

C1W3_Data_Labeling_Ungraded_Lab

July 26, 2021

1 Week 3 - Ungraded Lab: Data Labeling

Welcome to the ungraded lab for week 3 of Machine Learning Engineering for Production. In this lab, you will see how the data labeling process affects the performance of a classification model. Labeling data is usually a very labor intensive and costly task but it is of great importance.

As you saw in the lectures there are many ways to label data, this is dependant on the strategy used. Recall the example with the iguanas, all of the following are valid labeling alternatives but they clearly follow different criteria.

You can think of every labeling strategy as a result of different labelers following different labeling rules. If your data is labeled by people using different criteria this will have a negative impact on your learning algorithm. It is desired to have consistent labeling across your dataset.

This lab will touch on the effect of labeling strategies from a slightly different angle. You will explore how different strategies affect the performance of a machine learning model by simulating the process of having different labelers label the data. This, by defining a set of rules and performing automatic labeling based on those rules.

The main objective of this ungraded lab is to compare performance across labeling options to understand the role that good labeling plays on the performance of Machine Learning models, these options are: 1. Randomly generated labels (performance lower bound) 2. Automatic generated labels based on three different label strategies 3. True labels (performance upper bound)

Although the example with the iguanas is a computer vision task, the same concepts regarding labeling can be applied to other types of data. In this lab you will be working with text data, concretely you will be using a dataset containing comments from the 2015 top 5 most popular Youtube videos. Each comment has been labeled as **spam** or **not_spam** depending on its contents.

```
[1]: import os
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

1.1 Loading the dataset

The dataset consists of 5 CSV files, one for each video. Pandas `DataFrame` are very powerful to handle data in CSV format. The following helper function will load the data using pandas:

```
[2]: def load_labeled_spam_dataset():
    """Load labeled spam dataset."""

    # Path where csv files are located
    base_path = "./data/"

    # List of csv files with full path
    csv_files = [os.path.join(base_path, csv) for csv in os.listdir(base_path)]

    # List of dataframes for each file
    dfs = [pd.read_csv(filename) for filename in csv_files]

    # Concatenate dataframes into a single one
    df = pd.concat(dfs)

    # Rename columns
    df = df.rename(columns={"CONTENT": "text", "CLASS": "label"})

    # Set a seed for the order of rows
    df = df.sample(frac=1, random_state=824)

    return df.reset_index()

# Save the dataframe into the df_labeled variable
df_labeled = load_labeled_spam_dataset()
```

To have a feeling of how the data is organized, let's inspect the top 5 rows of the data:

```
[3]: # Take a look at the first 5 rows
df_labeled.head()
```

```
[3]:
```

	index	COMMENT_ID \	AUTHOR \
0	86	z12uzb3oxy23cbikz23qsjczaxz5wh1t5	luisel Tutoriales Gameplays (luisel Tutoriales)
1	291	z122z5pa2wyofbjj304cgfwrvmvjgn0pohc	Mia Aspinall
2	142	z13bttm5gxecfvrqq04cevkpuxj5s1u5ys40k	Vane Cavazos
3	147	z132z11rupqcylbep23jgfig3um3ct5vv	
4	326	z12usr54ppaxxf1dl23nhbybruapdnixw04	

```

3           KatyPerry TheQueenOfPop
4           Arthur Teixeira

           DATE \
0  2015-05-23T18:56:07.484000
1      2014-11-08T10:30:35
2      2014-09-20T15:39:44
3      2014-09-22T06:50:24
4      2014-11-12T20:12:47

           text  label
0           music yeah      0
1      2 billion views, only 2 million shares      0
2  Katycat! https://m.facebook.com/profile.php?id...      1
3  --&gt;ATTENTION KATYCATS! Katy leads with 7 no...      1
4  I wanted to know the name of the guy that danc...      0

```

1.2 Further inspection and preprocessing

1.2.1 Checking for data imbalance

It is fairly common to assume that the data you are working on is balanced. This means that the dataset contains a similar proportion of examples for all classes. Before moving forward let's actually test this assumption:

```

[4]: # Print actual value count
print(f"Value counts for each class:\n\n{df_labeled.label.value_counts()}\n")

# Display pie chart to visually check the proportion
df_labeled.label.value_counts().plot.pie(y='label', title='Proportion of each_
↪class')
plt.show()

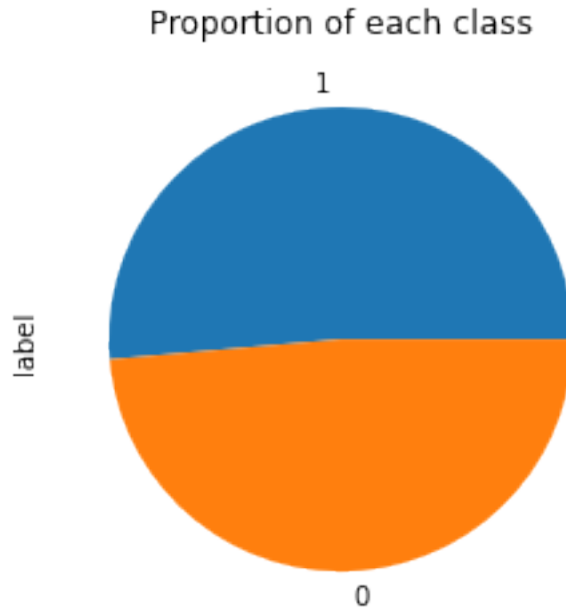
```

Value counts for each class:

```

1      1005
0       951
Name: label, dtype: int64

```



There is roughly the same number of data points for each class so class imbalance is not an issue for this particular dataset.

1.2.2 Cleaning the dataset

If you scroll back to the cell where you inspected the data, you will realize that the dataframe includes information that is not relevant for the task at hand. At the moment, you are only interested in the comments and the corresponding labels (the video that each comment belongs to will be used later). Let's drop the remaining columns.

```
[5]: # Drop unused columns
df_labeled = df_labeled.drop(['index', 'COMMENT_ID', 'AUTHOR', 'DATE'], axis=1)

# Look at the cleaned dataset
df_labeled.head()
```

```
[5]:
```

	text	label
0	music yeah	0
1	2 billion views, only 2 million shares	0
2	Katycat! https://m.facebook.com/profile.php?id...	1
3	-->ATTENTION KATYCATS! Katy leads with 7 no...	1
4	I wanted to know the name of the guy that danc...	0

Now the dataset only includes the information you are going to use moving forward.

1.2.3 Splitting the dataset

Before jumping to the data labeling section let's split the data into training and test sets so you can use the latter to measure the performance of models that were trained using data labeled through different methods. As a safety measure when doing this split, remember to use stratification so the proportion of classes is maintained within each split.

```
[6]: from sklearn.model_selection import train_test_split

# Save the text into the X variable
X = df_labeled.drop("label", axis=1)

# Save the true labels into the y variable
y = df_labeled["label"]

# Use 1/5 of the data for testing later
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
    ↪random_state=42, stratify=y)

# Print number of comments for each set
print(f"There are {X_train.shape[0]} comments for training.")
print(f"There are {X_test.shape[0]} comments for testing")
```

There are 1564 comments for training.

There are 392 comments for testing

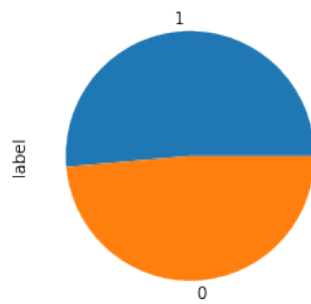
Let's do a visual to check that the stratification actually worked:

```
[7]: plt.subplot(1, 3, 1)
y_train.value_counts().plot.pie(y='label', title='Proportion of each class for_
    ↪train set', figsize=(10, 6))

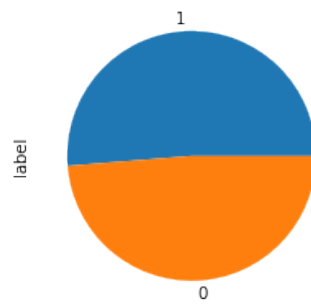
plt.subplot(1, 3, 3)
y_test.value_counts().plot.pie(y='label', title='Proportion of each class for_
    ↪test set', figsize=(10, 6))

plt.tight_layout()
plt.show()
```

Proportion of each class for train set



Proportion of each class for test set



Both, the training and test sets a balanced proportion of examples per class. So, the code successfully implemented stratification.

Let's get going!

1.3 Data Labeling

1.3.1 Establishing performance lower and upper bounds for reference

To properly compare different labeling strategies you need to establish a baseline for model accuracy, in this case you will establish both a lower and an upper bound to compare against.

1.3.2 Calculate accuracy of a labeling strategy

`CountVectorizer` is a handy tool included in the sklearn ecosystem to encode text based data.

For more information on how to work with text data using sklearn check out this [resource](#).

```
[9]: from sklearn.feature_extraction.text import CountVectorizer

# Allow unigrams and bigrams
vectorizer = CountVectorizer(ngram_range=(1, 5))
```

Now that the text encoding is defined, you need to select a model to make predictions. For simplicity you will use a `Multinomial Naive Bayes` classifier. This model is well suited for text classification and is fairly quick to train.

Let's define a function which will handle the model fitting and print out the accuracy on the test data:

```
[11]: from sklearn.metrics import accuracy_score
from sklearn.naive_bayes import MultinomialNB

def calculate_accuracy(X_tr, y_tr, X_te=X_test, y_te=y_test,
```

```

        clf=MultinomialNB(), vectorizer=vectorizer):

    # Encode train text
    X_train_vect = vectorizer.fit_transform(X_tr.text.tolist())

    # Fit model
    clf.fit(X=X_train_vect, y=y_tr)

    # Vectorize test text
    X_test_vect = vectorizer.transform(X_te.text.tolist())

    # Make predictions for the test set
    preds = clf.predict(X_test_vect)

    # Return accuracy score
    return accuracy_score(preds, y_te)

```

Now let's create a dictionary to store the accuracy of each labeling method:

```

[12]: # Empty dictionary
      accs = dict()

```

1.3.3 Random Labeling

Generating random labels is a natural way to establish a lower bound. You will expect that any successful alternative labeling model to outperform randomly generated labels.

Now let's calculate the accuracy for the random labeling method

```

[19]: # Calculate random labels
      rnd_labels = np.random.randint(0, 2, X_train.shape[0])

      # Feed them alongside X_train to calculate_accuracy function
      rnd_acc = calculate_accuracy(X_train, rnd_labels)

      rnd_acc

```

```

[19]: 0.4744897959183674

```

You will see a different accuracy everytime you run the previous cell. This is due to the fact that the labeling is done randomly. Remember, this is a binary classification problem and both classes are balanced, so you can expect to see accuracies that revolve around 50%.

To further gain intuition let's look at the average accuracy over 10 runs:

```

[20]: # Empty list to save accuracies
      rnd_accs = []

```

```

for _ in range(10):
    # Add every accuracy to the list
    rnd_accs.append(calculate_accuracy(X_train, np.random.randint(0, 2, X_train.
    ↳shape[0])))

# Save result in accs dictionary
accs['random-labels'] = sum(rnd_accs)/len(rnd_accs)

# Print result
print(f"The random labelling method achieved an accuracy of_
↳{accs['random-labels']*100:.2f}%")

```

The random labelling method achieved an accuracy of 50.74%

Random labelling is completely disregarding the information from the solution space you are working on, and is just guessing the correct label. You can't probably do worse than this (or maybe you can). For this reason, this method serves as reference for comparing other labeling methods

1.3.4 Labeling with true values

Now let's look at the other end of the spectrum, this is using the correct labels for your data points. Let's retrain the Multinomial Naive Bayes classifier with the actual labels

```

[22]: # Calculate accuracy when using the true labels
true_acc = calculate_accuracy(X_train, y_train)

# Save the result
accs['true-labels'] = true_acc

print(f"The true labelling method achieved an accuracy of_
↳{accs['true-labels']*100:.2f}%")

```

The true labelling method achieved an accuracy of 91.58%

Training with the true labels produced a noticeable boost in accuracy. This is expected as the classifier is now able to properly identify patterns in the training data which were lacking with randomly generated labels.

Achieving higher accuracy is possible by either fine-tuning the model or even selecting a different one. For the time being you will keep the model as it is and use this accuracy as what we should strive for with the automatic labeling algorithms you will see next.

1.4 Automatic labeling - Trying out different labeling strategies

Let's suppose that for some reason you don't have access to the true labels associated with each data point in this dataset. It is a natural idea to think that there are patterns in the data that will provide clues of which are the correct labels. This is of course very dependant on the kind

of data you are working with and to even hypothesize which patterns exist requires great domain knowledge.

The dataset used in this lab was used for this reason. It is reasonable for many people to come up with rules that might help identify a spam comment from a non-spam one for a Youtube video. In the following section you will be performing automatic labeling using such rules. **You can think of each iteration of this process as a labeler with different criteria for labeling** and your job is to hire the most promising one.

Notice the word **rules**. In order to perform automatic labeling you will define some rules such as “if the comment contains the word ‘free’ classify it as spam”.

First things first. Let’s define how we are going to encode the labeling: - SPAM is represented by 1

- NOT_SPAM by 0
- NO_LABEL as -1

You might be wondering about the NO_LABEL keyword. Depending on the rules you come up with, these might not be applicable to some data points. For such cases it is better to refuse from giving a label rather than guessing, which you already saw yields poor results.

1.4.1 First iteration - Define some rules

For this first iteration you will create three rules based on the intuition of common patterns that appear on spam comments. The rules are simple, classify as SPAM if any of the following patterns is present within the comment or NO_LABEL otherwise: - **free** - spam comments usually lure users by promoting free stuff - **subs** - spam comments tend to ask users to subscribe to some website or channel - **http** - spam comments include links very frequently

```
[24]: def labeling_rules_1(x):  
  
    # Convert text to lowercase  
    x = x.lower()  
  
    # Define list of rules  
    rules = [  
        "free" in x,  
        "subs" in x,  
        "http" in x  
    ]  
  
    # If the comment falls under any of the rules classify as SPAM  
    if any(rules):  
        return 1  
  
    # Otherwise, NO_LABEL  
    return -1
```

```
[27]: # Apply the rules the comments in the train set
labels = [labeling_rules_1(label) for label in X_train.text]

# Convert to a numpy array
labels = np.asarray(labels)

# Take a look at the automatic labels
labels
```

```
[27]: array([-1, -1, -1, ..., -1, -1,  1])
```

For lots of points the automatic labeling algorithm decided to not settle for a label, this is expected given the nature of the rules that were defined. These points should be deleted since they don't provide information about the classification process and tend to hurt performance.

