	0.82	0.47	0.60	19
133	0.76	0.52	0.62	25
134	0.43	0.10	0.17	29
135	0.56	0.25	0.34	20
136	0.29	0.07	0.11	30
137	0.90	0.69	0.78	26
138	0.94	0.75	0.83	20
139	0.00	0.00	0.00	24
140	1.00	0.10	0.18	20
141	0.80	0.76	0.78	21
142	1.00	0.48	0.65	23
143	0.25	0.03	0.05	34
144	0.20	0.05	0.07	22
145	0.50	0.10	0.17	30
146	0.47	0.29	0.36	28
147	0.12	0.06	0.08	16
148	0.71	0.60	0.65	20

149	0.80	0.36	0.50	22
150	0.82	0.50	0.62	28
151	0.69	0.50	0.58	22
152	0.38	0.12	0.19	24
153	0.33	0.05	0.09	20
154	0.69	0.48	0.56	23
155	0.57	0.15	0.24	26
156	0.50	0.24	0.32	17
157	0.75	0.25	0.38	24
158	0.00	0.00	0.00	21
159	0.00	0.00	0.00	24
160	0.29	0.11	0.15	19
161	0.43	0.10	0.17	29
162	0.50	0.16	0.24	19
163	0.50	0.15	0.23	27
164	0.43	0.26	0.32	23
165	0.25	0.08	0.12	24
166	0.75	0.20	0.32	15
167	0.81	0.59	0.68	29
168	0.87	0.59	0.70	22
169	0.83	0.45	0.59	22
170	0.69	0.43	0.53	21
171	0.60	0.21	0.31	29
172	0.20	0.05	0.07	22
173	0.00	0.00	0.00	21
174	0.75	0.21	0.33	28
175	0.67	0.08	0.14	26
176	0.75	0.17	0.28	35
177	1.00	0.05	0.10	20
178	0.56	0.29	0.38	17
179	0.71	0.21	0.32	24
180	0.73	0.41	0.52	27
181	0.67	0.08	0.15	24
182	0.75	0.30	0.43	10
183	0.93	0.74	0.82	19
184	1.00	0.18	0.30	28
185	0.50	0.04	0.07	25
186	0.43	0.23	0.30	13
187	0.25	0.07	0.11	15
188	0.00	0.00	0.00	20
189	0.40	0.17	0.24	24
190	0.00	0.00	0.00	24
191	0.00	0.00	0.00	23
192	0.33	0.09	0.14	22
193	1.00	0.71	0.83	17
194	0.79	0.52	0.63	21
195	0.50	0.41	0.45	17
196	0.00	0.00	0.00	22
197	0.60	0.26	0.36	23
198	0.60	0.29	0.39	21
199	0.50	0.19	0.28	21
200	0.00	0.00	0.00	15
201	0.50	0.37	0.42	19
202	0.00	0.00	0.00	17
203	0.62	0.29	0.40	17
204	0.55	0.25	0.34	24
205	1.00	0.05	0.09	21
206	0.33	0.10	0.15	20
207	0.50	0.21	0.29	24
208	0.20	0.06	0.10	16
209	0.71	0.56	0.63	18
210	0.75	0.30	0.43	20
211	0.00	0.00	0.00	23
212	0.00	0.00	0.00	25
213	0.29	0.10	0.15	20
214	0.75	0.14	0.23	22
215	1.00	0.57	0.73	14
216	0.67	0.10	0.17	21
217	0.91	0.62	0.74	16
218	0.00	0.00	0.00	15
219	0.77	0.62	0.69	16
220	0.60	0.14	0.22	22
221	0.33	0.11	0.17	18
222	0.83	0.38	0.53	13
223	0.75	0.35	0.48	17
224	0.92	0.50	0.65	22
225	0.45	0.36	0.40	14

226	0.64	0.39	0.48	18
227	0.67	0.27	0.38	15
228	0.70	0.35	0.47	20
229	0.00	0.00	0.00	21
230	0.29	0.12	0.17	16
231	0.25	0.07	0.11	14
232	0.50	0.38	0.43	13
233	0.67	0.43	0.52	28
234	0.86	0.29	0.43	21
235	0.59	0.42	0.49	24
236	0.57	0.31	0.40	13
237	0.60	0.33	0.43	18
238	0.86	0.75	0.80	16
239	0.18	0.11	0.14	18
240	0.80	0.25	0.38	16
241	0.00	0.00	0.00	16
242	0.80	0.40	0.53	20
243	0.00	0.00	0.00	15
244	0.50	0.05	0.09	20
245	0.73	0.47	0.57	17
246	0.50	0.22	0.31	18
247	0.20	0.10	0.13	10
248	0.29	0.09	0.13	23
249	0.00	0.00	0.00	21
250	0.71	0.42	0.53	12
251	0.25	0.13	0.17	15
252	0.50	0.04	0.08	24
253	0.70	0.41	0.52	17
254	0.50	0.05	0.09	20
255	0.64	0.47	0.54	15
256	0.71	0.38	0.50	13
257	0.83	0.40	0.54	25
258	0.75	0.56	0.64	16
259	0.83	0.59	0.69	17
260	0.00	0.00	0.00	18
261	0.40	0.31	0.35	13
262	0.00	0.00	0.00	13
263	0.00	0.00	0.00	16
264	0.00	0.00	0.00	16
265	0.29	0.17	0.21	12
266	0.00	0.00	0.00	16
267	0.67	0.18	0.29	11
268	1.00	0.77	0.87	13
269	0.71	0.29	0.42	17
270	0.56	0.77	0.65	13
271	0.64	0.41	0.50	17
272	0.00	0.00	0.00	11
273	0.29	0.15	0.20	13
274	0.75	0.20	0.32	15
275	0.00	0.00	0.00	18
276	1.00	0.67	0.80	15
277	0.40	0.13	0.20	15
278	0.00	0.00	0.00	10
279	0.00	0.00	0.00	19
280	0.75	0.33	0.46	18
281	0.78	0.70	0.74	10
282	0.00	0.00	0.00	15
283	0.50	0.33	0.40	9
284	0.00	0.00	0.00	14
285	0.57	0.27	0.36	15
286	0.92	0.65	0.76	17
287	0.40	0.22	0.29	9
288	0.50	0.05	0.10	19
289	0.00	0.00	0.00	20
290	0.00	0.00	0.00	7
291	0.50	0.08	0.14	12
292	0.70	0.54	0.61	13
293	0.00	0.00	0.00	13
294	0.00	0.00	0.00	12
295	0.56	0.83	0.67	6
296	0.40	0.31	0.35	13
297	0.67	0.25	0.36	16
298	0.75	0.40	0.52	15
299	0.91	0.77	0.83	13
300	0.90	0.43	0.58	21
301	0.00	0.00	0.00	12
302	1.00	0.14	0.25	7

303	0.00	0.00	0.00	13
304	1.00	0.06	0.12	16
305	0.70	0.58	0.64	12
306	0.50	0.10	0.16	21
307	0.67	0.18	0.29	11
308	0.00	0.00	0.00	18
309	0.56	0.45	0.50	11
310	0.00	0.00	0.00	14
311	0.00	0.00	0.00	13
312	0.20	0.09	0.13	11
313	0.00	0.00	0.00	16
314	0.89	0.62	0.73	13
315	0.50	0.08	0.14	12
316	0.00	0.00	0.00	15
317	1.00	0.25	0.40	8
318	0.33	0.10	0.15	10
319	0.55	0.38	0.44	16
320	0.43	0.27	0.33	11
321	0.25	0.11	0.15	9
322	1.00	0.08	0.15	12
323	0.00	0.00	0.00	8
324	1.00	0.20	0.33	15
325	1.00	0.60	0.75	10
326	0.50	0.12	0.20	8
327	0.33	0.22	0.27	9
328	0.43	0.21	0.29	14
329	1.00	0.09	0.17	11
330	0.00	0.00	0.00	9
331	0.00	0.00	0.00	9
332	0.00	0.00	0.00	9
333	0.00	0.00	0.00	13
334	1.00	0.80	0.89	5
335	0.71	0.33	0.45	15
336	0.67	0.18	0.29	11
337	0.80	0.67	0.73	6
338	1.00	0.31	0.48	16
339	0.80	0.44	0.57	9
340	0.91	0.67	0.77	15
341	1.00	0.16	0.27	19
342	1.00	0.42	0.59	12
343	0.00	0.00	0.00	11
344	0.00	0.00	0.00	16
345	0.75	0.21	0.33	14
346	0.00	0.00	0.00	8
347	0.82	0.75	0.78	12
348	0.67	0.12	0.20	17
349	0.25	0.11	0.15	9
350	0.00	0.00	0.00	10
351	0.43	0.27	0.33	11
352	0.56	0.50	0.53	10
353	0.00	0.00	0.00	12
354	1.00	0.38	0.56	13
355	0.67	0.20	0.31	10
356	0.33	0.06	0.10	18
357	0.75	0.30	0.43	10
358	0.33	0.43	0.38	7
359	0.00	0.00	0.00	12
360	0.00	0.00	0.00	12
361	0.00	0.00	0.00	13
362	0.00	0.00	0.00	14
363	0.00	0.00	0.00	8
364	0.00	0.00	0.00	10
365	0.00	0.00	0.00	14
366	0.67	0.15	0.25	13
367	0.83	0.56	0.67	9
368	0.70	0.44	0.54	16
369	0.75	0.60	0.67	10
370	0.50	0.14	0.22	14
371	0.67	0.29	0.40	7
372	0.75	0.20	0.32	15
373	0.00	0.00	0.00	13
374	0.00	0.00	0.00	13
375	0.50	0.12	0.20	8
376	0.00	0.00	0.00	10
377	1.00	0.18	0.31	11
378	0.25	0.09	0.13	11
379	0.40	0.57	0.47	7

380	0.00	0.00	0.00	5
381	0.00	0.00	0.00	9
382	0.50	0.10	0.17	10
383	1.00	0.20	0.33	15
384	0.00	0.00	0.00	7
385	1.00	0.67	0.80	12
386	0.33	0.20	0.25	5
387	0.00	0.00	0.00	6
388	0.00	0.00	0.00	13
389	0.40	0.25	0.31	8
390	1.00	0.17	0.29	6
391	0.40	0.36	0.38	11
392	0.00	0.00	0.00	8
393	0.00	0.00	0.00	12
394	0.40	0.22	0.29	9
395	0.00	0.00	0.00	12
396	0.17	0.14	0.15	7
397	0.75	0.50	0.60	6
398	0.70	0.70	0.70	10
399	0.50	0.08	0.14	12
400	1.00	0.12	0.22	8
401	0.00	0.00	0.00	13
402	0.62	0.50	0.56	10
403	0.00	0.00	0.00	14
404	0.33	0.10	0.15	10
405	0.33	0.25	0.29	12
406	0.00	0.00	0.00	10
407	0.67	0.15	0.25	13
408	0.33	0.25	0.29	8
409	0.36	0.44	0.40	9
410	0.00	0.00	0.00	5
411	0.64	0.88	0.74	8
412	0.67	0.29	0.40	7
413	0.00	0.00	0.00	8
414	0.00	0.00	0.00	7
415	0.00	0.00	0.00	8
416	0.25	0.11	0.15	9
417	0.50	0.17	0.25	6
418	0.00	0.00	0.00	10
419	0.33	0.09	0.14	11
420	1.00	0.20	0.33	10
421	0.00	0.00	0.00	8
422	0.00	0.00	0.00	12
423	0.00	0.00	0.00	14
424	1.00	0.36	0.53	11
425	0.17	0.09	0.12	11
426	0.50	0.09	0.15	11
427	0.00	0.00	0.00	10
428	0.00	0.00	0.00	8
429	0.83	0.38	0.53	13
430	0.75	0.33	0.46	9
431	0.00	0.00	0.00	9
432	1.00	0.43	0.60	7
433	0.40	0.18	0.25	11
434	0.00	0.00	0.00	6
435	0.00	0.00	0.00	8
436	0.33	0.11	0.17	9
437	1.00	0.57	0.73	7
438	0.00	0.00	0.00	4
439	1.00	0.06	0.12	16
440	0.00	0.00	0.00	7
441	1.00	0.20	0.33	10
442	1.00	0.42	0.59	12
443	0.50	0.20	0.29	5
444	1.00	0.17	0.29	6
445	1.00	0.43	0.60	7
446	0.40	0.29	0.33	7
447	0.50	0.18	0.27	11
448	0.00	0.00	0.00	6
449	0.33	0.10	0.15	10
450	0.00	0.00	0.00	7
451	0.73	0.73	0.73	11
452	0.00	0.00	0.00	7
453	0.75	0.25	0.38	12
454	0.00	0.00	0.00	12
455	1.00	0.25	0.40	16
456	1.00	0.14	0.25	7

456	1.00	0.11	0.20	7
457	0.33	0.33	0.33	9
458	0.00	0.00	0.00	7
459	1.00	0.44	0.62	9
460	1.00	0.57	0.73	7
461	0.00	0.00	0.00	7
462	0.83	0.50	0.62	10
463	1.00	0.33	0.50	9
464	0.00	0.00	0.00	10
465	0.33	0.29	0.31	7
466	0.33	0.11	0.17	9
467	0.00	0.00	0.00	5
468	0.00	0.00	0.00	19
469	0.33	0.25	0.29	8
470	0.67	0.75	0.71	8
471	1.00	0.38	0.55	8
472	0.00	0.00	0.00	9
473	1.00	0.11	0.20	9
474	0.00	0.00	0.00	12
475	0.40	0.40	0.40	5
476	0.33	0.17	0.22	6
477	0.44	0.33	0.38	12
478	1.00	0.50	0.67	8
479	0.00	0.00	0.00	11
480	0.50	0.25	0.33	8
481	1.00	0.10	0.18	10
482	0.00	0.00	0.00	8
483	0.00	0.00	0.00	7
484	0.00	0.00	0.00	10
485	1.00	0.29	0.44	7
486	0.50	0.11	0.18	9
487	1.00	0.62	0.77	8
488	0.75	0.33	0.46	9
489	0.67	0.14	0.24	14
490	0.57	0.57	0.57	7
491	1.00	0.29	0.44	7
492	0.50	0.17	0.25	6
493	1.00	0.50	0.67	6
494	0.00	0.00	0.00	6
495	0.00	0.00	0.00	9
496	0.00	0.00	0.00	7
497	0.75	0.30	0.43	10
498	0.00	0.00	0.00	9
499	0.56	0.50	0.53	10
500	0.00	0.00	0.00	5
501	0.00	0.00	0.00	8
502	0.38	0.25	0.30	12
503	0.67	0.50	0.57	8
504	0.50	0.12	0.20	8
505	0.67	0.25	0.36	8
506	0.00	0.00	0.00	12
507	0.50	0.09	0.15	11
508	0.50	0.18	0.27	11
509	0.86	0.60	0.71	10
510	0.40	0.17	0.24	12
511	0.50	0.43	0.46	7
512	0.00	0.00	0.00	6
513	0.00	0.00	0.00	9
514	0.50	0.15	0.24	13
515	1.00	0.60	0.75	10
516	0.00	0.00	0.00	11
517	0.83	0.62	0.71	8
518	0.75	0.43	0.55	7
519	1.00	0.11	0.20	9
520	0.50	0.12	0.20	8
521	0.33	0.11	0.17	9
522	0.14	0.09	0.11	11
523	0.88	0.58	0.70	12
524	0.00	0.00	0.00	9
525	1.00	0.11	0.20	9
526	1.00	0.20	0.33	5
527	0.75	0.67	0.71	9
528	0.50	0.09	0.15	11
529	0.67	0.33	0.44	6
530	0.67	0.40	0.50	5
531	0.50	0.25	0.33	8
532	0.00	0.00	0.00	4
533	0.67	0.40	0.50	5

533	0.07	0.10	0.00	5
534	1.00	0.25	0.40	8
535	0.00	0.00	0.00	6
536	0.00	0.00	0.00	6
537	1.00	0.57	0.73	7
538	0.33	0.25	0.29	4
539	0.60	0.30	0.40	10
540	0.60	0.33	0.43	9
541	0.00	0.00	0.00	7
542	0.50	0.50	0.50	6
543	1.00	0.25	0.40	8
544	0.33	0.14	0.20	7
545	0.00	0.00	0.00	5
546	0.00	0.00	0.00	6
547	0.50	0.17	0.25	6
548	0.33	0.25	0.29	4
549	0.00	0.00	0.00	9
550	0.50	0.33	0.40	3
551	0.00	0.00	0.00	6
552	0.00	0.00	0.00	8
553	0.00	0.00	0.00	4
554	0.50	0.44	0.47	9
555	1.00	0.29	0.44	7
556	0.50	0.25	0.33	8
557	0.50	0.25	0.33	8
558	1.00	0.17	0.29	12
559	0.00	0.00	0.00	6
560	0.00	0.00	0.00	7
561	0.67	0.22	0.33	9
562	0.00	0.00	0.00	7
563	0.00	0.00	0.00	6
564	0.00	0.00	0.00	14
565	0.00	0.00	0.00	5
566	1.00	0.50	0.67	8
567	1.00	0.57	0.73	7
568	1.00	0.25	0.40	8
569	0.00	0.00	0.00	7
570	0.00	0.00	0.00	6
571	0.00	0.00	0.00	6
572	0.00	0.00	0.00	9
573	0.00	0.00	0.00	9
574	1.00	0.40	0.57	5
575	0.00	0.00	0.00	6
576	0.83	0.71	0.77	7
577	0.33	0.12	0.18	8
578	0.67	0.20	0.31	10
579	0.00	0.00	0.00	8
580	0.00	0.00	0.00	8
581	0.00	0.00	0.00	7
582	0.00	0.00	0.00	6
583	0.67	0.25	0.36	8
584	1.00	0.33	0.50	6
585	1.00	0.71	0.83	7
586	0.00	0.00	0.00	9
587	0.00	0.00	0.00	8
588	0.00	0.00	0.00	10
589	0.60	0.30	0.40	10
590	1.00	0.11	0.20	9
591	0.50	0.12	0.20	8
592	0.00	0.00	0.00	7
593	1.00	0.30	0.46	10
594	0.00	0.00	0.00	6
595	0.00	0.00	0.00	4
596	1.00	0.29	0.44	7
597	0.00	0.00	0.00	5
598	0.25	0.20	0.22	5
599	0.00	0.00	0.00	10
600	0.00	0.00	0.00	9
601	0.00	0.00	0.00	5
602	0.00	0.00	0.00	11
603	0.00	0.00	0.00	5
604	0.75	0.30	0.43	10
605	0.50	0.50	0.50	2
606	0.00	0.00	0.00	8
607	0.00	0.00	0.00	9
608	0.00	0.00	0.00	10
609	0.00	0.00	0.00	9
610	0.60	0.30	0.40	10

610	0.00	0.00	0.40	10
611	1.00	0.25	0.40	8
612	1.00	0.38	0.55	8
613	0.75	0.75	0.75	4
614	0.00	0.00	0.00	3
615	0.00	0.00	0.00	3
616	0.00	0.00	0.00	8
617	0.00	0.00	0.00	7
618	0.00	0.00	0.00	6
619	0.00	0.00	0.00	4
620	1.00	0.20	0.33	5
621	1.00	0.56	0.71	9
622	0.00	0.00	0.00	6
623	0.00	0.00	0.00	8
624	0.43	0.60	0.50	5
625	0.67	0.33	0.44	6
626	0.00	0.00	0.00	3
627	1.00	0.33	0.50	6
628	1.00	0.33	0.50	3
629	1.00	0.33	0.50	3
630	0.00	0.00	0.00	4
631	0.00	0.00	0.00	6
632	0.00	0.00	0.00	8
633	0.00	0.00	0.00	6
634	0.00	0.00	0.00	8
635	0.50	0.17	0.25	6
636	0.71	0.83	0.77	6
637	0.00	0.00	0.00	5
638	0.00	0.00	0.00	7
639	0.00	0.00	0.00	5
640	0.00	0.00	0.00	10
641	1.00	0.36	0.53	11
642	0.00	0.00	0.00	10
643	0.00	0.00	0.00	9
644	0.67	0.50	0.57	4
645	0.50	0.17	0.25	6
646	0.33	0.09	0.14	11
647	1.00	0.86	0.92	7
648	0.00	0.00	0.00	6
649	0.50	0.25	0.33	4
650	0.00	0.00	0.00	7
651	0.25	0.17	0.20	6
652	0.00	0.00	0.00	9
653	0.00	0.00	0.00	4
654	0.00	0.00	0.00	6
655	0.00	0.00	0.00	5
656	0.00	0.00	0.00	5
657	0.00	0.00	0.00	4
658	0.00	0.00	0.00	9
659	1.00	1.00	1.00	4
660	0.00	0.00	0.00	3
661	0.00	0.00	0.00	6
662	1.00	0.43	0.60	7
663	0.00	0.00	0.00	6
664	0.00	0.00	0.00	8
665	0.00	0.00	0.00	8
666	1.00	0.43	0.60	7
667	1.00	0.73	0.84	11
668	0.00	0.00	0.00	7
669	0.50	0.33	0.40	6
670	0.00	0.00	0.00	3
671	1.00	0.12	0.22	8
672	0.00	0.00	0.00	5
673	0.00	0.00	0.00	4
674	0.67	0.25	0.36	8
675	1.00	0.30	0.46	10
676	0.00	0.00	0.00	7
677	0.50	0.12	0.20	8
678	0.00	0.00	0.00	3
679	0.00	0.00	0.00	6
680	0.00	0.00	0.00	7
681	0.00	0.00	0.00	6
682	0.00	0.00	0.00	4
683	0.00	0.00	0.00	4
684	1.00	0.50	0.67	4
685	0.00	0.00	0.00	7
686	0.00	0.00	0.00	6
687	1.00	0.25	0.40	8

687	1.00	0.20	0.40	0
688	0.83	0.71	0.77	7
689	0.00	0.00	0.00	6
690	0.75	0.33	0.46	9
691	0.00	0.00	0.00	7
692	1.00	0.20	0.33	5
693	0.00	0.00	0.00	9
694	0.33	0.17	0.22	6
695	1.00	0.57	0.73	7
696	0.33	0.17	0.22	6
697	0.00	0.00	0.00	7
698	0.00	0.00	0.00	9
699	0.00	0.00	0.00	5
700	1.00	0.20	0.33	5
701	1.00	0.40	0.57	5
702	1.00	0.20	0.33	5
703	0.75	0.33	0.46	9
704	1.00	0.78	0.88	9
705	1.00	0.22	0.36	9
706	1.00	0.80	0.89	5
707	0.00	0.00	0.00	4
708	0.00	0.00	0.00	10
709	0.50	0.14	0.22	7
710	0.50	0.17	0.25	6
711	1.00	0.57	0.73	7
712	0.00	0.00	0.00	9
713	0.00	0.00	0.00	8
714	1.00	0.57	0.73	7
715	1.00	0.50	0.67	4
716	0.50	0.33	0.40	3
717	0.00	0.00	0.00	4
718	0.67	1.00	0.80	2
719	0.00	0.00	0.00	6
720	0.50	0.22	0.31	9
721	0.00	0.00	0.00	6
722	0.00	0.00	0.00	7
723	0.00	0.00	0.00	5
724	0.00	0.00	0.00	7
725	0.00	0.00	0.00	1
726	0.00	0.00	0.00	5
727	0.50	0.25	0.33	4
728	1.00	0.20	0.33	5
729	1.00	0.40	0.57	5
730	1.00	0.50	0.67	6
731	0.00	0.00	0.00	7
732	0.00	0.00	0.00	7
733	1.00	0.12	0.22	8
734	0.00	0.00	0.00	8
735	1.00	0.80	0.89	5
736	1.00	0.50	0.67	4
737	0.00	0.00	0.00	1
738	0.00	0.00	0.00	6
739	1.00	0.25	0.40	8
740	0.00	0.00	0.00	3
741	1.00	0.29	0.44	7
742	0.00	0.00	0.00	5
743	0.50	0.25	0.33	4
744	0.00	0.00	0.00	5
745	0.00	0.00	0.00	7
746	0.00	0.00	0.00	8
747	1.00	0.50	0.67	4
748	1.00	0.14	0.25	7
749	0.00	0.00	0.00	7
750	0.00	0.00	0.00	3
751	0.00	0.00	0.00	6
752	0.00	0.00	0.00	8
753	0.00	0.00	0.00	4
754	0.50	0.17	0.25	6
755	0.00	0.00	0.00	5
756	1.00	0.11	0.20	9
757	1.00	0.14	0.25	7
758	1.00	0.33	0.50	6
759	0.00	0.00	0.00	7
760	0.00	0.00	0.00	1
761	1.00	0.20	0.33	5
762	0.00	0.00	0.00	6
763	0.00	0.00	0.00	4
764	0.00	0.00	0.00	5

764	0.00	0.00	0.00	5
765	1.00	0.33	0.50	3
766	0.00	0.00	0.00	4
767	1.00	0.25	0.40	4
768	1.00	0.33	0.50	6
769	0.00	0.00	0.00	8
770	1.00	0.67	0.80	3
771	1.00	0.14	0.25	7
772	1.00	0.14	0.25	7
773	1.00	0.14	0.25	7
774	0.00	0.00	0.00	4
775	0.00	0.00	0.00	4
776	0.00	0.00	0.00	8
777	0.00	0.00	0.00	5
778	0.00	0.00	0.00	3
779	0.00	0.00	0.00	6
780	0.00	0.00	0.00	4
781	1.00	0.50	0.67	4
782	0.00	0.00	0.00	3
783	1.00	0.11	0.20	9
784	0.00	0.00	0.00	7
785	0.50	0.25	0.33	4
786	0.00	0.00	0.00	9
787	0.00	0.00	0.00	2
788	0.00	0.00	0.00	2
789	0.50	0.67	0.57	3
790	0.00	0.00	0.00	4
791	0.00	0.00	0.00	4
792	0.00	0.00	0.00	3
793	0.00	0.00	0.00	2
794	0.00	0.00	0.00	6
795	0.00	0.00	0.00	3
796	0.00	0.00	0.00	3
797	0.00	0.00	0.00	5
798	0.00	0.00	0.00	3
799	0.00	0.00	0.00	6
800	0.00	0.00	0.00	7
801	0.00	0.00	0.00	4
802	0.00	0.00	0.00	5
803	0.00	0.00	0.00	4
804	1.00	0.25	0.40	8
805	0.00	0.00	0.00	4
806	1.00	0.60	0.75	5
807	0.00	0.00	0.00	7
808	0.33	0.14	0.20	7
809	0.00	0.00	0.00	4
810	0.50	0.50	0.50	4
811	0.00	0.00	0.00	5
812	0.00	0.00	0.00	7
813	1.00	0.14	0.25	7
814	0.00	0.00	0.00	7
815	0.75	0.75	0.75	4
816	0.00	0.00	0.00	5
817	0.00	0.00	0.00	2
818	0.00	0.00	0.00	3
819	0.00	0.00	0.00	7
820	1.00	0.25	0.40	4
821	0.00	0.00	0.00	3
822	0.00	0.00	0.00	4
823	0.00	0.00	0.00	4
824	0.00	0.00	0.00	4
825	1.00	0.75	0.86	4
826	0.00	0.00	0.00	2
827	0.00	0.00	0.00	4
828	0.00	0.00	0.00	6
829	0.50	0.17	0.25	6
830	1.00	0.22	0.36	9
831	0.00	0.00	0.00	4
832	0.00	0.00	0.00	4
833	0.00	0.00	0.00	3
834	1.00	0.25	0.40	4
835	0.00	0.00	0.00	8
836	0.00	0.00	0.00	5
837	0.50	0.20	0.29	5
838	0.00	0.00	0.00	2
839	0.00	0.00	0.00	5
840	1.00	0.40	0.57	5
841	0.00	0.00	0.00	0

841	0.00	0.00	0.00	3
842	0.00	0.00	0.00	9
843	1.00	0.12	0.22	8
844	0.00	0.00	0.00	1
845	0.00	0.00	0.00	4
846	0.00	0.00	0.00	1
847	1.00	0.20	0.33	5
848	0.00	0.00	0.00	2
849	0.00	0.00	0.00	5
850	1.00	0.17	0.29	6
851	0.50	0.33	0.40	6
852	0.00	0.00	0.00	4
853	1.00	0.33	0.50	3
854	0.00	0.00	0.00	5
855	0.00	0.00	0.00	2
856	0.00	0.00	0.00	1
857	0.00	0.00	0.00	4
858	0.00	0.00	0.00	7
859	0.00	0.00	0.00	4
860	0.00	0.00	0.00	2
861	0.50	0.20	0.29	5
862	0.00	0.00	0.00	3
863	0.00	0.00	0.00	7
864	0.00	0.00	0.00	5
865	0.50	0.20	0.29	5
866	0.00	0.00	0.00	6
867	1.00	0.50	0.67	2
868	0.60	0.60	0.60	5
869	0.00	0.00	0.00	4
870	0.00	0.00	0.00	2
871	1.00	0.14	0.25	7
872	0.50	0.33	0.40	3
873	0.33	0.20	0.25	5
874	0.00	0.00	0.00	5
875	0.67	0.40	0.50	5
876	0.00	0.00	0.00	6
877	0.00	0.00	0.00	6
878	0.00	0.00	0.00	6
879	1.00	1.00	1.00	1
880	0.00	0.00	0.00	4
881	0.00	0.00	0.00	2
882	0.00	0.00	0.00	7
883	0.00	0.00	0.00	3
884	0.00	0.00	0.00	3
885	0.00	0.00	0.00	5
886	0.00	0.00	0.00	3
887	1.00	0.25	0.40	4
888	0.50	0.40	0.44	5
889	1.00	0.33	0.50	3
890	0.50	0.20	0.29	5
891	0.00	0.00	0.00	4
892	0.00	0.00	0.00	5
893	0.00	0.00	0.00	8
894	0.00	0.00	0.00	0
895	0.00	0.00	0.00	8
896	0.00	0.00	0.00	4
897	1.00	0.29	0.44	7
898	1.00	0.17	0.29	6
899	0.00	0.00	0.00	3
900	1.00	0.29	0.44	7
901	0.00	0.00	0.00	5
902	0.00	0.00	0.00	3
903	0.00	0.00	0.00	5
904	0.00	0.00	0.00	3
905	0.00	0.00	0.00	4
906	0.00	0.00	0.00	3
907	0.00	0.00	0.00	6
908	0.00	0.00	0.00	5
909	0.00	0.00	0.00	8
910	0.00	0.00	0.00	4
911	1.00	0.50	0.67	4
912	0.00	0.00	0.00	5
913	0.00	0.00	0.00	5
914	0.00	0.00	0.00	4
915	0.00	0.00	0.00	2
916	0.50	0.25	0.33	4
917	1.00	0.20	0.33	5

918	1.00	0.25	0.40	8
919	0.00	0.00	0.00	2
920	0.00	0.00	0.00	3
921	0.00	0.00	0.00	4
922	0.33	0.14	0.20	7
923	1.00	0.40	0.57	5
924	0.00	0.00	0.00	6
925	0.33	0.25	0.29	4
926	0.33	0.25	0.29	4
927	0.00	0.00	0.00	6
928	0.00	0.00	0.00	3
929	0.50	0.40	0.44	5
930	0.00	0.00	0.00	3
931	0.00	0.00	0.00	3
932	0.00	0.00	0.00	4
933	0.00	0.00	0.00	3
934	0.00	0.00	0.00	6
935	0.00	0.00	0.00	2
936	0.00	0.00	0.00	2
937	0.00	0.00	0.00	3
938	0.00	0.00	0.00	3
939	0.67	0.67	0.67	3
940	1.00	0.40	0.57	5
941	0.50	0.20	0.29	5
942	0.20	0.25	0.22	4
943	0.00	0.00	0.00	2
944	0.00	0.00	0.00	3
945	0.00	0.00	0.00	4
946	0.67	0.50	0.57	4
947	0.00	0.00	0.00	1
948	0.00	0.00	0.00	6
949	0.00	0.00	0.00	4
950	1.00	0.33	0.50	3
951	0.00	0.00	0.00	4
952	0.00	0.00	0.00	3
953	0.00	0.00	0.00	4
954	0.00	0.00	0.00	6
955	0.00	0.00	0.00	1
956	0.00	0.00	0.00	7
957	0.00	0.00	0.00	3
958	0.00	0.00	0.00	4
959	0.00	0.00	0.00	3
960	1.00	0.33	0.50	6
961	1.00	0.33	0.50	3
962	0.80	0.67	0.73	6
963	0.00	0.00	0.00	6
964	0.00	0.00	0.00	3
965	1.00	1.00	1.00	2
966	0.00	0.00	0.00	1
967	0.00	0.00	0.00	3
968	1.00	1.00	1.00	1
969	1.00	1.00	1.00	3
970	0.00	0.00	0.00	3
971	0.00	0.00	0.00	4
972	1.00	0.50	0.67	2
973	0.00	0.00	0.00	5
974	0.00	0.00	0.00	5
975	0.00	0.00	0.00	6
976	0.00	0.00	0.00	3
977	0.00	0.00	0.00	3
978	0.00	0.00	0.00	3
979	0.00	0.00	0.00	3
980	1.00	0.67	0.80	3
981	0.00	0.00	0.00	4
982	1.00	0.20	0.33	5
983	0.00	0.00	0.00	4
984	0.00	0.00	0.00	2
985	1.00	0.14	0.25	7
986	1.00	0.14	0.25	7
987	1.00	0.33	0.50	3
988	0.00	0.00	0.00	4
989	0.00	0.00	0.00	5
990	1.00	0.17	0.29	6
991	0.50	0.33	0.40	3
992	1.00	0.17	0.29	6
993	1.00	0.67	0.80	3
994	0.00	0.00	0.00	2

995	0.75	0.50	0.60	6
996	0.00	0.00	0.00	1
997	0.00	0.00	0.00	6
998	1.00	1.00	1.00	3
999	0.00	0.00	0.00	4
1000	0.00	0.00	0.00	3
1001	0.00	0.00	0.00	4
1002	0.00	0.00	0.00	3
1003	1.00	0.25	0.40	4
1004	1.00	0.25	0.40	4
1005	0.00	0.00	0.00	5
1006	1.00	0.40	0.57	5
1007	1.00	0.50	0.67	2
1008	0.33	0.50	0.40	2
1009	0.00	0.00	0.00	2
1010	0.00	0.00	0.00	4
1011	0.00	0.00	0.00	5
1012	1.00	0.25	0.40	8
1013	0.00	0.00	0.00	3
1014	0.00	0.00	0.00	2
1015	0.00	0.00	0.00	3
1016	0.50	0.33	0.40	3
1017	1.00	0.20	0.33	5
1018	1.00	0.50	0.67	4
1019	0.00	0.00	0.00	1
1020	0.00	0.00	0.00	5
1021	0.00	0.00	0.00	2
1022	0.00	0.00	0.00	4
1023	0.00	0.00	0.00	4
1024	0.00	0.00	0.00	2
1025	0.00	0.00	0.00	4
1026	0.00	0.00	0.00	4
1027	0.00	0.00	0.00	3
1028	0.00	0.00	0.00	3
1029	0.00	0.00	0.00	2
1030	0.00	0.00	0.00	5
1031	0.00	0.00	0.00	5
1032	1.00	0.67	0.80	3
1033	0.00	0.00	0.00	5
1034	0.00	0.00	0.00	5
1035	1.00	0.50	0.67	2
1036	0.00	0.00	0.00	2
1037	0.00	0.00	0.00	3
1038	1.00	0.33	0.50	3
1039	0.00	0.00	0.00	4
1040	0.00	0.00	0.00	6
1041	0.33	0.50	0.40	2
1042	0.00	0.00	0.00	2
1043	1.00	0.60	0.75	5
1044	1.00	0.75	0.86	4
1045	0.00	0.00	0.00	2
1046	0.00	0.00	0.00	3
1047	0.00	0.00	0.00	8
1048	1.00	0.25	0.40	4
1049	0.00	0.00	0.00	5
1050	0.00	0.00	0.00	3
1051	1.00	0.67	0.80	3
1052	0.00	0.00	0.00	3
1053	1.00	0.67	0.80	3
1054	0.00	0.00	0.00	5
1055	0.50	0.33	0.40	3
1056	0.00	0.00	0.00	6
1057	0.00	0.00	0.00	2
1058	1.00	0.50	0.67	2
1059	0.00	0.00	0.00	3
1060	0.00	0.00	0.00	1
1061	0.00	0.00	0.00	3
1062	0.00	0.00	0.00	3
1063	0.00	0.00	0.00	5
1064	1.00	0.20	0.33	5
1065	0.00	0.00	0.00	1
1066	1.00	0.50	0.67	2
1067	0.00	0.00	0.00	6
1068	0.00	0.00	0.00	2
1069	0.00	0.00	0.00	3
1070	0.00	0.00	0.00	3
1071	0.00	0.00	0.00	1

1072	1.00	1.00	1.00	3
1073	0.00	0.00	0.00	6
1074	0.00	0.00	0.00	2
1075	1.00	0.33	0.50	6
1076	0.00	0.00	0.00	4
1077	1.00	0.40	0.57	5
1078	0.00	0.00	0.00	1
1079	0.00	0.00	0.00	8
1080	0.00	0.00	0.00	3
1081	0.00	0.00	0.00	3
1082	0.00	0.00	0.00	4
1083	0.75	0.75	0.75	4
1084	0.00	0.00	0.00	6
1085	1.00	0.80	0.89	5
1086	0.00	0.00	0.00	5
1087	0.00	0.00	0.00	5
1088	1.00	0.20	0.33	5
1089	0.00	0.00	0.00	3
1090	0.00	0.00	0.00	4
1091	0.00	0.00	0.00	4
1092	0.00	0.00	0.00	5
1093	0.25	0.20	0.22	5
1094	0.00	0.00	0.00	0
1095	1.00	1.00	1.00	3
1096	0.00	0.00	0.00	3
1097	1.00	1.00	1.00	2
1098	0.00	0.00	0.00	1
1099	1.00	0.75	0.86	4
1100	0.00	0.00	0.00	1
1101	1.00	0.17	0.29	6
1102	1.00	0.20	0.33	5
1103	0.00	0.00	0.00	2
1104	0.00	0.00	0.00	4
1105	0.00	0.00	0.00	2
1106	0.00	0.00	0.00	4
1107	1.00	0.57	0.73	7
1108	0.00	0.00	0.00	5
1109	1.00	0.25	0.40	4
1110	0.00	0.00	0.00	2
1111	1.00	0.33	0.50	3
1112	0.00	0.00	0.00	4
1113	0.00	0.00	0.00	4
1114	0.50	0.33	0.40	3
1115	0.00	0.00	0.00	2
1116	0.50	0.33	0.40	3
1117	0.00	0.00	0.00	4
1118	0.25	0.50	0.33	2
1119	0.00	0.00	0.00	5
1120	0.00	0.00	0.00	4
1121	0.00	0.00	0.00	3
1122	0.50	0.25	0.33	4
1123	0.00	0.00	0.00	3
1124	0.00	0.00	0.00	1
1125	0.00	0.00	0.00	2
1126	0.67	0.40	0.50	5
1127	0.00	0.00	0.00	4
1128	1.00	1.00	1.00	2
1129	0.00	0.00	0.00	5
1130	1.00	1.00	1.00	2
1131	1.00	0.33	0.50	3
1132	1.00	0.25	0.40	4
1133	1.00	0.50	0.67	2
1134	0.00	0.00	0.00	1
1135	0.00	0.00	0.00	5
1136	0.00	0.00	0.00	5
1137	0.00	0.00	0.00	1
1138	0.00	0.00	0.00	4
1139	0.00	0.00	0.00	5
1140	0.00	0.00	0.00	3
1141	0.00	0.00	0.00	4
1142	1.00	0.20	0.33	5
1143	0.00	0.00	0.00	5
1144	0.00	0.00	0.00	2
1145	0.00	0.00	0.00	7
1146	0.00	0.00	0.00	3
1147	0.00	0.00	0.00	3
1148	0.00	0.00	0.00	1

1149	0.00	0.00	0.00	3
1150	0.00	0.00	0.00	7
1151	0.00	0.00	0.00	3
1152	1.00	1.00	1.00	4
1153	1.00	0.33	0.50	3
1154	0.00	0.00	0.00	6
1155	1.00	0.25	0.40	4
1156	1.00	0.33	0.50	6
1157	0.00	0.00	0.00	3
1158	0.00	0.00	0.00	4
1159	0.00	0.00	0.00	1
1160	1.00	0.50	0.67	2
1161	0.00	0.00	0.00	2
1162	0.00	0.00	0.00	3
1163	0.00	0.00	0.00	1
1164	0.00	0.00	0.00	1
1165	0.00	0.00	0.00	1
1166	0.00	0.00	0.00	1
1167	0.00	0.00	0.00	4
1168	1.00	0.50	0.67	4
1169	0.00	0.00	0.00	4
1170	0.50	0.50	0.50	2
1171	0.00	0.00	0.00	4
1172	0.00	0.00	0.00	3
1173	0.00	0.00	0.00	2
1174	1.00	1.00	1.00	1
1175	0.00	0.00	0.00	2
1176	0.00	0.00	0.00	1
1177	0.50	0.25	0.33	4
1178	0.00	0.00	0.00	2
1179	0.00	0.00	0.00	3
1180	0.00	0.00	0.00	5
1181	0.00	0.00	0.00	4
1182	0.00	0.00	0.00	4
1183	0.00	0.00	0.00	4
1184	0.00	0.00	0.00	3
1185	0.00	0.00	0.00	1
1186	0.00	0.00	0.00	2
1187	1.00	0.33	0.50	6
1188	0.00	0.00	0.00	2
1189	0.00	0.00	0.00	6
1190	0.00	0.00	0.00	4
1191	0.00	0.00	0.00	4
1192	0.00	0.00	0.00	2
1193	0.00	0.00	0.00	8
1194	0.00	0.00	0.00	3
1195	0.00	0.00	0.00	2
1196	0.00	0.00	0.00	1
1197	0.00	0.00	0.00	4
1198	0.00	0.00	0.00	3
1199	0.00	0.00	0.00	5
1200	0.00	0.00	0.00	0
1201	0.00	0.00	0.00	3
1202	0.00	0.00	0.00	3
1203	0.67	0.67	0.67	3
1204	1.00	0.17	0.29	6
1205	0.00	0.00	0.00	3
1206	0.00	0.00	0.00	1
1207	0.00	0.00	0.00	1
1208	0.00	0.00	0.00	5
1209	1.00	0.33	0.50	3
1210	0.00	0.00	0.00	0
1211	0.00	0.00	0.00	3
1212	0.00	0.00	0.00	3
1213	0.00	0.00	0.00	4
1214	1.00	0.25	0.40	4
1215	0.50	1.00	0.67	1
1216	0.00	0.00	0.00	2
1217	0.00	0.00	0.00	3
1218	0.00	0.00	0.00	5
1219	0.00	0.00	0.00	5
1220	0.00	0.00	0.00	3
1221	0.00	0.00	0.00	3
1222	0.00	0.00	0.00	5
1223	0.00	0.00	0.00	3
1224	0.00	0.00	0.00	6
1225	0.00	0.00	0.00	5

1226	0.00	0.00	0.00	5
1227	0.00	0.00	0.00	3
1228	0.00	0.00	0.00	4
1229	0.00	0.00	0.00	3
1230	0.00	0.00	0.00	3
1231	0.00	0.00	0.00	3
1232	1.00	0.50	0.67	2
1233	0.00	0.00	0.00	5
1234	0.50	0.33	0.40	3
1235	0.00	0.00	0.00	3
1236	0.00	0.00	0.00	3
1237	0.75	0.75	0.75	4
1238	0.00	0.00	0.00	6
1239	0.00	0.00	0.00	2
1240	0.00	0.00	0.00	1
1241	0.00	0.00	0.00	4
1242	0.00	0.00	0.00	5
1243	1.00	0.50	0.67	4
1244	0.00	0.00	0.00	4
1245	0.00	0.00	0.00	3
1246	0.00	0.00	0.00	3
1247	1.00	0.20	0.33	5
1248	1.00	0.20	0.33	5
1249	0.00	0.00	0.00	3
1250	0.00	0.00	0.00	2
1251	0.00	0.00	0.00	2
1252	0.00	0.00	0.00	2
1253	0.00	0.00	0.00	3
1254	0.00	0.00	0.00	5
1255	0.00	0.00	0.00	1
1256	1.00	0.50	0.67	4
1257	0.50	0.33	0.40	3
1258	0.00	0.00	0.00	4
1259	0.00	0.00	0.00	3
1260	1.00	0.67	0.80	3
1261	0.00	0.00	0.00	1
1262	0.00	0.00	0.00	4
1263	0.00	0.00	0.00	2
1264	0.00	0.00	0.00	4
1265	0.00	0.00	0.00	5
1266	0.00	0.00	0.00	3
1267	0.00	0.00	0.00	5
1268	0.00	0.00	0.00	2
1269	0.00	0.00	0.00	1
1270	0.00	0.00	0.00	1
1271	0.00	0.00	0.00	3
1272	0.00	0.00	0.00	4
1273	0.00	0.00	0.00	5
1274	0.00	0.00	0.00	1
1275	0.00	0.00	0.00	6
1276	0.00	0.00	0.00	1
1277	0.00	0.00	0.00	3
1278	1.00	0.67	0.80	3
1279	0.00	0.00	0.00	5
1280	1.00	0.50	0.67	4
1281	1.00	0.25	0.40	4
1282	1.00	0.33	0.50	3
1283	0.67	1.00	0.80	2
1284	0.50	0.25	0.33	4
1285	0.00	0.00	0.00	3
1286	0.00	0.00	0.00	7
1287	0.00	0.00	0.00	2
1288	0.00	0.00	0.00	1
1289	0.00	0.00	0.00	2
1290	0.00	0.00	0.00	6
1291	0.00	0.00	0.00	4
1292	1.00	0.20	0.33	5
1293	0.00	0.00	0.00	4
1294	1.00	0.50	0.67	2
1295	0.00	0.00	0.00	3
1296	0.00	0.00	0.00	4
1297	1.00	1.00	1.00	2
1298	0.00	0.00	0.00	2
1299	0.00	0.00	0.00	2
1300	0.00	0.00	0.00	3
1301	0.00	0.00	0.00	2
1302	0.00	0.00	0.00	6

1303	0.00	0.00	0.00	1
1304	1.00	0.50	0.67	4
1305	0.00	0.00	0.00	2
1306	0.25	0.25	0.25	4
1307	0.00	0.00	0.00	4
1308	1.00	0.75	0.86	4
1309	0.00	0.00	0.00	3
1310	0.00	0.00	0.00	1
1311	0.00	0.00	0.00	5
1312	0.00	0.00	0.00	5
1313	1.00	0.25	0.40	4
1314	0.00	0.00	0.00	3
1315	0.00	0.00	0.00	2
1316	0.00	0.00	0.00	2
1317	0.00	0.00	0.00	3
1318	1.00	0.50	0.67	2
1319	0.00	0.00	0.00	7
1320	0.00	0.00	0.00	3
1321	0.00	0.00	0.00	1
1322	0.00	0.00	0.00	2
1323	0.00	0.00	0.00	3
1324	0.00	0.00	0.00	5
1325	1.00	1.00	1.00	1
1326	0.00	0.00	0.00	1
1327	0.00	0.00	0.00	2
1328	0.00	0.00	0.00	2
1329	1.00	0.33	0.50	3
1330	0.00	0.00	0.00	5
1331	0.00	0.00	0.00	2
1332	0.00	0.00	0.00	5
1333	0.00	0.00	0.00	0
1334	0.00	0.00	0.00	5
1335	0.00	0.00	0.00	3
1336	0.00	0.00	0.00	2
1337	0.00	0.00	0.00	5
1338	0.00	0.00	0.00	4
1339	1.00	0.50	0.67	2
1340	0.00	0.00	0.00	1
1341	0.00	0.00	0.00	0
1342	0.00	0.00	0.00	4
1343	0.00	0.00	0.00	2
1344	0.00	0.00	0.00	5
1345	1.00	0.33	0.50	3
1346	1.00	0.20	0.33	5
1347	0.00	0.00	0.00	1
1348	0.00	0.00	0.00	6
1349	0.00	0.00	0.00	1
1350	0.00	0.00	0.00	0
1351	0.00	0.00	0.00	4
1352	0.00	0.00	0.00	2
1353	0.00	0.00	0.00	2
1354	0.50	0.67	0.57	3
1355	0.00	0.00	0.00	4
1356	0.00	0.00	0.00	2
1357	0.00	0.00	0.00	0
1358	0.00	0.00	0.00	2
1359	0.00	0.00	0.00	2
1360	0.00	0.00	0.00	4
1361	0.00	0.00	0.00	1
1362	0.00	0.00	0.00	5
1363	1.00	0.50	0.67	2
1364	0.00	0.00	0.00	3
1365	0.00	0.00	0.00	5
1366	0.00	0.00	0.00	1
1367	0.00	0.00	0.00	0
1368	0.00	0.00	0.00	5
1369	0.00	0.00	0.00	2
1370	0.00	0.00	0.00	2
1371	0.00	0.00	0.00	1
1372	0.50	0.20	0.29	5
1373	0.00	0.00	0.00	1
1374	0.00	0.00	0.00	5
1375	0.00	0.00	0.00	0
1376	1.00	0.33	0.50	3
1377	0.00	0.00	0.00	1
1378	0.00	0.00	0.00	1
1379	0.00	0.00	0.00	3

1380	0.00	0.00	0.00	2
1381	1.00	0.25	0.40	4
1382	0.00	0.00	0.00	5
1383	0.00	0.00	0.00	1
1384	0.00	0.00	0.00	1
1385	1.00	0.33	0.50	3
1386	0.00	0.00	0.00	5
1387	0.00	0.00	0.00	5
1388	0.00	0.00	0.00	2
1389	0.00	0.00	0.00	2
1390	0.50	0.33	0.40	3
1391	0.00	0.00	0.00	3
1392	0.00	0.00	0.00	4
1393	0.00	0.00	0.00	4
1394	0.00	0.00	0.00	2
1395	1.00	0.67	0.80	3
1396	0.00	0.00	0.00	3
1397	0.50	1.00	0.67	1
1398	0.00	0.00	0.00	2
1399	0.67	1.00	0.80	2
1400	0.00	0.00	0.00	3
1401	0.00	0.00	0.00	2
1402	1.00	0.33	0.50	3
1403	1.00	0.33	0.50	3
1404	0.67	0.50	0.57	4
1405	0.00	0.00	0.00	1
1406	0.00	0.00	0.00	2
1407	0.00	0.00	0.00	3
1408	0.00	0.00	0.00	4
1409	1.00	0.33	0.50	3
1410	0.00	0.00	0.00	1
1411	0.00	0.00	0.00	0
1412	0.00	0.00	0.00	3
1413	0.50	0.33	0.40	3
1414	0.00	0.00	0.00	2
1415	1.00	0.20	0.33	5
1416	0.00	0.00	0.00	3
1417	0.00	0.00	0.00	3
1418	0.00	0.00	0.00	2
1419	0.00	0.00	0.00	2
1420	0.00	0.00	0.00	3
1421	0.00	0.00	0.00	3
1422	0.00	0.00	0.00	2
1423	0.00	0.00	0.00	1
1424	0.00	0.00	0.00	5
1425	1.00	0.50	0.67	2
1426	0.50	0.50	0.50	2
1427	0.00	0.00	0.00	2
1428	0.00	0.00	0.00	2
1429	0.00	0.00	0.00	3
1430	0.00	0.00	0.00	1
1431	0.50	0.50	0.50	2
1432	0.00	0.00	0.00	4
1433	0.50	0.33	0.40	3
1434	0.00	0.00	0.00	4
1435	0.00	0.00	0.00	4
1436	0.00	0.00	0.00	1
1437	0.00	0.00	0.00	3
1438	0.00	0.00	0.00	2
1439	0.00	0.00	0.00	3
1440	0.00	0.00	0.00	2
1441	0.00	0.00	0.00	2
1442	1.00	0.40	0.57	5
1443	1.00	0.33	0.50	3
1444	0.00	0.00	0.00	4
1445	0.50	0.50	0.50	2
1446	0.00	0.00	0.00	5
1447	0.00	0.00	0.00	0
1448	0.00	0.00	0.00	3
1449	0.00	0.00	0.00	3
1450	0.00	0.00	0.00	2
1451	0.00	0.00	0.00	4
1452	0.00	0.00	0.00	4
1453	0.00	0.00	0.00	1
1454	1.00	0.33	0.50	3
1455	0.00	0.00	0.00	3
1456	0.33	0.50	0.40	2

1457	1.00	0.60	0.75	5
1458	0.00	0.00	0.00	2
1459	0.00	0.00	0.00	3
1460	0.00	0.00	0.00	1
1461	0.50	0.33	0.40	3
1462	0.00	0.00	0.00	4
1463	0.00	0.00	0.00	1
1464	0.00	0.00	0.00	2
1465	0.00	0.00	0.00	1
1466	0.00	0.00	0.00	4
1467	0.00	0.00	0.00	2
1468	0.00	0.00	0.00	3
1469	0.00	0.00	0.00	3
1470	0.00	0.00	0.00	2
1471	0.00	0.00	0.00	3
1472	0.00	0.00	0.00	4
1473	0.00	0.00	0.00	1
1474	0.00	0.00	0.00	3
1475	0.00	0.00	0.00	2
1476	0.50	0.33	0.40	3
1477	0.00	0.00	0.00	2
1478	1.00	0.50	0.67	2
1479	0.00	0.00	0.00	2
1480	0.00	0.00	0.00	2
1481	0.00	0.00	0.00	3
1482	0.00	0.00	0.00	4
1483	0.00	0.00	0.00	1
1484	0.00	0.00	0.00	4
1485	0.00	0.00	0.00	2
1486	0.00	0.00	0.00	2
1487	0.00	0.00	0.00	1
1488	1.00	0.25	0.40	4
1489	0.00	0.00	0.00	3
1490	0.00	0.00	0.00	4
1491	0.00	0.00	0.00	2
1492	0.00	0.00	0.00	4
1493	0.00	0.00	0.00	2
1494	0.00	0.00	0.00	2
1495	0.00	0.00	0.00	4
1496	0.00	0.00	0.00	4
1497	0.00	0.00	0.00	2
1498	0.00	0.00	0.00	4
1499	0.00	0.00	0.00	3
1500	0.00	0.00	0.00	6
1501	0.00	0.00	0.00	4
1502	0.00	0.00	0.00	5
1503	0.00	0.00	0.00	4
1504	0.00	0.00	0.00	3
1505	0.00	0.00	0.00	1
1506	0.00	0.00	0.00	1
1507	1.00	1.00	1.00	2
1508	0.00	0.00	0.00	1
1509	0.00	0.00	0.00	2
1510	0.00	0.00	0.00	2
1511	0.00	0.00	0.00	4
1512	1.00	0.50	0.67	2
1513	0.00	0.00	0.00	3
1514	0.00	0.00	0.00	4
1515	0.00	0.00	0.00	1
1516	0.00	0.00	0.00	3
1517	0.00	0.00	0.00	1
1518	0.00	0.00	0.00	3
1519	0.00	0.00	0.00	3
1520	0.00	0.00	0.00	6
1521	0.00	0.00	0.00	3
1522	0.00	0.00	0.00	3
1523	0.00	0.00	0.00	5
1524	0.00	0.00	0.00	3
1525	0.00	0.00	0.00	0
1526	0.00	0.00	0.00	1
1527	0.00	0.00	0.00	2
1528	0.00	0.00	0.00	6
1529	1.00	0.67	0.80	3
1530	0.00	0.00	0.00	2
1531	0.00	0.00	0.00	3
1532	1.00	0.25	0.40	4
1533	0.00	0.00	0.00	2

1534	0.00	0.00	0.00	4
1535	0.00	0.00	0.00	4
1536	0.00	0.00	0.00	1
1537	0.00	0.00	0.00	0
1538	0.00	0.00	0.00	2
1539	0.50	1.00	0.67	1
1540	1.00	0.33	0.50	3
1541	0.00	0.00	0.00	1
1542	0.00	0.00	0.00	3
1543	0.00	0.00	0.00	3
1544	0.00	0.00	0.00	3
1545	0.00	0.00	0.00	6
1546	0.00	0.00	0.00	3
1547	0.00	0.00	0.00	1
1548	0.00	0.00	0.00	3
1549	0.00	0.00	0.00	2
1550	0.00	0.00	0.00	2
1551	0.00	0.00	0.00	2
1552	0.00	0.00	0.00	1
1553	1.00	0.33	0.50	3
1554	0.00	0.00	0.00	0
1555	0.00	0.00	0.00	2
1556	1.00	0.17	0.29	6
1557	0.00	0.00	0.00	0
1558	0.00	0.00	0.00	0
1559	0.00	0.00	0.00	3
1560	0.00	0.00	0.00	1
1561	0.00	0.00	0.00	1
1562	0.00	0.00	0.00	1
1563	0.00	0.00	0.00	1
1564	0.00	0.00	0.00	3
1565	0.00	0.00	0.00	2
1566	0.00	0.00	0.00	3
1567	0.00	0.00	0.00	1
1568	0.00	0.00	0.00	2
1569	0.00	0.00	0.00	4
1570	0.00	0.00	0.00	1
1571	0.00	0.00	0.00	3
1572	0.00	0.00	0.00	3
1573	1.00	0.50	0.67	2
1574	0.00	0.00	0.00	2
1575	0.00	0.00	0.00	0
1576	0.00	0.00	0.00	4
1577	0.00	0.00	0.00	1
1578	0.00	0.00	0.00	2
1579	0.00	0.00	0.00	4
1580	1.00	0.50	0.67	2
1581	0.00	0.00	0.00	5
1582	0.00	0.00	0.00	3
1583	0.00	0.00	0.00	5
1584	0.00	0.00	0.00	0
1585	0.50	0.50	0.50	2
1586	0.00	0.00	0.00	1
1587	0.00	0.00	0.00	2
1588	0.00	0.00	0.00	2
1589	0.00	0.00	0.00	3
1590	0.00	0.00	0.00	2
1591	1.00	0.50	0.67	4
1592	0.00	0.00	0.00	0
1593	0.00	0.00	0.00	2
1594	0.00	0.00	0.00	2
1595	0.00	0.00	0.00	3
1596	0.00	0.00	0.00	3
1597	0.00	0.00	0.00	3
1598	0.00	0.00	0.00	2
1599	0.00	0.00	0.00	2
1600	1.00	0.33	0.50	3
1601	0.00	0.00	0.00	2
1602	0.00	0.00	0.00	1
1603	0.00	0.00	0.00	1
1604	0.00	0.00	0.00	4
1605	0.00	0.00	0.00	2
1606	0.00	0.00	0.00	4
1607	0.00	0.00	0.00	1
1608	0.00	0.00	0.00	0
1609	0.00	0.00	0.00	2
1610	0.00	0.00	0.00	1

1611	0.00	0.00	0.00	3
1612	0.00	0.00	0.00	2
1613	0.00	0.00	0.00	3
1614	0.00	0.00	0.00	3
1615	1.00	0.50	0.67	2
1616	1.00	0.50	0.67	2
1617	0.00	0.00	0.00	3
1618	0.00	0.00	0.00	0
1619	0.00	0.00	0.00	0
1620	0.00	0.00	0.00	0
1621	1.00	0.33	0.50	3
1622	0.00	0.00	0.00	1
1623	0.00	0.00	0.00	3
1624	0.00	0.00	0.00	1
1625	0.00	0.00	0.00	2
1626	0.00	0.00	0.00	0
1627	0.00	0.00	0.00	1
1628	0.00	0.00	0.00	2
1629	1.00	0.33	0.50	3
1630	0.00	0.00	0.00	2
1631	1.00	0.50	0.67	2
1632	0.00	0.00	0.00	1
1633	1.00	0.50	0.67	2
1634	0.00	0.00	0.00	3
1635	0.00	0.00	0.00	2
1636	0.00	0.00	0.00	3
1637	0.00	0.00	0.00	3
1638	0.00	0.00	0.00	1
1639	0.00	0.00	0.00	1
1640	0.00	0.00	0.00	3
1641	0.00	0.00	0.00	3
1642	0.00	0.00	0.00	3
1643	1.00	0.33	0.50	3
1644	0.00	0.00	0.00	1
1645	0.00	0.00	0.00	3
1646	1.00	0.50	0.67	2
1647	0.00	0.00	0.00	1
1648	0.00	0.00	0.00	1
1649	0.00	0.00	0.00	0
1650	1.00	1.00	1.00	1
1651	0.00	0.00	0.00	1
1652	1.00	1.00	1.00	1
1653	0.00	0.00	0.00	3
1654	0.00	0.00	0.00	2
1655	0.00	0.00	0.00	1
1656	0.00	0.00	0.00	2
1657	0.00	0.00	0.00	2
1658	0.00	0.00	0.00	2
1659	1.00	0.33	0.50	3
1660	0.00	0.00	0.00	1
1661	0.00	0.00	0.00	3
1662	0.00	0.00	0.00	1
1663	1.00	0.33	0.50	3
1664	0.00	0.00	0.00	1
1665	0.00	0.00	0.00	1
1666	0.00	0.00	0.00	0
1667	0.00	0.00	0.00	2
1668	0.00	0.00	0.00	1
1669	0.00	0.00	0.00	1
1670	0.00	0.00	0.00	2
1671	0.00	0.00	0.00	2
1672	0.00	0.00	0.00	6
1673	0.00	0.00	0.00	3
1674	0.00	0.00	0.00	1
1675	0.00	0.00	0.00	2
1676	0.00	0.00	0.00	0
1677	0.00	0.00	0.00	3
1678	0.00	0.00	0.00	5
1679	0.00	0.00	0.00	1
1680	0.00	0.00	0.00	4
1681	0.00	0.00	0.00	3
1682	0.00	0.00	0.00	1
1683	0.00	0.00	0.00	2
1684	1.00	0.25	0.40	4
1685	0.00	0.00	0.00	2
1686	0.00	0.00	0.00	2
1687	0.00	0.00	0.00	1

1688	0.00	0.00	0.00	1
1689	0.00	0.00	0.00	3
1690	0.00	0.00	0.00	4
1691	0.00	0.00	0.00	0
1692	0.00	0.00	0.00	0
1693	0.00	0.00	0.00	2
1694	0.00	0.00	0.00	1
1695	1.00	1.00	1.00	1
1696	0.00	0.00	0.00	3
1697	0.00	0.00	0.00	4
1698	0.00	0.00	0.00	1
1699	0.00	0.00	0.00	3
1700	0.00	0.00	0.00	0
1701	0.00	0.00	0.00	1
1702	0.00	0.00	0.00	6
1703	1.00	1.00	1.00	1
1704	0.00	0.00	0.00	2
1705	0.00	0.00	0.00	3
1706	0.00	0.00	0.00	3
1707	0.00	0.00	0.00	0
1708	0.00	0.00	0.00	1
1709	0.00	0.00	0.00	0
1710	0.00	0.00	0.00	1
1711	1.00	0.50	0.67	2
1712	0.00	0.00	0.00	2
1713	0.00	0.00	0.00	0
1714	0.00	0.00	0.00	1
1715	0.00	0.00	0.00	2
1716	0.00	0.00	0.00	5
1717	0.00	0.00	0.00	5
1718	0.00	0.00	0.00	2
1719	0.00	0.00	0.00	4
1720	0.00	0.00	0.00	3
1721	1.00	0.25	0.40	4
1722	0.00	0.00	0.00	1
1723	0.00	0.00	0.00	2
1724	1.00	0.50	0.67	2
1725	0.00	0.00	0.00	3
1726	0.00	0.00	0.00	2
1727	0.00	0.00	0.00	1
1728	0.00	0.00	0.00	2
1729	0.00	0.00	0.00	4
1730	0.00	0.00	0.00	3
1731	0.00	0.00	0.00	1
1732	0.00	0.00	0.00	0
1733	0.00	0.00	0.00	1
1734	0.00	0.00	0.00	1
1735	0.00	0.00	0.00	3
1736	0.00	0.00	0.00	0
1737	0.00	0.00	0.00	3
1738	0.00	0.00	0.00	2
1739	0.00	0.00	0.00	3
1740	1.00	0.33	0.50	3
1741	0.00	0.00	0.00	1
1742	0.00	0.00	0.00	0
1743	0.00	0.00	0.00	3
1744	0.00	0.00	0.00	2
1745	0.00	0.00	0.00	2
1746	0.00	0.00	0.00	4
1747	0.00	0.00	0.00	3
1748	0.00	0.00	0.00	1
1749	0.00	0.00	0.00	4
1750	1.00	1.00	1.00	1
1751	0.00	0.00	0.00	0
1752	0.00	0.00	0.00	3
1753	0.00	0.00	0.00	5
1754	0.00	0.00	0.00	3
1755	0.00	0.00	0.00	1
1756	0.00	0.00	0.00	2
1757	0.00	0.00	0.00	6
1758	0.00	0.00	0.00	1
1759	0.00	0.00	0.00	1
1760	0.00	0.00	0.00	1
1761	0.00	0.00	0.00	0
1762	0.00	0.00	0.00	3
1763	0.00	0.00	0.00	1
1764	0.00	0.00	0.00	2

1765	0.00	0.00	0.00	2
1766	0.00	0.00	0.00	3
1767	0.00	0.00	0.00	3
1768	0.00	0.00	0.00	0
1769	1.00	0.25	0.40	4
1770	0.00	0.00	0.00	1
1771	0.00	0.00	0.00	3
1772	0.00	0.00	0.00	1
1773	1.00	0.50	0.67	2
1774	0.00	0.00	0.00	1
1775	0.00	0.00	0.00	2
1776	0.00	0.00	0.00	3
1777	0.00	0.00	0.00	2
1778	0.00	0.00	0.00	1
1779	0.00	0.00	0.00	0
1780	0.00	0.00	0.00	4
1781	0.00	0.00	0.00	2
1782	0.00	0.00	0.00	6
1783	0.00	0.00	0.00	3
1784	0.00	0.00	0.00	1
1785	0.00	0.00	0.00	1
1786	0.00	0.00	0.00	1
1787	0.00	0.00	0.00	1
1788	0.00	0.00	0.00	4
1789	0.00	0.00	0.00	3
1790	0.00	0.00	0.00	3
1791	0.00	0.00	0.00	2
1792	0.00	0.00	0.00	3
1793	0.00	0.00	0.00	1
1794	0.00	0.00	0.00	1
1795	0.00	0.00	0.00	2
1796	0.00	0.00	0.00	6
1797	0.00	0.00	0.00	0
1798	0.00	0.00	0.00	2
1799	0.00	0.00	0.00	3
1800	0.00	0.00	0.00	3
1801	0.00	0.00	0.00	2
1802	0.00	0.00	0.00	3
1803	1.00	1.00	1.00	4
1804	0.00	0.00	0.00	2
1805	0.00	0.00	0.00	0
1806	0.00	0.00	0.00	2
1807	0.00	0.00	0.00	2
1808	0.00	0.00	0.00	1
1809	0.00	0.00	0.00	3
1810	0.00	0.00	0.00	2
1811	0.00	0.00	0.00	0
1812	0.00	0.00	0.00	1
1813	0.00	0.00	0.00	4
1814	0.00	0.00	0.00	5
1815	0.00	0.00	0.00	3
1816	0.00	0.00	0.00	2
1817	0.00	0.00	0.00	0
1818	0.00	0.00	0.00	0
1819	0.00	0.00	0.00	1
1820	0.00	0.00	0.00	2
1821	0.00	0.00	0.00	2
1822	0.00	0.00	0.00	3
1823	0.00	0.00	0.00	2
1824	0.00	0.00	0.00	3
1825	0.00	0.00	0.00	3
1826	0.00	0.00	0.00	2
1827	0.00	0.00	0.00	3
1828	0.00	0.00	0.00	2
1829	0.00	0.00	0.00	1
1830	0.00	0.00	0.00	1
1831	0.00	0.00	0.00	2
1832	1.00	0.50	0.67	2
1833	0.00	0.00	0.00	4
1834	1.00	1.00	1.00	1
1835	0.00	0.00	0.00	1
1836	1.00	1.00	1.00	1
1837	0.00	0.00	0.00	2
1838	1.00	1.00	1.00	1
1839	0.00	0.00	0.00	3
1840	0.00	0.00	0.00	2
1841	0.00	0.00	0.00	2

1841	0.00	0.00	0.00	2
1842	0.00	0.00	0.00	3
1843	0.00	0.00	0.00	4
1844	0.00	0.00	0.00	4
1845	0.00	0.00	0.00	3
1846	1.00	0.33	0.50	3
1847	0.00	0.00	0.00	3
1848	0.00	0.00	0.00	2
1849	0.00	0.00	0.00	1
1850	0.00	0.00	0.00	1
1851	0.00	0.00	0.00	2
1852	0.00	0.00	0.00	2
1853	0.00	0.00	0.00	1
1854	1.00	0.50	0.67	2
1855	0.00	0.00	0.00	1
1856	0.00	0.00	0.00	2
1857	0.00	0.00	0.00	1
1858	0.00	0.00	0.00	1
1859	0.00	0.00	0.00	1
1860	0.00	0.00	0.00	2
1861	0.00	0.00	0.00	0
1862	0.00	0.00	0.00	1
1863	0.00	0.00	0.00	2
1864	1.00	0.33	0.50	3
1865	0.00	0.00	0.00	1
1866	0.00	0.00	0.00	1
1867	1.00	1.00	1.00	2
1868	0.00	0.00	0.00	2
1869	0.00	0.00	0.00	5
1870	0.00	0.00	0.00	4
1871	0.00	0.00	0.00	2
1872	0.00	0.00	0.00	3
1873	0.00	0.00	0.00	1
1874	0.00	0.00	0.00	3
1875	0.00	0.00	0.00	2
1876	1.00	0.33	0.50	3
1877	0.00	0.00	0.00	1
1878	0.00	0.00	0.00	1
1879	0.00	0.00	0.00	0
1880	0.00	0.00	0.00	1
1881	0.00	0.00	0.00	3
1882	0.00	0.00	0.00	2
1883	1.00	0.25	0.40	4
1884	0.67	1.00	0.80	2
1885	0.00	0.00	0.00	3
1886	0.00	0.00	0.00	1
1887	0.00	0.00	0.00	2
1888	0.00	0.00	0.00	5
1889	0.00	0.00	0.00	3
1890	0.00	0.00	0.00	2
1891	0.00	0.00	0.00	3
1892	0.00	0.00	0.00	0
1893	0.00	0.00	0.00	3
1894	0.00	0.00	0.00	2
1895	0.00	0.00	0.00	2
1896	0.00	0.00	0.00	2
1897	0.00	0.00	0.00	1
1898	0.00	0.00	0.00	4
1899	0.00	0.00	0.00	1
1900	1.00	1.00	1.00	1
1901	0.00	0.00	0.00	4
1902	0.00	0.00	0.00	2
1903	0.00	0.00	0.00	2
1904	0.00	0.00	0.00	3
1905	1.00	1.00	1.00	1
1906	0.00	0.00	0.00	1
1907	0.00	0.00	0.00	0
1908	0.00	0.00	0.00	2
1909	0.00	0.00	0.00	2
1910	0.00	0.00	0.00	4
1911	0.00	0.00	0.00	2
1912	0.00	0.00	0.00	4
1913	0.00	0.00	0.00	2
1914	1.00	0.50	0.67	2
1915	0.00	0.00	0.00	2
1916	0.00	0.00	0.00	1
1917	0.00	0.00	0.00	4
1918	0.00	0.00	0.00	4