```
[36]: # Create the automatic labeled version of X_train by removing points with
      ↪ NO_LABEL label
X_train_al = X_train[labels != -1]

# Remove predictions with NO_LABEL label
labels_al = labels[labels != -1]

print(f"Predictions with concrete label have shape: {labels_al.shape}")

print(f"Proportion of data points kept: {labels_al.shape[0]/labels.shape[0]*100:
      ↪ .2f}%")
```

```
Predictions with concrete label have shape: (379,)
Proportion of data points kept: 24.23%
```

Notice that only 379 data points remained out of the original 1564. The rules defined didn't provide enough context for the labeling algorithm to settle on a label, so around 75% of the data has been trimmed.

Let's test the accuracy of the model when using these automatic generated labels:

```
[37]: # Compute accuracy when using these labels
iter_1_acc = calculate_accuracy(X_train_al, labels_al)

# Display accuracy
print(f"First iteration of automatic labeling has an accuracy of
      ↪ {iter_1_acc*100:.2f}%")

# Save the result
accs['first-iteration'] = iter_1_acc
```

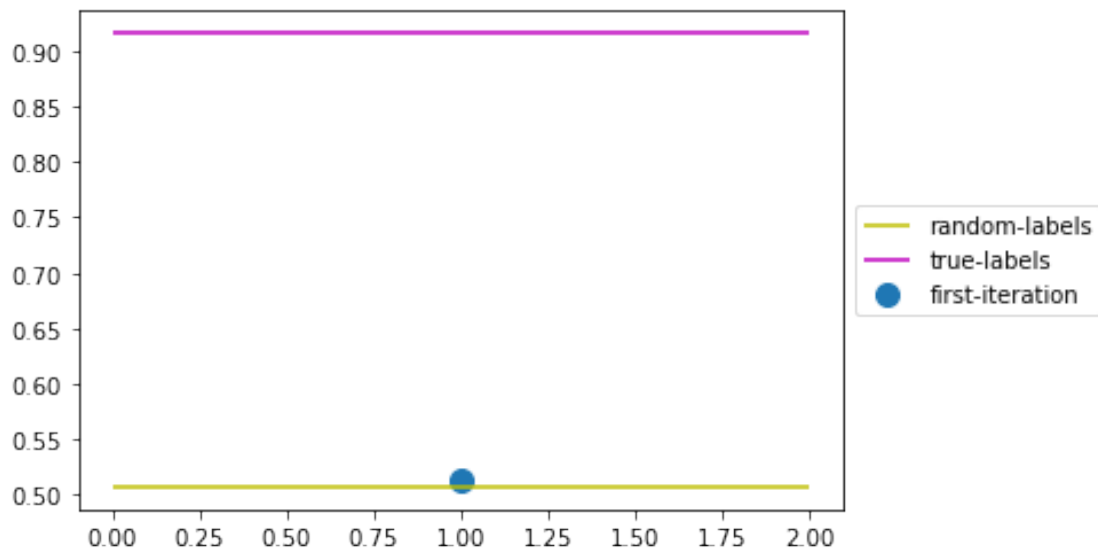
```
First iteration of automatic labeling has an accuracy of 51.28%
```

Let's compare this accuracy to the baselines by plotting:

```
[38]: def plot_accuracies(accs=accs):
    colors = list("rgbcmy")
    items_num = len(accs)
    cont = 1

    for x, y in accs.items():
        if x in ['true-labels', 'random-labels', 'true-labels-best-clf']:
            plt.hlines(y, 0, (items_num-2)*2, colors=colors.pop())
        else:
            plt.scatter(cont, y, s=100)
            cont+=2
    plt.legend(accs.keys(), loc="center left", bbox_to_anchor=(1, 0.5))
    plt.show()

plot_accuracies()
```



This first iteration had an accuracy very close to the random labeling, we should strive to do better than this.

Before moving forward let's define the `label_given_rules` function that performs all of the steps you just saw, these are: - Apply the rules to a dataframe of comments - Cast the resulting labels to a numpy array - Delete all data points with NO_LABEL as label - Calculate the accuracy of the model using the automatic labels - Save the accuracy for plotting - Print some useful metrics of the process

```
[39]: def label_given_rules(df, rules_function, name,
    accs_dict=accs, verbose=True):

    # Apply labeling rules to the comments
```

```

labels = [rules_function(label) for label in df.text]

# Convert to a numpy array
labels = np.asarray(labels)

# Save initial number of data points
initial_size = labels.shape[0]

# Trim points with NO_LABEL label
X_train_al = df[labels != -1]
labels = labels[labels != -1]

# Save number of data points after trimming
final_size = labels.shape[0]

# Compute accuracy
acc = calculate_accuracy(X_train_al, labels)

# Print useful information
if verbose:
    print(f"Proportion of data points kept: {final_size/initial_size*100:.2f}%\n")
    print(f"{name} labeling has an accuracy of {acc*100:.2f}%\n")

# Save accuracy to accuracies dictionary
accs_dict[name] = acc

return X_train_al, labels, acc

```

Going forward we should come up with rules that have a better coverage of the training data, thus making pattern discovery an easier task. Also notice how the rules were only able to label as either SPAM or NO_LABEL, we should also create some rules that help the identification of NOT_SPAM comments.

1.4.2 Second iteration - Coming up with better rules

If you inspect the comments in the dataset you might be able to distinguish certain patterns at a glimpse. For example, not spam comments often make references to either the number of views since these were the most watched videos of 2015 or the song in the video and its contents . As for spam comments other common patterns are to promote gifts or ask to follow some channel or website.

Let's create some new rules that include these patterns:

```

[40]: def labeling_rules_2(x):

      # Convert text to lowercase

```

```

x = x.lower()

# Define list of rules to classify as NOT_SPAM
not_spam_rules = [
    "view" in x,
    "song" in x
]

# Define list of rules to classify as SPAM
spam_rules = [
    "free" in x,
    "subs" in x,
    "gift" in x,
    "follow" in x,
    "http" in x
]

# Classify depending on the rules
if any(not_spam_rules):
    return 0

if any(spam_rules):
    return 1

return -1

```

This new set of rules looks more promising as it includes more patterns to classify as SPAM as well as some patterns to classify as NOT_SPAM. This should result in more data points with a label different to NO_LABEL.

Let's check if this is the case.

```

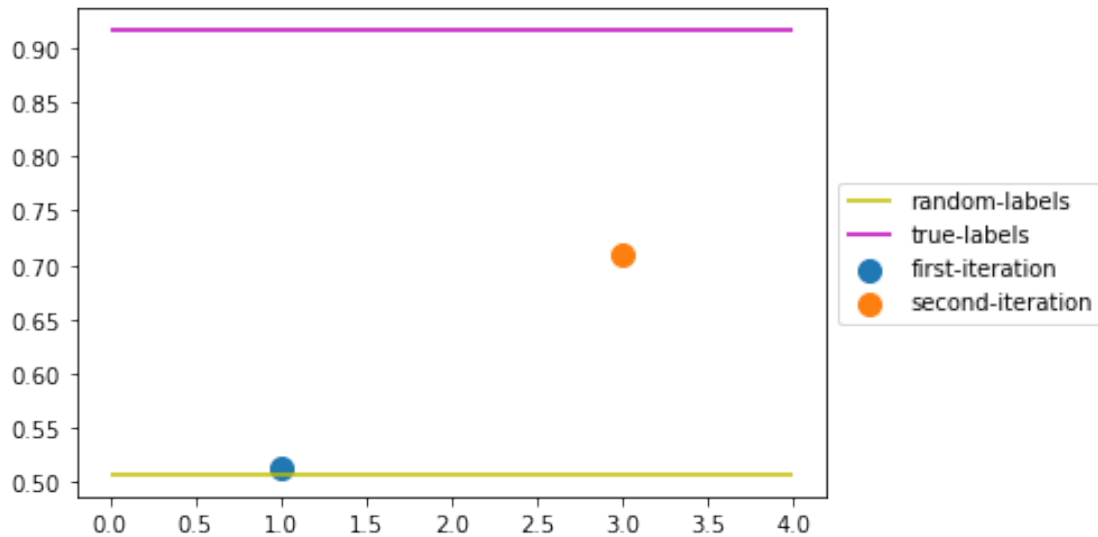
[41]: label_given_rules(X_train, labeling_rules_2, "second-iteration")

plot accuracies()

```

Proportion of data points kept: 44.12%

second-iteration labeling has an accuracy of 70.92%



This time 44% of the original dataset was given a decisive label and there were data points for both labels, this helped the model reach a higher accuracy when compared to the first iteration. Now the accuracy is considerably higher than the random labeling but it is still very far away from the upper bound.

Let's see if we can make it even better!

1.4.3 Third Iteration - Even more rules

The rules we have defined so far are doing a fair job. Let's add two additional rules, one for classifying SPAM comments and the other for the opposite task.

At a glimpse it looks like NOT_SPAM comments are usually shorter. This may be due to them not including hyperlinks but also in general they tend to be more concrete such as "I love this song!".

Let's take a look at the average number of characters for SPAM comments vs NOT_SPAM ones:

```
[42]: from statistics import mean

print(f"NOT_SPAM comments have an average of {mean([len(t) for t in_
↳df_labeled[df_labeled.label==0].text]):.2f} characters.")
print(f"SPAM comments have an average of {mean([len(t) for t in_
↳df_labeled[df_labeled.label==1].text]):.2f} characters.")
```

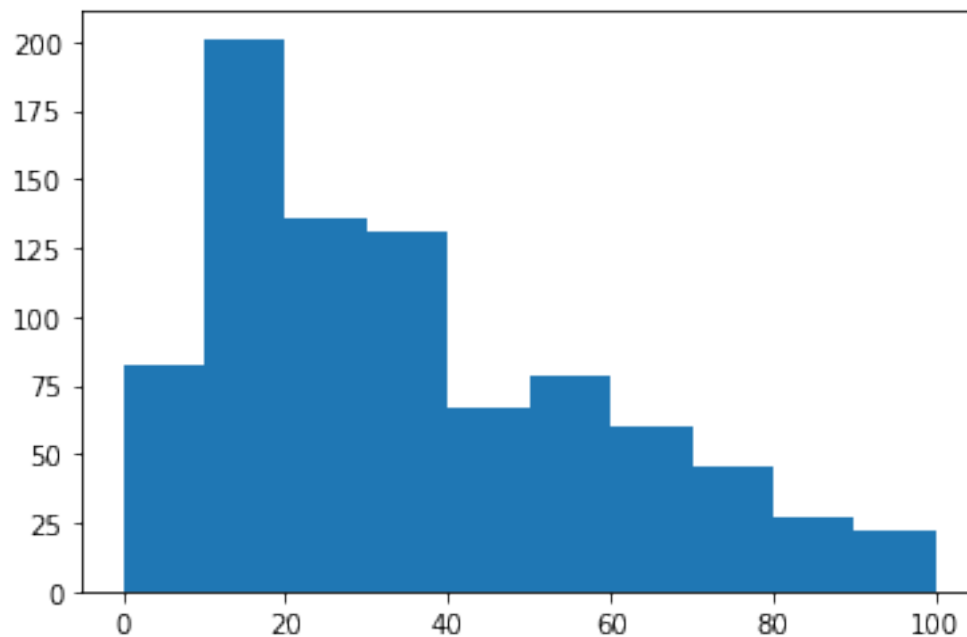
NOT_SPAM comments have an average of 49.64 characters.

SPAM comments have an average of 137.34 characters.

It sure looks like there is a big difference in the number of characters for both types of comments.

To decide on a threshold to classify as NOT_SPAM let's plot a histogram of the number of characters for NOT_SPAM comments:

```
[43]: plt.hist([len(t) for t in df_labeled[df_labeled.label==0].text], range=(0,100))
plt.show()
```



The majority of NOT_SPAM comments have 30 or less characters so we'll use that as a threshold. Another prevalent pattern in spam comments is to ask users to “check out” a channel, website or link.

Let's add these two new rules:

```
[44]: def labeling_rules_3(x):

    # Convert text to lowercase
    x = x.lower()

    # Define list of rules to classify as NOT_SPAM
    not_spam_rules = [
        "view" in x,
        "song" in x,
        len(x) < 30
    ]

    # Define list of rules to classify as SPAM
    spam_rules = [
        "free" in x,
        "subs" in x,
```

```

    "gift" in x,
    "follow" in x,
    "http" in x,
    "check out" in x
]

# Classify depending on the rules
if any(not_spam_rules):
    return 0

if any(spam_rules):
    return 1

return -1

```

```

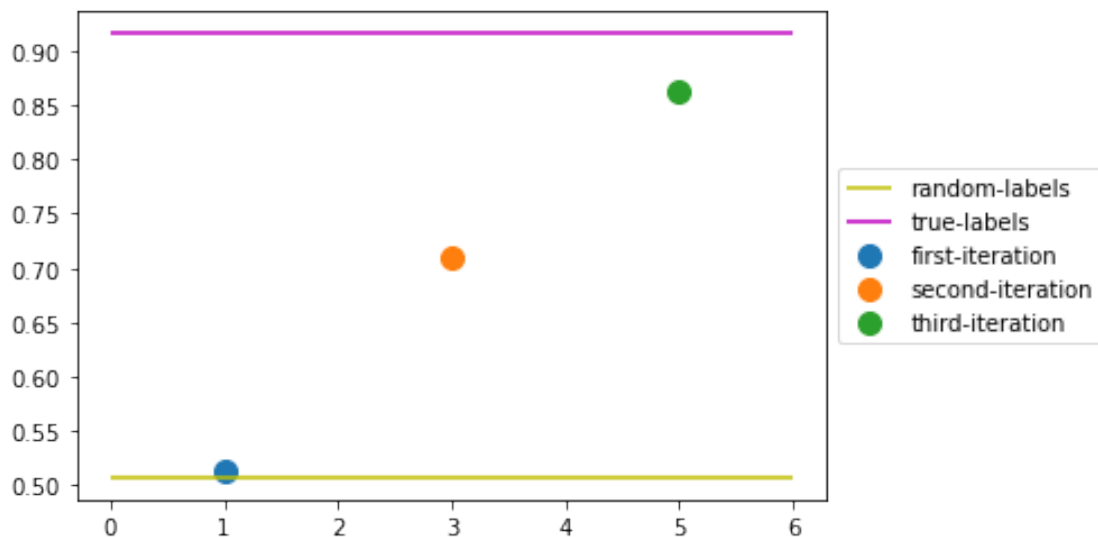
[45]: label_given_rules(X_train, labeling_rules_3, "third-iteration")

plot accuracies()

```

Proportion of data points kept: 78.26%

third-iteration labeling has an accuracy of 86.22%



These new rules do a pretty good job at both, covering the dataset and having a good model accuracy. To be more concrete this labeling strategy reached an accuracy of ~86%! We are getting closer and closer to the upper bound defined by using the true labels.

We could keep going on adding more rules to improve accuracy and we do encourage you to try it out yourself!

1.4.4 Come up with your own rules

The following cells contain some code to help you inspect the dataset for patterns and to test out these patterns. The ones used before are commented out in case you want start from scratch or re-use them.