1918	0.00	0.00	0.00	1
1919	0.00	0.00	0.00	2
1920	0.00	0.00	0.00	3
1921	0.00	0.00	0.00	1
1922	0.00	0.00	0.00	3
1923	1.00	1.00	1.00	1
1924	0.00	0.00	0.00	1
1925	0.00	0.00	0.00	2
1926	0.00	0.00	0.00	0
1927	0.00	0.00	0.00	1
1928	0.00	0.00	0.00	1
1929	0.00	0.00	0.00	1
1930	0.00	0.00	0.00	2
1931	0.00	0.00	0.00	2
1932	0.00	0.00	0.00	1
1933	0.00	0.00	0.00	1
1934	0.00	0.00	0.00	2
1935	0.00	0.00	0.00	4
1936	0.00	0.00	0.00	3
1937	0.00	0.00	0.00	3
1938	0.00	0.00	0.00	1
1939	0.00	0.00	0.00	4
1940	0.00	0.00	0.00	1
1941	0.00	0.00	0.00	2
1942	0.00	0.00	0.00	2
1943	0.00	0.00	0.00	4
1944	0.00	0.00	0.00	2
1945	0.00	0.00	0.00	2
1946	0.00	0.00	0.00	2
1947	0.00	0.00	0.00	3
1948	0.00	0.00	0.00	0
1949	0.00	0.00	0.00	1
1950	0.00	0.00	0.00	4
1951	0.00	0.00	0.00	2
1952	0.00	0.00	0.00	0
1953	0.00	0.00	0.00	2
1954	0.00	0.00	0.00	4
1955	0.00	0.00	0.00	3
1956	0.00	0.00	0.00	0
1957	0.00	0.00	0.00	2
1958	0.00	0.00	0.00	3
1959	0.00	0.00	0.00	2
1960	0.00	0.00	0.00	1
1961	0.00	0.00	0.00	1
1962	0.00	0.00	0.00	4
1963	0.00	0.00	0.00	2
1964	0.00	0.00	0.00	2
1965	0.00	0.00	0.00	2
1966	0.00	0.00	0.00	3
1967	0.00	0.00	0.00	1
1968	0.00	0.00	0.00	2
1969	0.00	0.00	0.00	3
1970	0.00	0.00	0.00	1
1971	0.00	0.00	0.00	2
1972	0.00	0.00	0.00	2
1973	1.00	1.00	1.00	1
1974	0.00	0.00	0.00	5
1975	0.00	0.00	0.00	1
1976	0.00	0.00	0.00	0
1977	0.00	0.00	0.00	1
1978	0.00	0.00	0.00	0
1979	0.00	0.00	0.00	1
1980	0.00	0.00	0.00	0
1981	0.00	0.00	0.00	0
1982	0.00	0.00	0.00	1
1983	0.00	0.00	0.00	2
1984	0.00	0.00	0.00	0
1985	0.00	0.00	0.00	0
1986	1.00	1.00	1.00	1
1987	1.00	0.50	0.67	2
1988	0.00	0.00	0.00	4
1989	0.00	0.00	0.00	3
1990	0.00	0.00	0.00	3
1991	1.00	1.00	1.00	1
1992	0.00	0.00	0.00	1
1993	1.00	1.00	1.00	1
1994	0.00	0.00	0.00	1
1995	0.00	0.00	0.00	2

1995	0.00	0.00	0.00	4
1996	0.00	0.00	0.00	1
1997	0.00	0.00	0.00	4
1998	0.00	0.00	0.00	2
1999	0.00	0.00	0.00	2
2000	0.00	0.00	0.00	0
2001	0.00	0.00	0.00	2
2002	0.00	0.00	0.00	2
2003	0.00	0.00	0.00	2
2004	0.00	0.00	0.00	2
2005	0.00	0.00	0.00	1
2006	0.00	0.00	0.00	0
2007	0.00	0.00	0.00	0
2008	0.00	0.00	0.00	2
2009	0.00	0.00	0.00	4
2010	0.00	0.00	0.00	5
2011	0.00	0.00	0.00	2
2012	0.00	0.00	0.00	0
2013	0.00	0.00	0.00	3
2014	0.00	0.00	0.00	3
2015	0.00	0.00	0.00	1
2016	0.00	0.00	0.00	1
2017	0.00	0.00	0.00	2
2018	0.00	0.00	0.00	2
2019	0.00	0.00	0.00	1
2020	0.00	0.00	0.00	3
2021	0.00	0.00	0.00	2
2022	0.00	0.00	0.00	1
2023	0.00	0.00	0.00	0
2024	0.00	0.00	0.00	2
2025	0.00	0.00	0.00	1
2026	0.00	0.00	0.00	5
2027	0.00	0.00	0.00	2
2028	0.00	0.00	0.00	1
2029	0.00	0.00	0.00	3
2030	0.00	0.00	0.00	4
2031	0.00	0.00	0.00	3
2032	0.00	0.00	0.00	1
2033	0.00	0.00	0.00	2
2034	0.00	0.00	0.00	3
2035	0.00	0.00	0.00	3
2036	0.00	0.00	0.00	0
2037	0.00	0.00	0.00	1
2038	0.00	0.00	0.00	5
2039	0.00	0.00	0.00	1
2040	0.00	0.00	0.00	3
2041	1.00	0.50	0.67	2
2042	0.00	0.00	0.00	2
2043	0.00	0.00	0.00	2
2044	0.00	0.00	0.00	3
2045	0.00	0.00	0.00	1
2046	1.00	0.50	0.67	2
2047	0.00	0.00	0.00	3
2048	1.00	0.50	0.67	2
2049	0.00	0.00	0.00	3
2050	0.00	0.00	0.00	0
2051	0.00	0.00	0.00	1
2052	0.00	0.00	0.00	1
2053	0.00	0.00	0.00	3
2054	0.00	0.00	0.00	0
2055	0.00	0.00	0.00	2
2056	0.00	0.00	0.00	3
2057	0.00	0.00	0.00	1
2058	0.00	0.00	0.00	0
2059	0.00	0.00	0.00	1
2060	0.00	0.00	0.00	2
2061	0.00	0.00	0.00	2
2062	0.00	0.00	0.00	2
2063	0.00	0.00	0.00	2
2064	0.00	0.00	0.00	2
2065	0.00	0.00	0.00	3
2066	0.00	0.00	0.00	0
2067	0.00	0.00	0.00	2
2068	0.00	0.00	0.00	1
2069	0.00	0.00	0.00	3
2070	0.00	0.00	0.00	2
2071	0.00	0.00	0.00	1
2072	0.00	0.00	0.00	0

2072	0.00	0.00	0.00	2
2073	0.00	0.00	0.00	3
2074	0.00	0.00	0.00	1
2075	0.00	0.00	0.00	2
2076	0.00	0.00	0.00	1
2077	0.00	0.00	0.00	2
2078	0.00	0.00	0.00	1
2079	0.00	0.00	0.00	2
2080	0.00	0.00	0.00	3
2081	0.00	0.00	0.00	3
2082	0.00	0.00	0.00	0
2083	0.00	0.00	0.00	3
2084	0.00	0.00	0.00	1
2085	0.00	0.00	0.00	4
2086	0.00	0.00	0.00	1
2087	0.00	0.00	0.00	3
2088	0.00	0.00	0.00	2
2089	1.00	1.00	1.00	1
2090	0.00	0.00	0.00	3
2091	0.00	0.00	0.00	1
2092	0.00	0.00	0.00	1
2093	0.00	0.00	0.00	0
2094	0.00	0.00	0.00	1
2095	0.00	0.00	0.00	3
2096	0.00	0.00	0.00	6
2097	0.00	0.00	0.00	0
2098	0.00	0.00	0.00	2
2099	0.00	0.00	0.00	3
2100	0.00	0.00	0.00	3
2101	0.00	0.00	0.00	4
2102	0.00	0.00	0.00	0
2103	0.00	0.00	0.00	1
2104	0.00	0.00	0.00	2
2105	0.00	0.00	0.00	1
2106	0.00	0.00	0.00	0
2107	0.00	0.00	0.00	2
2108	0.00	0.00	0.00	1
2109	0.00	0.00	0.00	2
2110	0.00	0.00	0.00	0
2111	0.00	0.00	0.00	2
2112	0.00	0.00	0.00	3
2113	0.00	0.00	0.00	3
2114	0.00	0.00	0.00	3
2115	0.00	0.00	0.00	5
2116	0.00	0.00	0.00	3
2117	0.00	0.00	0.00	0
2118	1.00	0.50	0.67	2
2119	0.00	0.00	0.00	0
2120	0.00	0.00	0.00	2
2121	0.00	0.00	0.00	0
2122	0.00	0.00	0.00	3
2123	0.00	0.00	0.00	2
2124	0.00	0.00	0.00	1
2125	0.00	0.00	0.00	1
2126	0.00	0.00	0.00	1
2127	0.00	0.00	0.00	1
2128	0.00	0.00	0.00	1
2129	1.00	0.50	0.67	2
2130	0.00	0.00	0.00	3
2131	0.00	0.00	0.00	3
2132	0.00	0.00	0.00	2
2133	0.00	0.00	0.00	2
2134	0.00	0.00	0.00	1
2135	0.00	0.00	0.00	2
2136	0.00	0.00	0.00	0
2137	0.00	0.00	0.00	0
2138	0.00	0.00	0.00	1
2139	0.00	0.00	0.00	1
2140	0.00	0.00	0.00	3
2141	0.00	0.00	0.00	2
2142	0.00	0.00	0.00	1
2143	0.00	0.00	0.00	2
2144	0.00	0.00	0.00	1
2145	0.00	0.00	0.00	1
2146	0.00	0.00	0.00	0
2147	0.00	0.00	0.00	1
2148	0.00	0.00	0.00	1
2149	0.00	0.00	0.00	0

2149	0.00	0.00	0.00	0
2150	0.00	0.00	0.00	1
2151	0.00	0.00	0.00	2
2152	0.00	0.00	0.00	3
2153	0.00	0.00	0.00	2
2154	0.00	0.00	0.00	1
2155	0.00	0.00	0.00	2
2156	0.00	0.00	0.00	3
2157	0.00	0.00	0.00	0
2158	0.00	0.00	0.00	3
2159	0.00	0.00	0.00	2
2160	0.00	0.00	0.00	3
2161	0.00	0.00	0.00	2
2162	1.00	0.50	0.67	2
2163	0.00	0.00	0.00	2
2164	0.00	0.00	0.00	2
2165	0.00	0.00	0.00	4
2166	1.00	1.00	1.00	1
2167	0.00	0.00	0.00	2
2168	0.00	0.00	0.00	4
2169	0.00	0.00	0.00	0
2170	0.00	0.00	0.00	0
2171	0.00	0.00	0.00	1
2172	0.00	0.00	0.00	1
2173	0.00	0.00	0.00	1
2174	0.00	0.00	0.00	0
2175	0.00	0.00	0.00	1
2176	0.00	0.00	0.00	1
2177	0.00	0.00	0.00	0
2178	0.00	0.00	0.00	1
2179	0.00	0.00	0.00	2
2180	0.00	0.00	0.00	1
2181	0.00	0.00	0.00	1
2182	0.00	0.00	0.00	3
2183	0.00	0.00	0.00	3
2184	0.00	0.00	0.00	1
2185	0.00	0.00	0.00	1
2186	0.00	0.00	0.00	1
2187	0.00	0.00	0.00	0
2188	0.00	0.00	0.00	1
2189	0.00	0.00	0.00	2
2190	0.00	0.00	0.00	1
2191	0.00	0.00	0.00	2
2192	0.00	0.00	0.00	1
2193	0.00	0.00	0.00	2
2194	0.00	0.00	0.00	0
2195	0.00	0.00	0.00	1
2196	0.00	0.00	0.00	2
2197	0.00	0.00	0.00	2
2198	0.00	0.00	0.00	1
2199	1.00	0.50	0.67	2
2200	0.00	0.00	0.00	3
2201	0.00	0.00	0.00	2
2202	0.00	0.00	0.00	2
2203	1.00	0.33	0.50	3
2204	0.00	0.00	0.00	2
2205	0.00	0.00	0.00	0
2206	0.00	0.00	0.00	2
2207	0.00	0.00	0.00	4
2208	0.00	0.00	0.00	2
2209	0.00	0.00	0.00	2
2210	0.00	0.00	0.00	1
2211	0.00	0.00	0.00	1
2212	1.00	1.00	1.00	1
2213	0.00	0.00	0.00	1
2214	0.00	0.00	0.00	1
2215	0.00	0.00	0.00	1
2216	0.00	0.00	0.00	4
2217	0.00	0.00	0.00	3
2218	0.00	0.00	0.00	2
2219	0.00	0.00	0.00	2
2220	0.00	0.00	0.00	3
2221	0.00	0.00	0.00	1
2222	0.00	0.00	0.00	3
2223	0.00	0.00	0.00	1
2224	0.00	0.00	0.00	1
2225	0.00	0.00	0.00	1
2226	0.00	0.00	0.00	0

2226	0.00	0.00	0.00	3
2227	1.00	1.00	1.00	1
2228	0.00	0.00	0.00	2
2229	0.00	0.00	0.00	3
2230	0.00	0.00	0.00	1
2231	0.00	0.00	0.00	4
2232	0.00	0.00	0.00	2
2233	0.00	0.00	0.00	1
2234	0.00	0.00	0.00	0
2235	0.00	0.00	0.00	2
2236	0.00	0.00	0.00	2
2237	0.00	0.00	0.00	2
2238	0.00	0.00	0.00	4
2239	0.00	0.00	0.00	0
2240	0.00	0.00	0.00	1
2241	0.00	0.00	0.00	1
2242	0.00	0.00	0.00	2
2243	0.00	0.00	0.00	2
2244	0.00	0.00	0.00	2
2245	0.00	0.00	0.00	1
2246	0.00	0.00	0.00	2
2247	0.00	0.00	0.00	1
2248	0.00	0.00	0.00	0
2249	0.00	0.00	0.00	0
2250	0.00	0.00	0.00	1
2251	0.00	0.00	0.00	2
2252	1.00	1.00	1.00	2
2253	0.00	0.00	0.00	2
2254	0.00	0.00	0.00	2
2255	0.00	0.00	0.00	1
2256	0.00	0.00	0.00	1
2257	0.00	0.00	0.00	0
2258	0.00	0.00	0.00	1
2259	0.00	0.00	0.00	1
2260	0.00	0.00	0.00	4
2261	0.00	0.00	0.00	4
2262	0.00	0.00	0.00	0
2263	0.00	0.00	0.00	1
2264	0.00	0.00	0.00	1
2265	0.00	0.00	0.00	4
2266	0.00	0.00	0.00	3
2267	0.00	0.00	0.00	4
2268	0.00	0.00	0.00	1
2269	1.00	0.33	0.50	3
2270	0.00	0.00	0.00	0
2271	0.00	0.00	0.00	3
2272	0.00	0.00	0.00	3
2273	0.00	0.00	0.00	1
2274	0.00	0.00	0.00	1
2275	0.00	0.00	0.00	1
2276	0.00	0.00	0.00	2
2277	0.00	0.00	0.00	2
2278	0.00	0.00	0.00	1
2279	0.00	0.00	0.00	2
2280	0.00	0.00	0.00	2
2281	0.00	0.00	0.00	1
2282	0.00	0.00	0.00	2
2283	0.00	0.00	0.00	3
2284	0.00	0.00	0.00	0
2285	0.00	0.00	0.00	2
2286	0.00	0.00	0.00	2
2287	0.00	0.00	0.00	3
2288	0.00	0.00	0.00	1
2289	0.00	0.00	0.00	0
2290	0.00	0.00	0.00	2
2291	0.00	0.00	0.00	1
2292	0.00	0.00	0.00	1
2293	0.00	0.00	0.00	1
2294	0.00	0.00	0.00	0
2295	0.00	0.00	0.00	2
2296	0.00	0.00	0.00	3
2297	0.00	0.00	0.00	0
2298	0.00	0.00	0.00	1
2299	0.00	0.00	0.00	2
2300	0.00	0.00	0.00	1
2301	0.00	0.00	0.00	2
2302	0.00	0.00	0.00	0
- - -	- - -	- - -	- - -	-

2303	0.00	0.00	0.00	2
2304	0.00	0.00	0.00	0
2305	0.00	0.00	0.00	4
2306	0.00	0.00	0.00	1
2307	0.00	0.00	0.00	1
2308	0.00	0.00	0.00	1
2309	0.00	0.00	0.00	2
2310	0.00	0.00	0.00	2
2311	0.00	0.00	0.00	3
2312	0.00	0.00	0.00	1
2313	0.00	0.00	0.00	1
2314	0.00	0.00	0.00	2
2315	0.00	0.00	0.00	1
2316	0.00	0.00	0.00	4
2317	0.00	0.00	0.00	0
2318	0.00	0.00	0.00	1
2319	0.00	0.00	0.00	1
2320	0.00	0.00	0.00	0
2321	0.00	0.00	0.00	2
2322	0.00	0.00	0.00	2
2323	0.00	0.00	0.00	4
2324	0.00	0.00	0.00	2
2325	0.00	0.00	0.00	1
2326	0.00	0.00	0.00	2
2327	0.00	0.00	0.00	2
2328	0.00	0.00	0.00	2
2329	0.00	0.00	0.00	0
2330	0.00	0.00	0.00	0
2331	0.00	0.00	0.00	2
2332	0.00	0.00	0.00	2
2333	0.00	0.00	0.00	1
2334	0.00	0.00	0.00	1
2335	0.00	0.00	0.00	0
2336	0.00	0.00	0.00	0
2337	0.00	0.00	0.00	3
2338	0.00	0.00	0.00	2
2339	0.00	0.00	0.00	0
2340	0.00	0.00	0.00	5
2341	0.00	0.00	0.00	1
2342	0.00	0.00	0.00	2
2343	0.00	0.00	0.00	0
2344	0.00	0.00	0.00	3
2345	0.00	0.00	0.00	3
2346	0.00	0.00	0.00	1
2347	0.00	0.00	0.00	2
2348	0.00	0.00	0.00	2
2349	0.00	0.00	0.00	2
2350	0.00	0.00	0.00	2
2351	0.00	0.00	0.00	2
2352	0.00	0.00	0.00	3
2353	0.00	0.00	0.00	2
2354	0.00	0.00	0.00	2
2355	0.00	0.00	0.00	1
2356	0.00	0.00	0.00	2
2357	0.00	0.00	0.00	2
2358	0.00	0.00	0.00	0
2359	0.00	0.00	0.00	1
2360	0.00	0.00	0.00	2
2361	0.00	0.00	0.00	2
2362	0.00	0.00	0.00	5
2363	0.00	0.00	0.00	1
2364	0.00	0.00	0.00	1
2365	0.00	0.00	0.00	0
2366	0.00	0.00	0.00	3
2367	0.00	0.00	0.00	3
2368	0.00	0.00	0.00	2
2369	0.00	0.00	0.00	2
2370	0.00	0.00	0.00	2
2371	0.00	0.00	0.00	2
2372	0.00	0.00	0.00	0
2373	0.00	0.00	0.00	2
2374	0.00	0.00	0.00	1
2375	0.00	0.00	0.00	0
2376	0.00	0.00	0.00	1
2377	0.00	0.00	0.00	0
2378	1.00	1.00	1.00	1
2379	0.00	0.00	0.00	1

2380	0.00	0.00	0.00	0
2381	0.00	0.00	0.00	1
2382	0.00	0.00	0.00	2
2383	0.00	0.00	0.00	2
2384	0.00	0.00	0.00	2
2385	0.00	0.00	0.00	2
2386	0.00	0.00	0.00	2
2387	0.00	0.00	0.00	0
2388	0.00	0.00	0.00	1
2389	0.00	0.00	0.00	0
2390	0.00	0.00	0.00	1
2391	0.00	0.00	0.00	0
2392	0.00	0.00	0.00	3
2393	0.00	0.00	0.00	1
2394	0.00	0.00	0.00	1
2395	0.00	0.00	0.00	1
2396	0.00	0.00	0.00	0
2397	0.00	0.00	0.00	2
2398	0.00	0.00	0.00	4
2399	0.00	0.00	0.00	1
2400	0.00	0.00	0.00	2
2401	0.00	0.00	0.00	0
2402	0.00	0.00	0.00	2
2403	0.00	0.00	0.00	1
2404	0.00	0.00	0.00	4
2405	0.00	0.00	0.00	2
2406	0.00	0.00	0.00	2
2407	0.00	0.00	0.00	4
2408	0.00	0.00	0.00	1
2409	0.00	0.00	0.00	0
2410	0.00	0.00	0.00	1
2411	0.00	0.00	0.00	1
2412	0.00	0.00	0.00	3
2413	0.00	0.00	0.00	2
2414	0.00	0.00	0.00	1
2415	0.00	0.00	0.00	1
2416	0.00	0.00	0.00	1
2417	0.00	0.00	0.00	1
2418	0.00	0.00	0.00	1
2419	0.00	0.00	0.00	2
2420	0.00	0.00	0.00	1
2421	0.00	0.00	0.00	1
2422	0.00	0.00	0.00	1
2423	0.00	0.00	0.00	1
2424	0.00	0.00	0.00	1
2425	0.00	0.00	0.00	2
2426	0.00	0.00	0.00	0
2427	0.00	0.00	0.00	3
2428	0.00	0.00	0.00	0
2429	0.00	0.00	0.00	1
2430	0.00	0.00	0.00	1
2431	1.00	0.50	0.67	2
2432	0.00	0.00	0.00	2
2433	0.00	0.00	0.00	0
2434	0.00	0.00	0.00	0
2435	0.00	0.00	0.00	1
2436	0.00	0.00	0.00	1
2437	0.00	0.00	0.00	0
2438	0.00	0.00	0.00	2
2439	0.00	0.00	0.00	3
2440	0.00	0.00	0.00	1
2441	0.00	0.00	0.00	4
2442	0.00	0.00	0.00	3
2443	0.00	0.00	0.00	5
2444	0.00	0.00	0.00	0
2445	0.00	0.00	0.00	0
2446	0.00	0.00	0.00	2
2447	0.00	0.00	0.00	4
2448	0.00	0.00	0.00	2
2449	0.00	0.00	0.00	0
2450	0.00	0.00	0.00	0
2451	0.00	0.00	0.00	0
2452	1.00	1.00	1.00	1
2453	0.00	0.00	0.00	2
2454	0.00	0.00	0.00	2
2455	0.00	0.00	0.00	3
2456	0.00	0.00	0.00	2

2457	0.00	0.00	0.00	0
2458	0.00	0.00	0.00	2
2459	0.00	0.00	0.00	2
2460	0.00	0.00	0.00	2
2461	0.00	0.00	0.00	2
2462	0.00	0.00	0.00	1
2463	0.00	0.00	0.00	1
2464	0.00	0.00	0.00	1
2465	0.00	0.00	0.00	0
2466	0.00	0.00	0.00	1
2467	0.00	0.00	0.00	1
2468	0.00	0.00	0.00	0
2469	0.00	0.00	0.00	1
2470	0.00	0.00	0.00	2
2471	0.00	0.00	0.00	0
2472	1.00	1.00	1.00	1
2473	0.00	0.00	0.00	2
2474	0.00	0.00	0.00	3
2475	0.00	0.00	0.00	2
2476	0.00	0.00	0.00	0
2477	0.00	0.00	0.00	2
2478	1.00	0.50	0.67	2
2479	0.00	0.00	0.00	0
2480	0.00	0.00	0.00	0
2481	0.00	0.00	0.00	1
2482	0.00	0.00	0.00	2
2483	0.00	0.00	0.00	1
2484	0.00	0.00	0.00	0
2485	1.00	1.00	1.00	1
2486	0.00	0.00	0.00	1
2487	0.00	0.00	0.00	4
2488	0.00	0.00	0.00	3
2489	0.00	0.00	0.00	0
2490	0.00	0.00	0.00	1
2491	0.00	0.00	0.00	2
2492	0.00	0.00	0.00	0
2493	0.00	0.00	0.00	2
2494	0.00	0.00	0.00	3
2495	0.00	0.00	0.00	1
2496	0.00	0.00	0.00	0
2497	0.00	0.00	0.00	1
2498	0.00	0.00	0.00	2
2499	0.00	0.00	0.00	1
2500	0.00	0.00	0.00	1
2501	0.00	0.00	0.00	0
2502	0.00	0.00	0.00	0
2503	0.00	0.00	0.00	2
2504	0.00	0.00	0.00	2
2505	0.00	0.00	0.00	1
2506	0.00	0.00	0.00	1
2507	0.00	0.00	0.00	2
2508	0.00	0.00	0.00	2
2509	0.00	0.00	0.00	1
2510	0.00	0.00	0.00	0
2511	0.00	0.00	0.00	1
2512	0.00	0.00	0.00	3
2513	0.00	0.00	0.00	1
2514	0.00	0.00	0.00	2
2515	0.00	0.00	0.00	1
2516	0.00	0.00	0.00	3
2517	0.00	0.00	0.00	1
2518	0.00	0.00	0.00	3
2519	0.00	0.00	0.00	1
2520	0.00	0.00	0.00	3
2521	0.00	0.00	0.00	2
2522	0.00	0.00	0.00	1
2523	0.00	0.00	0.00	1
2524	0.00	0.00	0.00	4
2525	0.00	0.00	0.00	3
2526	0.00	0.00	0.00	2
2527	0.00	0.00	0.00	0
2528	0.00	0.00	0.00	0
2529	0.00	0.00	0.00	0
2530	0.00	0.00	0.00	0
2531	0.00	0.00	0.00	4
2532	0.00	0.00	0.00	3
2533	0.00	0.00	0.00	2

2534	0.00	0.00	0.00	2
2535	0.00	0.00	0.00	1
2536	0.00	0.00	0.00	1
2537	0.00	0.00	0.00	2
2538	0.00	0.00	0.00	1
2539	0.00	0.00	0.00	3
2540	0.00	0.00	0.00	2
2541	0.00	0.00	0.00	2
2542	0.00	0.00	0.00	2
2543	0.00	0.00	0.00	1
2544	0.00	0.00	0.00	3
2545	0.00	0.00	0.00	2
2546	0.00	0.00	0.00	1
2547	0.00	0.00	0.00	2
2548	0.00	0.00	0.00	0
2549	0.00	0.00	0.00	1
2550	0.00	0.00	0.00	1
2551	0.00	0.00	0.00	3
2552	0.00	0.00	0.00	1
2553	0.00	0.00	0.00	4
2554	0.00	0.00	0.00	2
2555	0.00	0.00	0.00	1
2556	0.00	0.00	0.00	0
2557	0.00	0.00	0.00	1
2558	0.00	0.00	0.00	2
2559	0.00	0.00	0.00	2
2560	0.00	0.00	0.00	1
2561	0.00	0.00	0.00	2
2562	0.00	0.00	0.00	2
2563	0.00	0.00	0.00	1
2564	0.00	0.00	0.00	0
2565	0.00	0.00	0.00	2
2566	0.00	0.00	0.00	0
2567	0.00	0.00	0.00	3
2568	0.00	0.00	0.00	0
2569	0.00	0.00	0.00	0
2570	0.00	0.00	0.00	3
2571	0.00	0.00	0.00	0
2572	0.00	0.00	0.00	0
2573	0.00	0.00	0.00	1
2574	0.00	0.00	0.00	3
2575	0.00	0.00	0.00	2
2576	0.00	0.00	0.00	1
2577	0.00	0.00	0.00	1
2578	0.00	0.00	0.00	3
2579	0.00	0.00	0.00	3
2580	0.00	0.00	0.00	1
2581	0.00	0.00	0.00	2
2582	0.00	0.00	0.00	2
2583	0.00	0.00	0.00	2
2584	0.00	0.00	0.00	1
2585	0.00	0.00	0.00	2
2586	0.00	0.00	0.00	0
2587	0.00	0.00	0.00	0
2588	0.00	0.00	0.00	0
2589	0.00	0.00	0.00	2
2590	0.00	0.00	0.00	1
2591	0.00	0.00	0.00	1
2592	0.00	0.00	0.00	2
2593	0.00	0.00	0.00	1
2594	0.00	0.00	0.00	1
2595	0.00	0.00	0.00	4
2596	0.00	0.00	0.00	1
2597	0.00	0.00	0.00	2
2598	0.00	0.00	0.00	1
2599	0.00	0.00	0.00	0
2600	0.00	0.00	0.00	1
2601	0.00	0.00	0.00	1
2602	0.00	0.00	0.00	0
2603	0.00	0.00	0.00	3
2604	0.00	0.00	0.00	1
2605	0.00	0.00	0.00	3
2606	0.00	0.00	0.00	2
2607	0.00	0.00	0.00	2
2608	0.00	0.00	0.00	3
2609	1.00	0.50	0.67	2
2610	0.00	0.00	0.00	4

2611	0.00	0.00	0.00	3
2612	0.00	0.00	0.00	0
2613	0.00	0.00	0.00	4
2614	0.00	0.00	0.00	1
2615	0.00	0.00	0.00	1
2616	0.00	0.00	0.00	3
2617	0.00	0.00	0.00	1
2618	0.00	0.00	0.00	1
2619	0.00	0.00	0.00	3
2620	0.00	0.00	0.00	0
2621	0.00	0.00	0.00	2
2622	0.00	0.00	0.00	3
2623	0.00	0.00	0.00	0
2624	0.00	0.00	0.00	2
2625	0.00	0.00	0.00	2
2626	0.00	0.00	0.00	1
2627	0.00	0.00	0.00	2
2628	0.00	0.00	0.00	1
2629	0.00	0.00	0.00	1
2630	0.00	0.00	0.00	2
2631	0.00	0.00	0.00	1
2632	0.00	0.00	0.00	2
2633	0.00	0.00	0.00	2
2634	0.00	0.00	0.00	0
2635	0.00	0.00	0.00	3
2636	0.00	0.00	0.00	1
2637	0.00	0.00	0.00	1
2638	0.00	0.00	0.00	1
2639	0.00	0.00	0.00	0
2640	0.00	0.00	0.00	2
2641	1.00	0.50	0.67	2
2642	0.00	0.00	0.00	0
2643	0.00	0.00	0.00	1
2644	0.00	0.00	0.00	4
2645	0.00	0.00	0.00	0
2646	0.00	0.00	0.00	2
2647	0.00	0.00	0.00	3
2648	0.00	0.00	0.00	4
2649	0.00	0.00	0.00	1
2650	0.00	0.00	0.00	2
2651	0.00	0.00	0.00	0
2652	0.00	0.00	0.00	0
2653	0.00	0.00	0.00	1
2654	0.00	0.00	0.00	2
2655	0.00	0.00	0.00	0
2656	0.00	0.00	0.00	1
2657	0.00	0.00	0.00	0
2658	0.00	0.00	0.00	0
2659	0.00	0.00	0.00	2
2660	0.00	0.00	0.00	1
2661	0.00	0.00	0.00	0
2662	0.00	0.00	0.00	1
2663	0.00	0.00	0.00	0
2664	0.00	0.00	0.00	1
2665	0.00	0.00	0.00	0
2666	0.00	0.00	0.00	2
2667	0.00	0.00	0.00	2
2668	0.00	0.00	0.00	2
2669	0.00	0.00	0.00	1
2670	0.00	0.00	0.00	1
2671	0.00	0.00	0.00	1
2672	0.00	0.00	0.00	0
2673	0.00	0.00	0.00	1
2674	0.00	0.00	0.00	2
2675	0.00	0.00	0.00	2
2676	0.00	0.00	0.00	0
2677	0.00	0.00	0.00	0
2678	0.00	0.00	0.00	0
2679	0.00	0.00	0.00	0
2680	0.00	0.00	0.00	3
2681	0.00	0.00	0.00	0
2682	0.00	0.00	0.00	1
2683	0.00	0.00	0.00	0
2684	0.00	0.00	0.00	1
2685	0.00	0.00	0.00	1
2686	0.00	0.00	0.00	1
2687	0.00	0.00	0.00	2

2688	0.00	0.00	0.00	3
2689	0.00	0.00	0.00	1
2690	0.00	0.00	0.00	0
2691	0.00	0.00	0.00	1
2692	0.00	0.00	0.00	1
2693	0.00	0.00	0.00	1
2694	0.00	0.00	0.00	3
2695	0.00	0.00	0.00	1
2696	0.00	0.00	0.00	1
2697	0.00	0.00	0.00	2
2698	0.00	0.00	0.00	2
2699	0.00	0.00	0.00	1
2700	0.00	0.00	0.00	2
2701	0.00	0.00	0.00	1
2702	0.00	0.00	0.00	0
2703	0.00	0.00	0.00	1
2704	0.00	0.00	0.00	2
2705	0.00	0.00	0.00	1
2706	0.00	0.00	0.00	1
2707	0.00	0.00	0.00	2
2708	0.00	0.00	0.00	2
2709	0.00	0.00	0.00	2
2710	0.00	0.00	0.00	1
2711	0.00	0.00	0.00	3
2712	0.00	0.00	0.00	0
2713	0.00	0.00	0.00	2
2714	0.00	0.00	0.00	2
2715	0.00	0.00	0.00	1
2716	0.00	0.00	0.00	1
2717	0.00	0.00	0.00	0
2718	0.00	0.00	0.00	1
2719	0.00	0.00	0.00	0
2720	0.00	0.00	0.00	1
2721	0.00	0.00	0.00	2
2722	0.00	0.00	0.00	2
2723	0.00	0.00	0.00	1
2724	0.00	0.00	0.00	1
2725	0.00	0.00	0.00	0
2726	0.00	0.00	0.00	1
2727	0.00	0.00	0.00	1
2728	0.00	0.00	0.00	1
2729	0.00	0.00	0.00	1
2730	0.00	0.00	0.00	1
2731	0.00	0.00	0.00	0
2732	0.00	0.00	0.00	0
2733	0.00	0.00	0.00	1
2734	0.00	0.00	0.00	1
2735	0.00	0.00	0.00	2
2736	0.00	0.00	0.00	1
2737	0.00	0.00	0.00	2
2738	0.00	0.00	0.00	2
2739	0.00	0.00	0.00	1
2740	0.00	0.00	0.00	0
2741	0.00	0.00	0.00	0
2742	0.00	0.00	0.00	2
2743	0.00	0.00	0.00	1
2744	0.00	0.00	0.00	1
2745	0.00	0.00	0.00	2
2746	0.00	0.00	0.00	1
2747	0.00	0.00	0.00	0
2748	0.00	0.00	0.00	1
2749	0.00	0.00	0.00	1
2750	0.00	0.00	0.00	2
2751	0.00	0.00	0.00	1
2752	0.00	0.00	0.00	2
2753	0.00	0.00	0.00	1
2754	0.00	0.00	0.00	1
2755	0.00	0.00	0.00	1
2756	0.00	0.00	0.00	3
2757	0.00	0.00	0.00	3
2758	0.00	0.00	0.00	1
2759	0.00	0.00	0.00	2
2760	0.00	0.00	0.00	1
2761	0.00	0.00	0.00	1
2762	0.00	0.00	0.00	1
2763	0.00	0.00	0.00	0
2764	0.00	0.00	0.00	1

2765	0.00	0.00	0.00	1
2766	0.00	0.00	0.00	3
2767	0.00	0.00	0.00	0
2768	0.00	0.00	0.00	2
2769	0.00	0.00	0.00	1
2770	0.00	0.00	0.00	1
2771	0.00	0.00	0.00	0
2772	0.00	0.00	0.00	0
2773	0.00	0.00	0.00	1
2774	0.00	0.00	0.00	0
2775	0.00	0.00	0.00	1
2776	0.00	0.00	0.00	0
2777	0.00	0.00	0.00	2
2778	0.00	0.00	0.00	1
2779	0.00	0.00	0.00	0
2780	0.00	0.00	0.00	1
2781	0.00	0.00	0.00	1
2782	0.00	0.00	0.00	3
2783	0.00	0.00	0.00	0
2784	0.00	0.00	0.00	0
2785	0.00	0.00	0.00	0
2786	0.00	0.00	0.00	1
2787	0.00	0.00	0.00	0
2788	0.00	0.00	0.00	0
2789	0.00	0.00	0.00	1
2790	0.00	0.00	0.00	0
2791	0.00	0.00	0.00	1
2792	0.00	0.00	0.00	1
2793	0.00	0.00	0.00	1
2794	0.00	0.00	0.00	2
2795	0.00	0.00	0.00	1
2796	0.00	0.00	0.00	1
2797	0.00	0.00	0.00	0
2798	0.00	0.00	0.00	2
2799	0.00	0.00	0.00	1
2800	0.00	0.00	0.00	2
2801	0.00	0.00	0.00	0
2802	0.00	0.00	0.00	2
2803	0.00	0.00	0.00	0
2804	0.00	0.00	0.00	1
2805	0.00	0.00	0.00	1
2806	0.00	0.00	0.00	0
2807	0.00	0.00	0.00	1
2808	0.00	0.00	0.00	1
2809	0.00	0.00	0.00	1
2810	0.00	0.00	0.00	0
2811	0.00	0.00	0.00	0
2812	0.00	0.00	0.00	1
2813	0.00	0.00	0.00	1
2814	0.00	0.00	0.00	1
2815	0.00	0.00	0.00	0
2816	0.00	0.00	0.00	1
2817	0.00	0.00	0.00	3
2818	0.00	0.00	0.00	1
2819	0.00	0.00	0.00	0
2820	0.00	0.00	0.00	2
2821	0.50	0.50	0.50	2
2822	0.00	0.00	0.00	2
2823	0.00	0.00	0.00	2
2824	0.00	0.00	0.00	0
2825	0.00	0.00	0.00	0
2826	0.00	0.00	0.00	0
2827	0.00	0.00	0.00	2
2828	0.00	0.00	0.00	2
2829	0.00	0.00	0.00	1
2830	0.00	0.00	0.00	1
2831	0.00	0.00	0.00	0
2832	0.00	0.00	0.00	1
2833	0.00	0.00	0.00	3
2834	0.00	0.00	0.00	0
2835	0.00	0.00	0.00	3
2836	0.00	0.00	0.00	3
2837	0.00	0.00	0.00	1
2838	0.00	0.00	0.00	4
2839	0.00	0.00	0.00	0
2840	0.00	0.00	0.00	2
2841	0.00	0.00	0.00	0