```
[46]: # Configure pandas to print out all rows to check the complete dataset
pd.set_option('display.max_rows', None)

# Check NOT_SPAM comments
df_labeled[df_labeled.label==0]
```

```
[46]:
```

	text	label
0	music yeah	0
1	2 billion views, only 2 million shares	0
4	I wanted to know the name of the guy that danc...	0
6	NICE GIRL :D	0
7	this is increidebl	0
8	2 Billions in 2014	0
9	Love Song	0
12	Awsome 	0
14	best song ever (y)	0
15	The best world cup song ever!!!!	0
16	It was cool the best song ever	0
17	If I knew Korean, this would be even funnier. ...	0
21	when i see this back in 2015 i ask myself how ...	0
22	like the songs	0
25	Anybody else here in 2015?	0
27	Nice song	0
28	Oppa! Yeah! Best Song!	0
31	W0w	0
32	hay my is honesty wright i am 12year old i lo...	0
34	Best world cup offical song	0
35	I love this song so much	0
36	Love you	0
38	i like the lyrics but not to music video	0
39	Katy Perry is garbage. Rihanna is the best sin...	0
40	I love this song, can't believe it was 5 y...	0
41	just came here to check the views :P	0
43	Eminem rap can be easy for a boy but I can do ...	0
47	wow	0
48	Ahhh back when my life didn't suck...	0
51	I fucking hate her. Why? Because she don't wri...	0
52	2,000,000,000 out of 7,000,000,000 people in t...	0
53	We get it, you came here for the views...	0
54	best song eva	0
55	so beutiful	0
57	4 fucking years are fucking past so fucking fa...	0

61	I love your songs eminem your the rap god	0
62	She is good. Does she make any more music? If ...	0
63	when is this gonna hit 2 billion?	0
65	is that megan fox x:D?	0
72	this song sucks	0
76	Love the way you lie - Driveshaft	0
77	waka waka	0
79	it is wonderful	0
80	EMINEM the best EVER.	0
82	It looks so real and my daughter is a big fan ...	0
83	I loved it so much ...	0
85	In my head this is like 2 years ago.. Time FLIES	0
87	This song/video is such a trigger but it's...	0
88	It should be illegal to be this goodlooking as...	0
89	This awesome song needed 4 years to reach to 8...	0
90	Charlie, heroin will do that to you.	0
92	I love this song so much <3 Keep em...	0
94	i am a big fan of you and i love you	0
97	Her voice sounds weird and plus she's cute...	0
98	2 BILLION!!!	0
104	I like this song	0
107	Waka waka	0
109	WORLD RECORD YOUTUBE VIDEO VIEWS !!!!!!! XD	0
110	PSY - GANGNAM STYLE () M/V: http://youtu...	0
111	She is fit	0
112	Me and my big sister like you	0
114	If she really did this there she's hardcore	0
115	i love her	0
118	Stop,is a very TOP 1	0
120	This has had over 2 billion views. Holy shit.	0
121	love Shakira!	0
123		0
128	amazing song	0
129	I love this song	0
130	Good times.	0
131	Love this song so much! One of my faves! Xxx	0
132	Every collaboration between them, we know it w...	0
133	goood	0
136	i turned it on mute as soon is i came on i jus...	0
137	No one makes me wanna party like LMFAO does...	0
138	fave song	0
141	NICE :3	0
142	5 years soon!	0
146	Who is watching in 2015 like	0
148	I love you	0
156	Thumbs up if you listen this in 2015.	0
157	Your the best	0

273	charlieee :DDDD (Those who saw Lost only will ...	0
274	I love music	0
275	LMFAO - Party Rock Anthem ft. Lauren Bennett, ...	0
277	Fantastic!	0
287	More views than nikki minaj Anaconda	0
288	2008-2010 were the years for pop	0
290	Shakira :-*	0
293	Looooved	0
294	BEST SONG! GO SHAKI :D	0
295	I love this song sooooooooooooooooooooo much	0
296	Is that girl is Megan fox	0
300	I remember back when this was so popular every...	0
301	Memories	0
303	:)	0
304	Shuffling all the way with LMFAO! I like this ...	0
305	Love this song!!!	0
307	nice ..very nice	0
308	Every time I hear this song, I think about Ini...	0
309	This Song Was Good Until It Got Overplayed The...	0
310	Hahah, juyk! I allways laugh at the part 1:57...	0
311	I love KATY PERRY <3 <3	0
313	I love this song and expect the World Cup .	0
314	cool	0
319	Shakira is perfect	0
320	Amazing	0
321	We need to get this to 1 Billion Views!!	0
322	This is my favorite song ever love this Party ...	0
323	Dear person reading this, You are beautiful an...	0
326	Love the video	0
327	Nice	0
328	Wow;)	0
331	Waka waka she rules	0
333	2010:(0
335	thumbs up if you think this should have 1 bill...	0
336	This comment will randomly get lot's of likes ...	0
340	SERIOUSLY HOW DID THEY COME UP WITH THAT BEAT ...	0
343	shuffle!!...	0
347	how can there be 2.124.821.694 views, when im ...	0
349	Very Nice !	0
356	Like if you came here too see how many views t...	0
357	wow	0
358	My favorite song	0
363	this is the 2nd most best song when im gone by...	0
365	Wow this video almost has a billion views! Did...	0
366	This video is so cool, again and again!	0
367	Way was their a guy warring a robot head.	0
368	is that megan fox?	0

369	You think you're smart?	Headbutt your f...	0
370	How can this have 2 billion views when there's...		0
371	I'm not a big fan of the song but this video i...		0
375		omg	0
376	Nature is beautiful, no need to place tits in ...		0
381		Who df is Lauren Bennett..	0
384		Best World Cup Song	0
387	This song makes me want to drink bleach		0
390		ILove shakira	0
392	Eminem is idol for very people in España and M...		0
393		Ahhh, 2 years ago...	0
394		Loves it	0
397		Best. Song. EVER	0
402	I think he was drunk during this :) x)		0
403		Love you shkira	0
404	I felt old when I realized that this song was ...		0
405	i think they were drunk when they shot the fir...		0
406		LOVE IT!!!!!!!	0
407	I believe that soccer promotes terrorism. Bad ...		0
408		Beautiful song beautiful girl it works	0
413	DISLIKE.. Now one knows REAL music - ex. Enimen		0
414	Why does a song like this have more views than...		0
416		Cool	0
417	Love this song! My soccer team made a cd for o...		0
419	I am now going to voyage to the first comment...		0
420		Hi loving it	0
422		Are those real animals	0
423		some classsic :))))	0
426	i want to smack this year boy in to forever		0
427		lol so funny love it	0
429	Almost 1 Bil. What? Wow, GS sucks, in my opini...		0
430		PSY is a good guy	0
431		Awesome	0
434			0
438		:-D 🎶🎶 This is my favorite song	0
439		LOVE THE WAY YOU LIE .."	0
444		Almost to a billion :)	0
445	Love this video and the song of course		0
447		LMFAO IS THE BEST	0
448	WHY DOES THIS HAVE 2 BILLION VIEWS THIS SONG I...		0
449		Yeah! Let's start the party!	0
451	If the shitty Chinese Government didn't block ...		0
455	Best song ever made i swear :D i still hear ev...		0
456	Yesterday this video have 1 million likes and ...		0
458	Lol thats the guy from animal planet and lost...		0
459		Fuck you Eminem	0
460		awesome	0

462	Hi I am from bangladesh	0
463	this very good so I dance with some companions...	0
465	Let get this video to one billion views	0
466	:)	0
467	People Who Say That "This Song Is Too Old Now,...	0
468	Lip synch is terrible	0
476	P E A C E & L O V E ! !	0
477	Who else would give Katy perry a good old migh...	0
478	thumbs up if u checked this video to see hw vi...	0
479	awesome	0
482	Party Rock 	0
485	For all of the little kidz out there there is ...	0
488	This is the best of the best video in world!!!...	0
491	Glad to know im not the only one who knows its...	0
492	:D	0
493	this song always gives me chills! :)	0
494	What nicei	0
497	C'mon Katy you are so close to 14,000,000 subs...	0
499	I LOVE YOU KATTY PERRY <3	0
501	I just realized that this verses in this song ...	0
502	How are there 2 billion views and theres only ...	0
505	Waka waka eh eh	0
508	I love You Katy	0
510	I came here because of Vanoss.	0
512	Wow she is sexy XD	0
513	This Song is AWESOME!!!!	0
514	Like	0
519	CUTE :)	0
521	This Song will never get old	0
522	Hii youtube	0
523	You exactly who u want to be,watching your fav...	0
525	In what South American jungle or any jungle fo...	0
528	I love you ;p	0
529	Made in china...	0
530	I miss this song.	0
532	Why sooooo many downs?	0
534	i want to be that robot guy...	0
536	i was born in the wrong generation	0
541	Eminem rocks!	0
542	one of the BEST SONGS in music history	0
543	Lamest World Cup song ever! This time FOR Afri...	0
544	likeeeeeeeee	0
547	Omg	0
549	Nice	0
550	I dont even watch it anymore i just come here ...	0
552	I love song	0
553	Katy perry songs aren't that bad	0

558	Why so many disliked?????!!!!!!	0
559	Remeber the good ol' days when songs weren...	0
564	XD I WAS GOING CRAZY FUCKIN CRAZY WATCHIN THIS...	0
565	Feels and emotions in this song...God damn	0
566	This video deserves 1B views!!!	0
572	"...because I AM a champion...and you're gonn...	0
573	Best Music Ever!!!	0
575	WE GO FOR 1,000,000,000 FOR EMINEM	0
576	We pray for you Little Psy	0
578	Awesum song!! Jus luv it!	0
580	sorry but eminmem is a worthless wife beating ...	0
582	Very pleasant to hear, haha, good.	0
583	tension	0
585	666,002,018 views! 666 million. 666! Katy Perr...	0
586	The Guy in the yellow suit kinda looks like Ja...	0
588	Looool nice song funny how no one understands (...)	0
589	So underrated better Than Katy perry :/ ...	0
591	2010? The time past so fast ..	0
592	Love	0
593	What is he saying?!?!?!?!?!?!\$?	0
595	Why did they stop their career in music? This ...	0
598	Your going to hear me Roar !!!! :-)))) #soun...	0
599	I fuckin love this song! Afte...	0
600	The most watched video on YouTube is Psy's "Ga...	0
603	PSY GOT LOTS OF MONEY FROM YOUTUBE THAT HE GO...	0
605	i watched this because of the large amount of ...	0
607	2 Billion Views For This Piece Of Shit... ~ A ...	0
608	I like the music...but is anyone listening to ...	0
609	wait I SAW A KID NOT KIDDING	0
613	That guy charley of lost TV show	0
616	Almost a billion	0
623	I'm here to check the views.. holy shit	0
626	Charlie from LOST	0
627	You are the music hero	0
628	If only I had the body like Katy Perry :)). Sh...	0
629	Charlie got off the island and dated Megan Fox...	0
631	What Can i say...This Song He Just Change The...	0
632	Katy Perry - Roar (Official): http://youtu.be/...	0
634	8 million likes xD even the subscribers not 8 ...	0
636	2 billion for this shit?	0
638	I miss when people dressed like this.	0
639	Waka waka !!!	0
640	MEGAN FOX AND EMINEM TOGETHER IN A VIDEO DOES...	0
641	i'm watching this on summer 2015	0
642	Love this song !!!!!!	0
644	Hey I think I know what where dealing with her...	0
645	Still the best. :D	0

648	She looks like Megan Fox	xD!!	0
649		Lol I love this song	0
650		Ah. Good old times (:	0
652	I wish that guy wasn't so protective	geeze	0
654		Good video	0
655		BEST SONG EVER X3333333333	0
657		LoL	0
659		So freaking sad...	0
662		She is perfect	0
663		waka waka:-):-):-)	0
664		Never get old	0
666		I love it and my mom to	0
668		You best singer	0
671	...I stil lisening this :)		0
676	I LOVE YOU!!! Because u make me smile when im ...		0
678		Is that Charlie from lost?	0
681		This is a weird video.	0
682		Your a fucking bitch	0
683	they Shuffle hard that they made an Earthquake...		0
684		Hello I'm from Bulgaria	0
685		:)	0
688		Lemme Top Comments Please!!	0
689	Rihanna and Eminem together are unstoppable.		0
691		best song	0
693		I love this song	0
694	Who else saw jesses dancing sorry if I spelled...		0
695		LMFAO best songs ever!	0
699	so crazy, over 2 billion views, not US, not Uk...		0
700		I love it	0
706	857.482.940 views AWESOME !!!!!!!!!!!!!!!!!!!!!!!...		0
707	I could finally do the spongebob but I started...		0
708	LMFAO - Party Rock Anthem ft. Lauren Bennett, ...		0
712		Beautiful song	0
713		She's an old Whore!	0
714	I love this song, it's for empowering every wo...		0
716		Eminem best rapper all the time	0
717		Shakira	0
720		Fire..	0
721	I love the song roar it make me think am fill ...		0
727		katy perry is awesome	0
728		the song is sad	0
730		Remove This video its wank	0