2842	0.00	0.00	0.00	2
2843	0.00	0.00	0.00	0
2844	0.00	0.00	0.00	1
2845	0.00	0.00	0.00	1
2846	0.00	0.00	0.00	3
2847	0.00	0.00	0.00	0
2848	0.00	0.00	0.00	1
2849	0.00	0.00	0.00	2
2850	0.00	0.00	0.00	1
2851	0.00	0.00	0.00	2
2852	0.00	0.00	0.00	1
2853	0.00	0.00	0.00	0
2854	0.00	0.00	0.00	0
2855	0.00	0.00	0.00	0
2856	0.00	0.00	0.00	1
2857	0.00	0.00	0.00	1
2858	0.00	0.00	0.00	2
2859	0.00	0.00	0.00	1
2860	0.00	0.00	0.00	3
2861	0.00	0.00	0.00	3
2862	1.00	1.00	1.00	1
2863	0.00	0.00	0.00	1
2864	0.00	0.00	0.00	0
2865	0.00	0.00	0.00	2
2866	0.00	0.00	0.00	1
2867	0.00	0.00	0.00	1
2868	0.00	0.00	0.00	2
2869	0.00	0.00	0.00	1
2870	0.00	0.00	0.00	1
2871	0.00	0.00	0.00	2
2872	0.00	0.00	0.00	1
2873	0.00	0.00	0.00	1
2874	0.00	0.00	0.00	1
2875	0.00	0.00	0.00	3
2876	0.00	0.00	0.00	2
2877	0.00	0.00	0.00	1
2878	0.00	0.00	0.00	2
2879	0.00	0.00	0.00	2
2880	0.00	0.00	0.00	2
2881	0.00	0.00	0.00	2
2882	0.00	0.00	0.00	0
2883	0.00	0.00	0.00	1
2884	0.00	0.00	0.00	1
2885	0.00	0.00	0.00	2
2886	0.00	0.00	0.00	0
2887	0.00	0.00	0.00	0
2888	0.00	0.00	0.00	1
2889	0.00	0.00	0.00	1
2890	0.00	0.00	0.00	3
2891	0.00	0.00	0.00	1
2892	0.00	0.00	0.00	1
2893	0.00	0.00	0.00	2
2894	0.00	0.00	0.00	2
2895	0.00	0.00	0.00	1
2896	0.00	0.00	0.00	1
2897	0.00	0.00	0.00	1
2898	0.00	0.00	0.00	1
2899	0.00	0.00	0.00	0
2900	0.00	0.00	0.00	3
2901	0.00	0.00	0.00	1
2902	0.00	0.00	0.00	1
2903	0.00	0.00	0.00	3
2904	0.00	0.00	0.00	2
2905	0.00	0.00	0.00	1
2906	0.00	0.00	0.00	3
2907	0.00	0.00	0.00	2
2908	0.00	0.00	0.00	1
2909	0.00	0.00	0.00	0
2910	0.00	0.00	0.00	1
2911	0.00	0.00	0.00	2
2912	0.00	0.00	0.00	2
2913	0.00	0.00	0.00	1
2914	0.00	0.00	0.00	1
2915	0.00	0.00	0.00	1
2916	0.00	0.00	0.00	0
2917	0.00	0.00	0.00	0
2918	0.00	0.00	0.00	0

2919	0.00	0.00	0.00	0
2920	0.00	0.00	0.00	1
2921	0.00	0.00	0.00	2
2922	0.00	0.00	0.00	1
2923	0.00	0.00	0.00	1
2924	0.00	0.00	0.00	1
2925	0.00	0.00	0.00	0
2926	0.00	0.00	0.00	1
2927	0.00	0.00	0.00	2
2928	0.00	0.00	0.00	0
2929	0.00	0.00	0.00	1
2930	0.00	0.00	0.00	1
2931	0.00	0.00	0.00	3
2932	0.00	0.00	0.00	0
2933	0.00	0.00	0.00	2
2934	0.00	0.00	0.00	1
2935	0.00	0.00	0.00	1
2936	0.00	0.00	0.00	2
2937	0.00	0.00	0.00	1
2938	0.00	0.00	0.00	0
2939	0.00	0.00	0.00	0
2940	0.00	0.00	0.00	0
2941	0.00	0.00	0.00	2
2942	0.00	0.00	0.00	2
2943	0.00	0.00	0.00	3
2944	0.00	0.00	0.00	1
2945	0.00	0.00	0.00	0
2946	0.00	0.00	0.00	0
2947	0.00	0.00	0.00	1
2948	0.00	0.00	0.00	1
2949	0.00	0.00	0.00	1
2950	0.00	0.00	0.00	2
2951	0.00	0.00	0.00	1
2952	0.00	0.00	0.00	2
2953	0.00	0.00	0.00	2
2954	0.00	0.00	0.00	2
2955	0.00	0.00	0.00	1
2956	0.00	0.00	0.00	2
2957	0.00	0.00	0.00	1
2958	0.00	0.00	0.00	2
2959	0.00	0.00	0.00	0
2960	0.00	0.00	0.00	0
2961	0.00	0.00	0.00	2
2962	0.00	0.00	0.00	0
2963	0.00	0.00	0.00	2
2964	0.00	0.00	0.00	3
2965	0.00	0.00	0.00	3
2966	0.00	0.00	0.00	1
2967	0.00	0.00	0.00	1
2968	0.00	0.00	0.00	2
2969	0.00	0.00	0.00	3
2970	0.00	0.00	0.00	1
2971	0.00	0.00	0.00	2
2972	0.00	0.00	0.00	0
2973	0.00	0.00	0.00	1
2974	0.00	0.00	0.00	2
2975	0.00	0.00	0.00	2
2976	0.00	0.00	0.00	0
2977	0.00	0.00	0.00	0
2978	0.00	0.00	0.00	1
2979	0.00	0.00	0.00	0
2980	0.00	0.00	0.00	0
2981	0.00	0.00	0.00	1
2982	0.00	0.00	0.00	1
2983	0.00	0.00	0.00	3
2984	0.00	0.00	0.00	1
2985	0.00	0.00	0.00	1
2986	0.00	0.00	0.00	0
2987	0.00	0.00	0.00	0
2988	0.00	0.00	0.00	3
2989	0.00	0.00	0.00	2
2990	0.00	0.00	0.00	0
2991	0.00	0.00	0.00	2
2992	0.00	0.00	0.00	3
2993	0.00	0.00	0.00	2
2994	0.00	0.00	0.00	0
2995	0.00	0.00	0.00	1

2996	0.00	0.00	0.00	3
2997	0.00	0.00	0.00	1
2998	0.00	0.00	0.00	1
2999	0.00	0.00	0.00	2
3000	0.00	0.00	0.00	1
3001	0.00	0.00	0.00	0
3002	0.00	0.00	0.00	2
3003	0.00	0.00	0.00	1
3004	0.00	0.00	0.00	2
3005	0.00	0.00	0.00	2
3006	0.00	0.00	0.00	1
3007	0.00	0.00	0.00	0
3008	0.00	0.00	0.00	0
3009	0.00	0.00	0.00	1
3010	0.00	0.00	0.00	1
3011	0.00	0.00	0.00	0
3012	0.00	0.00	0.00	1
3013	0.00	0.00	0.00	0
3014	0.00	0.00	0.00	0
3015	0.00	0.00	0.00	3
3016	0.00	0.00	0.00	2
3017	0.00	0.00	0.00	1
3018	0.00	0.00	0.00	2
3019	0.00	0.00	0.00	2
3020	0.00	0.00	0.00	2
3021	0.00	0.00	0.00	0
3022	0.00	0.00	0.00	2
3023	0.00	0.00	0.00	3
3024	0.00	0.00	0.00	0
3025	0.00	0.00	0.00	4
3026	0.00	0.00	0.00	1
3027	0.00	0.00	0.00	2
3028	0.00	0.00	0.00	1
3029	0.00	0.00	0.00	1
3030	0.00	0.00	0.00	0
3031	0.00	0.00	0.00	2
3032	0.00	0.00	0.00	0
3033	0.00	0.00	0.00	1
3034	0.00	0.00	0.00	2
3035	0.00	0.00	0.00	1
3036	0.00	0.00	0.00	1
3037	0.00	0.00	0.00	1
3038	0.00	0.00	0.00	0
3039	0.00	0.00	0.00	2
3040	0.00	0.00	0.00	1
3041	0.00	0.00	0.00	1
3042	0.00	0.00	0.00	0
3043	0.00	0.00	0.00	2
3044	0.00	0.00	0.00	1
3045	0.00	0.00	0.00	1
3046	0.00	0.00	0.00	1
3047	0.00	0.00	0.00	0
3048	0.00	0.00	0.00	1
3049	0.00	0.00	0.00	0
3050	0.00	0.00	0.00	1
3051	0.00	0.00	0.00	0
3052	0.00	0.00	0.00	0
3053	0.00	0.00	0.00	2
3054	0.00	0.00	0.00	1
3055	0.00	0.00	0.00	1
3056	0.00	0.00	0.00	1
3057	0.00	0.00	0.00	0
3058	0.00	0.00	0.00	1
3059	0.00	0.00	0.00	0
3060	0.00	0.00	0.00	1
3061	0.00	0.00	0.00	0
3062	0.00	0.00	0.00	1
3063	0.00	0.00	0.00	0
3064	0.00	0.00	0.00	2
3065	0.00	0.00	0.00	0
3066	0.00	0.00	0.00	3
3067	0.00	0.00	0.00	0
3068	0.00	0.00	0.00	2
3069	0.00	0.00	0.00	2
3070	0.00	0.00	0.00	1
3071	0.00	0.00	0.00	0
3072	0.00	0.00	0.00	0

3072	0.00	0.00	0.00	0
3073	0.00	0.00	0.00	2
3074	0.00	0.00	0.00	3
3075	0.00	0.00	0.00	0
3076	0.00	0.00	0.00	2
3077	0.00	0.00	0.00	3
3078	0.00	0.00	0.00	1
3079	0.00	0.00	0.00	1
3080	0.00	0.00	0.00	1
3081	0.00	0.00	0.00	1
3082	1.00	1.00	1.00	1
3083	0.00	0.00	0.00	0
3084	0.00	0.00	0.00	2
3085	0.00	0.00	0.00	0
3086	0.00	0.00	0.00	1
3087	0.00	0.00	0.00	0
3088	0.00	0.00	0.00	0
3089	0.00	0.00	0.00	1
3090	0.00	0.00	0.00	1
3091	0.00	0.00	0.00	2
3092	0.00	0.00	0.00	1
3093	0.00	0.00	0.00	2
3094	0.00	0.00	0.00	1
3095	0.00	0.00	0.00	0
3096	0.00	0.00	0.00	1
3097	0.00	0.00	0.00	0
3098	0.00	0.00	0.00	0
3099	0.00	0.00	0.00	0
3100	0.00	0.00	0.00	2
3101	0.00	0.00	0.00	0
3102	0.00	0.00	0.00	0
3103	0.00	0.00	0.00	3
3104	0.00	0.00	0.00	3
3105	0.00	0.00	0.00	2
3106	0.00	0.00	0.00	1
3107	0.00	0.00	0.00	1
3108	0.00	0.00	0.00	1
3109	0.00	0.00	0.00	0
3110	0.00	0.00	0.00	0
3111	0.00	0.00	0.00	1
3112	0.00	0.00	0.00	2
3113	0.00	0.00	0.00	0
3114	0.00	0.00	0.00	0
3115	0.00	0.00	0.00	2
3116	0.00	0.00	0.00	1
3117	0.00	0.00	0.00	0
3118	0.00	0.00	0.00	2
3119	0.00	0.00	0.00	1
3120	0.00	0.00	0.00	1
3121	0.00	0.00	0.00	0
3122	0.00	0.00	0.00	1
3123	0.00	0.00	0.00	0
3124	0.00	0.00	0.00	1
3125	0.00	0.00	0.00	1
3126	0.00	0.00	0.00	3
3127	0.00	0.00	0.00	1
3128	0.00	0.00	0.00	0
3129	0.00	0.00	0.00	2
3130	0.00	0.00	0.00	2
3131	0.00	0.00	0.00	0
3132	0.00	0.00	0.00	1
3133	0.00	0.00	0.00	1
3134	0.00	0.00	0.00	1
3135	0.00	0.00	0.00	3
3136	0.00	0.00	0.00	0
3137	0.00	0.00	0.00	1
3138	0.00	0.00	0.00	3
3139	0.00	0.00	0.00	1
3140	0.00	0.00	0.00	1
3141	0.00	0.00	0.00	1
3142	0.00	0.00	0.00	0
3143	0.00	0.00	0.00	2
3144	0.00	0.00	0.00	0
3145	0.00	0.00	0.00	1
3146	0.00	0.00	0.00	2
3147	0.00	0.00	0.00	1
3148	0.00	0.00	0.00	2
3149	0.00	0.00	0.00	1

3149	0.00	0.00	0.00	1
3150	0.00	0.00	0.00	0
3151	0.00	0.00	0.00	2
3152	0.00	0.00	0.00	0
3153	0.00	0.00	0.00	4
3154	0.00	0.00	0.00	1
3155	0.00	0.00	0.00	2
3156	0.00	0.00	0.00	2
3157	0.00	0.00	0.00	0
3158	0.00	0.00	0.00	2
3159	0.00	0.00	0.00	3
3160	0.00	0.00	0.00	0
3161	0.00	0.00	0.00	1
3162	0.00	0.00	0.00	0
3163	0.00	0.00	0.00	0
3164	0.00	0.00	0.00	1
3165	0.00	0.00	0.00	0
3166	0.00	0.00	0.00	1
3167	0.00	0.00	0.00	0
3168	0.00	0.00	0.00	2
3169	0.00	0.00	0.00	0
3170	0.00	0.00	0.00	0
3171	0.00	0.00	0.00	0
3172	0.00	0.00	0.00	0
3173	0.00	0.00	0.00	2
3174	0.00	0.00	0.00	0
3175	0.00	0.00	0.00	2
3176	0.00	0.00	0.00	0
3177	0.00	0.00	0.00	1
3178	0.00	0.00	0.00	1
3179	0.00	0.00	0.00	1
3180	0.00	0.00	0.00	2
3181	0.00	0.00	0.00	2
3182	0.00	0.00	0.00	0
3183	0.00	0.00	0.00	1
3184	0.00	0.00	0.00	2
3185	0.00	0.00	0.00	0
3186	0.00	0.00	0.00	1
3187	0.00	0.00	0.00	1
3188	0.00	0.00	0.00	3
3189	0.00	0.00	0.00	2
3190	0.00	0.00	0.00	1
3191	0.00	0.00	0.00	1
3192	0.00	0.00	0.00	3
3193	0.00	0.00	0.00	1
3194	0.00	0.00	0.00	1
3195	0.00	0.00	0.00	0
3196	0.00	0.00	0.00	4
3197	0.00	0.00	0.00	1
3198	0.00	0.00	0.00	2
3199	0.00	0.00	0.00	1
3200	0.00	0.00	0.00	0
3201	0.00	0.00	0.00	2
3202	0.00	0.00	0.00	1
3203	0.00	0.00	0.00	1
3204	0.00	0.00	0.00	1
3205	0.00	0.00	0.00	1
3206	0.00	0.00	0.00	1
3207	0.00	0.00	0.00	0
3208	0.00	0.00	0.00	3
3209	0.00	0.00	0.00	1
3210	0.00	0.00	0.00	2
3211	0.00	0.00	0.00	0
3212	0.00	0.00	0.00	1
3213	0.00	0.00	0.00	2
3214	0.00	0.00	0.00	0
3215	0.00	0.00	0.00	0
3216	0.00	0.00	0.00	0
3217	0.00	0.00	0.00	2
3218	0.00	0.00	0.00	0
3219	0.00	0.00	0.00	0
3220	0.00	0.00	0.00	1
3221	0.00	0.00	0.00	1
3222	0.00	0.00	0.00	1
3223	0.00	0.00	0.00	0
3224	0.00	0.00	0.00	0
3225	0.00	0.00	0.00	0
3226	0.00	0.00	0.00	1

3226	0.00	0.00	0.00	1
3227	0.00	0.00	0.00	2
3228	0.00	0.00	0.00	2
3229	0.00	0.00	0.00	0
3230	0.00	0.00	0.00	1
3231	0.00	0.00	0.00	1
3232	0.00	0.00	0.00	1
3233	0.00	0.00	0.00	1
3234	0.00	0.00	0.00	3
3235	0.00	0.00	0.00	1
3236	0.00	0.00	0.00	1
3237	0.00	0.00	0.00	1
3238	0.00	0.00	0.00	0
3239	0.00	0.00	0.00	1
3240	0.00	0.00	0.00	3
3241	0.00	0.00	0.00	1
3242	0.00	0.00	0.00	1
3243	0.00	0.00	0.00	1
3244	0.00	0.00	0.00	2
3245	0.00	0.00	0.00	0
3246	0.00	0.00	0.00	3
3247	0.00	0.00	0.00	1
3248	0.00	0.00	0.00	1
3249	0.00	0.00	0.00	2
3250	0.00	0.00	0.00	0
3251	0.00	0.00	0.00	2
3252	0.00	0.00	0.00	1
3253	0.00	0.00	0.00	2
3254	0.00	0.00	0.00	0
3255	0.00	0.00	0.00	0
3256	0.00	0.00	0.00	0
3257	0.00	0.00	0.00	0
3258	0.00	0.00	0.00	0
3259	0.00	0.00	0.00	2
3260	0.00	0.00	0.00	0
3261	0.00	0.00	0.00	0
3262	0.00	0.00	0.00	1
3263	0.00	0.00	0.00	0
3264	0.00	0.00	0.00	2
3265	0.00	0.00	0.00	1
3266	0.00	0.00	0.00	3
3267	0.00	0.00	0.00	0
3268	0.00	0.00	0.00	2
3269	0.00	0.00	0.00	1
3270	0.00	0.00	0.00	2
3271	0.00	0.00	0.00	2
3272	0.00	0.00	0.00	1
3273	0.00	0.00	0.00	2
3274	0.00	0.00	0.00	1
3275	0.00	0.00	0.00	0
3276	0.00	0.00	0.00	1
3277	0.00	0.00	0.00	1
3278	0.00	0.00	0.00	0
3279	0.00	0.00	0.00	1
3280	0.00	0.00	0.00	0
3281	0.00	0.00	0.00	0
3282	0.00	0.00	0.00	1
3283	0.00	0.00	0.00	0
3284	0.00	0.00	0.00	0
3285	0.00	0.00	0.00	0
3286	0.00	0.00	0.00	3
3287	0.00	0.00	0.00	1
3288	0.00	0.00	0.00	0
3289	0.00	0.00	0.00	2
3290	0.00	0.00	0.00	1
3291	0.00	0.00	0.00	0
3292	0.00	0.00	0.00	1
3293	0.00	0.00	0.00	2
3294	0.00	0.00	0.00	1
3295	0.00	0.00	0.00	1
3296	0.00	0.00	0.00	0
3297	0.00	0.00	0.00	1
3298	0.00	0.00	0.00	1
3299	0.00	0.00	0.00	1
3300	0.00	0.00	0.00	1
3301	0.00	0.00	0.00	1
3302	0.00	0.00	0.00	2
3303	0.00	0.00	0.00	0

3303	0.00	0.00	0.00	0
3304	0.00	0.00	0.00	2
3305	0.00	0.00	0.00	0
3306	0.00	0.00	0.00	1
3307	0.00	0.00	0.00	1
3308	0.00	0.00	0.00	1
3309	0.00	0.00	0.00	0
3310	0.00	0.00	0.00	1
3311	0.00	0.00	0.00	2
3312	0.00	0.00	0.00	1
3313	0.00	0.00	0.00	1
3314	0.00	0.00	0.00	2
3315	0.00	0.00	0.00	2
3316	0.00	0.00	0.00	0
3317	0.00	0.00	0.00	1
3318	0.00	0.00	0.00	1
3319	0.00	0.00	0.00	0
3320	0.00	0.00	0.00	3
3321	0.00	0.00	0.00	0
3322	0.00	0.00	0.00	2
3323	0.00	0.00	0.00	1
3324	0.00	0.00	0.00	0
3325	0.00	0.00	0.00	1
3326	0.00	0.00	0.00	1
3327	0.00	0.00	0.00	0
3328	0.00	0.00	0.00	2
3329	0.00	0.00	0.00	1
3330	0.00	0.00	0.00	4
3331	0.00	0.00	0.00	2
3332	0.00	0.00	0.00	1
3333	0.00	0.00	0.00	0
3334	1.00	1.00	1.00	1
3335	0.00	0.00	0.00	1
3336	0.00	0.00	0.00	1
3337	0.00	0.00	0.00	0
3338	0.00	0.00	0.00	2
3339	0.00	0.00	0.00	0
3340	0.00	0.00	0.00	0
3341	0.00	0.00	0.00	0
3342	0.00	0.00	0.00	0
3343	0.00	0.00	0.00	2
3344	0.00	0.00	0.00	1
3345	0.00	0.00	0.00	0
3346	0.00	0.00	0.00	0
3347	0.00	0.00	0.00	1
3348	0.00	0.00	0.00	1
3349	0.00	0.00	0.00	1
3350	0.00	0.00	0.00	1
3351	0.00	0.00	0.00	0
3352	0.00	0.00	0.00	2
3353	0.00	0.00	0.00	1
3354	0.00	0.00	0.00	1
3355	0.00	0.00	0.00	0
3356	0.00	0.00	0.00	2
3357	0.00	0.00	0.00	1
3358	0.00	0.00	0.00	1
3359	0.00	0.00	0.00	1
3360	0.00	0.00	0.00	1
3361	0.00	0.00	0.00	1
3362	0.00	0.00	0.00	1
3363	0.00	0.00	0.00	1
3364	0.00	0.00	0.00	2
3365	0.00	0.00	0.00	1
3366	0.00	0.00	0.00	1
3367	0.00	0.00	0.00	1
3368	0.00	0.00	0.00	2
3369	0.00	0.00	0.00	0
3370	0.00	0.00	0.00	3
3371	0.00	0.00	0.00	0
3372	0.00	0.00	0.00	1
3373	0.00	0.00	0.00	1
3374	0.00	0.00	0.00	0
3375	0.00	0.00	0.00	1
3376	0.00	0.00	0.00	2
3377	0.00	0.00	0.00	0
3378	0.00	0.00	0.00	1
3379	0.00	0.00	0.00	2
3380	0.00	0.00	0.00	1

3380	0.00	0.00	0.00	1
3381	0.00	0.00	0.00	0
3382	0.00	0.00	0.00	1
3383	0.00	0.00	0.00	3
3384	0.00	0.00	0.00	2
3385	0.00	0.00	0.00	1
3386	0.00	0.00	0.00	3
3387	0.00	0.00	0.00	1
3388	0.00	0.00	0.00	1
3389	0.00	0.00	0.00	1
3390	0.00	0.00	0.00	2
3391	0.00	0.00	0.00	1
3392	0.00	0.00	0.00	1
3393	0.00	0.00	0.00	1
3394	0.00	0.00	0.00	1
3395	0.00	0.00	0.00	2
3396	0.00	0.00	0.00	0
3397	0.00	0.00	0.00	0
3398	0.00	0.00	0.00	1
3399	0.00	0.00	0.00	1
3400	0.00	0.00	0.00	1
3401	0.00	0.00	0.00	1
3402	0.00	0.00	0.00	2
3403	0.00	0.00	0.00	1
3404	0.00	0.00	0.00	1
3405	0.00	0.00	0.00	1
3406	0.00	0.00	0.00	0
3407	0.00	0.00	0.00	1
3408	0.00	0.00	0.00	0
3409	0.00	0.00	0.00	1
3410	0.00	0.00	0.00	2
3411	0.00	0.00	0.00	1
3412	0.00	0.00	0.00	1
3413	0.00	0.00	0.00	0
3414	0.00	0.00	0.00	1
3415	0.00	0.00	0.00	1
3416	0.00	0.00	0.00	1
3417	0.00	0.00	0.00	0
3418	0.00	0.00	0.00	1
3419	0.00	0.00	0.00	1
3420	0.00	0.00	0.00	1
3421	0.00	0.00	0.00	2
3422	0.00	0.00	0.00	0
3423	0.00	0.00	0.00	2
3424	0.00	0.00	0.00	2
3425	0.00	0.00	0.00	1
3426	0.00	0.00	0.00	0
3427	0.00	0.00	0.00	0
3428	0.00	0.00	0.00	0
3429	0.00	0.00	0.00	2
3430	0.00	0.00	0.00	1
3431	0.00	0.00	0.00	1
3432	0.00	0.00	0.00	1
3433	0.00	0.00	0.00	1
3434	0.00	0.00	0.00	3
3435	0.00	0.00	0.00	0
3436	0.00	0.00	0.00	1
3437	0.00	0.00	0.00	1
3438	0.00	0.00	0.00	0
3439	0.00	0.00	0.00	0
3440	0.00	0.00	0.00	0
3441	0.00	0.00	0.00	1
3442	0.00	0.00	0.00	2
3443	0.00	0.00	0.00	2
3444	0.00	0.00	0.00	4
3445	0.00	0.00	0.00	1
3446	0.00	0.00	0.00	0
3447	0.00	0.00	0.00	2
3448	0.00	0.00	0.00	0
3449	0.00	0.00	0.00	2
3450	0.00	0.00	0.00	2
3451	0.00	0.00	0.00	2
3452	0.00	0.00	0.00	2
3453	0.00	0.00	0.00	0
3454	0.00	0.00	0.00	3
3455	0.00	0.00	0.00	0
3456	0.00	0.00	0.00	2
3457	0.00	0.00	0.00	0

3457	0.00	0.00	0.00	3
3458	0.00	0.00	0.00	2
3459	0.00	0.00	0.00	0
3460	0.00	0.00	0.00	2
3461	0.00	0.00	0.00	0
3462	0.00	0.00	0.00	1
3463	0.00	0.00	0.00	0
3464	0.00	0.00	0.00	2
3465	0.00	0.00	0.00	1
3466	0.00	0.00	0.00	1
3467	0.00	0.00	0.00	2
3468	0.00	0.00	0.00	2
3469	0.00	0.00	0.00	1
3470	0.00	0.00	0.00	1
3471	0.00	0.00	0.00	1
3472	0.00	0.00	0.00	0
3473	0.00	0.00	0.00	1
3474	0.00	0.00	0.00	1
3475	0.00	0.00	0.00	2
3476	0.00	0.00	0.00	1
3477	0.00	0.00	0.00	2
3478	0.00	0.00	0.00	1
3479	0.00	0.00	0.00	0
3480	0.00	0.00	0.00	0
3481	0.00	0.00	0.00	0
3482	0.00	0.00	0.00	0
3483	0.00	0.00	0.00	0
3484	0.00	0.00	0.00	2
3485	0.00	0.00	0.00	0
3486	0.00	0.00	0.00	1
3487	0.00	0.00	0.00	0
3488	0.00	0.00	0.00	0
3489	0.00	0.00	0.00	1
3490	0.00	0.00	0.00	1
3491	0.00	0.00	0.00	0
3492	0.00	0.00	0.00	1
3493	0.00	0.00	0.00	1
3494	0.00	0.00	0.00	2
3495	0.00	0.00	0.00	1
3496	0.00	0.00	0.00	0
3497	0.00	0.00	0.00	3
3498	0.00	0.00	0.00	2
3499	0.00	0.00	0.00	3
3500	0.00	0.00	0.00	1
3501	0.00	0.00	0.00	0
3502	0.00	0.00	0.00	1
3503	0.00	0.00	0.00	0
3504	0.00	0.00	0.00	0
3505	0.00	0.00	0.00	0
3506	0.00	0.00	0.00	0
3507	0.00	0.00	0.00	0
3508	0.00	0.00	0.00	0
3509	0.00	0.00	0.00	0
3510	0.00	0.00	0.00	0
3511	0.00	0.00	0.00	1
3512	0.00	0.00	0.00	1
3513	0.00	0.00	0.00	0
3514	0.00	0.00	0.00	1
3515	0.00	0.00	0.00	0
3516	0.00	0.00	0.00	1
3517	0.00	0.00	0.00	4
3518	0.00	0.00	0.00	1
3519	0.00	0.00	0.00	1
3520	0.00	0.00	0.00	1
3521	0.00	0.00	0.00	0
3522	0.00	0.00	0.00	2
3523	0.00	0.00	0.00	1
3524	0.00	0.00	0.00	0
3525	0.00	0.00	0.00	2
3526	0.00	0.00	0.00	0
3527	0.00	0.00	0.00	1
3528	0.00	0.00	0.00	3
3529	0.00	0.00	0.00	1
3530	0.00	0.00	0.00	1
3531	0.00	0.00	0.00	0
3532	0.00	0.00	0.00	1
3533	0.00	0.00	0.00	0
3534	0.00	0.00	0.00	1

3534	0.00	0.00	0.00	1
3535	0.00	0.00	0.00	4
3536	0.00	0.00	0.00	1
3537	0.00	0.00	0.00	0
3538	0.00	0.00	0.00	1
3539	0.00	0.00	0.00	2
3540	0.00	0.00	0.00	0
3541	0.00	0.00	0.00	1
3542	0.00	0.00	0.00	0
3543	0.00	0.00	0.00	0
3544	0.00	0.00	0.00	0
3545	0.00	0.00	0.00	1
3546	0.00	0.00	0.00	3
3547	0.00	0.00	0.00	0
3548	0.00	0.00	0.00	0
3549	0.00	0.00	0.00	0
3550	0.00	0.00	0.00	3
3551	0.00	0.00	0.00	1
3552	0.00	0.00	0.00	0
3553	0.00	0.00	0.00	3
3554	0.00	0.00	0.00	0
3555	0.00	0.00	0.00	4
3556	0.00	0.00	0.00	3
3557	0.00	0.00	0.00	2
3558	0.00	0.00	0.00	3
3559	0.00	0.00	0.00	0
3560	0.00	0.00	0.00	0
3561	0.00	0.00	0.00	0
3562	0.00	0.00	0.00	3
3563	0.00	0.00	0.00	2
3564	0.00	0.00	0.00	0
3565	0.00	0.00	0.00	2
3566	0.00	0.00	0.00	1
3567	0.00	0.00	0.00	2
3568	0.00	0.00	0.00	0
3569	0.00	0.00	0.00	1
3570	0.00	0.00	0.00	1
3571	0.00	0.00	0.00	2
3572	0.00	0.00	0.00	0
3573	0.00	0.00	0.00	1
3574	0.00	0.00	0.00	2
3575	0.00	0.00	0.00	2
3576	0.00	0.00	0.00	0
3577	0.00	0.00	0.00	1
3578	0.00	0.00	0.00	1
3579	0.00	0.00	0.00	1
3580	0.00	0.00	0.00	0
3581	0.00	0.00	0.00	1
3582	0.00	0.00	0.00	1
3583	0.00	0.00	0.00	2
3584	0.00	0.00	0.00	1
3585	0.00	0.00	0.00	2
3586	0.00	0.00	0.00	1
3587	0.00	0.00	0.00	1
3588	0.00	0.00	0.00	2
3589	0.00	0.00	0.00	1
3590	0.00	0.00	0.00	0
3591	0.00	0.00	0.00	1
3592	0.00	0.00	0.00	1
3593	0.00	0.00	0.00	1
3594	0.00	0.00	0.00	0
3595	0.00	0.00	0.00	0
3596	0.00	0.00	0.00	4
3597	0.00	0.00	0.00	1
3598	0.00	0.00	0.00	2
3599	0.00	0.00	0.00	3
3600	0.00	0.00	0.00	1
3601	0.00	0.00	0.00	2
3602	0.00	0.00	0.00	1
3603	0.00	0.00	0.00	0
3604	0.00	0.00	0.00	0
3605	0.00	0.00	0.00	1
3606	0.00	0.00	0.00	0
3607	0.00	0.00	0.00	0
3608	0.00	0.00	0.00	0
3609	0.00	0.00	0.00	1
3610	0.00	0.00	0.00	2

3611	0.00	0.00	0.00	1
3612	0.00	0.00	0.00	0
3613	0.00	0.00	0.00	0
3614	0.00	0.00	0.00	0
3615	0.00	0.00	0.00	1
3616	0.00	0.00	0.00	1
3617	0.00	0.00	0.00	2
3618	0.00	0.00	0.00	3
3619	0.00	0.00	0.00	1
3620	0.00	0.00	0.00	0
3621	0.00	0.00	0.00	0
3622	0.00	0.00	0.00	0
3623	0.00	0.00	0.00	0
3624	0.00	0.00	0.00	2
3625	0.00	0.00	0.00	1
3626	0.00	0.00	0.00	0
3627	0.00	0.00	0.00	1
3628	0.00	0.00	0.00	0
3629	0.00	0.00	0.00	1
3630	0.00	0.00	0.00	1
3631	0.00	0.00	0.00	2
3632	0.00	0.00	0.00	0
3633	0.00	0.00	0.00	0
3634	0.00	0.00	0.00	1
3635	0.00	0.00	0.00	1
3636	0.00	0.00	0.00	1
3637	0.00	0.00	0.00	1
3638	0.00	0.00	0.00	1
3639	0.00	0.00	0.00	0
3640	0.00	0.00	0.00	1
3641	0.00	0.00	0.00	2
3642	0.00	0.00	0.00	1
3643	0.00	0.00	0.00	2
3644	0.00	0.00	0.00	1
3645	0.00	0.00	0.00	1
3646	0.00	0.00	0.00	0
3647	0.00	0.00	0.00	1
3648	0.00	0.00	0.00	0
3649	0.00	0.00	0.00	2
3650	0.00	0.00	0.00	3
3651	0.00	0.00	0.00	3
3652	0.00	0.00	0.00	1
3653	0.00	0.00	0.00	0
3654	0.00	0.00	0.00	0
3655	0.00	0.00	0.00	1
3656	0.00	0.00	0.00	2
3657	0.00	0.00	0.00	0
3658	0.00	0.00	0.00	0
3659	0.00	0.00	0.00	1
3660	0.00	0.00	0.00	1
3661	0.00	0.00	0.00	0
3662	0.00	0.00	0.00	0
3663	0.00	0.00	0.00	0
3664	0.00	0.00	0.00	1
3665	0.00	0.00	0.00	0
3666	0.00	0.00	0.00	1
3667	0.00	0.00	0.00	1
3668	0.00	0.00	0.00	1
3669	0.00	0.00	0.00	0
3670	0.00	0.00	0.00	1
3671	0.00	0.00	0.00	2
3672	0.00	0.00	0.00	0
3673	0.00	0.00	0.00	2
3674	0.00	0.00	0.00	1
3675	0.00	0.00	0.00	1
3676	0.00	0.00	0.00	0
3677	0.00	0.00	0.00	1
3678	0.00	0.00	0.00	1
3679	0.00	0.00	0.00	2
3680	0.00	0.00	0.00	0
3681	0.00	0.00	0.00	0
3682	0.00	0.00	0.00	1
3683	0.00	0.00	0.00	1
3684	0.00	0.00	0.00	0
3685	0.00	0.00	0.00	0
3686	0.00	0.00	0.00	1
3687	0.00	0.00	0.00	0

3688	0.00	0.00	0.00	0
3689	0.00	0.00	0.00	0
3690	0.00	0.00	0.00	0
3691	0.00	0.00	0.00	0
3692	0.00	0.00	0.00	0
3693	0.00	0.00	0.00	1
3694	0.00	0.00	0.00	0
3695	0.00	0.00	0.00	0
3696	0.00	0.00	0.00	2
3697	0.00	0.00	0.00	0
3698	0.00	0.00	0.00	0
3699	0.00	0.00	0.00	0
3700	0.00	0.00	0.00	0
3701	0.00	0.00	0.00	0
3702	0.00	0.00	0.00	0
3703	0.00	0.00	0.00	2
3704	0.00	0.00	0.00	3
3705	0.00	0.00	0.00	0
3706	0.00	0.00	0.00	1
3707	0.00	0.00	0.00	1
3708	0.00	0.00	0.00	0
3709	0.00	0.00	0.00	0
3710	0.00	0.00	0.00	1
3711	0.00	0.00	0.00	2
3712	0.00	0.00	0.00	0
3713	0.00	0.00	0.00	0
3714	0.00	0.00	0.00	2
3715	0.00	0.00	0.00	0
3716	0.00	0.00	0.00	1
3717	0.00	0.00	0.00	0
3718	0.00	0.00	0.00	2
3719	0.00	0.00	0.00	1
3720	0.00	0.00	0.00	1
3721	0.00	0.00	0.00	3
3722	0.00	0.00	0.00	1
3723	0.00	0.00	0.00	0
3724	0.00	0.00	0.00	0
3725	0.00	0.00	0.00	0
3726	0.00	0.00	0.00	0
3727	0.00	0.00	0.00	1
3728	0.00	0.00	0.00	1
3729	0.00	0.00	0.00	3
3730	0.00	0.00	0.00	0
3731	0.00	0.00	0.00	1
3732	0.00	0.00	0.00	0
3733	0.00	0.00	0.00	0
3734	0.00	0.00	0.00	0
3735	0.00	0.00	0.00	1
3736	0.00	0.00	0.00	0
3737	0.00	0.00	0.00	0
3738	0.00	0.00	0.00	1
3739	0.00	0.00	0.00	1
3740	0.00	0.00	0.00	1
3741	0.00	0.00	0.00	1
3742	0.00	0.00	0.00	0
3743	0.00	0.00	0.00	0
3744	0.00	0.00	0.00	1
3745	0.00	0.00	0.00	2
3746	0.00	0.00	0.00	0
3747	0.00	0.00	0.00	2
3748	0.00	0.00	0.00	1
3749	0.00	0.00	0.00	1
3750	0.00	0.00	0.00	0
3751	0.00	0.00	0.00	0
3752	0.00	0.00	0.00	0
3753	0.00	0.00	0.00	1
3754	0.00	0.00	0.00	1
3755	0.00	0.00	0.00	0
3756	0.00	0.00	0.00	0
3757	0.00	0.00	0.00	0
3758	0.00	0.00	0.00	0
3759	0.00	0.00	0.00	0
3760	0.00	0.00	0.00	0
3761	0.00	0.00	0.00	1
3762	0.00	0.00	0.00	2
3763	0.00	0.00	0.00	0
3764	0.00	0.00	0.00	0

3765	0.00	0.00	0.00	0
3766	0.00	0.00	0.00	0
3767	0.00	0.00	0.00	1
3768	0.00	0.00	0.00	0
3769	0.00	0.00	0.00	2
3770	0.00	0.00	0.00	1
3771	0.00	0.00	0.00	0
3772	0.00	0.00	0.00	1
3773	0.00	0.00	0.00	1
3774	0.00	0.00	0.00	0
3775	0.00	0.00	0.00	0
3776	0.00	0.00	0.00	1
3777	0.00	0.00	0.00	1
3778	0.00	0.00	0.00	0
3779	0.00	0.00	0.00	2
3780	0.00	0.00	0.00	0
3781	0.00	0.00	0.00	1
3782	0.00	0.00	0.00	0
3783	0.00	0.00	0.00	1
3784	0.00	0.00	0.00	0
3785	0.00	0.00	0.00	0
3786	0.00	0.00	0.00	2
3787	0.00	0.00	0.00	1
3788	0.00	0.00	0.00	1
3789	0.00	0.00	0.00	1
3790	0.00	0.00	0.00	0
3791	0.00	0.00	0.00	1
3792	0.00	0.00	0.00	2
3793	0.00	0.00	0.00	1
3794	0.00	0.00	0.00	3
3795	0.00	0.00	0.00	1
3796	0.00	0.00	0.00	0
3797	0.00	0.00	0.00	2
3798	0.00	0.00	0.00	1
3799	0.00	0.00	0.00	1
3800	0.00	0.00	0.00	1
3801	0.00	0.00	0.00	1
3802	0.00	0.00	0.00	0
3803	0.00	0.00	0.00	2
3804	0.00	0.00	0.00	0
3805	0.00	0.00	0.00	2
3806	0.00	0.00	0.00	0
3807	0.00	0.00	0.00	2
3808	0.00	0.00	0.00	2
3809	0.00	0.00	0.00	1
3810	0.00	0.00	0.00	1
3811	0.00	0.00	0.00	0
3812	0.00	0.00	0.00	2
3813	0.00	0.00	0.00	1
3814	0.00	0.00	0.00	1
3815	0.00	0.00	0.00	1
3816	0.00	0.00	0.00	1
3817	0.00	0.00	0.00	1
3818	0.00	0.00	0.00	2
3819	0.00	0.00	0.00	0
3820	0.00	0.00	0.00	1
3821	0.00	0.00	0.00	2
3822	0.00	0.00	0.00	2
3823	0.00	0.00	0.00	0
3824	0.00	0.00	0.00	0
3825	0.00	0.00	0.00	2
3826	0.00	0.00	0.00	1
3827	0.00	0.00	0.00	0
3828	0.00	0.00	0.00	0
3829	0.00	0.00	0.00	0
3830	0.00	0.00	0.00	2
3831	0.00	0.00	0.00	2
3832	0.00	0.00	0.00	1
3833	0.00	0.00	0.00	2
3834	0.00	0.00	0.00	0
3835	0.00	0.00	0.00	2
3836	0.00	0.00	0.00	1
3837	0.00	0.00	0.00	0
3838	0.00	0.00	0.00	2
3839	0.00	0.00	0.00	0
3840	0.00	0.00	0.00	1
3841	0.00	0.00	0.00	1

3842	0.00	0.00	0.00	0
3843	0.00	0.00	0.00	1
3844	0.00	0.00	0.00	0
3845	0.00	0.00	0.00	0
3846	0.00	0.00	0.00	1
3847	0.00	0.00	0.00	2
3848	0.00	0.00	0.00	1
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3850	0.00	0.00	0.00	0
3851	0.00	0.00	0.00	0
3852	0.00	0.00	0.00	0
3853	0.00	0.00	0.00	1
3854	0.00	0.00	0.00	2
3855	0.00	0.00	0.00	1
3856	0.00	0.00	0.00	0
3857	0.00	0.00	0.00	0
3858	0.00	0.00	0.00	0
3859	0.00	0.00	0.00	0
3860	0.00	0.00	0.00	0
3861	0.00	0.00	0.00	0
3862	0.00	0.00	0.00	1
3863	0.00	0.00	0.00	0
3864	0.00	0.00	0.00	1
3865	0.00	0.00	0.00	1
3866	0.00	0.00	0.00	0
3867	0.00	0.00	0.00	0
3868	0.00	0.00	0.00	0
3869	0.00	0.00	0.00	0
3870	0.00	0.00	0.00	2
3871	0.00	0.00	0.00	1
3872	0.00	0.00	0.00	0
3873	0.00	0.00	0.00	0
3874	0.00	0.00	0.00	2
3875	0.00	0.00	0.00	1
3876	0.00	0.00	0.00	0
3877	0.00	0.00	0.00	0
3878	0.00	0.00	0.00	1
3879	0.00	0.00	0.00	1
3880	0.00	0.00	0.00	0
3881	0.00	0.00	0.00	1
3882	0.00	0.00	0.00	1
3883	0.00	0.00	0.00	1
3884	0.00	0.00	0.00	2
3885	0.00	0.00	0.00	0
3886	0.00	0.00	0.00	0
3887	0.00	0.00	0.00	0
3888	0.00	0.00	0.00	0
3889	0.00	0.00	0.00	2
3890	0.00	0.00	0.00	0
3891	0.00	0.00	0.00	1
3892	0.00	0.00	0.00	0
3893	0.00	0.00	0.00	1
3894	0.00	0.00	0.00	0
3895	0.00	0.00	0.00	0
3896	0.00	0.00	0.00	2
3897	0.00	0.00	0.00	0
3898	0.00	0.00	0.00	0
3899	0.00	0.00	0.00	0
3900	0.00	0.00	0.00	0
3901	0.00	0.00	0.00	3
3902	0.00	0.00	0.00	1
3903	0.00	0.00	0.00	0
3904	0.00	0.00	0.00	0
3905	0.00	0.00	0.00	0
3906	0.00	0.00	0.00	4
3907	0.00	0.00	0.00	2
3908	0.00	0.00	0.00	0
3909	0.00	0.00	0.00	0
3910	0.00	0.00	0.00	2
3911	0.00	0.00	0.00	0
3912	0.00	0.00	0.00	0
3913	0.00	0.00	0.00	2
3914	0.00	0.00	0.00	1
3915	0.00	0.00	0.00	0
3916	0.00	0.00	0.00	1
3917	0.00	0.00	0.00	1
3918	0.00	0.00	0.00	0

3919	0.00	0.00	0.00	0
3920	0.00	0.00	0.00	0
3921	0.00	0.00	0.00	1
3922	0.00	0.00	0.00	0
3923	0.00	0.00	0.00	1
3924	0.00	0.00	0.00	0
3925	0.00	0.00	0.00	1
3926	0.00	0.00	0.00	1
3927	0.00	0.00	0.00	0
3928	0.00	0.00	0.00	0
3929	0.00	0.00	0.00	1
3930	0.00	0.00	0.00	0
3931	0.00	0.00	0.00	0
3932	0.00	0.00	0.00	2
3933	0.00	0.00	0.00	1
3934	0.00	0.00	0.00	0
3935	0.00	0.00	0.00	0
3936	0.00	0.00	0.00	1
3937	0.00	0.00	0.00	0
3938	0.00	0.00	0.00	0
3939	0.00	0.00	0.00	1
3940	0.00	0.00	0.00	1
3941	0.00	0.00	0.00	2
3942	0.00	0.00	0.00	2
3943	0.00	0.00	0.00	1
3944	0.00	0.00	0.00	0
3945	0.00	0.00	0.00	2
3946	0.00	0.00	0.00	1
3947	0.00	0.00	0.00	0
3948	0.00	0.00	0.00	2
3949	0.00	0.00	0.00	2
3950	0.00	0.00	0.00	1
3951	0.00	0.00	0.00	0
3952	0.00	0.00	0.00	3
3953	0.00	0.00	0.00	2
3954	0.00	0.00	0.00	0
3955	0.00	0.00	0.00	0
3956	0.00	0.00	0.00	1
3957	0.00	0.00	0.00	0
3958	0.00	0.00	0.00	1
3959	0.00	0.00	0.00	2
3960	0.00	0.00	0.00	0
3961	0.00	0.00	0.00	1
3962	0.00	0.00	0.00	0
3963	0.00	0.00	0.00	0
3964	0.00	0.00	0.00	1
3965	0.00	0.00	0.00	0
3966	0.00	0.00	0.00	0
3967	0.00	0.00	0.00	0
3968	0.00	0.00	0.00	0
3969	0.00	0.00	0.00	0
3970	0.00	0.00	0.00	1
3971	0.00	0.00	0.00	0
3972	0.00	0.00	0.00	1
3973	0.00	0.00	0.00	0
3974	0.00	0.00	0.00	1
3975	0.00	0.00	0.00	0
3976	0.00	0.00	0.00	0
3977	0.00	0.00	0.00	0
3978	0.00	0.00	0.00	1
3979	0.00	0.00	0.00	1
3980	0.00	0.00	0.00	0
3981	0.00	0.00	0.00	0
3982	0.00	0.00	0.00	2
3983	0.00	0.00	0.00	1
3984	0.00	0.00	0.00	0
3985	0.00	0.00	0.00	0
3986	0.00	0.00	0.00	1
3987	0.00	0.00	0.00	1
3988	0.00	0.00	0.00	0
3989	0.00	0.00	0.00	2
3990	0.00	0.00	0.00	1
3991	0.00	0.00	0.00	1
3992	0.00	0.00	0.00	1
3993	0.00	0.00	0.00	0
3994	0.00	0.00	0.00	1
3995	0.00	0.00	0.00	1

3996	0.00	0.00	0.00	2
3997	0.00	0.00	0.00	2
3998	0.00	0.00	0.00	1
3999	0.00	0.00	0.00	0
4000	0.00	0.00	0.00	1
4001	0.00	0.00	0.00	1
4002	0.00	0.00	0.00	1
4003	0.00	0.00	0.00	1
4004	0.00	0.00	0.00	1
4005	0.00	0.00	0.00	0
4006	0.00	0.00	0.00	2
4007	0.00	0.00	0.00	0
4008	0.00	0.00	0.00	1
4009	0.00	0.00	0.00	2
4010	0.00	0.00	0.00	0
4011	0.00	0.00	0.00	1
4012	0.00	0.00	0.00	1
4013	0.00	0.00	0.00	2
4014	0.00	0.00	0.00	0
4015	0.00	0.00	0.00	0
4016	0.00	0.00	0.00	0
4017	0.00	0.00	0.00	0
4018	0.00	0.00	0.00	0
4019	0.00	0.00	0.00	2
4020	0.00	0.00	0.00	1
4021	0.00	0.00	0.00	1
4022	0.00	0.00	0.00	0
4023	0.00	0.00	0.00	1
4024	0.00	0.00	0.00	0
4025	0.00	0.00	0.00	1
4026	0.00	0.00	0.00	0
4027	0.00	0.00	0.00	0
4028	0.00	0.00	0.00	1
4029	0.00	0.00	0.00	1
4030	0.00	0.00	0.00	0
4031	0.00	0.00	0.00	0
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4033	0.00	0.00	0.00	0
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4037	0.00	0.00	0.00	0
4038	0.00	0.00	0.00	1
4039	0.00	0.00	0.00	0
4040	0.00	0.00	0.00	3
4041	0.00	0.00	0.00	1
4042	0.00	0.00	0.00	0
4043	0.00	0.00	0.00	0
4044	0.00	0.00	0.00	1
4045	0.00	0.00	0.00	1
4046	0.00	0.00	0.00	0
4047	0.00	0.00	0.00	1
4048	0.00	0.00	0.00	1
4049	0.00	0.00	0.00	1
4050	0.00	0.00	0.00	0
4051	0.00	0.00	0.00	1
4052	0.00	0.00	0.00	1
4053	0.00	0.00	0.00	1
4054	0.00	0.00	0.00	0
4055	0.00	0.00	0.00	1
4056	0.00	0.00	0.00	0
4057	0.00	0.00	0.00	0
4058	0.00	0.00	0.00	1
4059	0.00	0.00	0.00	0
4060	0.00	0.00	0.00	0
4061	0.00	0.00	0.00	2
4062	0.00	0.00	0.00	0
4063	0.00	0.00	0.00	1
4064	0.00	0.00	0.00	2
4065	0.00	0.00	0.00	0
4066	0.00	0.00	0.00	0
4067	0.00	0.00	0.00	1
4068	0.00	0.00	0.00	0
4069	0.00	0.00	0.00	2
4070	0.00	0.00	0.00	1
4071	0.00	0.00	0.00	1
4072	0.00	0.00	0.00	0

4073	0.00	0.00	0.00	1
4074	0.00	0.00	0.00	1
4075	0.00	0.00	0.00	2
4076	0.00	0.00	0.00	1
4077	0.00	0.00	0.00	1
4078	0.00	0.00	0.00	0
4079	0.00	0.00	0.00	1
4080	0.00	0.00	0.00	1
4081	0.00	0.00	0.00	0
4082	0.00	0.00	0.00	4
4083	0.00	0.00	0.00	0
4084	0.00	0.00	0.00	0
4085	0.00	0.00	0.00	0
4086	0.00	0.00	0.00	1
4087	0.00	0.00	0.00	1
4088	0.00	0.00	0.00	1
4089	0.00	0.00	0.00	0
4090	0.00	0.00	0.00	0
4091	0.00	0.00	0.00	0
4092	0.00	0.00	0.00	2
4093	0.00	0.00	0.00	1
4094	0.00	0.00	0.00	1
4095	0.00	0.00	0.00	1
4096	0.00	0.00	0.00	0
4097	0.00	0.00	0.00	1
4098	0.00	0.00	0.00	0
4099	0.00	0.00	0.00	0
4100	0.00	0.00	0.00	1
4101	0.00	0.00	0.00	0
4102	0.00	0.00	0.00	0
4103	0.00	0.00	0.00	0
4104	0.00	0.00	0.00	1
4105	0.00	0.00	0.00	0
4106	0.00	0.00	0.00	1
4107	0.00	0.00	0.00	2
4108	0.00	0.00	0.00	1
4109	0.00	0.00	0.00	1
4110	0.00	0.00	0.00	1
4111	0.00	0.00	0.00	1
4112	0.00	0.00	0.00	0
4113	0.00	0.00	0.00	1
4114	0.00	0.00	0.00	2
4115	0.00	0.00	0.00	2
4116	0.00	0.00	0.00	1
4117	0.00	0.00	0.00	0
4118	0.00	0.00	0.00	0
4119	0.00	0.00	0.00	2
4120	0.00	0.00	0.00	1
4121	0.00	0.00	0.00	0
4122	0.00	0.00	0.00	0
4123	0.00	0.00	0.00	0
4124	0.00	0.00	0.00	0
4125	0.00	0.00	0.00	1
4126	0.00	0.00	0.00	2
4127	0.00	0.00	0.00	0
4128	0.00	0.00	0.00	1
4129	0.00	0.00	0.00	2
4130	0.00	0.00	0.00	1
4131	0.00	0.00	0.00	1
4132	0.00	0.00	0.00	1
4133	0.00	0.00	0.00	1
4134	0.00	0.00	0.00	1
4135	0.00	0.00	0.00	2
4136	0.00	0.00	0.00	2
4137	0.00	0.00	0.00	1
4138	0.00	0.00	0.00	2
4139	0.00	0.00	0.00	0
4140	0.00	0.00	0.00	1
4141	0.00	0.00	0.00	1
4142	0.00	0.00	0.00	1
4143	0.00	0.00	0.00	0
4144	0.00	0.00	0.00	1
4145	0.00	0.00	0.00	2
4146	0.00	0.00	0.00	1
4147	0.00	0.00	0.00	0
4148	0.00	0.00	0.00	2
4149	0.00	0.00	0.00	1

4150	0.00	0.00	0.00	0
4151	0.00	0.00	0.00	1
4152	0.00	0.00	0.00	2
4153	0.00	0.00	0.00	1
4154	0.00	0.00	0.00	1
4155	0.00	0.00	0.00	0
4156	0.00	0.00	0.00	1
4157	0.00	0.00	0.00	0
4158	0.00	0.00	0.00	1
4159	0.00	0.00	0.00	0
4160	0.00	0.00	0.00	1
4161	0.00	0.00	0.00	1
4162	0.00	0.00	0.00	0
4163	0.00	0.00	0.00	0
4164	0.00	0.00	0.00	0
4165	0.00	0.00	0.00	2
4166	0.00	0.00	0.00	1
4167	0.00	0.00	0.00	1
4168	0.00	0.00	0.00	2
4169	0.00	0.00	0.00	1
4170	0.00	0.00	0.00	1
4171	0.00	0.00	0.00	0
4172	0.00	0.00	0.00	1
4173	0.00	0.00	0.00	1
4174	0.00	0.00	0.00	1
4175	0.00	0.00	0.00	1
4176	0.00	0.00	0.00	1
4177	0.00	0.00	0.00	1
4178	0.00	0.00	0.00	1
4179	0.00	0.00	0.00	1
4180	0.00	0.00	0.00	1
4181	0.00	0.00	0.00	0
4182	0.00	0.00	0.00	1
4183	0.00	0.00	0.00	0
4184	0.00	0.00	0.00	0
4185	0.00	0.00	0.00	0
4186	0.00	0.00	0.00	2
4187	0.00	0.00	0.00	2
4188	0.00	0.00	0.00	0
4189	0.00	0.00	0.00	0
4190	0.00	0.00	0.00	1
4191	0.00	0.00	0.00	0
4192	0.00	0.00	0.00	2
4193	0.00	0.00	0.00	0
4194	0.00	0.00	0.00	1
4195	0.00	0.00	0.00	0
4196	0.00	0.00	0.00	0
4197	0.00	0.00	0.00	2
4198	0.00	0.00	0.00	0
4199	0.00	0.00	0.00	0
4200	0.00	0.00	0.00	2
4201	0.00	0.00	0.00	0
4202	0.00	0.00	0.00	0
4203	0.00	0.00	0.00	0
4204	0.00	0.00	0.00	1
4205	0.00	0.00	0.00	0
4206	0.00	0.00	0.00	1
4207	0.00	0.00	0.00	0
4208	0.00	0.00	0.00	1
4209	0.00	0.00	0.00	0
4210	0.00	0.00	0.00	0
4211	0.00	0.00	0.00	0
4212	0.00	0.00	0.00	1
4213	0.00	0.00	0.00	0
4214	0.00	0.00	0.00	3
4215	0.00	0.00	0.00	0
4216	0.00	0.00	0.00	1
4217	0.00	0.00	0.00	0
4218	0.00	0.00	0.00	1
4219	0.00	0.00	0.00	1
4220	0.00	0.00	0.00	0
4221	0.00	0.00	0.00	1
4222	0.00	0.00	0.00	2
4223	0.00	0.00	0.00	2
4224	0.00	0.00	0.00	0
4225	0.00	0.00	0.00	0
4226	0.00	0.00	0.00	1

4227	0.00	0.00	0.00	1
4228	0.00	0.00	0.00	0
4229	0.00	0.00	0.00	1
4230	0.00	0.00	0.00	1
4231	0.00	0.00	0.00	1
4232	0.00	0.00	0.00	2
4233	0.00	0.00	0.00	0
4234	0.00	0.00	0.00	0
4235	0.00	0.00	0.00	1
4236	0.00	0.00	0.00	2
4237	0.00	0.00	0.00	0
4238	0.00	0.00	0.00	2
4239	0.00	0.00	0.00	0
4240	0.00	0.00	0.00	1
4241	0.00	0.00	0.00	0
4242	0.00	0.00	0.00	1
4243	0.00	0.00	0.00	3
4244	0.00	0.00	0.00	0
4245	0.00	0.00	0.00	0
4246	0.00	0.00	0.00	1
4247	0.00	0.00	0.00	0
4248	0.00	0.00	0.00	1
4249	0.00	0.00	0.00	1
4250	0.00	0.00	0.00	2
4251	0.00	0.00	0.00	0
4252	0.00	0.00	0.00	0
4253	0.00	0.00	0.00	1
4254	0.00	0.00	0.00	2
4255	0.00	0.00	0.00	1
4256	0.00	0.00	0.00	2
4257	0.00	0.00	0.00	2
4258	0.00	0.00	0.00	1
4259	0.00	0.00	0.00	1
4260	0.00	0.00	0.00	0
4261	0.00	0.00	0.00	0
4262	0.00	0.00	0.00	1
4263	0.00	0.00	0.00	0
4264	0.00	0.00	0.00	0
4265	0.00	0.00	0.00	1
4266	0.00	0.00	0.00	1
4267	0.00	0.00	0.00	3
4268	0.00	0.00	0.00	0
4269	0.00	0.00	0.00	0
4270	0.00	0.00	0.00	1
4271	0.00	0.00	0.00	0
4272	0.00	0.00	0.00	2
4273	0.00	0.00	0.00	0
4274	0.00	0.00	0.00	1
4275	0.00	0.00	0.00	1
4276	0.00	0.00	0.00	1
4277	0.00	0.00	0.00	2
4278	0.00	0.00	0.00	0
4279	0.00	0.00	0.00	1
4280	0.00	0.00	0.00	2
4281	0.00	0.00	0.00	1
4282	0.00	0.00	0.00	0
4283	0.00	0.00	0.00	0
4284	0.00	0.00	0.00	1
4285	0.00	0.00	0.00	0
4286	0.00	0.00	0.00	0
4287	0.00	0.00	0.00	1
4288	0.00	0.00	0.00	1
4289	0.00	0.00	0.00	1
4290	0.00	0.00	0.00	1
4291	0.00	0.00	0.00	1
4292	0.00	0.00	0.00	4
4293	0.00	0.00	0.00	0
4294	0.00	0.00	0.00	0
4295	0.00	0.00	0.00	0
4296	0.00	0.00	0.00	1
4297	0.00	0.00	0.00	0
4298	0.00	0.00	0.00	0
4299	0.00	0.00	0.00	0
4300	0.00	0.00	0.00	1
4301	0.00	0.00	0.00	0
4302	0.00	0.00	0.00	1
4303	0.00	0.00	0.00	1

4304	0.00	0.00	0.00	1
4305	0.00	0.00	0.00	1
4306	0.00	0.00	0.00	2
4307	0.00	0.00	0.00	0
4308	0.00	0.00	0.00	1
4309	0.00	0.00	0.00	0
4310	0.00	0.00	0.00	1
4311	0.00	0.00	0.00	0
4312	0.00	0.00	0.00	0
4313	0.00	0.00	0.00	1
4314	0.00	0.00	0.00	0
4315	0.00	0.00	0.00	1
4316	0.00	0.00	0.00	0
4317	0.00	0.00	0.00	0
4318	0.00	0.00	0.00	1
4319	0.00	0.00	0.00	0
4320	0.00	0.00	0.00	1
4321	0.00	0.00	0.00	2
4322	0.00	0.00	0.00	0
4323	0.00	0.00	0.00	0
4324	0.00	0.00	0.00	0
4325	0.00	0.00	0.00	1
4326	0.00	0.00	0.00	1
4327	0.00	0.00	0.00	1
4328	0.00	0.00	0.00	0
4329	0.00	0.00	0.00	0
4330	0.00	0.00	0.00	0
4331	0.00	0.00	0.00	0
4332	0.00	0.00	0.00	1
4333	0.00	0.00	0.00	0
4334	0.00	0.00	0.00	0
4335	0.00	0.00	0.00	0
4336	0.00	0.00	0.00	0
4337	0.00	0.00	0.00	0
4338	0.00	0.00	0.00	0
4339	0.00	0.00	0.00	0
4340	0.00	0.00	0.00	0
4341	0.00	0.00	0.00	0
4342	0.00	0.00	0.00	1
4343	0.00	0.00	0.00	1
4344	0.00	0.00	0.00	1
4345	0.00	0.00	0.00	0
4346	0.00	0.00	0.00	0
4347	0.00	0.00	0.00	0
4348	0.00	0.00	0.00	0
4349	0.00	0.00	0.00	0
4350	0.00	0.00	0.00	2
4351	0.00	0.00	0.00	0
4352	0.00	0.00	0.00	0
4353	0.00	0.00	0.00	1
4354	0.00	0.00	0.00	2
4355	0.00	0.00	0.00	0
4356	0.00	0.00	0.00	1
4357	0.00	0.00	0.00	0
4358	0.00	0.00	0.00	2
4359	0.00	0.00	0.00	3
4360	0.00	0.00	0.00	0
4361	0.00	0.00	0.00	0
4362	0.00	0.00	0.00	1
4363	0.00	0.00	0.00	0
4364	0.00	0.00	0.00	2
4365	0.00	0.00	0.00	0
4366	0.00	0.00	0.00	0
4367	0.00	0.00	0.00	1
4368	0.00	0.00	0.00	0
4369	0.00	0.00	0.00	0
4370	0.00	0.00	0.00	0
4371	0.00	0.00	0.00	0
4372	0.00	0.00	0.00	2
4373	0.00	0.00	0.00	1
4374	0.00	0.00	0.00	0
4375	0.00	0.00	0.00	0
4376	0.00	0.00	0.00	0
4377	0.00	0.00	0.00	0
4378	0.00	0.00	0.00	1
4379	0.00	0.00	0.00	1
4380	0.00	0.00	0.00	0

4381	0.00	0.00	0.00	1
4382	0.00	0.00	0.00	2
4383	0.00	0.00	0.00	1
4384	0.00	0.00	0.00	1
4385	0.00	0.00	0.00	2
4386	0.00	0.00	0.00	0
4387	0.00	0.00	0.00	1
4388	0.00	0.00	0.00	1
4389	0.00	0.00	0.00	1
4390	0.00	0.00	0.00	0
4391	0.00	0.00	0.00	1
4392	0.00	0.00	0.00	1
4393	0.00	0.00	0.00	0
4394	0.00	0.00	0.00	2
4395	0.00	0.00	0.00	0
4396	0.00	0.00	0.00	1
4397	0.00	0.00	0.00	0
4398	0.00	0.00	0.00	1
4399	0.00	0.00	0.00	1
4400	0.00	0.00	0.00	1
4401	0.00	0.00	0.00	0
4402	0.00	0.00	0.00	0
4403	0.00	0.00	0.00	0
4404	0.00	0.00	0.00	2
4405	0.00	0.00	0.00	2
4406	0.00	0.00	0.00	0
4407	0.00	0.00	0.00	0
4408	0.00	0.00	0.00	0
4409	0.00	0.00	0.00	1
4410	0.00	0.00	0.00	0
4411	0.00	0.00	0.00	0
4412	0.00	0.00	0.00	0
4413	0.00	0.00	0.00	1
4414	0.00	0.00	0.00	0
4415	0.00	0.00	0.00	0
4416	0.00	0.00	0.00	1
4417	0.00	0.00	0.00	0
4418	0.00	0.00	0.00	1
4419	0.00	0.00	0.00	0
4420	0.00	0.00	0.00	1
4421	0.00	0.00	0.00	0
4422	0.00	0.00	0.00	0
4423	0.00	0.00	0.00	0
4424	0.00	0.00	0.00	0
4425	0.00	0.00	0.00	2
4426	0.00	0.00	0.00	0
4427	0.00	0.00	0.00	0
4428	0.00	0.00	0.00	0
4429	0.00	0.00	0.00	1
4430	0.00	0.00	0.00	1
4431	0.00	0.00	0.00	0
4432	0.00	0.00	0.00	0
4433	0.00	0.00	0.00	1
4434	0.00	0.00	0.00	0
4435	0.00	0.00	0.00	0
4436	0.00	0.00	0.00	1
4437	0.00	0.00	0.00	0
4438	0.00	0.00	0.00	0
4439	0.00	0.00	0.00	2
4440	0.00	0.00	0.00	1
4441	0.00	0.00	0.00	1
4442	0.00	0.00	0.00	0
4443	0.00	0.00	0.00	0
4444	0.00	0.00	0.00	1
4445	0.00	0.00	0.00	1
4446	0.00	0.00	0.00	2
4447	0.00	0.00	0.00	1
4448	0.00	0.00	0.00	2
4449	0.00	0.00	0.00	0
4450	0.00	0.00	0.00	1
4451	0.00	0.00	0.00	0
4452	0.00	0.00	0.00	0
4453	0.00	0.00	0.00	2
4454	0.00	0.00	0.00	1
4455	0.00	0.00	0.00	0
4456	0.00	0.00	0.00	0
4457	0.00	0.00	0.00	0

4457	0.00	0.00	0.00	0
4458	0.00	0.00	0.00	2
4459	0.00	0.00	0.00	1
4460	0.00	0.00	0.00	2
4461	0.00	0.00	0.00	1
4462	0.00	0.00	0.00	1
4463	0.00	0.00	0.00	2
4464	0.00	0.00	0.00	0
4465	0.00	0.00	0.00	0
4466	0.00	0.00	0.00	0
4467	0.00	0.00	0.00	1
4468	0.00	0.00	0.00	0
4469	0.00	0.00	0.00	2
4470	0.00	0.00	0.00	0
4471	0.00	0.00	0.00	1
4472	0.00	0.00	0.00	0
4473	0.00	0.00	0.00	3
4474	0.00	0.00	0.00	1
4475	0.00	0.00	0.00	1
4476	0.00	0.00	0.00	2
4477	0.00	0.00	0.00	0
4478	0.00	0.00	0.00	0
4479	0.00	0.00	0.00	1
4480	0.00	0.00	0.00	1
4481	0.00	0.00	0.00	1
4482	0.00	0.00	0.00	1
4483	0.00	0.00	0.00	0
4484	0.00	0.00	0.00	2
4485	0.00	0.00	0.00	2
4486	0.00	0.00	0.00	1
4487	0.00	0.00	0.00	1
4488	0.00	0.00	0.00	1
4489	0.00	0.00	0.00	0
4490	0.00	0.00	0.00	0
4491	0.00	0.00	0.00	0
4492	0.00	0.00	0.00	1
4493	0.00	0.00	0.00	2
4494	0.00	0.00	0.00	0
4495	0.00	0.00	0.00	0
4496	0.00	0.00	0.00	0
4497	0.00	0.00	0.00	0
4498	0.00	0.00	0.00	0
4499	0.00	0.00	0.00	0
4500	0.00	0.00	0.00	0
4501	0.00	0.00	0.00	1
4502	0.00	0.00	0.00	0
4503	0.00	0.00	0.00	1
4504	0.00	0.00	0.00	2
4505	0.00	0.00	0.00	1
4506	0.00	0.00	0.00	1
4507	0.00	0.00	0.00	1
4508	0.00	0.00	0.00	0
4509	0.00	0.00	0.00	0
4510	0.00	0.00	0.00	0
4511	0.00	0.00	0.00	1
4512	0.00	0.00	0.00	0
4513	0.00	0.00	0.00	1
4514	0.00	0.00	0.00	0
4515	0.00	0.00	0.00	0
4516	0.00	0.00	0.00	1
4517	0.00	0.00	0.00	0
4518	0.00	0.00	0.00	0
4519	0.00	0.00	0.00	1
4520	0.00	0.00	0.00	0
4521	0.00	0.00	0.00	0
4522	0.00	0.00	0.00	1
4523	0.00	0.00	0.00	1
4524	0.00	0.00	0.00	1
4525	0.00	0.00	0.00	2
4526	0.00	0.00	0.00	0
4527	0.00	0.00	0.00	0
4528	0.00	0.00	0.00	1
4529	0.00	0.00	0.00	1
4530	0.00	0.00	0.00	0
4531	0.00	0.00	0.00	2
4532	0.00	0.00	0.00	0
4533	0.00	0.00	0.00	1
4534	0.00	0.00	0.00	1