732		It is 0 zero	0
737		Shakira is very beautiful	0
739	I remember when this used to be so popular all...		0
740		very good	0
743	i hate this music. fucking singer and every ko...		0

744	5 years later i still love this song ~Ax...	0
745	How old is Katy perry?	0
749	Its almost Katys birthday! October 25th Lets s...	0
753	Lets party	0
754	epic	0
756	Will this song ever reach 7 Billion Views?	0
760	awesome	0
761	I <3 Katy Perry!	0
762	The most liked video on YouTube...	0
765	I like how the robot shuffles he shuffles good	0
767	Good	0
768	At least she didn't get rid of her completely ...	0
770	Nice song	0
774	OMG LOVE THIS!	0
775	Oh my god go to 1 billion of replay i love sha...	0
778	i love this song thumsb up to you	0
781	Shakira :-*	0
786	old and good song	0
788	Love these guys, love the song!	0
791	Just coming to check if people are still viewi...	0
793	00 : 39 Im pretty sure that tiger just wanted ...	0
797	2:05. Hahahahah	0
798	they said this video are not deserve 2billion ...	0
799	:3	0
804	Shakira voice sound spanish but that is what m...	0
807	Love this sooooooooooooooooooooooooooooooooooooo...	0
810	Omg! This guy sounds like an american professo...	0
813	It's been back for quite a while now.	0
814	Awesome song!,congratulations!!!	0
815	Love it	0
819	just checking the views	0
820	i like this song because of all the animals an...	0
821	Holy crap. 800,000,000 views?!	0
822	best song in world	0
823	9 year olds be like, 'How does this have 2 bil...	0
824	MANY MEMORIES...	0
825	very good song:)	0
827	I liked 	0
828	Waka waka	0
829	i like and love so much people all friends...	0
830	Katy Perry can't sing for shit. All i hear it ...	0
831	5 milions comentars and 2 bilion views	0
832	I love it	0
833	She kinda let herself go, huh?	0
838	well done shakira	0
839	This is so cool,why haven't I heard this b...	0
840	Katty is the best! ! ! !	0

841	Thanks to this video we know that Nokia phones...	0
844	Don't mind me, I'm just checking what the view...	0
847	Behold the most viewed youtube video in the hi...	0
850	sorry to all my haters ...	0
851	This song is great there are 2,127,315,950 vie...	0
853	The great mother of the jungle. Sweet and natu...	0
856	so spousal abusue cool that's great	0
858	like!!!!	0
859	still watching in 2015...	0
860	Still listening,still same pleasure	0
865	Youtube comments be like This is so 5 yea...	0
866	My 6th grade teacher looked exactly like Katy ...	0
868	Every time I watch this mv I just so so so gla...	0
876	Nice video shakira good	0
877	i like it :)	0
878	Lets be honest, you wouldn't last 1 day on you...	0
879	Dang Dat little kid gat moves	0
880	Cutie girl and beautiful song	0
881	katy perry just stop it and dont do a song i ...	0
882	Wow I love it	0
883	I lovet	0
884	This song means so much to me thank you soooo...	0
887	OMG that looks just like a piece of the mirror...	0
889	This is so stupid. If you Roared at a Lion in ...	0
891	This video is kinda close to 1 million views ...	0
894	That shake and that golden and black robot wer...	0
895	Whose watching this in 2015. If so hi-5	0
896	I love shakira 	0
898	The song is very good ...but the video makes n...	0
899	I love dis song!! 3	0
901	Watching in 2015	0
904	this song is NICE	0
905	2 billion views wow not even baby by justin be...	0
906	How can this song have 629 million views while...	0
907	most popular video on youtube	0
911	What the hell this song is already five years ...	0
913	Where are Shakifans?	0
917	Eminem et Rihanna trop belle chanson	0
918	i check back often to help reach 2x10^9 views ...	0
923	5 years and i still dont get the music video h...	0
924	0	
925	Thumbs up if you watched it in 2011	0
928	I love you Shakiria!!!!!!	0
929	The perfect example of abuse from husbands and...	0
930	2015 LIKEEE	0
932	#2015 FUCK YEAH	0
933	This song is true because it is insane because...	0

934	Good song:-)	0
938	go here to check the views :3	0
939	everyday I'm shufflin	0
940	1 million dislikes!EPIC FAIL(ready for you fan...	0
941	THIS IS SHIT AND SOOOOO AUTOTUNED	0
943	First they were fighting... Then they were mak...	0
947	I WILL FINISH THIS DISSERTATION! And I will la...	0
948	969,210 dislikes like dislike themselves	0
949	psy=korean	0
953	prehistoric song..has been	0
955	she is a fool. this is a foolish video. the ly...	0
956	Shakira is my favourite singer. Wooooo	0
958	Ching Ching ling long ding ring yaaaaaa Ganga ...	0
959	I LOVE YOUR SONGS	0
960	How can this music video get 2 billion views w...	0
963	that is megan fox	0
964	Rihana, Love Me. :(0
965	BEST PARTY SONG LITERALLY PARTY ROCK IS IN THE...	0
966	great song, but we all know that Katy buys her...	0
968	Best song ever!!!!	0
974	Why do I feel like as if Gangnam style copied ...	0
975	this video is great ...!!! I love this...	0
981	Whose who are watching this in 2015. LIKE!	0
986	Best song ever	0
991	Hello. I am from Azerbaijan 	0
992	Loooooooooove this song!!!!!!!!!!!!:))))))	0
995	If you are a person that loves real music you ...	0
996	Likeeee	0
997	OMG 2/7 People watched this video because ther...	0
998	fucking love it omg :v	0
999	I love roar and Katy Perry. She is my favorite...	0
1001	this fucking song like a'n oreo the only w...	0
1002	why the elephant have a broken horn	0
1003	Katy Perry is lion	0
1005	And after the video ends, a 13 ft. boa constri...	0
1006	Honestly speaking except taylor swift and adel...	0
1013	LIKKEE	0
1015	why tiger succumbs to a beautiful girl ?.proba...	0
1016	My honest opinion. It's a very mediocre song. ...	0
1017	every bady yust have a good time	0
1018	sexy shakira	0
1022	#1 song in world even in 2015	0
1026	LOL this shit never gets old	0
1027	3:46 so cute!	0
1029	This is the only video on youtube that get so ...	0
1030	Love this song makes me wanna dance!	0
1031	everyones back lool this is almost 3 years old...	0

1034	Best song	0
1035	Anyone else notice that Megan Fox is in this v...	0
1037	The best song ever!	0
1040	You gotta say its funny. well not 2 billion wo...	0
1041	Wanderfol is love or miusic	0
1042	Super awesome video 	0
1045	Was that Meghan fox??	0
1046	fav.	0
1052	The first billion viewed this because they tho...	0
1053	I like it 	0
1054	Party rock! XD	0
1058	I hate it when Laura Bennett comes in	0
1060	do you guys know, there's a part two of th...	0
1061	Shakira is the best dancer	0
1062	This song is just insane. Do you dance li...	0
1065	This song is like an oreo, the black part is g...	0
1066	eminem is a ginius stop!	0
1071	This the best song i ever hire 	0
1072	Im just to check how much views it has	0
1073	She is good	0
1074	NEW GOAL! 3,000,000! Let's go for it!	0
1075	Cool	0
1079	just :(superr!!!	0
1085	Strong messages in every song I've heard.	0
1089	I'd rather hear some propa explicit gangsta ra...	0
1091	ILOVETHISSONG	0
1092	Why dafuq is a Korean song so big in the USA. ...	0
1094	I like so much this music, good	0
1095	If you pause at 1:39 at the last millisecond y...	0
1099	Love your songs Supper cool 	0
1100	should not have paused the music, this is a cl...	0
1102	amazing song	0
1106	not 2 million view anymore :))	0
1109	Stupid people... this video doesnt have 2 bill...	0
1110	Y LOVE YOU	0
1111	Shakira u are so wiredo	0
1112	my son love so much	0
1113	Love this song	0
1114	How did THIS Video in all of YouTube get this ...	0
1115	I like the Mmph version better	0
1116	I like shakira..	0
1120	I'm watching this in 2014	0
1121	I remember when everyone was obsessed with Gan...	0
1127	I found out this song now	0
1128	Where did she find all that make up in a freak...	0
1129	Charlie from LOST?	0
1131	"eye of the tiger" "i am the champion" seems l...	0

1133	Enough with the whole "how does this have two ...	0
1136	Its funny because I listen to rock and death m...	0
1139	Very nice	0
1140	In the beginning she was scared off everything...	0
1141	love lmfaao party rockin keep it going	0
1144	cool cool cool cool cool cool cool	0
1148	Very good! Like! :D	0
1153	To help shakira become the first female to hit...	0
1155	WAT DA FUCK THIS THE MOST VIEWED VIDEO IN YOUT...	0
1157	I love this song for two reasons: 1.it is abou...	0
1158	Thumbs up if you're watching in 2015	0
1161	Best song for ever 	0
1162	Hi, nice song Shakira! (Sorry for bad Brazilian)	0
1163	Getting too 1billion views, holy moly.!!!	0
1164	this comment is wrong	0
1166	i love this song	0
1167	I'm only checking the views	0
1168	No-I hate The Way U LIe!!	0
1170	I like it	0
1173	loooooooooooooooooooooovvvvvvvveeeeeeeeeeee it...	0
1174	goot	0
1176	Shakira is different :) She is so happy all th...	0
1177	;:-)	0
1179	On 0:02 u can see the camera man on his glasse...	0
1180	my favorite song	0
1182	Dumb Guy: Why is there 2 billion views when th...	0
1183	1 millioon dislikesssssssssssssssssssssssssss...	0
1184	He is good boy!!! I am korean I like to em...	0
1185	I loved this song when I was in my teenage yea...	0
1187	watch this with sound off!	0
1189	Lol this youtuber (officialpsy) is getting so ...	0
1190	Amazing song	0
1192	I guss this song is one of my worst fears in l...	0
1193	cooooooooooooooollllllllllll	0
1194	Not bad	0
1195	Love it	0
1196	still listening in 2015	0
1198	GREAT!!!	0
1199	THUMBS UP FOR ROBO GUY BABY	0
1200	good!!	0
1202	This video will get to 2 billion just because ...	0
1203	Awesome video this is one of my favorite song...	0
1206	this song is racist	0
1207	LMFAO!	0
1208	When I hear Katy singing this, I cry. The song...	0
1210	I don't understand this song, I have had t...	0
1211	im still watching in 2015	0

1213	so beautiful	0
1214	i think about 100 millions of the views come f...	0
1215	Megan Fox is gorg in this!! Eminem is truly th...	0
1217	this song never get's old <3	0
1218	everyday I'm shufflin	0
1222	wow	0
1223	This song is the most boring, asinine song I h...	0
1225	Katy has conqueror's haki >:)	0
1228	I hear this all the time on radio and its real...	0
1231	This was such an epic track. And the video is ...	0
1234	This video is so racist!!! There are only anim...	0
1235	This makes me miss the world cup	0
1236	Great music anyway	0
1237	katy is mine the girl of my dreams	0
1238	Is this the video that started the whole "got ...	0
1240	You know a song sucks dick when you need to us...	0
1241	:)	0
1242	eminem - RIHANNA	0
1243	why does the world not shuffle???	0
1244	This looks so fun and it's a good song	0
1250	Good times ...	0
1251	NOKIA spotted	0
1252	BR	0
1254	Mix - PSY - GANGNAM STYLE () M/V: PSY - G...	0
1256	Rihanna is so beautiful and amazing love ...	0
1257	I love this-the talents of eminem and Skylar,w...	0
1258	LMFAO!!!!!!!	0
1261	OOOOO SHUFFLLLLLLLLLLLLLLLLLLLLLLLLLINNNNN	0
1263	Katy Perry - Roar (Official): http://youtu.be/...	0
1265	Every day I'm Shuffling !	0
1267	Hey, it's Charlie from Lost	0
1271	her voice is so wow!	0
1272	i love this song so much!!!!!!!!!!!!!!!!!!!!!!...	0
1273	Like this in 2015! :D	0
1275	Can somebody wake me up when we get to 3 billi...	0
1276	I like this song very much	0
1279	Rihanna is absolutely gorgeous in this video.	0
1280	Love it!!!!!!!!!!!!!!!!!!!!	0
1282	*KATY YOU ARE A SHIT GO DIE!!!!!!ROAR IS A FLOO...	0
1283	no where near one of eminem's actual best songs...	0
1284	The best Song i saw ... 0	0
1287	song is bad	0
1290	still.. this reminds me of 1 years back when i...	0
1293	2015 I like video	0
1294	Love this song makes me wanna dance!	0
1295	now its 1,884,034,783 views! pls. comment the ...	0
1297	OH SHIT THIS WAS UPLOADED ON MY BIRTHDAY, fina...	0

1299	I love song	0
1300	Party rock anthem is love,party rock anthem is...	0
1306	This song never gets old love it.	0
1308	5 years...	0
1310	Is that Charlie from lost? 	0