4534	0.00	0.00	0.00	1
4535	0.00	0.00	0.00	1
4536	0.00	0.00	0.00	1
4537	0.00	0.00	0.00	0
4538	0.00	0.00	0.00	0
4539	0.00	0.00	0.00	1
4540	0.00	0.00	0.00	0
4541	0.00	0.00	0.00	2
4542	0.00	0.00	0.00	0
4543	0.00	0.00	0.00	1
4544	0.00	0.00	0.00	1
4545	0.00	0.00	0.00	2
4546	0.00	0.00	0.00	0
4547	0.00	0.00	0.00	0
4548	0.00	0.00	0.00	0
4549	0.00	0.00	0.00	0
4550	0.00	0.00	0.00	0
4551	0.00	0.00	0.00	0
4552	0.00	0.00	0.00	1
4553	0.00	0.00	0.00	1
4554	0.00	0.00	0.00	0
4555	0.00	0.00	0.00	1
4556	0.00	0.00	0.00	0
4557	0.00	0.00	0.00	1
4558	0.00	0.00	0.00	2
4559	0.00	0.00	0.00	0
4560	0.00	0.00	0.00	1
4561	0.00	0.00	0.00	1
4562	0.00	0.00	0.00	1
4563	0.00	0.00	0.00	0
4564	0.00	0.00	0.00	0
4565	0.00	0.00	0.00	0
4566	0.00	0.00	0.00	0
4567	0.00	0.00	0.00	0
4568	0.00	0.00	0.00	0
4569	0.00	0.00	0.00	0
4570	0.00	0.00	0.00	0
4571	0.00	0.00	0.00	0
4572	0.00	0.00	0.00	0
4573	0.00	0.00	0.00	0
4574	0.00	0.00	0.00	1
4575	0.00	0.00	0.00	0
4576	0.00	0.00	0.00	1
4577	0.00	0.00	0.00	2
4578	0.00	0.00	0.00	1
4579	0.00	0.00	0.00	0
4580	0.00	0.00	0.00	1
4581	0.00	0.00	0.00	1
4582	0.00	0.00	0.00	2
4583	0.00	0.00	0.00	1
4584	0.00	0.00	0.00	1
4585	0.00	0.00	0.00	0
4586	0.00	0.00	0.00	1
4587	0.00	0.00	0.00	1
4588	0.00	0.00	0.00	0
4589	0.00	0.00	0.00	0
4590	0.00	0.00	0.00	1
4591	0.00	0.00	0.00	1
4592	0.00	0.00	0.00	0
4593	0.00	0.00	0.00	1
4594	0.00	0.00	0.00	0
4595	0.00	0.00	0.00	2
4596	0.00	0.00	0.00	1
4597	0.00	0.00	0.00	0
4598	0.00	0.00	0.00	0
4599	0.00	0.00	0.00	1
4600	0.00	0.00	0.00	1
4601	0.00	0.00	0.00	0
4602	0.00	0.00	0.00	1
4603	0.00	0.00	0.00	0
4604	0.00	0.00	0.00	2
4605	0.00	0.00	0.00	0
4606	0.00	0.00	0.00	2
4607	0.00	0.00	0.00	0
4608	0.00	0.00	0.00	0
4609	0.00	0.00	0.00	0
4610	0.00	0.00	0.00	2
4611	0.00	0.00	0.00	0

4611	0.00	0.00	0.00	0
4612	0.00	0.00	0.00	1
4613	0.00	0.00	0.00	0
4614	0.00	0.00	0.00	0
4615	0.00	0.00	0.00	0
4616	0.00	0.00	0.00	0
4617	0.00	0.00	0.00	1
4618	0.00	0.00	0.00	1
4619	0.00	0.00	0.00	1
4620	0.00	0.00	0.00	0
4621	0.00	0.00	0.00	1
4622	0.00	0.00	0.00	0
4623	0.00	0.00	0.00	0
4624	0.00	0.00	0.00	1
4625	0.00	0.00	0.00	1
4626	0.00	0.00	0.00	0
4627	0.00	0.00	0.00	0
4628	0.00	0.00	0.00	0
4629	0.00	0.00	0.00	0
4630	0.00	0.00	0.00	1
4631	0.00	0.00	0.00	1
4632	0.00	0.00	0.00	0
4633	0.00	0.00	0.00	0
4634	0.00	0.00	0.00	0
4635	0.00	0.00	0.00	0
4636	0.00	0.00	0.00	0
4637	0.00	0.00	0.00	0
4638	0.00	0.00	0.00	0
4639	0.00	0.00	0.00	1
4640	0.00	0.00	0.00	1
4641	0.00	0.00	0.00	3
4642	0.00	0.00	0.00	1
4643	0.00	0.00	0.00	1
4644	0.00	0.00	0.00	1
4645	0.00	0.00	0.00	1
4646	0.00	0.00	0.00	0
4647	0.00	0.00	0.00	1
4648	0.00	0.00	0.00	2
4649	0.00	0.00	0.00	1
4650	0.00	0.00	0.00	1
4651	0.00	0.00	0.00	0
4652	0.00	0.00	0.00	0
4653	0.00	0.00	0.00	0
4654	0.00	0.00	0.00	2
4655	0.00	0.00	0.00	2
4656	0.00	0.00	0.00	0
4657	0.00	0.00	0.00	1
4658	0.00	0.00	0.00	1
4659	0.00	0.00	0.00	1
4660	0.00	0.00	0.00	0
4661	0.00	0.00	0.00	1
4662	0.00	0.00	0.00	2
4663	0.00	0.00	0.00	0
4664	0.00	0.00	0.00	0
4665	0.00	0.00	0.00	2
4666	0.00	0.00	0.00	1
4667	0.00	0.00	0.00	0
4668	0.00	0.00	0.00	1
4669	0.00	0.00	0.00	1
4670	0.00	0.00	0.00	1
4671	0.00	0.00	0.00	2
4672	0.00	0.00	0.00	1
4673	0.00	0.00	0.00	0
4674	0.00	0.00	0.00	0
4675	0.00	0.00	0.00	0
4676	0.00	0.00	0.00	2
4677	0.00	0.00	0.00	0
4678	0.00	0.00	0.00	0
4679	0.00	0.00	0.00	0
4680	0.00	0.00	0.00	1
4681	0.00	0.00	0.00	1
4682	0.00	0.00	0.00	1
4683	0.00	0.00	0.00	0
4684	0.00	0.00	0.00	0
4685	0.00	0.00	0.00	1
4686	0.00	0.00	0.00	2
4687	0.00	0.00	0.00	0
4688	0.00	0.00	0.00	0

4688	0.00	0.00	0.00	0
4689	0.00	0.00	0.00	3
4690	0.00	0.00	0.00	0
4691	0.00	0.00	0.00	1
4692	0.00	0.00	0.00	2
4693	0.00	0.00	0.00	0
4694	0.00	0.00	0.00	2
4695	0.00	0.00	0.00	0
4696	0.00	0.00	0.00	0
4697	0.00	0.00	0.00	1
4698	0.00	0.00	0.00	1
4699	0.00	0.00	0.00	2
4700	0.00	0.00	0.00	2
4701	0.00	0.00	0.00	0
4702	0.00	0.00	0.00	1
4703	0.00	0.00	0.00	0
4704	0.00	0.00	0.00	0
4705	0.00	0.00	0.00	1
4706	0.00	0.00	0.00	1
4707	0.00	0.00	0.00	0
4708	0.00	0.00	0.00	0
4709	0.00	0.00	0.00	1
4710	0.00	0.00	0.00	2
4711	0.00	0.00	0.00	1
4712	0.00	0.00	0.00	1
4713	0.00	0.00	0.00	1
4714	0.00	0.00	0.00	1
4715	0.00	0.00	0.00	0
4716	0.00	0.00	0.00	1
4717	0.00	0.00	0.00	0
4718	0.00	0.00	0.00	0
4719	0.00	0.00	0.00	0
4720	0.00	0.00	0.00	0
4721	0.00	0.00	0.00	0
4722	0.00	0.00	0.00	1
4723	0.00	0.00	0.00	1
4724	0.00	0.00	0.00	1
4725	0.00	0.00	0.00	0
4726	0.00	0.00	0.00	0
4727	0.00	0.00	0.00	1
4728	0.00	0.00	0.00	0
4729	0.00	0.00	0.00	1
4730	0.00	0.00	0.00	1
4731	0.00	0.00	0.00	0
4732	0.00	0.00	0.00	0
4733	0.00	0.00	0.00	0
4734	0.00	0.00	0.00	1
4735	0.00	0.00	0.00	0
4736	0.00	0.00	0.00	0
4737	0.00	0.00	0.00	1
4738	0.00	0.00	0.00	1
4739	0.00	0.00	0.00	0
4740	0.00	0.00	0.00	0
4741	0.00	0.00	0.00	1
4742	0.00	0.00	0.00	1
4743	0.00	0.00	0.00	1
4744	0.00	0.00	0.00	0
4745	0.00	0.00	0.00	1
4746	0.00	0.00	0.00	1
4747	0.00	0.00	0.00	0
4748	0.00	0.00	0.00	1
4749	0.00	0.00	0.00	1
4750	0.00	0.00	0.00	0
4751	0.00	0.00	0.00	0
4752	0.00	0.00	0.00	1
4753	0.00	0.00	0.00	0
4754	0.00	0.00	0.00	0
4755	0.00	0.00	0.00	1
4756	0.00	0.00	0.00	1
4757	0.00	0.00	0.00	0
4758	0.00	0.00	0.00	0
4759	0.00	0.00	0.00	1
4760	0.00	0.00	0.00	1
4761	0.00	0.00	0.00	0
4762	0.00	0.00	0.00	0
4763	0.00	0.00	0.00	1
4764	0.00	0.00	0.00	1
4765	0.00	0.00	0.00	1

4765	0.00	0.00	0.00	1
4766	0.00	0.00	0.00	0
4767	0.00	0.00	0.00	0
4768	0.00	0.00	0.00	0
4769	0.00	0.00	0.00	0
4770	0.00	0.00	0.00	1
4771	0.00	0.00	0.00	0
4772	0.00	0.00	0.00	1
4773	0.00	0.00	0.00	1
4774	0.00	0.00	0.00	1
4775	0.00	0.00	0.00	1
4776	0.00	0.00	0.00	0
4777	0.00	0.00	0.00	1
4778	0.00	0.00	0.00	0
4779	0.00	0.00	0.00	0
4780	0.00	0.00	0.00	1
4781	0.00	0.00	0.00	0
4782	0.00	0.00	0.00	1
4783	0.00	0.00	0.00	0
4784	0.00	0.00	0.00	0
4785	0.00	0.00	0.00	0
4786	0.00	0.00	0.00	1
4787	0.00	0.00	0.00	1
4788	0.00	0.00	0.00	2
4789	0.00	0.00	0.00	1
4790	0.00	0.00	0.00	1
4791	0.00	0.00	0.00	1
4792	0.00	0.00	0.00	1
4793	0.00	0.00	0.00	1
4794	0.00	0.00	0.00	0
4795	0.00	0.00	0.00	0
4796	0.00	0.00	0.00	0
4797	0.00	0.00	0.00	1
4798	0.00	0.00	0.00	0
4799	0.00	0.00	0.00	1
4800	0.00	0.00	0.00	0
4801	0.00	0.00	0.00	2
4802	0.00	0.00	0.00	1
4803	0.00	0.00	0.00	1
4804	0.00	0.00	0.00	1
4805	0.00	0.00	0.00	1
4806	0.00	0.00	0.00	1
4807	0.00	0.00	0.00	2
4808	0.00	0.00	0.00	2
4809	0.00	0.00	0.00	1
4810	0.00	0.00	0.00	0
4811	0.00	0.00	0.00	0
4812	0.00	0.00	0.00	1
4813	0.00	0.00	0.00	1
4814	0.00	0.00	0.00	0
4815	0.00	0.00	0.00	1
4816	0.00	0.00	0.00	0
4817	0.00	0.00	0.00	0
4818	0.00	0.00	0.00	0
4819	0.00	0.00	0.00	1
4820	0.00	0.00	0.00	0
4821	0.00	0.00	0.00	1
4822	0.00	0.00	0.00	1
4823	0.00	0.00	0.00	1
4824	0.00	0.00	0.00	1
4825	0.00	0.00	0.00	1
4826	0.00	0.00	0.00	2
4827	0.00	0.00	0.00	0
4828	0.00	0.00	0.00	0
4829	0.00	0.00	0.00	0
4830	0.00	0.00	0.00	1
4831	0.00	0.00	0.00	0
4832	0.00	0.00	0.00	1
4833	0.00	0.00	0.00	1
4834	0.00	0.00	0.00	0
4835	0.00	0.00	0.00	0
4836	0.00	0.00	0.00	0
4837	0.00	0.00	0.00	0
4838	0.00	0.00	0.00	1
4839	0.00	0.00	0.00	0
4840	0.00	0.00	0.00	0
4841	0.00	0.00	0.00	1
4842	0.00	0.00	0.00	1

4842	0.00	0.00	0.00	1
4843	0.00	0.00	0.00	1
4844	0.00	0.00	0.00	0
4845	0.00	0.00	0.00	0
4846	0.00	0.00	0.00	0
4847	0.00	0.00	0.00	1
4848	0.00	0.00	0.00	0
4849	0.00	0.00	0.00	1
4850	0.00	0.00	0.00	0
4851	0.00	0.00	0.00	0
4852	0.00	0.00	0.00	0
4853	0.00	0.00	0.00	0
4854	0.00	0.00	0.00	0
4855	0.00	0.00	0.00	0
4856	0.00	0.00	0.00	0
4857	0.00	0.00	0.00	0
4858	0.00	0.00	0.00	1
4859	0.00	0.00	0.00	1
4860	0.00	0.00	0.00	0
4861	0.00	0.00	0.00	2
4862	0.00	0.00	0.00	0
4863	0.00	0.00	0.00	1
4864	0.00	0.00	0.00	1
4865	0.00	0.00	0.00	2
4866	0.00	0.00	0.00	1
4867	0.00	0.00	0.00	1
4868	0.00	0.00	0.00	0
4869	0.00	0.00	0.00	1
4870	0.00	0.00	0.00	1
4871	0.00	0.00	0.00	0
4872	0.00	0.00	0.00	1
4873	0.00	0.00	0.00	1
4874	0.00	0.00	0.00	0
4875	0.00	0.00	0.00	0
4876	0.00	0.00	0.00	0
4877	0.00	0.00	0.00	1
4878	0.00	0.00	0.00	0
4879	0.00	0.00	0.00	0
4880	0.00	0.00	0.00	1
4881	0.00	0.00	0.00	0
4882	0.00	0.00	0.00	0
4883	0.00	0.00	0.00	0
4884	0.00	0.00	0.00	0
4885	0.00	0.00	0.00	0
4886	0.00	0.00	0.00	1
4887	0.00	0.00	0.00	1
4888	0.00	0.00	0.00	1
4889	0.00	0.00	0.00	1
4890	0.00	0.00	0.00	0
4891	0.00	0.00	0.00	2
4892	0.00	0.00	0.00	2
4893	0.00	0.00	0.00	0
4894	0.00	0.00	0.00	0
4895	0.00	0.00	0.00	0
4896	0.00	0.00	0.00	0
4897	0.00	0.00	0.00	1
4898	0.00	0.00	0.00	1
4899	0.00	0.00	0.00	0
4900	0.00	0.00	0.00	1
4901	0.00	0.00	0.00	2
4902	0.00	0.00	0.00	1
4903	0.00	0.00	0.00	1
4904	0.00	0.00	0.00	0
4905	0.00	0.00	0.00	1
4906	0.00	0.00	0.00	1
4907	0.00	0.00	0.00	1
4908	0.00	0.00	0.00	2
4909	0.00	0.00	0.00	0
4910	0.00	0.00	0.00	0
4911	0.00	0.00	0.00	1
4912	0.00	0.00	0.00	1
4913	0.00	0.00	0.00	0
4914	0.00	0.00	0.00	0
4915	0.00	0.00	0.00	1
4916	0.00	0.00	0.00	2
4917	0.00	0.00	0.00	1
4918	0.00	0.00	0.00	0

4919	0.00	0.00	0.00	1
4920	0.00	0.00	0.00	1
4921	0.00	0.00	0.00	0
4922	0.00	0.00	0.00	1
4923	0.00	0.00	0.00	1
4924	0.00	0.00	0.00	0
4925	0.00	0.00	0.00	0
4926	0.00	0.00	0.00	1
4927	0.00	0.00	0.00	1
4928	0.00	0.00	0.00	0
4929	0.00	0.00	0.00	0
4930	0.00	0.00	0.00	1
4931	0.00	0.00	0.00	2
4932	0.00	0.00	0.00	1
4933	0.00	0.00	0.00	0
4934	0.00	0.00	0.00	0
4935	0.00	0.00	0.00	1
4936	0.00	0.00	0.00	0
4937	0.00	0.00	0.00	2
4938	0.00	0.00	0.00	0
4939	0.00	0.00	0.00	1
4940	0.00	0.00	0.00	2
4941	0.00	0.00	0.00	0
4942	0.00	0.00	0.00	0
4943	0.00	0.00	0.00	0
4944	0.00	0.00	0.00	1
4945	0.00	0.00	0.00	1
4946	0.00	0.00	0.00	0
4947	0.00	0.00	0.00	0
4948	0.00	0.00	0.00	0
4949	0.00	0.00	0.00	0
4950	0.00	0.00	0.00	2
4951	0.00	0.00	0.00	1
4952	0.00	0.00	0.00	1
4953	0.00	0.00	0.00	0
4954	0.00	0.00	0.00	1
4955	0.00	0.00	0.00	1
4956	0.00	0.00	0.00	0
4957	0.00	0.00	0.00	1
4958	0.00	0.00	0.00	0
4959	0.00	0.00	0.00	0
4960	0.00	0.00	0.00	1
4961	0.00	0.00	0.00	0
4962	0.00	0.00	0.00	1
4963	0.00	0.00	0.00	2
4964	0.00	0.00	0.00	1
4965	0.00	0.00	0.00	0
4966	0.00	0.00	0.00	1
4967	0.00	0.00	0.00	0
4968	0.00	0.00	0.00	0
4969	0.00	0.00	0.00	0
4970	0.00	0.00	0.00	0
4971	0.00	0.00	0.00	1
4972	0.00	0.00	0.00	2
4973	0.00	0.00	0.00	1
4974	0.00	0.00	0.00	1
4975	0.00	0.00	0.00	0
4976	0.00	0.00	0.00	0
4977	0.00	0.00	0.00	0
4978	0.00	0.00	0.00	0
4979	0.00	0.00	0.00	1
4980	0.00	0.00	0.00	0
4981	0.00	0.00	0.00	0
4982	0.00	0.00	0.00	0
4983	0.00	0.00	0.00	1
4984	0.00	0.00	0.00	0
4985	0.00	0.00	0.00	1
4986	0.00	0.00	0.00	0
4987	0.00	0.00	0.00	0
4988	0.00	0.00	0.00	0
4989	0.00	0.00	0.00	3
4990	0.00	0.00	0.00	0
4991	0.00	0.00	0.00	0
4992	0.00	0.00	0.00	0
4993	0.00	0.00	0.00	0
4994	0.00	0.00	0.00	2
4995	0.00	0.00	0.00	1

4996	0.00	0.00	0.00	0
4997	0.00	0.00	0.00	0
4998	0.00	0.00	0.00	0
4999	0.00	0.00	0.00	2
5000	0.00	0.00	0.00	0
5001	0.00	0.00	0.00	0
5002	0.00	0.00	0.00	1
5003	0.00	0.00	0.00	0
5004	0.00	0.00	0.00	0
5005	0.00	0.00	0.00	1
5006	0.00	0.00	0.00	0
5007	0.00	0.00	0.00	2
5008	0.00	0.00	0.00	0
5009	0.00	0.00	0.00	1
5010	0.00	0.00	0.00	0
5011	0.00	0.00	0.00	0
5012	0.00	0.00	0.00	1
5013	0.00	0.00	0.00	0
5014	0.00	0.00	0.00	0
5015	0.00	0.00	0.00	0
5016	0.00	0.00	0.00	0
5017	0.00	0.00	0.00	0
5018	0.00	0.00	0.00	2
5019	0.00	0.00	0.00	0
5020	0.00	0.00	0.00	0
5021	0.00	0.00	0.00	1
5022	0.00	0.00	0.00	0
5023	0.00	0.00	0.00	0
5024	0.00	0.00	0.00	1
5025	0.00	0.00	0.00	0
5026	0.00	0.00	0.00	0
5027	0.00	0.00	0.00	0
5028	0.00	0.00	0.00	1
5029	0.00	0.00	0.00	0
5030	0.00	0.00	0.00	0
5031	0.00	0.00	0.00	0
5032	0.00	0.00	0.00	0
5033	0.00	0.00	0.00	0
5034	0.00	0.00	0.00	1
5035	0.00	0.00	0.00	1
5036	0.00	0.00	0.00	3
5037	0.00	0.00	0.00	1
5038	0.00	0.00	0.00	1
5039	0.00	0.00	0.00	0
5040	0.00	0.00	0.00	1
5041	0.00	0.00	0.00	1
5042	0.00	0.00	0.00	2
5043	0.00	0.00	0.00	2
5044	0.00	0.00	0.00	0
5045	0.00	0.00	0.00	1
5046	0.00	0.00	0.00	2
5047	0.00	0.00	0.00	0
5048	0.00	0.00	0.00	1
5049	0.00	0.00	0.00	0
5050	0.00	0.00	0.00	1
5051	0.00	0.00	0.00	0
5052	0.00	0.00	0.00	2
5053	0.00	0.00	0.00	0
5054	0.00	0.00	0.00	1
5055	0.00	0.00	0.00	2
5056	0.00	0.00	0.00	0
5057	0.00	0.00	0.00	0
5058	0.00	0.00	0.00	0
5059	0.00	0.00	0.00	2
5060	0.00	0.00	0.00	1
5061	0.00	0.00	0.00	0
5062	0.00	0.00	0.00	0
5063	0.00	0.00	0.00	2
5064	0.00	0.00	0.00	0
5065	0.00	0.00	0.00	0
5066	0.00	0.00	0.00	1
5067	0.00	0.00	0.00	0
5068	0.00	0.00	0.00	1
5069	0.00	0.00	0.00	1
5070	0.00	0.00	0.00	1
5071	0.00	0.00	0.00	1
5072	0.00	0.00	0.00	0

5073	0.00	0.00	0.00	0
5074	0.00	0.00	0.00	0
5075	0.00	0.00	0.00	1
5076	0.00	0.00	0.00	1
5077	0.00	0.00	0.00	0
5078	0.00	0.00	0.00	1
5079	0.00	0.00	0.00	2
5080	0.00	0.00	0.00	0
5081	0.00	0.00	0.00	2
5082	0.00	0.00	0.00	1
5083	0.00	0.00	0.00	1
5084	0.00	0.00	0.00	0
5085	0.00	0.00	0.00	0
5086	0.00	0.00	0.00	0
5087	0.00	0.00	0.00	0
5088	0.00	0.00	0.00	2
5089	0.00	0.00	0.00	0
5090	0.00	0.00	0.00	1
5091	0.00	0.00	0.00	1
5092	0.00	0.00	0.00	0
5093	0.00	0.00	0.00	1
5094	0.00	0.00	0.00	0
5095	0.00	0.00	0.00	0
5096	0.00	0.00	0.00	1
5097	0.00	0.00	0.00	1
5098	0.00	0.00	0.00	0
5099	0.00	0.00	0.00	1
5100	0.00	0.00	0.00	0
5101	0.00	0.00	0.00	0
5102	0.00	0.00	0.00	1
5103	0.00	0.00	0.00	1
5104	0.00	0.00	0.00	0
5105	0.00	0.00	0.00	1
5106	0.00	0.00	0.00	0
5107	0.00	0.00	0.00	1
5108	0.00	0.00	0.00	0
5109	0.00	0.00	0.00	0
5110	0.00	0.00	0.00	1
5111	0.00	0.00	0.00	0
5112	0.00	0.00	0.00	0
5113	0.00	0.00	0.00	0
5114	0.00	0.00	0.00	0
5115	0.00	0.00	0.00	0
5116	0.00	0.00	0.00	0
5117	0.00	0.00	0.00	2
5118	0.00	0.00	0.00	1
5119	0.00	0.00	0.00	0
5120	0.00	0.00	0.00	1
5121	0.00	0.00	0.00	0
5122	0.00	0.00	0.00	0
5123	0.00	0.00	0.00	0
5124	0.00	0.00	0.00	1
5125	0.00	0.00	0.00	0
5126	0.00	0.00	0.00	0
5127	0.00	0.00	0.00	0
5128	0.00	0.00	0.00	1
5129	0.00	0.00	0.00	1
5130	0.00	0.00	0.00	3
5131	0.00	0.00	0.00	0
5132	0.00	0.00	0.00	0
5133	0.00	0.00	0.00	0
5134	0.00	0.00	0.00	2
5135	0.00	0.00	0.00	1
5136	0.00	0.00	0.00	1
5137	0.00	0.00	0.00	0
5138	0.00	0.00	0.00	1
5139	0.00	0.00	0.00	2
5140	0.00	0.00	0.00	0
5141	0.00	0.00	0.00	0
5142	0.00	0.00	0.00	2
5143	0.00	0.00	0.00	1
5144	0.00	0.00	0.00	0
5145	0.00	0.00	0.00	0
5146	0.00	0.00	0.00	1
5147	0.00	0.00	0.00	0
5148	0.00	0.00	0.00	0
5149	0.00	0.00	0.00	1

5150	0.00	0.00	0.00	1
5151	0.00	0.00	0.00	2
5152	0.00	0.00	0.00	2
5153	0.00	0.00	0.00	1
5154	0.00	0.00	0.00	1
5155	0.00	0.00	0.00	2
5156	0.00	0.00	0.00	0
5157	0.00	0.00	0.00	0
5158	0.00	0.00	0.00	1
5159	0.00	0.00	0.00	0
5160	0.00	0.00	0.00	1
5161	0.00	0.00	0.00	0
5162	0.00	0.00	0.00	0
5163	0.00	0.00	0.00	0
5164	0.00	0.00	0.00	2
5165	0.00	0.00	0.00	0
5166	0.00	0.00	0.00	1
5167	0.00	0.00	0.00	1
5168	0.00	0.00	0.00	0
5169	0.00	0.00	0.00	2
5170	0.00	0.00	0.00	0
5171	0.00	0.00	0.00	0
5172	0.00	0.00	0.00	1
5173	0.00	0.00	0.00	0
5174	0.00	0.00	0.00	0
5175	0.00	0.00	0.00	0
5176	0.00	0.00	0.00	1
5177	0.00	0.00	0.00	0
5178	0.00	0.00	0.00	0
5179	0.00	0.00	0.00	2
5180	0.00	0.00	0.00	1
5181	0.00	0.00	0.00	2
5182	0.00	0.00	0.00	1
5183	0.00	0.00	0.00	2
5184	0.00	0.00	0.00	1
5185	0.00	0.00	0.00	0
5186	0.00	0.00	0.00	0
5187	0.00	0.00	0.00	0
5188	0.00	0.00	0.00	1
5189	0.00	0.00	0.00	0
5190	0.00	0.00	0.00	0
5191	0.00	0.00	0.00	0
5192	0.00	0.00	0.00	1
5193	0.00	0.00	0.00	0
5194	0.00	0.00	0.00	1
5195	0.00	0.00	0.00	0
5196	0.00	0.00	0.00	0
5197	0.00	0.00	0.00	1
5198	0.00	0.00	0.00	1
5199	0.00	0.00	0.00	0
5200	0.00	0.00	0.00	2
5201	0.00	0.00	0.00	0
5202	0.00	0.00	0.00	0
5203	0.00	0.00	0.00	1
5204	0.00	0.00	0.00	1
5205	0.00	0.00	0.00	1
5206	0.00	0.00	0.00	1
5207	0.00	0.00	0.00	0
5208	0.00	0.00	0.00	1
5209	0.00	0.00	0.00	2
5210	0.00	0.00	0.00	0
5211	0.00	0.00	0.00	1
5212	0.00	0.00	0.00	1
5213	0.00	0.00	0.00	1
5214	0.00	0.00	0.00	1
5215	0.00	0.00	0.00	1
5216	0.00	0.00	0.00	0
5217	0.00	0.00	0.00	0
5218	0.00	0.00	0.00	1
5219	0.00	0.00	0.00	1
5220	0.00	0.00	0.00	2
5221	0.00	0.00	0.00	0
5222	0.00	0.00	0.00	2
5223	0.00	0.00	0.00	0
5224	0.00	0.00	0.00	1
5225	0.00	0.00	0.00	1
5226	0.00	0.00	0.00	0

5227	0.00	0.00	0.00	1
5228	0.00	0.00	0.00	0
5229	0.00	0.00	0.00	0
5230	0.00	0.00	0.00	0
5231	0.00	0.00	0.00	1
5232	0.00	0.00	0.00	0
5233	0.00	0.00	0.00	0
5234	0.00	0.00	0.00	0
5235	0.00	0.00	0.00	0
5236	0.00	0.00	0.00	1
5237	0.00	0.00	0.00	1
5238	0.00	0.00	0.00	0
5239	0.00	0.00	0.00	0
5240	0.00	0.00	0.00	1
5241	0.00	0.00	0.00	2
5242	0.00	0.00	0.00	1
5243	0.00	0.00	0.00	1
5244	0.00	0.00	0.00	0
5245	0.00	0.00	0.00	2
5246	0.00	0.00	0.00	1
5247	0.00	0.00	0.00	1
5248	0.00	0.00	0.00	0
5249	0.00	0.00	0.00	0
5250	0.00	0.00	0.00	1
5251	0.00	0.00	0.00	2
5252	0.00	0.00	0.00	0
5253	0.00	0.00	0.00	1
5254	0.00	0.00	0.00	0
5255	0.00	0.00	0.00	0
5256	0.00	0.00	0.00	2
5257	0.00	0.00	0.00	1
5258	0.00	0.00	0.00	0
5259	0.00	0.00	0.00	0
5260	0.00	0.00	0.00	0
5261	0.00	0.00	0.00	0
5262	0.00	0.00	0.00	1
5263	0.00	0.00	0.00	1
5264	0.00	0.00	0.00	0
5265	0.00	0.00	0.00	1
5266	0.00	0.00	0.00	1
5267	0.00	0.00	0.00	1
5268	0.00	0.00	0.00	1
5269	0.00	0.00	0.00	0
5270	0.00	0.00	0.00	1
5271	0.00	0.00	0.00	0
5272	0.00	0.00	0.00	2
5273	0.00	0.00	0.00	2
5274	0.00	0.00	0.00	2
5275	0.00	0.00	0.00	1
5276	0.00	0.00	0.00	1
5277	0.00	0.00	0.00	0
5278	0.00	0.00	0.00	0
5279	0.00	0.00	0.00	0
5280	0.00	0.00	0.00	0
5281	0.00	0.00	0.00	0
5282	0.00	0.00	0.00	0
5283	0.00	0.00	0.00	1
5284	0.00	0.00	0.00	0
5285	0.00	0.00	0.00	1
5286	0.00	0.00	0.00	0
5287	0.00	0.00	0.00	0
5288	0.00	0.00	0.00	0
5289	0.00	0.00	0.00	0
5290	0.00	0.00	0.00	2
5291	0.00	0.00	0.00	2
5292	0.00	0.00	0.00	1
5293	0.00	0.00	0.00	0
5294	0.00	0.00	0.00	0
5295	0.00	0.00	0.00	0
5296	0.00	0.00	0.00	1
5297	0.00	0.00	0.00	1
5298	0.00	0.00	0.00	2
5299	0.00	0.00	0.00	1
5300	0.00	0.00	0.00	1
5301	0.00	0.00	0.00	0
5302	0.00	0.00	0.00	0
5303	0.00	0.00	0.00	2

5304	0.00	0.00	0.00	0
5305	0.00	0.00	0.00	2
5306	0.00	0.00	0.00	1
5307	0.00	0.00	0.00	1
5308	0.00	0.00	0.00	0
5309	0.00	0.00	0.00	1
5310	0.00	0.00	0.00	1
5311	0.00	0.00	0.00	0
5312	0.00	0.00	0.00	0
5313	0.00	0.00	0.00	2
5314	0.00	0.00	0.00	0
5315	0.00	0.00	0.00	0
5316	0.00	0.00	0.00	1
5317	0.00	0.00	0.00	2
5318	0.00	0.00	0.00	1
5319	0.00	0.00	0.00	0
5320	0.00	0.00	0.00	0
5321	0.00	0.00	0.00	0
5322	0.00	0.00	0.00	0
5323	0.00	0.00	0.00	2
5324	0.00	0.00	0.00	1
5325	0.00	0.00	0.00	0
5326	0.00	0.00	0.00	0
5327	0.00	0.00	0.00	1
5328	0.00	0.00	0.00	1
5329	0.00	0.00	0.00	0
5330	0.00	0.00	0.00	1
5331	0.00	0.00	0.00	0
5332	0.00	0.00	0.00	0
5333	0.00	0.00	0.00	0
5334	0.00	0.00	0.00	0
5335	0.00	0.00	0.00	0
5336	0.00	0.00	0.00	0
5337	0.00	0.00	0.00	0
5338	0.00	0.00	0.00	1
5339	0.00	0.00	0.00	1
5340	0.00	0.00	0.00	1
5341	0.00	0.00	0.00	0
5342	0.00	0.00	0.00	1
5343	0.00	0.00	0.00	1
5344	0.00	0.00	0.00	0
5345	0.00	0.00	0.00	0
5346	0.00	0.00	0.00	0
5347	0.00	0.00	0.00	2
5348	0.00	0.00	0.00	1
5349	0.00	0.00	0.00	0
5350	0.00	0.00	0.00	0
5351	0.00	0.00	0.00	0
5352	0.00	0.00	0.00	0
5353	0.00	0.00	0.00	1
5354	0.00	0.00	0.00	0
5355	0.00	0.00	0.00	0
5356	0.00	0.00	0.00	1
5357	0.00	0.00	0.00	2
5358	0.00	0.00	0.00	0
5359	0.00	0.00	0.00	0
5360	0.00	0.00	0.00	2
5361	0.00	0.00	0.00	1
5362	0.00	0.00	0.00	0
5363	0.00	0.00	0.00	0
5364	0.00	0.00	0.00	1
5365	0.00	0.00	0.00	2
5366	0.00	0.00	0.00	0
5367	0.00	0.00	0.00	2
5368	0.00	0.00	0.00	2
5369	0.00	0.00	0.00	1
5370	0.00	0.00	0.00	1
5371	0.00	0.00	0.00	1
5372	0.00	0.00	0.00	0
5373	0.00	0.00	0.00	0
5374	0.00	0.00	0.00	1
5375	0.00	0.00	0.00	1
5376	0.00	0.00	0.00	1
5377	0.00	0.00	0.00	1
5378	0.00	0.00	0.00	1
5379	0.00	0.00	0.00	1
5380	0.00	0.00	0.00	2

5381	0.00	0.00	0.00	1
5382	0.00	0.00	0.00	1
5383	0.00	0.00	0.00	1
5384	0.00	0.00	0.00	1
5385	0.00	0.00	0.00	1
5386	0.00	0.00	0.00	0
5387	0.00	0.00	0.00	0
5388	0.00	0.00	0.00	0
5389	0.00	0.00	0.00	0
5390	0.00	0.00	0.00	0
5391	0.00	0.00	0.00	0
5392	0.00	0.00	0.00	1
5393	0.00	0.00	0.00	0
5394	0.00	0.00	0.00	0
5395	0.00	0.00	0.00	0
5396	0.00	0.00	0.00	0
5397	0.00	0.00	0.00	1
5398	0.00	0.00	0.00	0
5399	0.00	0.00	0.00	1
5400	0.00	0.00	0.00	2
5401	0.00	0.00	0.00	1
5402	0.00	0.00	0.00	2
5403	0.00	0.00	0.00	0
5404	0.00	0.00	0.00	1
5405	0.00	0.00	0.00	0
5406	0.00	0.00	0.00	1
5407	0.00	0.00	0.00	1
5408	0.00	0.00	0.00	0
5409	0.00	0.00	0.00	0
5410	0.00	0.00	0.00	2
5411	0.00	0.00	0.00	0
5412	0.00	0.00	0.00	0
5413	0.00	0.00	0.00	0
5414	0.00	0.00	0.00	1
5415	0.00	0.00	0.00	2
5416	0.00	0.00	0.00	1
5417	0.00	0.00	0.00	2
5418	0.00	0.00	0.00	0
5419	0.00	0.00	0.00	1
5420	0.00	0.00	0.00	0
5421	0.00	0.00	0.00	2
5422	0.00	0.00	0.00	0
5423	0.00	0.00	0.00	1
5424	0.00	0.00	0.00	0
5425	0.00	0.00	0.00	0
5426	0.00	0.00	0.00	0
5427	0.00	0.00	0.00	1
5428	0.00	0.00	0.00	1
5429	0.00	0.00	0.00	1
5430	0.00	0.00	0.00	3
5431	0.00	0.00	0.00	1
5432	0.00	0.00	0.00	0
5433	0.00	0.00	0.00	2
5434	0.00	0.00	0.00	0
5435	0.00	0.00	0.00	0
5436	0.00	0.00	0.00	1
5437	0.00	0.00	0.00	2
5438	0.00	0.00	0.00	0
5439	0.00	0.00	0.00	0
5440	0.00	0.00	0.00	0
5441	0.00	0.00	0.00	1
5442	0.00	0.00	0.00	1
5443	0.00	0.00	0.00	0
5444	0.00	0.00	0.00	0
5445	0.00	0.00	0.00	0
5446	0.00	0.00	0.00	2
5447	0.00	0.00	0.00	1
5448	0.00	0.00	0.00	1
5449	0.00	0.00	0.00	0
5450	0.00	0.00	0.00	0
5451	0.00	0.00	0.00	0
5452	0.00	0.00	0.00	1
5453	0.00	0.00	0.00	0
5454	0.00	0.00	0.00	1
5455	0.00	0.00	0.00	1
5456	0.00	0.00	0.00	1
5457	0.00	0.00	0.00	1