1316	Party Rock...lol...who wants to shuffle!!!	0
1317	I love this song so much	0
1323	So he's admitting he killed his girlfriend...	0
1325	i love you katy perry because you will sing ni...	0
1329	I loved, she is amazing.. OMG your eyes*_*	0
1332	The population of world is more than 7 billion	0
1333	awesome	0
1334	Justin bieber = gay	0
1337	Katy Perry - Roar (Official) #soundsofsunday ...	0
1343	I lovee it	0
1347	I love the way you lie	0
1348	Never gets old best song ever	0
1351	2011- the last year of decent music.	0
1353	That was very good I mean very very much good	0
1355	Katy Perry's songs are the best of the songs o...	0
1356	Wow	0
1358	Like	0
1360	thumb up if you watching in 2015 and you like...	0
1362	BEAUTIFUL	0
1365	Why the fuck this keeps updated? Comments : "5 ...	0
1366	Love song	0
1367	This song is so beauty	0
1370	Can we reach 3 billion views by December 2014?	0
1372	Is that tiger called 'Katty Purry'?	0
1373	I remember this :D	0
1374	Really good song . you know love song song.	0
1375	the views... They're over 90,000!!!!!!!...	0
1376	OMG this oldspice spraytan party commercial om...	0
1377	imagine if this guy put adsense on with all th...	0
1379	Rihanna looks so beautiful with red hair ;)	0
1382	This song is about Rape and Cheating ...	0
1386	C'mon 3 billion views!!!!!!!	0
1388	Great.This is a song	0
1390	who the fuck cheats on megan fox	0
1391	860,000,000 lets make it first female to reach...	0
1394	It's so funny it's awesomeness lol aaaaaaa sex...	0
1396	just came to check the view count	0
1401	Wow 23 min ago	0
1403	i like this song the video goes perfect with it	0
1405	So,cool	0
1406	beautiful song!	0
1409	i remember this song!	0

1410	OMG LISTEN TO THIS ITS SOO GOOD!! :D	0
1411	I am going to blow my mind	0
1412	Great song	0
1413	The best FIFA world cup song for sure.	0
1417	I know it old song but (like) if you watching ...	0
1418	My telephone!	0
1419	i love Rihanna [from Thailand]	0
1420	OMG over 2 billion views!	0
1424	Party rock	0
1427	see it all, human folly right?	0
1429	Me and my aunt love this song!!!!	0
1432	how is this shit still relevant	0
1433	Fuck Eminem. Bieber is the best <3	0
1434	i like this steps...	0
1435	mindblowing dance.,.,.superbbb song	0
1437	Katy has a voice of an Angel	0
1438	I like	0
1441	the most viewed youtube video of all time?	0
1445	THIS HAS MORE VIEWS THAN QUEEN AND MICHAEL JAC...	0
1447	nice song	0
1450	Wow dance show	0
1451	I cried this song bringing back some hard memo...	0
1452	Party time!	0
1454	Shakira I love you	0
1456	I always end up coming back to this song 	0
1458	Eminem - Love the way you lie	0
1459	wierd but funny	0
1460	is it bad that my realtionship is just like th...	0
1462	This Will Always Be My Favorite Song But ...	0
1467	this has so many views	0
1469	2015 <3	0
1471	Screw this Chinese crap i dont even understand...	0
1472	Waka waka	0
1473	god she is so sexy! drives me crazy!	0
1474	It is a shit	0
1476	I swear Shakira keeps getting more and more go...	0
1477	The best song ever!	0
1481	God she is so hot	0
1483	Love the way you lie II is nicer in my opinion...	0
1485	Like	0
1486	Since when has Katy Perry had her own YouTube ...	0
1490	I hav absolutely no idea what he's saying. Is ...	0
1491	the best!	0
1492	best rap ever	0
1500	Simply rap god	0
1502	I love eminem <3	0
1503	Love this song makes me wanna dance!	0

1505	Like eminen	0
1506	are there people who like this shit? hahah...	0
1509	...	0
1511	cool song ever good thing its here	0
1512	great song you go katy!	0
1514	SHAKIRA SONG WAKA WAKA	0
1521	really want this video to get 1 billion views,...	0
1528	I think this is now a place to promote channel...	0
1533	2015 but Im still listening to this!	0
1536	wow	0
1537	Nice song ^_^	0
1538	beautiful	0
1539	YOUTUBE MONEY !!!!!!!!!!!!!!!!!!!!!!!!!!!!!	0
1540	hot,hot	0
1541	How is this the most watched Eminem video, it ...	0
1544	The rap: cool Rihanna: STTUUPID	0
1547	beautiful	0
1549	Fantastic!!!	0
1551	To everyone joking about how he hacked to get ...	0
1552	Hello Brazil	0
1554	love the way you lie featuring rhianna, hes an...	0
1555	Party rock due and duel	0
1558	Maybe the best music video in the last 15 year...	0
1559	she is sooooo beautiful!	0
1560	WELL THIS DUDES FADED THE FUCK OUT!	0
1561	How do you forget you have a choice, and what ...	0
1563	<a href="http://www.youtube.com/watch?v=KQ6zr6...	0
1565	Why does this video have so many views? Becaus...	0
1566	1,000,000 VIEWS NEAR	0
1567	This is fucking shit. From the first notes, th...	0
1568	this song is better then monster by eminem	0
1570	Gooooood	0
1571	She's awesome XD	0
1572	I remember that torunament like it was today.	0
1573	SUPER!!! !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!...	0
1574	People who believe in Illuminati are stupid th...	0
1577	What my gangnam style	0
1583	shakira is best for worldcup	0
1585	Laughing My Fucking Ass Off!!!	0
1587	I love you Eminem	0
1591	Who is still watching in 2015	0
1595	<3	0
1597	Good thing she brought her spray-on tan, hairs...	0
1600	love this song	0
1601	never gets old	0
1602	2015!! LLIKEE!!	0
1603	that time in 2011 where this shirt was cool	0

1606	Made five years ago and people still don't...	0
1607	Since she is a feminist champion, why would sh...	0
1611	Don't love someone soo much, love the way ...	0
1612	'Little Psy, only 5 months left.. Tumor in th...	0
1614	i hate rap	0
1616	That's Good :)	0
1618	OMG I LOVE YOU KATY PARRY YOUR SONGS ROCK!!!!...	0
1619	I love katty perry	0
1626	This is getting old...	0
1629	Is that Megan Fox?	0
1633	Nice love itttttttt wurkkkkkkkkkkkkkkkkkkkkkk...	0
1634	Still watching this 2 years later?	0
1635	I like this song 	0
1638	super music	0
1640	Perfect! <3	0
1642	Best song ever	0
1644	selfie alert	0
1648	waka waka	0
1651	you cant stop the shuffle	0
1652	I want to see Shakira, not football :)	0
1653	Dance :)	0
1654	Omg it's going to have 1bi views!	0
1655	Imagine this in the news crazy woman found act...	0
1656	so cute that monkey *-*!	0
1657	I want new song	0
1658	Shakira	0
1661	Cool song	0
1662	it pisses me off a bit that blank space has mo...	0
1664	Remeber when this song was good	0
1666	#2012bitches	0
1668	Came here to check the views, goodbye.	0
1670	I could hear this for years ;3	0
1671	love	0
1673	There is 7 bilion poeple on earth Now stop bei...	0
1674	5 years ago damn	0
1675	most viewed video in the world	0
1676	Boooobs	0
1679	5th most viewed video.. i guess	0
1680	lets get it to 1 BILLION	0
1682	I really like this song.	0
1683	She's such an awesome entertainer. And pre...	0
1684	I love this song!!!	0
1686	she is megan fox?because she is very similar	0
1691	super	0
1697	I can't comprehend why this video has nearly 7...	0
1698	The boyfriend was Charlie from the TV show LOST	0
1700	Hello all 29.24% earth population of the world...	0

1702	Eminem THE BEST !	0
1712	she is beautiful but it is not American!	0
1713	LOVE THIS SONG!!!	0
1715	I've figured out why I dislike this song: it's...	0
1721	870,000,000 views...566,000 comments...oh my l...	0
1722	Sick Music for sick females	0
1731	I love this shit but I disliked it because it'...	0
1733	cool	0
1734	who is going to reach the billion first : katy...	0
1739	Its a good song and i like her video clip, bec...	0
1740	like me	0
1743	Love this song	0
1744	ROAAAAARRRRRRR	0
1746	Wow. Comments section on this still active. No...	0
1747	love the you lie the good	0
1748	Nice	0
1749	wow!!!!!! increible song!!!!!!!	0
1753	Love your song makes me happy	0
1754	super nice, love musique	0
1756	Shakira - Waka Waka LOVE THIS SONG!!!!!!...	0
1758	Something to dance to, even if your sad JUST ...	0
1759	She is perfect! <3	0
1761	Katy Perry You Are Looking Soo PRETTY DAMN CUT...	0
1762	How stupid humanity is	0
1763	HONESTLY, I WANNA SEE YOU BE BRAVE! oh wait...	0
1766	Shakira :-*	0
1767	I started hating Katy Perry after finding out ...	0
1768	What's with the guys jacket? 1 sleeve and ...	0
1771	With the korean girl more slut and bitch : Hyu...	0
1774	Roar is without a doubt your best song...feel ...	0
1775	And i'm Shufflin still today :D	0
1777	I don't think this song will ever get old	0
1778	I still to this day wonder why this video is s...	0
1781	Man this song really does get in your bones - ...	0
1788	awesome song ever	0
1789	JUST DANCE 3	0
1790	Damn, this was everywhere	0
1791	I heard this when I was only 6 years old and I...	0
1793	this song is fu cking awesom!!!!!!!	0
1796	You can not hate eminem and nirvana...trust me	0
1801	This song is special, because is a song for Af...	0
1803	My friend Sam loves this song ...	0
1805	why I dont see any comments but mine?:/	0
1809	Party in da tonight	0
1812	Wow...5 years 	0
1813	She is a perfect wonder...	0
1816	so many comments.	0

1817	Put famous people in the jungle for an hour an...	0
1819	Waka best one	0
1820	How could 108k people dislike this song or video	0
1821	OPPA GANGNAM STYLE!!!	0
1823	Man she is BEAUTIFUL!	0
1825	this video is very inaccurate, a tiger would r...	0
1826	good music	0
1829	I love this soooooooooooooong I love katy perry	0
1831	Ouf Ouf OUFFFFFFFFFFFFFFFFFFFFFFF!!!!!!! :)	0
1832	I love you!	0
1833	<3 this song so much.SHAKIRA YOUR A REALLY ...	0
1835	2,124923004 wiews... wow	0
1839	1000000000 views.	0
1840	I really am madly in love with this woman!!	0
1841	Awesome	0
1844	Anyone else think this video theme is a bit of...	0
1846	I love	0
1848	this jap is such a piece of shit. he is such a...	0
1849	She's so pretty	0
1853	katy perry does remind me of a tiger,like as i...	0
1854	The funny thing is, 1,700,000,000 of the views...	0
1856	Love	0
1857	how does this video have 2,127,322,484 views i...	0
1858	What does that tattoo on her right tricep say?	0
1859	I love your music	0
1864	Why there are so many dislikes. This song is s...	0
1865	Every single one of his songs brings me back t...	0
1869	love!!!!	0
1873	shakira is the best!	0
1875	PARTY ROCK (8) ~	0
1876	The first comment is chuck norrus obviously :D	0
1877	Still a very fun music video to watch!	0
1881	I hate this song!	0
1882	I love this song because we sing it at Camp al...	0
1884	I always have goose bumps at that part	0
1885	I shuffled while listening to this song. THE I...	0
1888	Katy Perry - Roar (Official): http://youtu.be/...	0
1893	LOVE TROP FORT VOTRE clip	0
1897	You are all sheep, period. This is terrible mu...	0
1901	This song is so AWESOME!!!She made everything ...	0
1904	I love this song up to the moon >3 you are ...	0
1907	I'm sorry Katy Perry, I was being weird. I sti...	0
1908	Love it when I can relate to my daughter's mus...	0
1911	This song is just really fun	0
1914	I love this song	0
1915	I hate rap and I like this song	0
1916	She's got it all. Incredible voice, extremely ...	0

1918	PSY - GANGNAM STYLE () M/V: http://youtu...	0
1920	In my opinion I think you look better with bla...	0
1922	nice song	0
1924	One of the best song of all the time	0
1925	i totally love this song. absolutely fantastic...	0
1927	I lover this song	0
1931	i love song :)	0
1932	Shakira :-*	0
1933	we all love you Katy Perry <3	0
1935	GANGMAN STY- *D-D-D-D-D-D--DROP THE BASS!!*	0
1936	Shuffle	0
1937	And somehow she has access to makeup in the mi...	0
1938	It makes me happy instantly, and makes me forg...	0
1939	is that Megan fox	0
1942	Admit it you just came here to check the numbe...	0
1943	i am 2,126,492,636 viewer :D	0
1944	The Funny Thing Is That this song was made in ...	0
1945	2 billion...Coming soon	0
1947	DAMNNNNNNNN, she is sexy 0_0	0
1948	Most viewed video on youtube...daaaaaaaaaaannnn...	0
1951	Very Nice !!! Yeah Fucking.	0
1952	Its 2015 and still shuffling to this song	0
1954	I love you	0

[47]: # Check SPAM comments