5458	0.00	0.00	0.00	0
5459	0.00	0.00	0.00	0
5460	0.00	0.00	0.00	1
5461	0.00	0.00	0.00	1
5462	0.00	0.00	0.00	0
5463	0.00	0.00	0.00	0
5464	0.00	0.00	0.00	2
5465	0.00	0.00	0.00	0
5466	0.00	0.00	0.00	2
5467	0.00	0.00	0.00	0
5468	0.00	0.00	0.00	0
5469	0.00	0.00	0.00	1
5470	0.00	0.00	0.00	0
5471	0.00	0.00	0.00	1
5472	0.00	0.00	0.00	0
5473	0.00	0.00	0.00	1
5474	0.00	0.00	0.00	1
5475	0.00	0.00	0.00	0
5476	0.00	0.00	0.00	0
5477	0.00	0.00	0.00	0
5478	0.00	0.00	0.00	0
5479	0.00	0.00	0.00	1
5480	0.00	0.00	0.00	0
5481	0.00	0.00	0.00	0
5482	0.00	0.00	0.00	1
5483	0.00	0.00	0.00	0
5484	0.00	0.00	0.00	1
5485	0.00	0.00	0.00	1
5486	0.00	0.00	0.00	0
5487	0.00	0.00	0.00	0
5488	0.00	0.00	0.00	1
5489	0.00	0.00	0.00	0
5490	0.00	0.00	0.00	0
5491	0.00	0.00	0.00	2
5492	0.00	0.00	0.00	1
5493	0.00	0.00	0.00	1
5494	0.00	0.00	0.00	0
5495	0.00	0.00	0.00	1
5496	0.00	0.00	0.00	1
5497	0.00	0.00	0.00	0
5498	0.00	0.00	0.00	0
5499	0.00	0.00	0.00	1
micro avg	0.67	0.25	0.37	26718
macro avg	0.11	0.06	0.07	26718
weighted avg	0.46	0.25	0.31	26718
samples avg	0.46	0.28	0.32	26718

In [0]:

```
from sklearn.externals import joblib
joblib.dump(classifier, 'lr_with_equal_weight.pkl')
```

4.5 Modeling with more weight to title and 500 tags only.

In [119]:

```
sql_create_table = """CREATE TABLE IF NOT EXISTS QuestionsProcessed (question text NOT NULL, code
text, tags text, words_pre integer, words_post integer, is_code integer);"""
create_database_table("Titlmoreweight.db", sql_create_table)
```

Tables in the databse:
QuestionsProcessed

In [120]:

```
# 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'
```

```

write_db = item['weight'].db
# train_datasize = 400000
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 ;")
        # for selecting random points
        #reader.execute("SELECT Title, Body, Tags From no_dup_train ORDER 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 database:

QuestionsProcessed

Cleared All the rows

4.5.1 Preprocessing of questions

1. Separate Code from Body
2. Remove Special 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 [121]:

```

#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_processed = 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.DOTALL))

    question=re.sub('<code>(.*?)</code>', '', question, flags=re.MULTILINE|re.DOTALL)
    question=striphtml(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_processed<=train_datasize:
#         question=str(title)+" "+str(title)+" "+str(title)+" "+question+" "+str(tags)
#     else:

```

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

question=re.sub(r'^A-Za-z0-9#+.\-]+',' ',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 stop_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,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)
```

```
Avg. length of questions(Title+Body) before processing: 1151
Avg. length of questions(Title+Body) after processing: 410
Percent of questions containing code: 55
Time taken to run this cell : 0:02:19.504463
```

In [122]:

```
# never forget to close the conections or else we will end up with database locks
conn_r.commit()
conn_w.commit()
conn_r.close()
conn_w.close()
```

Sample quesitons after preprocessing of data

In [123]:

```
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

```
=====

('googl map locat base address googl map locat base address googl map locat base address im use go
ogl map applic work fine provid longitud latitud nbut display locat base address string',)
-----

('insert custom field typo3 dam modul custom locat insert custom field typo3 dam modul custom
locat insert custom field typo3 dam modul custom locat introduc custom field dam modul work fine w
ant display custom field overview tab first tab edit document appear last tab ext tables.php line
add field dam modul',)
-----

('preserv case use re.ignorecas .sub preserv case use re.ignorecas .sub preserv case use
re.ignorecas .sub return nmi name roger shrubber arrang design sell shrubberi like return origin c
ase name roger shrubber arrang design sell shrubberi sorri total noob help would great appreci',)
-----
```

('loop perform calcul across row specif column match pattern data frame loop perform calcul across row specif column match pattern data frame loop perform calcul across row specif column match pattern data frame datafram boolean valu follow sorri work make smart tabl 64 sampl sam tedetc list call file i.e would like creat column sum flag valu sampl creat follow fair new tri learn need know basi tri follow code work bit lost move forward anyon help untangl problem point right direct command tool use thank',)

('miss summari tag explicit implement interfac miss summari tag explicit implement interfac miss summari tag explicit implement interfac basic follow code myproject.xml sandcastl built output warn showmissingcompon miss document myproject.mydictionary 2.system collect generic icollect clear sure exact sandcastl build option includ explicit implement creat page document seem figur creat xml comment method odd enough method identifi xml comment fact implicit implement icollect method give sandcastl issu help',)

('flag two mean java flag two mean java flag two mean java wonder consid condit paramet pass elsew her',)

('handler scriptprocessor could found fastcgi applic configur access php script subfold handler scriptprocessor could found fastcgi applic configur access php script subfold handler scriptprocessor could found fastcgi applic configur access php script subfold ni configur problem php ii 7.5. practic fresh instal made ms web pi win7 creat simpl php testpag work root level first sub-level get http 500 error everyth seem configur specifi http www.iis.net configrefer system.webserv fastcgi applic could kind filter disabl process specif folder-level enabl first level check',)

('access violat read locat vertex buffer access violat read locat vertex buffer access violat read locat vertex buffer tri convert follow piec code one use vertex buffer faulti code part look like howev get access violat read locat error gldrawarray line idea could wrong new opengl graphic pretti sure mess someth obvious',)

('add correct host key known host multipl ssh host key per hostnam add correct host key known host multipl ssh host key per hostnam add correct host key known host multipl ssh host key per hostnam tri ssh comput control get familiar messag inde chang key read dozen post say way resolv problem d elet old key known host file would like ssh accept old key new key languag error messag add correct host key suggest way add correct host key without remov old one abl figur add new host key without remov old one possibl error messag extrem mislead',)

Saving Preprocessed data to a Database

In [124]:

```
#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 [125]:

```
preprocessed_data.head()
```

Out[125]:

	question	tags
0	encod sent data work encod sent data work enco...	php jquery ajax encoding
1	googl map locat base address googl map locat b...	android google-maps
2	insert custom field typo3 dam modul custom loc...	typo3 dam
3	preserv case use re.ignorecas .sub preserv cas...	python regex
4	loop perform calcul across row specif column m...	r for-loop pattern-matching aggregate reshape

In [126]:

```
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 : 49856
number of dimensions : 2
```

Converting string Tags to multilable output variables

In [127]:

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

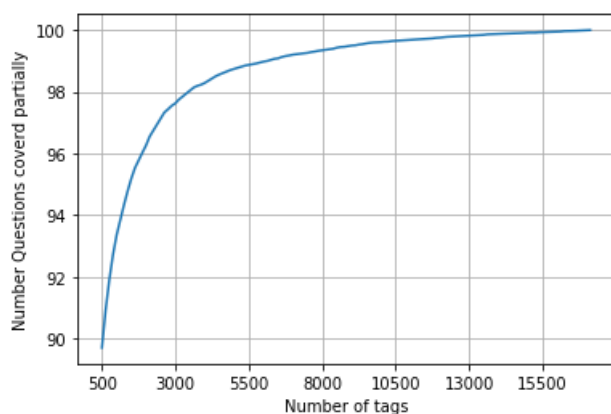
Selecting 500 Tags

In [128]:

```
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 [129]:

```
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, minimun 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 99.152 % of questions
with 500 tags we are covering 89.704 % of questions
```

In [130]:

```
# 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 : 5133 out of 49856
```

In [132]:

In [133]:

```
Number of data points in train data : (40000, 500)
Number of data points in test data : (9856, 500)
```

In [137]:

Time taken to run this cell : 0:00:43.757697

In [138]:

```
Dimensions of train data X: (40000, 5000) Y : (40000, 500)
Dimensions of test data X: (9856, 5000) Y: (9856, 500)
```

In [152]:

Time to train 2:02:08.366686

```
OneVsRestClassifier(estimator=LogisticRegression(C=1, class_weight=None,
dual=False, fit_intercept=True,
intercept_scaling=1,
ll_ratio=None, max_iter=100,
multi_class='warn',
n_jobs=None, penalty='l2',
random_state=None,
solver='warn', tol=0.0001,
verbose=0, warm_start=False),
```

```
n_jobs=-1)
```

4.5.4. Applying Logistic Regression with OneVsRest Classifier with penalty = l2

In [153]:

```
start = datetime.now()
classifier1 = OneVsRestClassifier(LogisticRegression(C=1, penalty='l2'), n_jobs=-1)
classifier1.fit(x_train_multilabel, y_train)
predictions = classifier1.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 : 0.19541396103896103
Hamming loss 0.003281452922077922
Micro-average quality numbers
Precision: 0.5510, Recall: 0.3802, F1-measure: 0.4499
Macro-average quality numbers
Precision: 0.4544, Recall: 0.2716, F1-measure: 0.3274
precision    recall  f1-score   support
```

0	0.45	0.35	0.39	585
1	0.55	0.44	0.49	626
2	0.68	0.53	0.59	780
3	0.51	0.46	0.48	720
4	0.83	0.73	0.77	477
5	0.79	0.70	0.74	849
6	0.63	0.46	0.53	333
7	0.65	0.57	0.61	427
8	0.73	0.50	0.59	316
9	0.52	0.44	0.47	245
10	0.74	0.61	0.67	291
11	0.35	0.27	0.30	324
12	0.17	0.13	0.15	158
13	0.43	0.38	0.40	164
14	0.41	0.37	0.39	266
15	0.31	0.27	0.29	225
16	0.62	0.51	0.56	239
17	0.36	0.25	0.30	213
18	0.63	0.44	0.52	180
19	0.23	0.17	0.19	164
20	0.38	0.24	0.30	198
21	0.30	0.25	0.27	69
22	0.58	0.43	0.49	114
23	0.67	0.44	0.53	66
24	0.64	0.58	0.61	139
25	0.26	0.21	0.24	75
26	0.49	0.41	0.45	110
27	0.70	0.70	0.70	89
28	0.51	0.35	0.41	128
29	0.48	0.30	0.37	80
30	0.31	0.28	0.30	53
31	0.38	0.24	0.30	75
32	0.53	0.42	0.47	119
33	0.00	0.00	0.00	50

33	0.89	0.73	0.80	70
34	0.47	0.38	0.42	53
35	0.73	0.55	0.62	64
36	0.26	0.15	0.19	71
37	0.56	0.33	0.42	60
38	0.33	0.22	0.26	60
39	0.61	0.32	0.42	71
40	0.31	0.16	0.21	70
41	0.64	0.50	0.56	74
42	0.68	0.37	0.48	51
43	0.63	0.41	0.49	59
44	0.35	0.21	0.26	34
45	0.58	0.38	0.46	68
46	0.37	0.30	0.33	54
47	0.63	0.47	0.54	51
48	0.43	0.27	0.33	48
49	0.76	0.66	0.70	38
50	0.78	0.42	0.55	50
51	0.10	0.07	0.08	60
52	0.07	0.03	0.04	32
53	0.67	0.36	0.47	28
54	0.19	0.10	0.13	42
55	0.69	0.54	0.61	104
56	0.59	0.24	0.34	42
57	0.40	0.19	0.26	32
58	0.48	0.30	0.37	50
59	0.59	0.46	0.52	37
60	0.10	0.07	0.08	30
61	0.25	0.17	0.20	29
62	0.19	0.10	0.13	48
63	0.17	0.13	0.15	23
64	0.50	0.28	0.36	39
65	0.35	0.13	0.19	47
66	0.52	0.41	0.46	27
67	0.26	0.08	0.13	59
68	0.84	0.78	0.81	40
69	0.95	0.76	0.84	50
70	0.15	0.10	0.12	39
71	0.47	0.31	0.37	74
72	0.46	0.38	0.41	16
73	0.82	0.41	0.55	44
74	0.35	0.26	0.30	34
75	0.04	0.03	0.03	33
76	0.47	0.35	0.40	26
77	0.55	0.41	0.47	29
78	0.14	0.07	0.09	43
79	0.32	0.19	0.24	31
80	0.63	0.29	0.40	41
81	0.33	0.19	0.24	47
82	0.61	0.26	0.36	78
83	0.61	0.33	0.43	33
84	0.48	0.32	0.38	31
85	0.00	0.00	0.00	17
86	0.86	0.67	0.76	46
87	0.43	0.25	0.32	24
88	0.27	0.21	0.24	29
89	0.86	0.46	0.60	26
90	0.32	0.33	0.33	27
91	0.92	0.73	0.81	33
92	0.36	0.35	0.36	37
93	0.65	0.52	0.58	21
94	0.54	0.50	0.52	26
95	0.91	0.59	0.71	34
96	0.74	0.65	0.69	31
97	0.47	0.35	0.40	20
98	0.78	0.38	0.51	37
99	0.36	0.20	0.26	25
100	0.65	0.43	0.52	30
101	0.67	0.52	0.58	31
102	0.42	0.36	0.39	22
103	0.80	0.47	0.59	17
104	0.71	0.77	0.74	13
105	0.95	0.58	0.72	33
106	0.14	0.17	0.15	18
107	0.27	0.15	0.20	26
108	0.27	0.12	0.17	24
109	0.18	0.22	0.20	9

110	0.60	0.45	0.52	33
111	0.14	0.06	0.09	33
112	0.17	0.07	0.10	27
113	0.93	0.52	0.67	27
114	0.58	0.38	0.46	29
115	0.14	0.10	0.12	30
116	0.55	0.29	0.37	21
117	0.53	0.40	0.45	25
118	0.30	0.12	0.17	25
119	0.94	0.55	0.70	29
120	0.82	0.52	0.64	27
121	0.31	0.29	0.30	28
122	0.65	0.50	0.57	26
123	0.22	0.10	0.13	21
124	0.67	0.35	0.46	17
125	0.36	0.25	0.29	20
126	0.60	0.21	0.32	28
127	0.37	0.27	0.31	26
128	0.53	0.27	0.36	30
129	0.30	0.18	0.22	17
130	0.33	0.24	0.28	17
131	0.12	0.08	0.10	26
132	0.65	0.42	0.51	31
133	0.72	0.55	0.63	38
134	0.00	0.00	0.00	11
135	0.44	0.29	0.35	14
136	0.36	0.19	0.24	27
137	0.86	0.67	0.75	18
138	1.00	0.72	0.84	29
139	0.00	0.00	0.00	16
140	0.71	0.29	0.42	17
141	0.90	0.64	0.75	28
142	0.75	0.69	0.72	13
143	0.25	0.10	0.14	42
144	0.33	0.18	0.23	28
145	0.40	0.11	0.17	19
146	0.33	0.32	0.32	19
147	0.23	0.12	0.16	24
148	0.83	0.59	0.69	51
149	0.78	0.64	0.70	22
150	1.00	0.62	0.77	16
151	0.64	0.39	0.49	23
152	0.20	0.08	0.12	24
153	0.23	0.14	0.17	22
154	0.55	0.23	0.32	26
155	0.17	0.04	0.06	27
156	0.50	0.18	0.27	22
157	0.57	0.40	0.47	20
158	0.12	0.03	0.04	38
159	0.00	0.00	0.00	14
160	0.33	0.18	0.23	17
161	0.20	0.28	0.23	18
162	0.11	0.05	0.07	21
163	0.50	0.46	0.48	13
164	0.43	0.42	0.43	24
165	0.10	0.06	0.07	17
166	0.71	0.48	0.57	21
167	0.70	0.50	0.58	28
168	0.90	0.43	0.58	21
169	0.64	0.47	0.55	19
170	0.75	0.27	0.40	22
171	0.59	0.45	0.51	22
172	0.00	0.00	0.00	21
173	0.71	0.25	0.37	20
174	0.60	0.33	0.43	9
175	0.33	0.11	0.16	28
176	0.28	0.33	0.30	15
177	0.00	0.00	0.00	13
178	0.33	0.29	0.31	14
179	0.75	0.43	0.55	14
180	0.57	0.57	0.57	21
181	0.00	0.00	0.00	19
182	0.45	0.26	0.33	19
183	0.91	0.45	0.61	22
184	0.50	0.15	0.24	13
185	0.60	0.21	0.32	14
186	0.20	0.11	0.14	18

187	0.33	0.06	0.10	18
188	0.60	0.25	0.35	12
189	0.38	0.20	0.26	15
190	0.20	0.07	0.10	15
191	0.75	0.13	0.22	23
192	0.60	0.32	0.41	19
193	0.92	0.71	0.80	17
194	1.00	0.64	0.78	11
195	1.00	0.36	0.53	11
196	0.00	0.00	0.00	19
197	0.36	0.27	0.31	15
198	0.56	0.26	0.36	19
199	0.50	0.20	0.29	15
200	0.20	0.06	0.10	16
201	0.89	0.48	0.63	33
202	0.00	0.00	0.00	14
203	0.41	0.27	0.33	26
204	0.36	0.23	0.28	22
205	0.60	0.50	0.55	12
206	0.00	0.00	0.00	17
207	0.27	0.15	0.20	26
208	0.33	0.09	0.14	23
209	0.78	0.33	0.47	21
210	0.50	0.25	0.33	8
211	0.00	0.00	0.00	15
212	0.13	0.18	0.15	11
213	0.67	0.25	0.36	16
214	0.00	0.00	0.00	7
215	0.86	0.33	0.48	18
216	0.33	0.10	0.15	20
217	0.60	0.21	0.32	14
218	0.20	0.07	0.10	15
219	0.97	0.64	0.77	44
220	0.60	0.33	0.43	9
221	0.45	0.26	0.33	19
222	0.83	0.42	0.56	12
223	0.75	0.57	0.65	37
224	0.69	0.50	0.58	18
225	0.57	0.42	0.48	19
226	0.71	0.36	0.48	14
227	0.80	0.36	0.50	11
228	0.20	0.09	0.13	11
229	0.00	0.00	0.00	19
230	0.25	0.16	0.19	19
231	0.33	0.16	0.21	19
232	0.25	0.08	0.12	12
233	0.81	0.52	0.63	25
234	0.50	0.33	0.40	21
235	0.62	0.89	0.73	9
236	0.50	0.31	0.38	16
237	0.20	0.12	0.15	8
238	1.00	0.69	0.82	29
239	0.33	0.29	0.31	7
240	0.40	0.13	0.20	15
241	0.67	0.36	0.47	22
242	0.80	0.29	0.42	14
243	0.33	0.14	0.20	21
244	0.00	0.00	0.00	11
245	0.90	0.68	0.78	38
246	0.43	0.30	0.35	10
247	0.62	0.29	0.40	17
248	0.50	0.29	0.36	7
249	0.00	0.00	0.00	10
250	0.90	0.60	0.72	15
251	0.25	0.25	0.25	8
252	0.00	0.00	0.00	9
253	0.73	0.50	0.59	16
254	0.00	0.00	0.00	18
255	0.62	0.36	0.46	22
256	0.00	0.00	0.00	4
257	0.70	0.50	0.58	14
258	0.71	0.60	0.65	20
259	1.00	0.83	0.91	12
260	0.33	0.05	0.09	20
261	0.62	0.38	0.48	13
262	0.12	0.14	0.13	7
263	0.40	0.40	0.40	5

264	0.00	0.00	0.00	28
265	0.38	0.17	0.23	18
266	0.25	0.07	0.11	15
267	0.00	0.00	0.00	4
268	1.00	0.69	0.82	13
269	0.33	0.15	0.21	13
270	0.75	0.75	0.75	16
271	0.67	0.36	0.47	11
272	0.00	0.00	0.00	14
273	0.00	0.00	0.00	11
274	0.80	0.31	0.44	13
275	0.50	0.12	0.20	8
276	0.88	0.64	0.74	11
277	0.50	0.10	0.17	10
278	0.00	0.00	0.00	20
279	0.20	0.11	0.14	9
280	0.80	0.33	0.47	12
281	1.00	0.68	0.81	19
282	0.43	0.20	0.27	15
283	0.67	0.50	0.57	12
284	0.00	0.00	0.00	13
285	0.33	0.33	0.33	9
286	0.60	0.27	0.37	11
287	0.55	0.75	0.63	8
288	0.25	1.00	0.40	1
289	0.50	0.04	0.07	25
290	0.17	0.07	0.10	15
291	0.00	0.00	0.00	9
292	1.00	0.38	0.55	8
293	0.00	0.00	0.00	11
294	0.00	0.00	0.00	11
295	0.29	0.15	0.20	13
296	0.58	0.58	0.58	12
297	0.14	0.20	0.17	5
298	0.00	0.00	0.00	4
299	0.90	0.60	0.72	15
300	0.62	0.56	0.59	9
301	0.25	0.10	0.14	10
302	1.00	0.30	0.46	10
303	0.00	0.00	0.00	15
304	0.00	0.00	0.00	16
305	1.00	0.43	0.60	14
306	0.00	0.00	0.00	11
307	0.38	0.38	0.38	8
308	0.00	0.00	0.00	7
309	0.57	0.33	0.42	12
310	1.00	0.25	0.40	8
311	0.00	0.00	0.00	11
312	0.00	0.00	0.00	6
313	0.00	0.00	0.00	8
314	1.00	0.46	0.63	13
315	0.33	0.06	0.11	16
316	0.00	0.00	0.00	21
317	0.60	0.30	0.40	10
318	0.33	0.08	0.12	13
319	0.50	0.25	0.33	8
320	1.00	0.27	0.42	15
321	0.40	0.14	0.21	14
322	0.50	0.08	0.13	13
323	0.20	0.07	0.11	14
324	0.25	0.11	0.15	9
325	0.89	0.73	0.80	11
326	0.25	0.12	0.17	8
327	0.33	0.40	0.36	5
328	0.25	0.08	0.12	12
329	0.40	0.33	0.36	6
330	0.67	0.22	0.33	9
331	0.00	0.00	0.00	14
332	0.33	0.13	0.19	15
333	0.00	0.00	0.00	6
334	1.00	0.46	0.63	13
335	0.50	0.09	0.15	11
336	0.50	0.18	0.27	11
337	1.00	0.75	0.86	4
338	0.43	0.27	0.33	11
339	1.00	0.50	0.67	12
340	0.91	0.71	0.80	14

341	0.43	0.38	0.40	8
342	0.50	0.13	0.21	15
343	0.33	0.08	0.13	12
344	1.00	0.25	0.40	4
345	0.50	0.18	0.27	11
346	0.40	0.17	0.24	12
347	1.00	0.64	0.78	25
348	0.40	0.15	0.22	13
349	0.50	0.17	0.25	12
350	1.00	0.15	0.27	13
351	0.08	0.08	0.08	12
352	0.57	0.31	0.40	13
353	0.00	0.00	0.00	17
354	0.75	0.55	0.63	11
355	0.00	0.00	0.00	9
356	0.33	0.40	0.36	5
357	1.00	0.33	0.50	9
358	0.40	0.55	0.46	11
359	0.67	0.17	0.27	12
360	0.00	0.00	0.00	4
361	0.20	0.09	0.13	11
362	0.00	0.00	0.00	12
363	0.00	0.00	0.00	6
364	0.75	0.27	0.40	11
365	0.67	0.29	0.40	7
366	0.38	0.21	0.27	14
367	0.86	0.46	0.60	13
368	1.00	0.22	0.36	9
369	0.33	0.40	0.36	5
370	0.86	0.55	0.67	11
371	0.60	0.33	0.43	9
372	0.20	0.17	0.18	6
373	0.00	0.00	0.00	13
374	0.00	0.00	0.00	8
375	0.00	0.00	0.00	10
376	0.00	0.00	0.00	19
377	0.20	0.09	0.13	11
378	0.33	0.11	0.17	9
379	0.40	0.15	0.22	13
380	0.00	0.00	0.00	8
381	0.00	0.00	0.00	6
382	0.20	0.09	0.13	11
383	0.60	0.38	0.46	8
384	0.33	0.17	0.22	6
385	1.00	0.33	0.50	3
386	0.67	0.31	0.42	13
387	0.00	0.00	0.00	12
388	0.00	0.00	0.00	14
389	0.33	0.08	0.13	12
390	0.50	0.25	0.33	4
391	0.50	0.40	0.44	5
392	0.00	0.00	0.00	6
393	0.00	0.00	0.00	9
394	1.00	0.22	0.36	9
395	0.25	0.20	0.22	5
396	0.00	0.00	0.00	14
397	1.00	0.69	0.82	13
398	0.80	0.40	0.53	10
399	0.20	0.20	0.20	5
400	1.00	0.38	0.55	8
401	0.00	0.00	0.00	11
402	0.22	0.29	0.25	7
403	0.40	0.25	0.31	8
404	0.00	0.00	0.00	10
405	0.43	0.27	0.33	11
406	0.00	0.00	0.00	3
407	0.00	0.00	0.00	5
408	0.50	0.17	0.25	6
409	0.57	0.40	0.47	10
410	0.33	0.09	0.14	11
411	0.90	0.56	0.69	16
412	1.00	0.50	0.67	8
413	0.00	0.00	0.00	12
414	0.00	0.00	0.00	6
415	0.00	0.00	0.00	5
416	0.75	0.40	0.52	15
417	0.00	0.00	0.00	3

418	0.25	0.08	0.12	13
419	0.00	0.00	0.00	4
420	0.00	0.00	0.00	3
421	0.43	0.30	0.35	10
422	0.33	0.14	0.20	14
423	0.00	0.00	0.00	7
424	1.00	0.50	0.67	12
425	0.83	0.36	0.50	14
426	0.17	0.08	0.11	13
427	0.33	0.25	0.29	4
428	0.20	0.25	0.22	4
429	1.00	0.38	0.55	8
430	0.33	0.20	0.25	5
431	0.00	0.00	0.00	7
432	1.00	0.33	0.50	9
433	0.25	0.17	0.20	6
434	0.00	0.00	0.00	5
435	0.67	0.18	0.29	11
436	0.00	0.00	0.00	11
437	0.80	0.57	0.67	7
438	0.17	0.08	0.11	13
439	0.67	0.20	0.31	10
440	1.00	0.25	0.40	12
441	0.25	0.10	0.14	10
442	0.50	0.43	0.46	7
443	0.33	0.10	0.15	10
444	0.50	0.11	0.17	19
445	1.00	0.67	0.80	6
446	0.50	0.25	0.33	4
447	0.00	0.00	0.00	5
448	0.00	0.00	0.00	5
449	0.33	0.14	0.20	7
450	0.00	0.00	0.00	2
451	0.20	0.40	0.27	5
452	1.00	0.43	0.60	7
453	1.00	0.30	0.46	10
454	0.33	0.18	0.24	11
455	0.86	0.75	0.80	8
456	0.10	0.08	0.09	12
457	0.20	0.17	0.18	6
458	0.17	0.08	0.11	13
459	1.00	0.47	0.64	15
460	0.75	0.33	0.46	9
461	0.00	0.00	0.00	10
462	1.00	0.67	0.80	12
463	1.00	0.67	0.80	6
464	0.22	0.25	0.24	8
465	1.00	0.20	0.33	10
466	1.00	0.14	0.25	7
467	0.67	0.25	0.36	8
468	0.00	0.00	0.00	14
469	0.00	0.00	0.00	8
470	0.40	0.40	0.40	5
471	0.89	0.53	0.67	15
472	0.00	0.00	0.00	10
473	0.33	0.17	0.22	6
474	0.50	0.11	0.18	9
475	0.20	0.20	0.20	5
476	0.80	0.40	0.53	10
477	0.00	0.00	0.00	11
478	1.00	0.33	0.50	3
479	0.00	0.00	0.00	5
480	0.20	0.25	0.22	8
481	0.00	0.00	0.00	6
482	0.50	0.25	0.33	8
483	0.00	0.00	0.00	11
484	0.50	0.17	0.25	6
485	0.71	0.50	0.59	10
486	0.67	0.25	0.36	8
487	0.83	0.36	0.50	14
488	0.88	0.50	0.64	14
489	0.00	0.00	0.00	9
490	1.00	0.33	0.50	15
491	0.00	0.00	0.00	12
492	1.00	0.57	0.73	7
493	1.00	0.62	0.77	8
494	0.00	0.00	0.00	10

495	0.67	0.50	0.57	4
496	0.00	0.00	0.00	13
497	1.00	0.67	0.80	9
498	0.00	0.00	0.00	4
499	0.50	0.17	0.25	6
micro avg	0.55	0.38	0.45	17395
macro avg	0.45	0.27	0.33	17395
weighted avg	0.53	0.38	0.43	17395
samples avg	0.43	0.37	0.37	17395

Time taken to run this cell : 0:12:06.152028

4.5.5. Applying Logistic Regression with OneVsRest Classifier with penalty = l1

In [154]:

```
start = datetime.now()
classifier3 = OneVsRestClassifier(LogisticRegression(C=1, penalty='l1'), n_jobs=-1)
classifier3.fit(x_train_multilabel, y_train)
predictions = classifier3.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 : 0.20241477272727273
Hamming loss 0.0033129058441558443
Micro-average quality numbers
Precision: 0.5407, Recall: 0.4085, F1-measure: 0.4654
Macro-average quality numbers
Precision: 0.4080, Recall: 0.3188, F1-measure: 0.3481
```

	precision	recall	f1-score	support
0	0.49	0.34	0.40	585
1	0.60	0.44	0.51	626
2	0.72	0.53	0.61	780
3	0.57	0.47	0.51	720
4	0.84	0.73	0.78	477
5	0.82	0.71	0.76	849
6	0.67	0.46	0.54	333
7	0.69	0.59	0.64	427
8	0.82	0.51	0.63	316
9	0.58	0.47	0.52	245
10	0.72	0.63	0.67	291
11	0.38	0.27	0.31	324
12	0.24	0.13	0.17	158
13	0.49	0.38	0.43	164
14	0.45	0.39	0.42	266
15	0.31	0.25	0.28	225
16	0.61	0.50	0.55	239
17	0.42	0.26	0.32	213
18	0.64	0.46	0.53	180
19	0.24	0.16	0.19	164
20	0.40	0.24	0.30	198
21	0.39	0.33	0.36	69

22	0.59	0.42	0.49	114
23	0.60	0.50	0.55	66
24	0.60	0.58	0.59	139
25	0.19	0.16	0.17	75
26	0.53	0.45	0.48	110
27	0.66	0.70	0.68	89
28	0.52	0.36	0.43	128
29	0.49	0.29	0.36	80
30	0.31	0.30	0.30	53
31	0.43	0.40	0.42	75
32	0.53	0.44	0.48	119
33	0.85	0.76	0.80	70
34	0.42	0.38	0.40	53
35	0.71	0.58	0.64	64
36	0.24	0.17	0.20	71
37	0.56	0.37	0.44	60
38	0.33	0.27	0.30	60
39	0.60	0.39	0.47	71
40	0.33	0.13	0.19	70
41	0.61	0.49	0.54	74
42	0.62	0.41	0.49	51
43	0.57	0.42	0.49	59
44	0.42	0.32	0.37	34
45	0.49	0.34	0.40	68
46	0.33	0.26	0.29	54
47	0.60	0.47	0.53	51
48	0.46	0.33	0.39	48
49	0.71	0.66	0.68	38
50	0.74	0.46	0.57	50
51	0.19	0.13	0.16	60
52	0.10	0.03	0.05	32
53	0.59	0.36	0.44	28
54	0.19	0.12	0.14	42
55	0.71	0.65	0.68	104
56	0.46	0.29	0.35	42
57	0.38	0.16	0.22	32
58	0.44	0.28	0.34	50
59	0.55	0.59	0.57	37
60	0.10	0.07	0.08	30
61	0.25	0.17	0.20	29
62	0.26	0.17	0.20	48
63	0.26	0.22	0.24	23
64	0.43	0.33	0.38	39
65	0.22	0.09	0.12	47
66	0.45	0.48	0.46	27
67	0.24	0.08	0.12	59
68	0.84	0.80	0.82	40
69	0.93	0.80	0.86	50
70	0.14	0.10	0.12	39
71	0.50	0.34	0.40	74
72	0.50	0.44	0.47	16
73	0.76	0.43	0.55	44
74	0.39	0.44	0.42	34
75	0.04	0.03	0.04	33
76	0.57	0.50	0.53	26
77	0.62	0.55	0.58	29
78	0.14	0.09	0.11	43
79	0.29	0.19	0.23	31
80	0.52	0.29	0.38	41
81	0.33	0.23	0.28	47
82	0.55	0.31	0.39	78
83	0.52	0.42	0.47	33
84	0.48	0.35	0.41	31
85	0.07	0.06	0.06	17
86	0.81	0.74	0.77	46
87	0.48	0.42	0.44	24
88	0.27	0.21	0.24	29
89	0.77	0.65	0.71	26
90	0.30	0.30	0.30	27
91	0.87	0.82	0.84	33
92	0.39	0.41	0.40	37
93	0.52	0.57	0.55	21
94	0.43	0.50	0.46	26
95	0.92	0.68	0.78	34
96	0.79	0.71	0.75	31
97	0.47	0.40	0.43	20
98	0.65	0.65	0.65	37

99	0.29	0.24	0.26	25
100	0.58	0.50	0.54	30
101	0.62	0.52	0.56	31
102	0.45	0.41	0.43	22
103	0.80	0.47	0.59	17
104	0.62	0.77	0.69	13
105	0.95	0.61	0.74	33
106	0.14	0.17	0.15	18
107	0.29	0.15	0.20	26
108	0.30	0.12	0.18	24
109	0.22	0.22	0.22	9
110	0.65	0.52	0.58	33
111	0.05	0.03	0.04	33
112	0.11	0.07	0.09	27
113	0.94	0.63	0.76	27
114	0.60	0.52	0.56	29
115	0.17	0.13	0.15	30
116	0.38	0.24	0.29	21
117	0.62	0.52	0.57	25
118	0.30	0.12	0.17	25
119	0.88	0.72	0.79	29
120	0.61	0.52	0.56	27
121	0.27	0.36	0.31	28
122	0.72	0.69	0.71	26
123	0.23	0.14	0.18	21
124	0.73	0.47	0.57	17
125	0.27	0.30	0.29	20
126	0.62	0.29	0.39	28
127	0.31	0.19	0.24	26
128	0.53	0.30	0.38	30
129	0.29	0.29	0.29	17
130	0.29	0.24	0.26	17
131	0.18	0.15	0.17	26
132	0.60	0.48	0.54	31
133	0.62	0.61	0.61	38
134	0.00	0.00	0.00	11
135	0.33	0.36	0.34	14
136	0.40	0.22	0.29	27
137	0.80	0.67	0.73	18
138	1.00	0.79	0.88	29
139	0.08	0.06	0.07	16
140	0.37	0.41	0.39	17
141	0.86	0.68	0.76	28
142	0.80	0.62	0.70	13
143	0.25	0.12	0.16	42
144	0.24	0.14	0.18	28
145	0.38	0.16	0.22	19
146	0.35	0.37	0.36	19
147	0.36	0.33	0.35	24
148	0.80	0.76	0.78	51
149	0.64	0.64	0.64	22
150	0.85	0.69	0.76	16
151	0.57	0.52	0.55	23
152	0.22	0.08	0.12	24
153	0.29	0.23	0.26	22
154	0.53	0.38	0.44	26
155	0.27	0.15	0.19	27
156	0.22	0.09	0.13	22
157	0.50	0.35	0.41	20
158	0.15	0.05	0.08	38
159	0.00	0.00	0.00	14
160	0.27	0.18	0.21	17
161	0.22	0.33	0.27	18
162	0.11	0.10	0.10	21
163	0.50	0.54	0.52	13
164	0.45	0.38	0.41	24
165	0.17	0.12	0.14	17
166	0.71	0.57	0.63	21
167	0.68	0.61	0.64	28
168	0.82	0.67	0.74	21
169	0.62	0.68	0.65	19
170	0.60	0.27	0.37	22
171	0.55	0.55	0.55	22
172	0.07	0.05	0.06	21
173	0.60	0.15	0.24	20
174	0.50	0.56	0.53	9
175	0.38	0.18	0.24	28

176	0.26	0.40	0.32	15
177	0.00	0.00	0.00	13
178	0.36	0.36	0.36	14
179	0.67	0.57	0.62	14
180	0.48	0.62	0.54	21
181	0.00	0.00	0.00	19
182	0.38	0.32	0.34	19
183	0.92	0.50	0.65	22
184	0.30	0.23	0.26	13
185	0.50	0.14	0.22	14
186	0.21	0.17	0.19	18
187	0.00	0.00	0.00	18
188	0.25	0.25	0.25	12
189	0.56	0.33	0.42	15
190	0.12	0.07	0.09	15
191	0.22	0.09	0.12	23
192	0.47	0.42	0.44	19
193	0.87	0.76	0.81	17
194	0.78	0.64	0.70	11
195	0.71	0.45	0.56	11
196	0.15	0.11	0.12	19
197	0.25	0.27	0.26	15
198	0.58	0.37	0.45	19
199	0.22	0.13	0.17	15
200	0.33	0.19	0.24	16
201	0.82	0.55	0.65	33
202	0.12	0.07	0.09	14
203	0.37	0.27	0.31	26
204	0.35	0.36	0.36	22
205	0.45	0.42	0.43	12
206	0.00	0.00	0.00	17
207	0.32	0.23	0.27	26
208	0.31	0.17	0.22	23
209	0.62	0.48	0.54	21
210	0.57	0.50	0.53	8
211	0.00	0.00	0.00	15
212	0.20	0.36	0.26	11
213	0.67	0.38	0.48	16
214	0.00	0.00	0.00	7
215	0.85	0.61	0.71	18
216	0.13	0.10	0.11	20
217	0.50	0.29	0.36	14
218	0.12	0.07	0.09	15
219	0.95	0.89	0.92	44
220	0.50	0.33	0.40	9
221	0.37	0.37	0.37	19
222	0.67	0.50	0.57	12
223	0.71	0.68	0.69	37
224	0.79	0.61	0.69	18
225	0.53	0.47	0.50	19
226	0.75	0.43	0.55	14
227	0.83	0.45	0.59	11
228	0.17	0.09	0.12	11
229	0.00	0.00	0.00	19
230	0.24	0.21	0.22	19
231	0.36	0.26	0.30	19
232	0.14	0.08	0.11	12
233	0.68	0.68	0.68	25
234	0.47	0.38	0.42	21
235	0.43	0.67	0.52	9
236	0.36	0.25	0.30	16
237	0.12	0.12	0.12	8
238	0.85	0.76	0.80	29
239	0.27	0.43	0.33	7
240	0.50	0.40	0.44	15
241	0.58	0.32	0.41	22
242	0.50	0.43	0.46	14
243	0.30	0.14	0.19	21
244	0.00	0.00	0.00	11
245	0.90	0.74	0.81	38
246	0.50	0.30	0.37	10
247	0.50	0.35	0.41	17
248	0.33	0.29	0.31	7
249	0.00	0.00	0.00	10
250	0.73	0.73	0.73	15
251	0.09	0.12	0.11	8
252	0.00	0.00	0.00	9

253	0.71	0.62	0.67	16
254	0.00	0.00	0.00	18
255	0.71	0.55	0.62	22
256	0.00	0.00	0.00	4
257	0.57	0.57	0.57	14
258	0.74	0.70	0.72	20
259	0.85	0.92	0.88	12
260	0.17	0.05	0.08	20
261	0.54	0.54	0.54	13
262	0.09	0.14	0.11	7
263	0.33	0.40	0.36	5
264	0.43	0.11	0.17	28
265	0.25	0.17	0.20	18
266	0.00	0.00	0.00	15
267	0.00	0.00	0.00	4
268	0.86	0.92	0.89	13
269	0.23	0.23	0.23	13
270	0.63	0.75	0.69	16
271	0.33	0.45	0.38	11
272	0.00	0.00	0.00	14
273	0.40	0.18	0.25	11
274	0.80	0.31	0.44	13
275	0.14	0.12	0.13	8
276	0.89	0.73	0.80	11
277	0.12	0.10	0.11	10
278	0.50	0.15	0.23	20
279	0.20	0.11	0.14	9
280	0.57	0.33	0.42	12
281	0.93	0.68	0.79	19
282	0.23	0.20	0.21	15
283	0.64	0.58	0.61	12
284	0.00	0.00	0.00	13
285	0.30	0.33	0.32	9
286	0.71	0.45	0.56	11
287	0.55	0.75	0.63	8
288	0.14	1.00	0.25	1
289	0.30	0.12	0.17	25
290	0.12	0.07	0.09	15
291	0.00	0.00	0.00	9
292	1.00	0.50	0.67	8
293	0.00	0.00	0.00	11
294	0.00	0.00	0.00	11
295	0.30	0.23	0.26	13
296	0.57	0.67	0.62	12
297	0.14	0.20	0.17	5
298	0.00	0.00	0.00	4
299	0.86	0.80	0.83	15
300	0.60	0.67	0.63	9
301	0.14	0.10	0.12	10
302	0.50	0.30	0.37	10
303	0.00	0.00	0.00	15
304	0.00	0.00	0.00	16
305	0.75	0.43	0.55	14
306	0.25	0.09	0.13	11
307	0.30	0.38	0.33	8
308	0.00	0.00	0.00	7
309	0.50	0.58	0.54	12
310	0.40	0.25	0.31	8
311	0.00	0.00	0.00	11
312	0.00	0.00	0.00	6
313	0.00	0.00	0.00	8
314	0.88	0.54	0.67	13
315	0.33	0.06	0.11	16
316	0.20	0.05	0.08	21
317	0.50	0.40	0.44	10
318	0.33	0.08	0.12	13
319	0.50	0.25	0.33	8
320	0.57	0.27	0.36	15
321	0.29	0.14	0.19	14
322	0.29	0.15	0.20	13
323	0.33	0.14	0.20	14
324	0.20	0.11	0.14	9
325	0.77	0.91	0.83	11
326	0.29	0.25	0.27	8
327	0.33	0.40	0.36	5
328	0.20	0.17	0.18	12
329	0.33	0.33	0.33	6

329	0.00	0.00	0.00	0
330	0.40	0.22	0.29	9
331	0.25	0.07	0.11	14
332	0.33	0.20	0.25	15
333	0.20	0.17	0.18	6
334	0.89	0.62	0.73	13
335	0.17	0.09	0.12	11
336	0.33	0.18	0.24	11
337	0.60	0.75	0.67	4
338	0.33	0.36	0.35	11
339	0.90	0.75	0.82	12
340	0.85	0.79	0.81	14
341	0.27	0.50	0.35	8
342	0.38	0.20	0.26	15
343	0.14	0.08	0.11	12
344	0.33	0.25	0.29	4
345	0.40	0.18	0.25	11
346	0.33	0.17	0.22	12
347	0.96	0.96	0.96	25
348	0.38	0.23	0.29	13
349	0.44	0.33	0.38	12
350	0.33	0.15	0.21	13
351	0.08	0.08	0.08	12
352	0.56	0.38	0.45	13
353	0.00	0.00	0.00	17
354	0.67	0.55	0.60	11
355	0.00	0.00	0.00	9
356	0.12	0.20	0.15	5
357	0.80	0.44	0.57	9
358	0.38	0.55	0.44	11
359	0.29	0.17	0.21	12
360	0.00	0.00	0.00	4
361	0.00	0.00	0.00	11
362	0.00	0.00	0.00	12
363	0.00	0.00	0.00	6
364	0.33	0.18	0.24	11
365	0.40	0.29	0.33	7
366	0.29	0.29	0.29	14
367	0.88	0.54	0.67	13
368	0.75	0.33	0.46	9
369	0.57	0.80	0.67	5
370	0.80	0.73	0.76	11
371	0.33	0.33	0.33	9
372	0.00	0.00	0.00	6
373	0.25	0.08	0.12	13
374	0.25	0.12	0.17	8
375	0.33	0.10	0.15	10
376	0.00	0.00	0.00	19
377	0.12	0.09	0.11	11
378	0.29	0.22	0.25	9
379	0.67	0.31	0.42	13
380	0.00	0.00	0.00	8
381	0.00	0.00	0.00	6
382	0.33	0.18	0.24	11
383	0.50	0.38	0.43	8
384	0.20	0.17	0.18	6
385	1.00	0.67	0.80	3
386	0.45	0.38	0.42	13
387	0.00	0.00	0.00	12
388	0.25	0.14	0.18	14
389	0.33	0.08	0.13	12
390	0.40	0.50	0.44	4
391	1.00	0.20	0.33	5
392	0.00	0.00	0.00	6
393	0.00	0.00	0.00	9
394	0.14	0.11	0.12	9
395	0.17	0.20	0.18	5
396	0.00	0.00	0.00	14
397	0.91	0.77	0.83	13
398	0.62	0.50	0.56	10
399	0.14	0.20	0.17	5
400	1.00	0.50	0.67	8
401	0.00	0.00	0.00	11
402	0.20	0.29	0.24	7
403	0.67	0.25	0.36	8
404	0.14	0.10	0.12	10
405	0.50	0.18	0.27	11
406	0.00	0.00	0.00	3

400	0.00	0.00	0.00	5
407	0.00	0.00	0.00	5
408	0.67	0.33	0.44	6
409	0.50	0.30	0.37	10
410	0.12	0.09	0.11	11
411	0.82	0.56	0.67	16
412	0.83	0.62	0.71	8
413	0.00	0.00	0.00	12
414	0.14	0.17	0.15	6
415	0.00	0.00	0.00	5
416	0.83	0.67	0.74	15
417	0.00	0.00	0.00	3
418	0.11	0.08	0.09	13
419	0.50	0.25	0.33	4
420	0.00	0.00	0.00	3
421	0.43	0.30	0.35	10
422	0.30	0.21	0.25	14
423	0.00	0.00	0.00	7
424	0.82	0.75	0.78	12
425	0.86	0.43	0.57	14
426	0.14	0.08	0.10	13
427	0.00	0.00	0.00	4
428	0.25	0.25	0.25	4
429	1.00	0.62	0.77	8
430	0.33	0.40	0.36	5
431	0.09	0.14	0.11	7
432	1.00	0.56	0.71	9
433	0.17	0.17	0.17	6
434	0.00	0.00	0.00	5
435	0.50	0.27	0.35	11
436	0.00	0.00	0.00	11
437	0.56	0.71	0.63	7
438	0.00	0.00	0.00	13
439	0.50	0.20	0.29	10
440	0.29	0.17	0.21	12
441	0.43	0.30	0.35	10
442	0.57	0.57	0.57	7
443	0.20	0.10	0.13	10
444	0.09	0.05	0.07	19
445	1.00	0.67	0.80	6
446	0.33	0.25	0.29	4
447	0.00	0.00	0.00	5
448	0.33	0.20	0.25	5
449	0.29	0.29	0.29	7
450	0.00	0.00	0.00	2
451	0.22	0.40	0.29	5
452	0.43	0.43	0.43	7
453	0.42	0.50	0.45	10
454	0.29	0.18	0.22	11
455	0.86	0.75	0.80	8
456	0.30	0.58	0.40	12
457	0.29	0.33	0.31	6
458	0.50	0.38	0.43	13
459	0.92	0.80	0.86	15
460	0.67	0.44	0.53	9
461	0.00	0.00	0.00	10
462	0.80	0.67	0.73	12
463	0.50	0.50	0.50	6
464	0.14	0.12	0.13	8
465	0.25	0.10	0.14	10
466	0.33	0.14	0.20	7
467	0.50	0.25	0.33	8
468	0.12	0.07	0.09	14
469	0.20	0.12	0.15	8
470	0.38	0.60	0.46	5
471	0.90	0.60	0.72	15
472	0.00	0.00	0.00	10
473	0.12	0.17	0.14	6
474	0.20	0.11	0.14	9
475	0.00	0.00	0.00	5
476	0.80	0.40	0.53	10
477	0.17	0.09	0.12	11
478	1.00	0.33	0.50	3
479	0.00	0.00	0.00	5
480	0.15	0.25	0.19	8
481	0.00	0.00	0.00	6
482	0.33	0.25	0.29	8
483	0.00	0.00	0.00	11

483	0.00	0.00	0.00	11
484	0.50	0.33	0.40	6
485	0.44	0.40	0.42	10
486	0.50	0.38	0.43	8
487	0.62	0.36	0.45	14
488	0.90	0.64	0.75	14
489	0.00	0.00	0.00	9
490	1.00	0.33	0.50	15
491	0.00	0.00	0.00	12
492	0.80	0.57	0.67	7
493	1.00	0.62	0.77	8
494	0.00	0.00	0.00	10
495	0.50	0.75	0.60	4
496	0.00	0.00	0.00	13
497	0.88	0.78	0.82	9
498	0.00	0.00	0.00	4
499	0.40	0.33	0.36	6
micro avg	0.54	0.41	0.47	17395
macro avg	0.41	0.32	0.35	17395
weighted avg	0.52	0.41	0.45	17395
samples avg	0.45	0.40	0.39	17395

Time taken to run this cell : 0:07:21.632198

4.5.6. Applying SVM with OneVsRest Classifier with penalty =l2

In [151]:

```
start = datetime.now()
classifier2 = OneVsRestClassifier(SGDClassifier(loss='hinge', alpha=0.00001, penalty='l2'), n_jobs=-1)
classifier2.fit(x_train_multilabel, y_train)
predictions = classifier2.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 : 0.12469561688311688
Hamming loss  0.00447849025974026
Micro-average quality numbers
Precision: 0.3753, Recall: 0.4044, F1-measure: 0.3893
Macro-average quality numbers
Precision: 0.2889, Recall: 0.3217, F1-measure: 0.2928
      precision    recall  f1-score   support

0         0.38         0.37         0.37         585
1         0.45         0.45         0.45         626
2         0.63         0.54         0.58         780
3         0.44         0.47         0.45         720
4         0.77         0.71         0.74         477
5         0.70         0.66         0.68         849
6         0.53         0.47         0.50         333
7         0.52         0.60         0.56         427
8         0.54         0.52         0.53         316
-         -         -         -         -
```

9	0.39	0.49	0.43	245
10	0.65	0.66	0.65	291
11	0.25	0.26	0.26	324
12	0.11	0.13	0.12	158
13	0.35	0.41	0.38	164
14	0.34	0.40	0.37	266
15	0.25	0.32	0.28	225
16	0.52	0.52	0.52	239
17	0.25	0.26	0.25	213
18	0.46	0.43	0.44	180
19	0.18	0.18	0.18	164
20	0.32	0.30	0.31	198
21	0.20	0.25	0.22	69
22	0.39	0.40	0.39	114
23	0.53	0.45	0.49	66
24	0.50	0.55	0.52	139
25	0.13	0.20	0.16	75
26	0.48	0.43	0.45	110
27	0.50	0.69	0.58	89
28	0.39	0.31	0.35	128
29	0.36	0.34	0.35	80
30	0.23	0.34	0.27	53
31	0.28	0.29	0.29	75
32	0.39	0.45	0.42	119
33	0.64	0.79	0.71	70
34	0.28	0.38	0.32	53
35	0.57	0.52	0.54	64
36	0.18	0.25	0.21	71
37	0.38	0.43	0.40	60
38	0.23	0.33	0.27	60
39	0.40	0.24	0.30	71
40	0.23	0.17	0.20	70
41	0.43	0.43	0.43	74
42	0.48	0.29	0.37	51
43	0.42	0.47	0.44	59
44	0.34	0.32	0.33	34
45	0.36	0.37	0.36	68
46	0.21	0.20	0.21	54
47	0.41	0.47	0.44	51
48	0.24	0.29	0.26	48
49	0.54	0.66	0.60	38
50	0.41	0.48	0.44	50
51	0.12	0.15	0.14	60
52	0.03	0.03	0.03	32
53	0.36	0.43	0.39	28
54	0.16	0.12	0.14	42
55	0.66	0.57	0.61	104
56	0.24	0.26	0.25	42
57	0.19	0.16	0.17	32
58	0.38	0.28	0.32	50
59	0.48	0.43	0.46	37
60	0.07	0.07	0.07	30
61	0.17	0.24	0.20	29
62	0.00	0.00	0.00	48
63	0.12	0.13	0.12	23
64	0.40	0.41	0.41	39
65	0.22	0.15	0.18	47
66	0.44	0.59	0.51	27
67	0.14	0.07	0.09	59
68	0.76	0.85	0.80	40
69	0.82	0.84	0.83	50
70	0.07	0.10	0.09	39
71	0.27	0.28	0.28	74
72	0.18	0.38	0.24	16
73	0.50	0.41	0.45	44
74	0.26	0.32	0.29	34
75	0.02	0.03	0.02	33
76	0.34	0.42	0.38	26
77	0.45	0.48	0.47	29
78	0.08	0.09	0.09	43
79	0.11	0.13	0.12	31
80	0.45	0.34	0.39	41
81	0.25	0.21	0.23	47
82	0.63	0.24	0.35	78
83	0.28	0.39	0.33	33
84	0.38	0.35	0.37	31
85	0.03	0.06	0.04	17

86	0.77	0.74	0.76	46
87	0.27	0.33	0.30	24
88	0.10	0.17	0.13	29
89	0.50	0.58	0.54	26
90	0.25	0.33	0.29	27
91	0.49	0.73	0.59	33
92	0.25	0.22	0.23	37
93	0.43	0.57	0.49	21
94	0.38	0.46	0.41	26
95	0.67	0.59	0.62	34
96	0.38	0.68	0.49	31
97	0.25	0.25	0.25	20
98	0.53	0.49	0.51	37
99	0.15	0.20	0.17	25
100	0.56	0.47	0.51	30
101	0.45	0.55	0.49	31
102	0.36	0.55	0.44	22
103	0.50	0.47	0.48	17
104	0.23	0.69	0.35	13
105	0.90	0.58	0.70	33
106	0.13	0.17	0.15	18
107	0.16	0.15	0.16	26
108	0.20	0.17	0.18	24
109	0.07	0.22	0.11	9
110	0.40	0.64	0.49	33
111	0.08	0.06	0.07	33
112	0.14	0.11	0.12	27
113	0.82	0.52	0.64	27
114	0.48	0.48	0.48	29
115	0.11	0.13	0.12	30
116	0.40	0.29	0.33	21
117	0.37	0.44	0.40	25
118	0.16	0.20	0.18	25
119	0.87	0.69	0.77	29
120	0.69	0.41	0.51	27
121	0.26	0.39	0.31	28
122	0.67	0.54	0.60	26
123	0.07	0.10	0.08	21
124	0.40	0.35	0.38	17
125	0.26	0.30	0.28	20
126	0.27	0.21	0.24	28
127	0.33	0.31	0.32	26
128	0.22	0.27	0.24	30
129	0.14	0.24	0.17	17
130	0.20	0.35	0.26	17
131	0.17	0.15	0.16	26
132	0.32	0.29	0.31	31
133	0.64	0.55	0.59	38
134	0.11	0.18	0.13	11
135	0.20	0.36	0.26	14
136	0.22	0.22	0.22	27
137	0.60	0.67	0.63	18
138	0.66	0.79	0.72	29
139	0.07	0.12	0.09	16
140	0.38	0.29	0.33	17
141	0.58	0.64	0.61	28
142	0.59	0.77	0.67	13
143	0.11	0.12	0.12	42
144	0.11	0.14	0.12	28
145	0.14	0.16	0.15	19
146	0.35	0.42	0.38	19
147	0.12	0.17	0.14	24
148	0.73	0.63	0.67	51
149	0.62	0.68	0.65	22
150	0.69	0.56	0.62	16
151	0.52	0.52	0.52	23
152	0.16	0.12	0.14	24
153	0.09	0.09	0.09	22
154	0.40	0.38	0.39	26
155	0.09	0.07	0.08	27
156	0.29	0.18	0.22	22
157	0.29	0.35	0.32	20
158	0.08	0.05	0.06	38
159	0.03	0.07	0.04	14
160	0.24	0.24	0.24	17
161	0.12	0.22	0.16	18
162	0.12	0.14	0.13	21

163	0.32	0.54	0.40	13
164	0.35	0.29	0.32	24
165	0.09	0.18	0.12	17
166	0.53	0.48	0.50	21
167	0.76	0.57	0.65	28
168	0.73	0.38	0.50	21
169	0.33	0.47	0.39	19
170	0.21	0.50	0.29	22
171	0.30	0.59	0.39	22
172	0.00	0.00	0.00	21
173	0.33	0.25	0.29	20
174	0.12	0.33	0.18	9
175	0.19	0.14	0.16	28
176	0.28	0.47	0.35	15
177	0.00	0.00	0.00	13
178	0.24	0.29	0.26	14
179	0.47	0.50	0.48	14
180	0.38	0.57	0.45	21
181	0.00	0.00	0.00	19
182	0.33	0.32	0.32	19
183	0.80	0.55	0.65	22
184	0.06	0.08	0.07	13
185	0.29	0.14	0.19	14
186	0.06	0.11	0.07	18
187	0.15	0.22	0.18	18
188	0.27	0.33	0.30	12
189	0.17	0.33	0.22	15
190	0.09	0.20	0.13	15
191	0.14	0.09	0.11	23
192	0.24	0.32	0.27	19
193	0.74	0.82	0.78	17
194	0.50	0.64	0.56	11
195	0.42	0.45	0.43	11
196	0.00	0.00	0.00	19
197	0.24	0.33	0.28	15
198	0.35	0.32	0.33	19
199	0.38	0.33	0.36	15
200	0.12	0.06	0.08	16
201	0.67	0.48	0.56	33
202	0.07	0.14	0.09	14
203	0.31	0.38	0.34	26
204	0.23	0.23	0.23	22
205	0.46	0.50	0.48	12
206	0.00	0.00	0.00	17
207	0.14	0.15	0.15	26
208	0.10	0.09	0.09	23
209	0.50	0.33	0.40	21
210	0.23	0.38	0.29	8
211	0.00	0.00	0.00	15
212	0.05	0.09	0.06	11
213	0.19	0.25	0.22	16
214	0.00	0.00	0.00	7
215	0.91	0.56	0.69	18
216	0.08	0.05	0.06	20
217	0.42	0.36	0.38	14
218	0.06	0.13	0.08	15
219	0.72	0.66	0.69	44
220	0.29	0.22	0.25	9
221	0.24	0.26	0.25	19
222	0.54	0.58	0.56	12
223	0.69	0.65	0.67	37
224	0.32	0.61	0.42	18
225	0.44	0.42	0.43	19
226	0.24	0.36	0.29	14
227	0.10	0.27	0.15	11
228	0.16	0.27	0.20	11
229	0.00	0.00	0.00	19
230	0.22	0.21	0.22	19
231	0.11	0.21	0.15	19
232	0.45	0.42	0.43	12
233	0.74	0.68	0.71	25
234	0.41	0.33	0.37	21
235	0.38	0.89	0.53	9
236	0.40	0.38	0.39	16
237	0.33	0.12	0.18	8
238	0.81	0.72	0.76	29
239	0.17	0.57	0.26	7

240	0.23	0.33	0.27	15
241	0.39	0.32	0.35	22
242	0.38	0.36	0.37	14
243	0.20	0.19	0.20	21
244	0.07	0.09	0.08	11
245	0.72	0.76	0.74	38
246	0.15	0.40	0.22	10
247	0.28	0.29	0.29	17
248	0.08	0.14	0.10	7
249	0.00	0.00	0.00	10
250	0.67	0.67	0.67	15
251	0.19	0.38	0.25	8
252	0.00	0.00	0.00	9
253	0.57	0.50	0.53	16
254	0.00	0.00	0.00	18
255	0.50	0.64	0.56	22
256	0.00	0.00	0.00	4
257	0.53	0.57	0.55	14
258	0.50	0.65	0.57	20
259	0.60	0.75	0.67	12
260	0.00	0.00	0.00	20
261	0.44	0.54	0.48	13
262	0.07	0.14	0.10	7
263	0.23	0.60	0.33	5
264	0.11	0.07	0.09	28
265	0.25	0.22	0.24	18
266	0.06	0.07	0.06	15
267	0.06	0.25	0.10	4
268	0.90	0.69	0.78	13
269	0.32	0.46	0.37	13
270	0.52	0.81	0.63	16
271	0.36	0.45	0.40	11
272	0.00	0.00	0.00	14
273	0.10	0.09	0.10	11
274	0.43	0.23	0.30	13
275	0.11	0.12	0.12	8
276	0.88	0.64	0.74	11
277	0.06	0.10	0.07	10
278	0.12	0.05	0.07	20
279	0.08	0.11	0.09	9
280	0.30	0.50	0.37	12
281	0.79	0.79	0.79	19
282	0.14	0.20	0.16	15
283	0.42	0.67	0.52	12
284	0.14	0.08	0.10	13
285	0.12	0.22	0.15	9
286	0.50	0.55	0.52	11
287	0.35	0.75	0.48	8
288	0.11	1.00	0.20	1
289	0.13	0.08	0.10	25
290	0.18	0.13	0.15	15
291	0.00	0.00	0.00	9
292	0.75	0.75	0.75	8
293	0.17	0.18	0.17	11
294	0.00	0.00	0.00	11
295	0.20	0.23	0.21	13
296	0.33	0.67	0.44	12
297	0.00	0.00	0.00	5
298	0.14	0.25	0.18	4
299	0.58	0.73	0.65	15
300	0.42	0.56	0.48	9
301	0.10	0.10	0.10	10
302	0.21	0.40	0.28	10
303	0.08	0.07	0.07	15
304	0.03	0.06	0.04	16
305	1.00	0.50	0.67	14
306	0.00	0.00	0.00	11
307	0.20	0.38	0.26	8
308	0.29	0.29	0.29	7
309	0.36	0.33	0.35	12
310	0.11	0.12	0.12	8
311	0.06	0.18	0.09	11
312	0.07	0.17	0.10	6
313	0.00	0.00	0.00	8
314	0.54	0.54	0.54	13
315	0.09	0.12	0.11	16
316	0.07	0.10	0.08	21

317	0.29	0.40	0.33	10
318	0.25	0.08	0.12	13
319	0.07	0.12	0.09	8
320	0.29	0.27	0.28	15
321	0.23	0.21	0.22	14
322	0.08	0.15	0.11	13
323	0.14	0.14	0.14	14
324	0.12	0.11	0.12	9
325	0.75	0.82	0.78	11
326	0.10	0.12	0.11	8
327	0.05	0.20	0.08	5
328	0.15	0.17	0.16	12
329	0.25	0.33	0.29	6
330	0.14	0.11	0.12	9
331	0.00	0.00	0.00	14
332	0.33	0.27	0.30	15
333	0.00	0.00	0.00	6
334	0.67	0.62	0.64	13
335	0.20	0.09	0.13	11
336	0.25	0.18	0.21	11
337	0.57	1.00	0.73	4
338	0.15	0.36	0.21	11
339	0.47	0.67	0.55	12
340	0.61	0.79	0.69	14
341	0.19	0.38	0.25	8
342	0.29	0.27	0.28	15
343	0.13	0.17	0.15	12
344	0.09	0.25	0.13	4
345	0.22	0.18	0.20	11
346	0.38	0.25	0.30	12
347	1.00	0.80	0.89	25
348	0.62	0.38	0.48	13
349	0.27	0.33	0.30	12
350	0.22	0.15	0.18	13
351	0.19	0.25	0.21	12
352	0.50	0.23	0.32	13
353	0.12	0.18	0.14	17
354	0.50	0.64	0.56	11
355	0.00	0.00	0.00	9
356	0.18	0.40	0.25	5
357	0.44	0.44	0.44	9
358	0.24	0.73	0.36	11
359	0.11	0.08	0.10	12
360	0.00	0.00	0.00	4
361	0.17	0.09	0.12	11
362	0.00	0.00	0.00	12
363	0.00	0.00	0.00	6
364	0.43	0.27	0.33	11
365	0.33	0.43	0.38	7
366	0.29	0.36	0.32	14
367	0.55	0.46	0.50	13
368	0.33	0.22	0.27	9
369	0.43	0.60	0.50	5
370	0.50	0.55	0.52	11
371	0.21	0.33	0.26	9
372	0.14	0.33	0.20	6
373	0.14	0.23	0.18	13
374	0.12	0.25	0.16	8
375	0.00	0.00	0.00	10
376	0.10	0.11	0.10	19
377	0.11	0.18	0.13	11
378	0.11	0.11	0.11	9
379	0.29	0.15	0.20	13
380	0.00	0.00	0.00	8
381	0.00	0.00	0.00	6
382	0.09	0.09	0.09	11
383	0.45	0.62	0.53	8
384	0.11	0.17	0.13	6
385	0.20	0.33	0.25	3
386	0.43	0.23	0.30	13
387	0.07	0.08	0.08	12
388	0.00	0.00	0.00	14
389	0.07	0.08	0.08	12
390	0.00	0.00	0.00	4
391	0.33	0.40	0.36	5
392	0.00	0.00	0.00	6
393	0.33	0.22	0.27	9

394	0.14	0.11	0.12	9
395	0.08	0.20	0.11	5
396	0.00	0.00	0.00	14
397	0.77	0.77	0.77	13
398	0.45	0.50	0.48	10
399	0.12	0.40	0.18	5
400	1.00	0.50	0.67	8
401	0.00	0.00	0.00	11
402	0.10	0.57	0.17	7
403	0.17	0.25	0.20	8
404	0.00	0.00	0.00	10
405	0.36	0.36	0.36	11
406	0.00	0.00	0.00	3
407	0.17	0.20	0.18	5
408	0.17	0.17	0.17	6
409	0.50	0.60	0.55	10
410	0.06	0.09	0.07	11
411	0.82	0.56	0.67	16
412	0.80	0.50	0.62	8
413	0.00	0.00	0.00	12
414	0.08	0.17	0.11	6
415	0.07	0.20	0.10	5
416	0.69	0.60	0.64	15
417	0.17	0.33	0.22	3
418	0.20	0.15	0.17	13
419	0.00	0.00	0.00	4
420	0.00	0.00	0.00	3
421	0.18	0.20	0.19	10
422	0.06	0.07	0.06	14
423	0.00	0.00	0.00	7
424	0.80	0.67	0.73	12
425	0.37	0.50	0.42	14
426	0.00	0.00	0.00	13
427	0.22	0.50	0.31	4
428	0.10	0.25	0.14	4
429	0.38	0.38	0.38	8
430	0.29	0.40	0.33	5
431	0.09	0.14	0.11	7
432	0.36	0.44	0.40	9
433	0.25	0.17	0.20	6
434	0.00	0.00	0.00	5
435	0.33	0.18	0.24	11
436	0.05	0.09	0.06	11
437	0.44	1.00	0.61	7
438	0.00	0.00	0.00	13
439	0.33	0.30	0.32	10
440	0.18	0.17	0.17	12
441	0.67	0.40	0.50	10
442	0.50	0.43	0.46	7
443	0.11	0.10	0.11	10
444	0.14	0.11	0.12	19
445	0.28	0.83	0.42	6
446	0.07	0.25	0.11	4
447	0.07	0.20	0.11	5
448	0.08	0.20	0.11	5
449	0.14	0.14	0.14	7
450	0.12	0.50	0.20	2
451	0.18	0.40	0.25	5
452	0.71	0.71	0.71	7
453	0.50	0.50	0.50	10
454	0.11	0.27	0.15	11
455	0.55	0.75	0.63	8
456	0.25	0.42	0.31	12
457	0.30	0.50	0.37	6
458	0.09	0.15	0.11	13
459	0.85	0.73	0.79	15
460	0.44	0.44	0.44	9
461	0.00	0.00	0.00	10
462	0.46	0.50	0.48	12
463	0.50	0.67	0.57	6
464	0.21	0.50	0.30	8
465	0.21	0.30	0.25	10
466	0.00	0.00	0.00	7
467	0.25	0.25	0.25	8
468	0.08	0.07	0.07	14
469	0.20	0.12	0.15	8
470	0.00	0.00	0.00	5

471	0.62	0.53	0.57	15
472	0.00	0.00	0.00	10
473	0.15	0.50	0.23	6
474	0.11	0.11	0.11	9
475	0.12	0.20	0.15	5
476	0.36	0.40	0.38	10
477	0.00	0.00	0.00	11
478	0.25	0.33	0.29	3
479	0.00	0.00	0.00	5
480	0.17	0.25	0.20	8
481	0.18	0.50	0.26	6
482	0.10	0.25	0.14	8
483	0.00	0.00	0.00	11
484	0.10	0.17	0.12	6
485	0.31	0.50	0.38	10
486	0.20	0.25	0.22	8
487	0.46	0.43	0.44	14
488	0.57	0.57	0.57	14
489	0.20	0.33	0.25	9
490	0.44	0.53	0.48	15
491	0.08	0.08	0.08	12
492	0.40	0.29	0.33	7
493	0.71	0.62	0.67	8
494	0.00	0.00	0.00	10
495	0.33	1.00	0.50	4
496	0.25	0.08	0.12	13
497	0.70	0.78	0.74	9
498	0.00	0.00	0.00	4
499	0.38	0.50	0.43	6
micro avg	0.38	0.40	0.39	17395
macro avg	0.29	0.32	0.29	17395
weighted avg	0.40	0.40	0.40	17395
samples avg	0.37	0.39	0.34	17395

Time taken to run this cell : 0:01:44.648115

6. Conclusion

In [155]:

```
# http://zetcode.com/python/prettytable/
from prettytable import PrettyTable

#If you get a ModuleNotFoundError error , install prettytable using: pip3 install prettytable

x = PrettyTable()

x.field_names = ["Model","Vectorizer", "Hyper paramete Tuned","Penalty" ,"Tags","Macro F1","Micro F1","Accuracy","Hamming Loss"]

x.add_row(["Logistic Regression", "TFIDF","NO","L1","5500",0.0688,0.3656,0.0749,0.000424])
x.add_row(["Logistic Regression","BOW","YES","L2","500",0.3274,0.4499,0.1954,0.003281])
x.add_row(["Logistic Regression","BOW","YES","L1","500",0.3481,0.4654,0.2024,0.003312])
x.add_row(["Linear SVM","BOW","NO","L2","500",0.2928,0.3893,0.1246,0.004478])

print(x)
```

Model	Vectorizer	Hyper paramete Tuned	Penalty	Tags	Macro F1	Micro F1	Accuracy	Hamming Loss
Logistic Regression	TFIDF	NO	L1	5500	0.0688	0.3656	0.0749	0.000424
Logistic Regression	BOW	YES	L2	500	0.3274	0.4499	0.1954	0.003281
Logistic Regression	BOW	YES	L1	500	0.3481	0.4654	0.2024	0.003312
Linear SVM	BOW	NO	L2	500	0.2928	0.3893	0.1246	0.004478

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