```
df_labeled[df_labeled.label==1]
```

	text	label
2	Katycat! https://m.facebook.com/profile.php?id...	1
3	-->ATTENTION KATYCATS! Katy leads with 7 no...	1
5	Hey guys I'm 87 cypher im 11 years old and...	1
10	check out my channel for rap and hip hop music	1
11	http://ubuntuone.com/40beUutVu2ZKxK4uTgPZ8K	1
13	gofundme.com/grwmps	1
18	Hey guys subscribe to my channel for no reason...	1
19	Subscribe to me i subscribe back!!!! Plus i ha...	1
20	http://www.aaas.org/tech-i/vote#view/25874/217...	1
23	Check out this video on YouTube:	1
24	okay, this should cover me for some time... Th...	1
26	Check out this video on YouTube:	1
29	My uncle said he will stop smoking if this com...	1
30	Love itt and ppl check out my channel!!!	1
33	like this comment if ur watching this on 2015	1
37	hey guys i know its annoying getting spammed s...	1
42	https://twitter.com/GBphotographyGB	1
44	You guys should check out this EXTRAORDINARY w...	1
45	Support the fight for your 4th amendment right...	1

46	The Perry you're doing a good job good job I l...	1
49	Please subscribe every sub gets a shout out te...	1
50	COFFEE ! LOVERS ! PLEASE ! READ ! Check out a ...	1
56	subscribe to my pagee please.	1
58	http://vimeo.com/106865403	1
59	You guys should check out this EXTRAORDINARY w...	1
60	YO GUYS IM 14 YEAR OLD RAPPER JUST STARTED RAP...	1
64	subscribe please	1
66	Check out this video on YouTube:Qq	1
67	Search "Chubbz Dinero - Ready Or Not " Thanks	1
68	**CHECK OUT MY NEW MIXTAPE**** **CHECK OUT MY ...	1
69	((rapid facebook)) the free version of all c...	1
70	Subscribe me please	1
71	LADIES!!! ----->> If you have a broken h...	1
73	watch?v=vtaRGvGtWQ Check this out .	1
74	sub my channel for no reason -_-	1
75	COME AND CHECK OUT MY NEW YOUTUBE CHHANEL, GOI...	1
78	http://9gag.com/gag/aAVpwj9/ =)	1
81	me segue ha https://www.facebook.com/marcos.s...	1
84	Hi Guys im an Upcoming Rapper if you could che...	1
86	Check out this playlist on YouTube:	1
91	We are an EDM apparel company dedicated to bri...	1
93	Check out this video on YouTube:	1
95	You guys should check out this EXTRAORDINARY w...	1
96	Check out this playlist on YouTube:chcfcvzfzfb...	1
99	LIKE AND SUBSCRIB IF YOU WATCH IN 2015 ;)	1
100	Check out this video on YouTube:	1
101	Please subscribe to me	1
102	Come check out our parody of this!	1
103	Follow me on Twitter @mscalifornia95	1
105	Subscribe to me if u think "swag" is...	1
106	Check out this video on YouTube:..	1
108	https://www.facebook.com/FUDAIRYQUEEN?pnref=st...	1
113	hey its M.E.S here I'm a young up and comi...	1
116	Cool Video LMFAOVEVO! You should check out my ...	1
117	Check out this video on YouTube:	1
119	CHECK OUT DANEJA GOOD GIRL	1
122	Ummm... I just hit 1k subscribers. I make Mine...	1
124	Check out this video on YouTube:	1
125	Check out my videos guy! :) Hope you guys had ...	1
126	subscribe to <sp...	1
127	iS IN TOP 10 , IN YOUTUBE TOP VIEWS , ON 9 IS ...	1
134	great l subscribe	1
135	please subscribe to my page. thanks.	1
139	http://www.ermail.pl/dolacz/V3VeYGIN CLICK ht...	1
140	Check out our Channel for nice Beats!!	1
143	Subscribe ME!	1

144	http://thepiratebay.se/torrent/10626835/The.Ex...	1
145	HI IM 14 YEAR RAPPER SUPPORT ME GUY AND CHECK...	1
147	Tell us the title so i can like and subscribe ...	1
149	subscribe my chanel	1
150	Hey Music Fans I really appreciate any of you ...	1
151	Hey everyone check out my channel leave a like...	1
152	Check out this playlist on YouTube:	1
153	http://www.ebay.com/itm/131275322914?ssPageNam...	1
154	http://shhort.com/a?r=G8iX5cTKd	1
155	Check Out The New Hot Video By Dante B Called ...	1
158	People, here is a new network like FB...you re...	1
159	If I get 100 subscribers, I will summon Freddy...	1
160	go check out our video	1
162	Check out this video on YouTube:	1
163	Subscribe pleaaaaase to my instagram account , ...	1
164	Subscribe to my Youtube Channel!! :) Suscribit...	1
165	Anyone Who LOVEs music , please go check out m...	1
170	Like Gorlin-Goltz Syndrome Support Community, ...	1
173	Limit sun exposure while driving. Eliminate th...	1
174	Check out pivot animations in my channel	1
175	Check out this video on YouTube:	1
176	Check out this video on YouTube:	1
177	At 500 subscribers i'm sky diving help me ...	1
179	Wow justin Bieber is Better thats why when he...	1
180	Come check out our music channel! go check out...	1
181	Check out this video on YouTube:	1
182	hey guys if you guys can please SUBSCRIBE to m...	1
183	Being paid to respond to fast paid surveys fro...	1
186	Stop Wasting Up Your Time and Get Paid To Mes...	1
188	Hey guys plz check out my youtube channel to c...	1
190	Like this comment if you still jam out to this...	1
194	This great Warning will happen soon. ,0\nLneaD...	1
195	http://www.bing.com/explore/rewards?PUBL=REFER...	1
196	DO YOU KNOW HOW SEAN KINGSTON GOT FAMOUS WHY D...	1
197	pls http://www10.vakinha.com.br/VaquinhaE.aspx...	1
198	Check out this video on YouTube: Lo...	1
199	Like This Comment	1
203	please visit our web: wellcomemd.blogfa.com	1
204	Check out this playlist on YouTube:	1
205	I'm subscribing to you just because your c...	1
206	Hey, have you tried "DribblePROshot"...	1
207	Check my channel please! And listen to the bes...	1
208	CHECK MY CHANNEL FOR MY NEW SONG 'STATIC'!! YO...	1
209	and u should.d check my channel and tell me wh...	1
210	e.e...everyone could check out my channel.. d...	1
214	http://www.ebay.com/itm/171183229277?ssPageNam...	1
215	Check out this video on YouTube:	1

216	For Christmas Song visit my channel! ;)	1
220	The britishs called that soccer but you know t...	1
221	subscribe to my feed	1
223	HI!:D!:) We' re TWIN MELODY ,17 year old twi...	1
224	SUP GUS THIS IS A VIDEO FOR PEOPLE WHO LOVES P...	1
226	Check out this video on YouTube:	1
227	Check out this video on YouTube:	1
228	https://www.facebook.com/pages/Brew-Crew-2014/...	1
229	i was playing this song and the baby in my bel...	1
232	Hey guys ready for more 87 Cyphers back check ...	1
234	Check out this playlist on YouTube:a	1
236	Check out my dance videos!! You won't be d...	1
237	Hey check out my channel!!!! Please	1
238	me shaking my sexy ass on my channel enjoy ^_^	1
240	check it out free stuff for watching videos an...	1
241	Check out this video on YouTube	1
245	Hello everyone my name's Anderson and i's...	1
246	Hey Go To My Channel Check Out My Dongs Thanks...	1
248	I love that you subscribed	1
249	Check out my channel to see Rihanna short mix ...	1
250	Hey subscribe to me	1
251	Check out this video on YouTube:	1
252	Check out this video on YouTube: 	1
253	Hi. Check out and share our songs.	1
254	Please visit this Website: oldchat.tk	1
256	SUBSCRIBE me. if you do that leave your name s...	1
258	Take a break from Katie and help me reach 100 ...	1
259	Watch my videos xx	1
260	Check out this video on YouTube:	1
265	Check out this video on YouTube:	1
268	https://vimeo.com/107297364	1
276	You guys should check out this EXTRAORDINARY w...	1
278	https://www.indiegogo.com/projects/help-stop-m...	1
279	Nicee!!sabrosura viva https://soundcloud.com/y...	1
280	Hey guys, I was working last night on this pro...	1
281	ima rapper trying to get notice please check o...	1
282	You guys should check out this EXTRAORDINARY w...	1
283	Pleas subscribe my channel GamezZMTA	1
284	Take a look at this video on YouTub You	1
285	Check out this playlist on YouTube:	1
286	Rap from Belarus, check my channel:)	1
289	Check out this video on YouTube:	1
291	I really can't comprehend Miley Cyrus , s...	1
292	HAHAA THIS DANCE IS TIGHTTTT I know...	1
297	Hey Music Fans I really appreciate all of you ...	1
298	Hey everyone, I am a new channel and will post...	1
299	http://flipagram.com/f/LUKA1QMrhF	1

302	Check out this video on YouTube:fb i	1
306	Subscribe me Secret videos :D	1
312	subscribe	1
315	i rekt ur mum last nite. cuz da haterz were 2 ...	1
316	Check out this playlist on YouTube:a	1
317	Check out this video on YouTube:	1
318	http://www.guardalo.org/best-of-funny-cats-gat...	1
324	Dress like Rihanna at kpopcity.net - The large...	1
325	Check out this video on YouTube <br...	1
329	Hey I'm a British youtuber!! I upload...	1
330	https://www.paidverts.com/ref/tomuciux99 esyes...	1
332	/watch?v=aImbWbfQbzg watch and subscribe	1
334	I'm A SUBSCRIBER	1
337	SUBSCRIBE MY CHANNEL	1
338	Sign up for free on TSU and start making money...	1
339	Check out: My Hood Doh, by Flixter Nossnevs	1
341	please throw a sub on my channel	1
342	Check out this video on YouTube:	1
344	WATCH MY VIDEOS AND SUBSCRIBE	1
345	Hey if you guys wouldnt mind...could you check...	1
346	Hey ! Subscribe to me for the peace in the wo...	1
348	Like my page please... https://m.facebook.com...	1
350	Earn money for being online with 0 efforts! ...	1
351	Hey Music Fans I really appreciate all of you ...	1
352	Check out this video on YouTube:	1
353	Check out our cover of this song!	1
354	Hey guys! Can you please SUBSCRIBE to my chan...	1
355	SUB 4 SUB PLEASE LIKE THIS COMMENT I WANT A SU...	1
359	+447935454150 lovely girl talk to me xxx	1
360	cool song check out my animal trafficking peti...	1
361	all u should go check out j rants vi about eminem	1
362	everyday i'm subscribe	1
364	adf.ly / K1D3Y	1
372	I WILL NEVER FORGET THIS SONG IN MY LIFE LIKE ...	1
373	Share Eminem's Artist of the Year video so...	1
374	SnEakiESTG Good Music. Hood Muzik Subscribe 2 ...	1
377	**CHECK OUT MY NEW MIXTAPE**** **CHECK OUT MY ...	1
378	Check out my channel for funny skits! Thanks!	1
379	Hey guys can you check my YouTube channel I kn...	1
380	Youtube comments in a nut shell: .F...	1
382	http://www.gcmforex.com/partners/aw.aspx?Task=...	1
383	Check out this video on YouTube:	1
385	CHECK MY CHANNEL OUT PLEASE. I DO SINGING COVERS	1
386	Subscribe to me and I'll subscribe back!!!	1
388	Check out this video on YouTube:	1
389	Subscribe to my channel !	1
391	like this comment then type 1337	1

395	Check out my channel :)	1
396	<a rel="nofollow" class="ot-hashtag" href="htt...	1
398	I hope everyone is in good spirits I'm a h...	1
399	want to win borderlands the pre-sequel? check ...	1
400	You guys should check out this EXTRAORDINARY w...	1
401	SUBSCRIBE TO ME AND I'LL SUBSCRIBE TO YOU! (Mu...	1
409	Check out this playlist on YouTube:m	1
410	A friend of mine has invented a big dick form...	1
411	https://www.facebook.com/antrobofficial	1
412	Come and check out my music!Im spamming on loa...	1
415	HEY GUYS!!! BEFORE YOU IGNORE ME, PLE...	1
418	White people are going extinct for more inform...	1
421	check out my new video	1
424	Subscribe & Like /watch?v=5tu9gN1l310	1
425	Hi.Check out and share our songs.	1
428	check out fantasy music right here -----&...	1
432	Subscribe me, I will? subscribe you back!!!	1
433	Yo like what up this song is fricking beast an...	1
435	Hey yall its the real Kevin Hart, shout out to...	1
436	GO TO MY CHANNEL and check out my written songs	1
437	Please check out my acoustic cover channel :) ...	1
440	Help me get 50 subs please	1
441	Subscribe to me for free Android games, apps..	1
442	Check me out I'm all about gaming	1
443	Check out my mummy chanel!	1
446	Hey dickwad - we're all africans. The colo...	1
450	subscribers please`	1
452	This past Christmas my dad passed away, to hel...	1
453	Pls follow this channel!! http://www.twitch.tv...	1
454	Lil m !!!!! Check hi out!!!! Does live the wa...	1
457	Check out this video on YouTube:	1
461	Hey guys, I'm a human. Bu...	1
464	... 1	
469	hey its M.E.S here I'm a young up and comi...	1
470	Subscribe and Win a CAP 	1
471	Check out this playlist on YouTube:	1
472	Follow me watch my videos :) Follow me watch m...	1
473	Hey guys im a 17yr old rapper trying to get ex...	1
474	For all you ladies out there... Check out ...	1
475	im M.E.S an aspiring young rapper with high ho...	1
480	https://m.facebook.com/story.php?story_fbid=76...	1
481	YouTube collaborator's anyone? subscribe t...	1
483	Hey come check us out were new on youtube let ...	1
484	Check out this video on YouTube:	1
486	Check out Berzerk video on my channel ! :D	1
487	http://www.ermail.pl/dolacz/UnNfY2I= ...	1
489	Check out this playlist on YouTube: ...	1

490	Subscribe and like my video please	1
495	http://hackfbaccountlive.com/?ref=4436607 psy...	1
496	Check out my SEXY VIDEO :*	1
498	hi guys please my android photo editor downloa...	1
500	this video has 800+m views and the channe...	1
503	share your thoughts	1
504	My friends wife earns 4000DOLLARS a month ,you...	1
506	Hello! Do you like gaming, art videos, scienti...	1
507	Check out this video on YouTube:	1
509	Subscribe I'll subscribe back	1
511	There is one video on my channel about my brot...	1
515	Who's watching in 2015 Subscribe for me !	1
516	Please check out my New Song (Music Video) AD ...	1
517	LIKE AND SUBSCRIBE	1
518	Look and shares my video please :D	1
520	want a sub? tell me about your channel and i w...	1
524	Check out this playlist on YouTube:	1
526	https://www.facebook.com/tofikmiedzynB/photos/...	1
527	im sorry for the spam but My name is Jenny. I ...	1
531	***** Facebook is LAME and so 2004! Check ou...	1
533	if your like drones, plz subscribe to Kamal Ta...	1
535	Hey guys check out my new channel and our firs...	1
537	Check out this video on YouTube:	1
538	Hello! I'm Marian, I'm a singer from Venezuela...	1
539	Take a look at this video on YouTube:	1
540	Add me here... https://www.facebook.com/TLouXmu...	1
545	I really ask nicely to view my vids:) I subscr...	1
546	Hello Guys...I Found a Way to Make Money Onlin...	1
548	plese subscribe to me	1
551	Check out this video on YouTube:	1
554	Great video by a great artist in Katy Perry! A...	1
555	Check out this video on YouTube:	1
556	Check out this video on YouTube:	1
557	subscribe to me	1
560	Hi everyone! My dream is to have passionate se...	1
561	Check out this playlist on YouTube:	1
562	Every weekend a new lyric video of Eminem here...	1
563	Dance dance,,,,,Psy http://www.reverbnation.c...	1
567	Check out this video on YouTube:	1
568	I agree they are just damn spammers. They suck...	1
569	Please visit this Website: oldchat.tk	1
570	Check out my bass cover of hips don't lie ...	1
571	Check out this video on YouTube:	1
574	Hey Guys Jaylan Here And I Just Wanted Everybo...	1
577	Subscribe and u are gonna hear me roar ;)	1
579	How To Make A Lot Of Money Fast	1
581	Check out Em's dope new song monster here:...	1

584	follower please https://www.facebook.com/lists...	1
587	http://www.twitch.tv/zxlightsoutxz	1
590	subscribe to my feed	1
594	Pleas subscribe my channel	1
596	Hey ! I know most people don't like these kind...	1
597	Check out my music niggas	1
601	I personally have never been in a abusive rela...	1
602	You guys should check out this EXTRAORDINARY w...	1
604	like this comment if your watching in 2015 or ...	1
606	Believe that Jesus Christ is your savior for a...	1
610	Come and watch my video it is called the odowd...	1
611	Check out this playlist on YouTube:	1
612	Hey guys! I've made a amazing Smiley T-Shirt.0...	1
614	If you looking for new music to listen to chec...	1
615	wanna earn money online without investment...	1
617	Watch Maroon 5's latest 2nd single from V (It ...	1
618	Can this channel get 500+ subscribers? You can...	1
619	HOW DO YOU PUT A PICTURE FOR YOUR IMAGE THINGI...	1
620	Follow 4 Follow @ Va...	1
621	Huh, anyway check out this you[tube] channel: ...	1
622	https://www.facebook.com/teeLaLaLa	1
624	http://woobox.com/33gxrf/brt0u5 FREE CS GO!!!!	1
625	give it a like	1
630	need money?Enjoy https://www.tsu.co/emerson_z...	1
633	**CHECK OUT MY NEW MIXTAPE**** **CHECK OUT MY ...	1
635	Check out this video on YouTube:lo	1
637	I love this!!!!!! This is one of my fave songs ...	1
643	Please check out my youtube channel! Just uplo...	1
646	https://www.facebook.com/photo.php?fbid=543627...	1
647	Go to my channel if u want to see a fly gettin...	1
651	Media is Evil! Please see and share: W W W. TH...	1
653	There are beautiful songs please subscribe	1
656	Do you need more instagram followers or photo ...	1
658	You guys should check out this EXTRAORDINARY w...	1
660	CHECK OUT partyman318 FR GOOD TUNEZ!! :D	1
661	like this comment if you're watching this ...	1
665	Check out my channel im 15 year old rapper!	1
667	and how many subscribers compared to her over ...	1
669	CHECK OUT MY COVER OF LOVE THE WAY YOU LIE PLE...	1
670	Check Out The New Hot Video By Dante B Called ...	1
672	adf.ly / K1D3Y	1
673	<a href="http://www.gofundme.com/Helpmypitbull..."	1
674	Hello Guys...I Found a Way to Make Money Onlin...	1
675	SubScribe me pls EMINEM FANS	1
677	https://www.tsu.co/Aseris get money here !	1
679	***** Facebook is LAME and so 2004! Check ou...	1
680	Check out this video on YouTube:	1

686	Hey guys! Im a 12 yr old music producer. I mak...	1
687	hey guy if you can please SUBSCRIBE to my chan...	1
690	You guys should check out this EXTRAORDINARY w...	1
692	hi guys check my youtube channel	1
696	Hey Music Fans I really appreciate any of you ...	1
697	If i reach 100 subscribers i will tazze my self...	1
698	http://www.amazon.com/Knight-Dawn-cursed-Danie...	1
701	Omg can this be the first video on YouTube to ...	1
702	I can't believe this I just now watched a...	1
703	Check out this video on YouTube:	1
704	I absolutely adore watching football plus I've...	1
705	youtube.com/watch?v=2ASFn9ShgHk&feature=yo...	1
709	i can to make money	1
710	Check out this video on YouTube: <a rel="nofol...	1
711	Check out this video on YouTube: Gotta da...	1
715	Check out this video on YouTube: I	1
718	:// . . / / 314 1	
719	Please Subscribe In My Channel →	1
722	https://soundcloud.com/jackal-and-james/wrap-u...	1
723	Check out this video on YouTube:	1
724	SUBSCRIBE!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!...	1
725	hey again if you guys wouldnt mind chacking ou...	1
726	Hello everyone :) I know most of you probably ...	1
729	Nice to meet You - this is Johnny: 1. If You a...	1
731	katy is beautiful. and this song is catchy. I'...	1
733	<a href="https://m.freemyapps.com/share/url/10...	1
734	SUBSCRIBE TO MY CHANNEL X PLEASE!. SPARE	1
735	Check out this playlist on YouTube:	1
736	Check my channel, please!	1
738	HUH HYUCK HYUCK IM SPECIAL WHO'S WATCHING ...	1
741	http://hackfbaccountlive.com/?ref=5242575	1
742	Aye homies check out our remix to 50 Cent Your...	1
746	please subscribe i am a new youtuber and need ...	1
747	Nezo and Ed Like&share this page on f...	1
748	subscribe to us an we will subscribe back	1
750	*****PLEASE READ***** Hey everyone! I&m a...	1
751	Hey youtubers... I really appreciate all of yo...	1
752	Come subscribe	1
755	This guy win dollars sleeping... m m m he love...	1
757	:D subscribe to me for daily vines	1
758	plz subscribe to my channel i need subs and if...	1
759	Please check out my vidios	1
763	Check out this video on YouTube:	1
764	https://binbox.io/DNckM#qT4Q1JB1	1
766	You guys should check out this EXTRAORDINARY w...	1
769	CHECK OUT THE DUBSTEP VERSION	1
771	Subscribe to my channel :) <3	1

772	www.marketglory.com/strategygame/lordviperas	1
773	Check out this video on YouTube:	1
776	Hey Music Fans I really appreciate any of you ...	1
777	Check out this video on YouTube: 	1
779	pleas subscribe on me for ps4 games video <br ...	1
780	Katy perry is and inspirational singer her voi...	1
782	Check out this video on YouTube: <a href="http...	1
783	Check out this video on YouTube:	1
784	Check out this playlist on YouTube 	1
785	hey you ! check out the channel of Alvar Lake !!	1
787	https://www.facebook.com/pages/Hiphop-Express/...	1
789	hey guys look im aware im spamming and it piss...	1
790	Check out this video on YouTube:hjalp	1
792	Terrance. .thank you for serving our country. ...	1
794	 NOW THAT I HAVE YOUR ATT...	1
795	Check out this video on YouTube:	1
796	subscribe now!!!!!! love the song!!!!!! love f...	1
800	Can i get views and subscribers for no reason?	1
801	Have you tried a new social network TSU? This ...	1
802	Visit my channel	1
803	if you like raw talent, raw lyrics, straight r...	1
805	Hey guys whats up? I found this app that lets ...	1
806	Check out this video on YouTube:	1
808	http://www.mediafire.com/download/yvovhafsv5qz...	1
809	EVERYONE GO AND SHARE youtu be/ARkglzjQuPO ON...	1
811	<a href="https://m.freemyapps.com/share/url/50...	1
812	Check out this video on YouTube:	1
816	Check out this video on YouTube:	1
817	Definitley the song for 2010 when im not liste...	1
818	Check Out The New Hot Video By Dante B Called ...	1
826	The new Makeup Transformation with Integrated ...	1
834	Hey check out our new musicvideo ''Lif...	1
835	curti? click here ? https://www.facebook.com/...	1
836	if i reach 100 subscribers i will go round in ...	1
837	subscribe like comment	1
842	Okay trust me I'm doing a favor. You NEED ...	1
843	Hi -this is Johnny: 1. If You already know my ...	1
845	adam b beats check out my page	1
846	SO THEN HOW ARE YOU GOING TO CALL YOURSELF A I...	1
848	Check out this video on YouTube:	1
849	You guys should check out this EXTRAORDINARY w...	1
852	i love this so much. AND also I Generate Free ...	1
854	http://www.twitch.tv/jaroadc come follow and w...	1
855	Check out this video on YouTube:	1
857	Check out this playlist on YouTube:	1
861	Finally someone shares the same opinion as me...	1
862	Fuck it was the best ever 0687119038 nummber o...	1

863	Hey, check out my new website!! This site is a...	1
864	WHATS UP EVERYONE!? :-) I Trying To Showcase M...	1
867	Fruits and vegetables give you longer lasting ...	1
869	Check out this playlist on YouTube:	1
870	http://www.ebay.com/itm/131338190916?ssPageNam...	1
871	Subscribe me, I will? subscribe you back!!!	1
872	You guys should check out this EXTRAORDINARY w...	1
873	FREE iTunes Gift card http://shhort.com/a?r=x6...	1
874	Hey guys! Check this out: Kollektivet - Don't ...	1
875	Hey Youtubers and All Music lover's, Guess...	1
885	Hey guys! My mom said if i got 100 subs before...	1
886	CHECK OUT THIS DOPE CHANNEL! phenomenallyri...	1
888	Plizz withing my channel	1
890	Check out this playlist on YouTube:	1
892	Check out this video on YouTube:	1
893	Check out this video on YouTube:	1
897	Man she is hot in this one, male companions vi...	1
900	Need money ? check my channel and subscribe,so...	1
902	Check out this playlist on YouTube:	1
903	Subscribe to me plz plz plz plz plz plZ	1
908	Still amazing this song!! I did a French Kpop ...	1
909	I did a cover if u want to check it out THANK ...	1
910	Subscribe to my channel	1
912	You guys should check out this EXTRAORDINARY w...	1
914	IIIIIIIIII LOVE THIS SHAKE IT SONG OH SORRY E...	1
915	https://www.facebook.com/photo.php?v=448317985...	1
916	http://thepiratebay.se/torrent/6381501/Timothy...	1
919	Hi guys my name is Dylan and I do IRL football...	1
920	Hey! I'm a 16 Year old rapper from Texas I...	1
921	sorry for the spam yall I know it's annoying. ...	1
922	Hi guys ! ! Check Out My Remixes ! ! Thanx Y...	1
926	Check out this video on YouTube:but I'm no...	1
927	Please help me go here http://www.gofundme.com...	1
931	Like this comment for no reason	1
935	visit " ww estiloproduction com " be...	1
936	Subscribe To Mê Please Guys	1
937	I KNOW YOU MAY NOT WANT TO READ THIS BUT pleas...	1
942	PLEASE CHECK OUT MY VIDEO CALLED "WE LOVE...	1
944	Hey, I am doing the Forty Hour famine so I'...	1
945	Plz subscribe to my channel and I will subscri...	1
946	Follow me on twitter & IG : __killuminati94	1
950	http://tankionline.com#friend=cd92db3f4 great ...	1
951	CHECK OUT MY MUSIC VIDEO ON MY CHANEL!!!	1
952	Like this comment for no reason	1
954	PLEASE VOTE FOR ME FOR THE WET SEAL MODEL 2015...	1
957	coby this USL and past : <a href="http://...	1
961	share and like this page to win a hand signed ...	1

962	RIHANNA - POUR IT UP (VINCENT T. REMIX) RIHANN...	1
967	Check out this video on YouTube:	1
969	Subscribe to my channel Tweet & Foll...	1
970	Check out this playlist on YouTube: <br ...	1
971	Check out this video on YouTube:	1
972	YAY IM THE 11TH COMMENTER!!!!	1
973	Show your AUBURN PRIDE HERE: http://www.teespr...	1
976	Eminem is the king of rap Micheal Jackson i...	1
977	Check out this playlist on YouTube:	1
978	Follow me on Instagram. _chris_cz	1
979	CHECK OUT MY YOUTUBE VIDEOS FOR FUNNY AND COOL...	1
980	<a href="https://www.facebook.com/groups/10087...	1
982	subscribe to my channel yo - DJ Feelz	1
983	man check out the raps on my channel im better...	1
984	Check out this funny video "Cereal Box Kn...	1
985	Hello from Russia comes to the channel subscribe	1
987	My videos are half way decent, check them out ...	1
988	plz i wilsuscribe me frndzzl subscribe u back	1
989	subscribe my	1
990	Hay dakota u earned a subscribee	1
993	subscribe to my channel /watch?v=NxK32i0HkDs	1
994	Check out this video on YouTube:	1
1000	https://www.facebook.com/SchoolGeniusNITS/phot...	1
1004	watch?v=ARkgIzjQuP0 Like this comment and shar...	1
1007	https://www.surveymonkey.com/s/CVHMKLT	1
1008	No long paragraph just check out my song calle...	1
1009	https://www.facebook.com/nicushorbbboy add mee ...	1
1010	Subscribe my channel I RECORDING FIFA 15 GOAL...	1
1011	Check out this video on YouTube:	1
1012	Check out this video on YouTube:	1
1014	Thumbs up if FE-FE-FE-FE-FEGELEIN brought u here	1
1019	SUBSCRIBE ME AND I REQUIRE	1
1020	i been working so hard for the past 60 days to...	1
1021	Hi. Check out and share our songs.	1
1023	Hello everyone, It Is not my intention to spam...	1
1024	this is the 4th most watched video on youtube...	1
1025	Check out my SEXY VIDEO :*	1
1028	Once you have started reading do not stop. If...	1
1032	Check out this video on YouTube:	1
1033	KATY PERRY, I AM THE "DÉCIO CABELO", "DECIO HA...	1
1036	https://www.facebook.com/pages/Mathster-WP/149...	1
1038	If interested in making extra money by interne...	1
1039	https://viralangels.com/user/d4aaacwk	1
1043	Thank you KatyPerryVevo for your instagram lik...	1
1044	http://thepiratebay.se/torrent/10626048/The.Ex...	1
1047	Check out this video on YouTube:	1
1048	check out our bands page on youtube killtheclo...	1

	HAPPY BIRTHDAY KATY :) http://giphy.com/gifs/b...	1
1050	sub me if you dont like the song	1
1051	Hello everyone :) I know most of you probably ...	1
1055	Hi guys i sell Jack Daniel's Hard Back Cover C...	1
1056	hey guys!! visit my channel please (i'm searc...	1
1057	Check out this video on YouTube:	1
1059	https://soundcloud.com/j-supt-fils-du-son/fuck...	1
1063	Pleas subscribe GamezZ MTA my channel 	1
1064	hey its M.E.S here I'm a young up and comi...	1
1067	I just wanna see how many people like this com...	1
1068	Check out this playlist on YouTube:	1
1069	subscribe me if u love eminem	1
1070	plz check out fablife / welcome to fablife for...	1
1076	Check out this video on YouTube: <br /... 1	1
1077	subscribe to my channel who can	1
1078	share and like this page to win a hand signed ...	1
1080	subscribe me plzzzzzzzz plzzzzzzzzzzzzzzzzzzzzzz...	1
1081	Hey Guys this is Glamour Beauty! I just starte...	1
1082	VOTE FOR KATY FOR THE EMAS! #KATYCATS http://...	1
1083	Check out this video on YouTube:	1
1084	ayyy can u guys please check out my rap video ...	1
1086	Check out my drum cover of E.T. here! thanks -...	1
1087	Sub my channel!	1
1088	Hi I'm lil m !!! Check out love the way yo...	1
1090	I know that maybe no one will read this but PL...	1
1093	los invito a subscribirse a mi canal	1
1096	Also check out D.j.j where do i go now and roa...	1
1097	Check out this video on YouTube:	1
1098	COME SUBSCRIBE TO MY CHANNEL! ;-) PLEASE!!	1
1101	Echa un vistazo a la remezcla! / Check out the...	1
1103	Free itunes \$25 giftcard codes: http://shhort...	1
1104	Subscribe	1
1105	check out my rapping hope you guys like it ht...	1
1107	check out my new EM cover video trailer	1
1108	Haha , Miley Cyrus has done it once again T...	1
1117	HI! CHECK OUT OUR AWESOME COVERS! AND SAY WHAT...	1
1118	Check out this playlist on YouTube:	1
1119	Check out this video on YouTube:	1
1122	http://www.bubblews.com/news/6401116-vps-solut...	1
1123	Help me get 10000000 subscribers by tomorrow!<...	1
1124	 Please help me get 100 subscribers by t...	1
1125	Tuto to subscribe to my channel because you sh...	1
1126	Wanna Laugh??? Please SUBSCRIBE to our channel!!!	1
1130	Hey guys and girls check out Comedy Recipe for...	1
1132	hey guys im 17 years old remixer and producer ...	1
1134	Check out this video on YouTube:	1
1135	Could you please check out my covers on my cha...	1

1137	http://shhort.com/a?r=Jt2ufxHxc	1
1138	https://www.reverbnation.com/slicknick313/songs	1
1142	https://www.indiegogo.com/projects/cleaning-th...	1
1143	https://www.facebook.com/photo.php?fbid=313454...	1
1145	I shared my first song "I Want You";...	1
1146	dude check out psy	1
1147	Click For iTunes code http://shhort.com/a?r=OL...	1
1149	Help Please!! http://www.gofundme.com/RJanima...	1
1150	Check out this playlist on YouTube:	1
1151	Hey? Everyone Please take a moment to read thi...	1
1152	PLEASE DON'T LIKE THIS COMMENT IF YOU ARE ...	1
1154	Hey guys! Please join me in my fight to help a...	1
1156	Support the fight for your 4th amendment right...	1
1159	follow me---> https://twitter.com/followsho...	1
1160	check out my Eminem & Kid Cudi M a s h up ...	1
1165	Check my channel	1
1169	I Know Y'all Can Check Out Amy Music Be cau...	1
1171	Check out this video on YouTube:	1
1172	Hello! I'm kind of new to Youtube, And soon i'...	1
1175	Check out this video on YouTube:Facebook lhudy...	1
1178	Such a good song ans Katy sounds great over th...	1
1181	You should check my channel for Funny VIDEOS!!	1
1186	Please.. Check my channel out:) I subscribe ba...	1
1188	----->>>> https://www.facebook.co...	1
1191	Anybody who subscribes to me will get 10 subsc...	1
1197	CHECK OUT THESE LYRICS /watch?v=yUTTX04oyqQ	1
1201	You guys should check out this EXTRAORDINARY w...	1
1204	:) I'll subscribe to you. You look Nice :)	1
1205	http://www.twitch.tv/daconnormc	1
1209	Check out this video on YouTube:	1
1212	Like this comment if you are watching on a phone	1
1216	You guys should check out this EXTRAORDINARY w...	1
1219	Check me out! I'm kyle. I rap so yeah	1
1220	reminds me of this song https://soundcloud.com...	1
1221	hello friends. i am a young 15 year old rapper...	1
1224	https://www.change.org/p/facebook-twitter-yout...	1
1226	hi everyone this is cool check out sexy and i ...	1
1227	http://www.amazon.co.uk/gp/offer-listing/B00EC...	1
1229	http://hackfbaccountlive.com/?ref=4344749	1
1230	Katty perry please say in one of your new vide...	1
1232	Check out my youtube channel for cool beatboxi...	1
1233	Hey guys subscribe to my chanel and i will sub...	1
1239	Check out my acoustic channel	1
1245	Subscribe and like to me for more how to video...	1
1246	/\ / \ <br ... 1	1
1247	http://www.rtbef.be/tv/emission/detail_the-voic...	1
1248	like please	1

1249	hey its M.E.S here I'm a young up and comi...	1
1253	https://www.tsu.co/KodysMan plz ^^	1
1255	DOWNLOAD RAPID FACEBOOK FOR FREE NOW https://p...	1
1259	check out you tube keithlinscotts one word kei...	1
1260	PLEASE CHECK OUT THIS VIDEO CALLED "WE LO...	1
1262	hahahahah :D like vines ? Subscribe to m...	1
1264	please suscribe i am bored of 5 subscribers tr...	1
1266	Check out my remix to Tyga's - Molly ft. W...	1
1268	Check out this video on YouTube:	1
1269	Hiya I just started YouTube and it would mean...	1
1270	Please subscribe to us and thank you	1
1274	Hey plz check out my music video. Thanks!! :-)	1
1277	http://www.wattpad.com/story/26032883-she-can-...	1
1278	hahahahah :D like vines ? Subscribe to m...	1
1281	if watching in 2015 subscribe to <span class="...	1
1285	https://www.tsu.co/ToMeks Go register ;) free ...	1
1286	Discover a beautiful song of A young Moroccan ...	1
1288	Im gonna share a little ryhme canibus blows em...	1
1289	3m subscribers but look at the views its 700 m...	1
1291	I am so awesome and smart!!! Sucscribe to me!	1
1292	Our Beautiful Bella has been diagnosed with Wo...	1
1296	*for 90's rap fans* check out my Big Pun ...	1
1298	Check out this playlist on YouTube:	1
1301	CHECK OUT THE NEW REMIX !!! CLICK CLICK !!	1
1302	I #votekatyperry for the 2014 MTV #VMA Best Ly...	1
1303	Check Out LEANDRUS - PLAYTIME It's awesooo...	1
1304	tryna work with some rappers check out the one...	1
1305	Check out this playlist on YouTube:pl	1
1307	if you need youtube subscriber mail hermann bu...	1
1309	hey guys i really want to go to a katy perry c...	1
1311	Subscribe me please. i'll promise i'll...	1
1312	View 851.247.920 Best youtube Vide...	1
1313	http://hackfbaccountlive.com/?ref=4604617	1
1314	Check out my covers please!	1
1315	EVERYONE PLEASE SUBSCRIBE TO MY CHANNEL OR CAN...	1
1318	Share this video.. This song can beat PSY - Ga...	1
1319 My name is George and let me tell u EMIN...	1
1320	You guys should check out this EXTRAORDINARY w...	1
1321	Check out this video on YouTube:	1
1322	Check out this video on YouTube:	1
1324	like if ur watchin in 900000000000000000000000...	1
1326	if you like roblox minecraft world of warcraft...	1
1327	https://www.facebook.com/pages/Nailey-nicool/6...	1
1328	marketglory . com/strategygame/andrijamatf ear...	1
1330	subscribe to my chanell	1
1331	Like this comment, guys i just started up a ne...	1
1335	Hello everyone :) I know most of you probably ...	1

1336	Check out my channel please.	1
1338	Sub to my channel visuelgamingzNL I sub back	1
1339	Suscribe My Channel Please XD lol	1
1340	Check out this video on YouTube:	1
1341	Check out this video on YouTube:	1
1342	Check out this playlist on YouTube: I tried	1
1344	3 yrs ago I had a health scare but thankfully ...	1
1345	Dear friends please subscribe to my channel I ...	1
1346	Go check out eminem survival.	1
1349	Check out these Irish guys cover of Avicii&#...	1
1350	Check out this video on YouTube:	1
1352	Free my apps get 1m crdits ! Just click on the...	1
1354	The projects After Effects, Music, Foto, Web s...	1
1357	PLEASE SUBSCRIBE ME!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!...	1
1359	What free gift cards? Go here http://www.swag...	1
1361	https://www.facebook.com/myfunnyriddles	1
1363	More... http://www.sunfrogshirts.com/Sunglass-...	1
1364	Check out this video on YouTube:	1
1368	Alright ladies, if you like this song, then ch...	1
1369	Hey, hit this shit up while yall can, they kil...	1
1371	Aslamu Lykum... From Pakistan	1
1378	Subscribe My Channel	1
1380	PLEASSSSSSSSSSSSSSSSSS SUBSCRIBEEEEEEEEEEE MY CHA...	1
1381	Please go in and see our Channel and subscribe...	1
1383	Do not like this comment if you are not watchi...	1
1384	Check the shit out on my channel <b...	1
1385	Check out this video on YouTube:	1
1387	this song is awesome. these guys are the best...	1
1389	yo I know nobody will probably even read this...	1
1392	*****OMG Facebook is OLD! Check out -----...	1
1393	SIMPLY PUT, OUR CUSTOMERS LOVE US... and so wi...	1
1395	Check out this video on YouTube: 	1
1397	Abomination! Subscribe if you agree : party h...	1
1398	I like This Comment and do not kill :P	1
1399	Hey guys can you check my channel out plz. I d...	1
1400	adam b beats check out my page 2013	1
1402	EMINEM FANS!!! - Check Out The New Song "...	1
1404	Hi there~I'm group leader of Angel, a rookie K...	1
1407	Check out this playlist on YouTube:	1
1408	Please look at my channel	1
1414	Hey guys go to check my video name "growtopia ...	1
1415	https://www.facebook.com/eecon/posts/73394924...	1
1416	New way to make money easily and spending 20 m...	1
1421	I know that maybe no one will read this but PL...	1
1422	Check out this video on YouTube:	1
1423	subscribe to me :)	1
1425	if u love rihanna subscribe me	1

1426	Check Out The New Hot Video By Dante B Called ...	1
1428	CHECK OUT MY CHANNEL ...	1
1430	https://apps.facebook.com/my-polls/utsitcompet...	1
1431	Check out this video on YouTube: <b...	1
1436	wtf. subscribe my channel thanx ;)	1
1439	http://www.avaaz.org/po/petition/Youtube_Corpo...	1
1440	:: ATTENTION : WE NEED 10 Million Views More f...	1
1442	He gets more views but has less subscribers lol	1
1443	check men out i put allot of effort into my mu...	1
1444	It's so hard, sad :(iThat little child Actor ...	1
1446	if u love rihanna subscribe me	1
1448	Hi. Check out and share our songs.	1
1449	Check out this video on YouTube:	1
1453	GUYS SHARE THIS VIDEO!!!!!! HE must have 1.000...	1
1455	Hey everyone!! I have just started my first Y...	1
1457	Hello. I only made ONE Eminem song on my chann...	1
1461	Maybe no one will probably read this. But just...	1
1463	Like & Subscribe /watch?v=5tu9gN1l310	1
1464	Suscribe my channel please	1
1465	I subscribed it 	1
1466	Part 5. Comforter of the afflicted, pray for u...	1
1468	Www.youniqueproducts.com/joannagordon Younique...	1
1470	Nice! http://www.barnesandnoble.com/s/BDP?csrf...	1
1475	Check out my Music Videos! Fuego - U LA LA Rem...	1
1478	Hi! I would appreciate it if you all could hel...	1
1479	Stop Wasting Up Your Time and Get Paid To Mes...	1
1480	Top three Shakira songs (my choice) <br ...	1
1482	...subscribe... ...to my... ...	1
1484	Like this comment for no reason.	1
1487	SUBSCRIBE TO MY CHANNEL	1
1488	please like :D https://premium.easypromosapp.c...	1
1489	Please do buy these new Christmas shirts! You ...	1
1493	Go check out my rapping video called Four Whee...	1
1494	Check out this video on YouTube:	1
1495	http://www.googleadservices.com/pagead/acclk?sa...	1
1496	Check Out The New Hot Video By Dante B Called ...	1
1497	"HELP THE HUMANITY WITH YOUR SIGN IN TO T...	1
1498	THIS IS A COMPETITION TO MEET MY IDOLS, IT WOU...	1
1499	Hey, join me on tsū, a publishing platform whe...	1
1501	Hey everyone. Watch this trailer!!!!!!!!!! http...	1
1504	Hi.. Everyone.. If anyone after real online wo...	1
1507	Hey youtubers... {**}I really appreciate all ...	1
1508	Check out Melbourne shuffle, everybody!	1
1510	Part 2. Holy Mary, pray for us Holy Mother of ...	1
1513	Hello to everyone! Please check out my video: ...	1
1515	do you want to make some easy money? check out...	1
1516	everyone come and check out the new GTA 5 Game...	1

1517	see this http://a...	1
1518	Check out this video on YouTube:	1
1519	Hello Guys...I Found a Way to Make Money Onlin...	1
1520	SUBSCRIBE MY CHANNEL PLEASE LOL PRO PLAYS)	1
1522	https://www.facebook.com/profile.php?id=100007...	1
1523	FOLLOW MY COMPANY ON TWITTER thanks. https://...	1
1524	Check out this video on YouTube:	1
1525	I make guitar covers, please have a look at my...	1
1526	I made a gaming channel (Unique right?) :L Ang...	1
1527	Check out this playlist on YouTube:	1
1529	Check out this playlist on YouTube:	1
1530	Check out this video on YouTube: "Th...	1
1531	Check Out Daneja Good Girl	1
1532	follow me on instagram bigboss286	1
1534	Also LuckyMusiqLive she probably could help u ...	1
1535	... 1	
1542	Check out this video on YouTube:	1
1543	http://psnboss.com/?ref=2tGgp3pV6L this is the...	1
1545	Please check out and send to others Freedom an...	1
1546	eminem new song check out my videos	1
1548	Hi everyone! Do you like music? Then why not c...	1
1550	Hello everyone :) I know most of you probably ...	1
1553	http://www.gofundme.com/gvr7xg	1
1556	Perhaps you have seen the newest Miley Cyrus...	1
1557	Check out this video on YouTube:jjwajwkajajqj...	1
1562	http://minhateca.com.br/mauro-sp2013/Filmes+Se...	1
1564	You guys should check out this EXTRAORDINARY w...	1
1569	Nice song .See my new track.	1
1575	Message : GTA V \$20 FIFA 14 \$15 PS4 \$200...	1
1576	Check out this playlist on YouTube:Central	1
1578	CHECK OUT MY CHANNEL BOYS AND GIRLS ;)	1
1579	guys please subscribe me to help my channel gr...	1
1580	check out our bands page on youtube killtheclo...	1
1581	Please help me give my son a grave. http://ww...	1
1582	Check out this video on YouTube:	1
1584	http://shhort.com/a?r=HuPwEH5ab	1
1586	Check out this video on YouTube:	1
1588	Check out this video on YouTube:	1
1589	You guys should check out this EXTRAORDINARY w...	1
1590	http://www.billboard.com/articles/columns/pop-...	1
1592	SUBSCRIBE TO ME! I MAKE MUSIC!	1
1593	LMFAO is CRAZY DOPE!!! CHeck out my music on m...	1
1594	WOW VERY NICE CONGRASULATION I LIVE SO MUCH ht...	1
1596	Please become my first subscriber. Thank you.	1
1598	check out "starlitnightsky" channel to see epi...	1
1599	Check out this video on YouTube:	1
1604	even without make up she is still hot htt...	1

1605	subscribe to itz recaps and above diddle	1
1608	Im a RAPPER/SONGWRITER, check my video PLEASE...	1
1609	You guys should check out this EXTRAORDINARY w...	1
1610	watch youtube video "EMINEM -YTMA artist ...	1
1613	Hello everyone :) I know most of you probably ...	1
1615	if eminem gets 1 penny per view he would have ...	1
1617	subscribe to me for call of duty vids and give...	1
1620	You guys should check out this EXTRAORDINARY w...	1
1621	Check out this video on YouTube:	1
1622	Check out this video on YouTube:	1
1623	subscribe to me and I wil subscribe to you back	1
1624	I know that maybe no one will read this but PL...	1
1625	https://www.facebook.com/pages/%D8%AA%D8%AD%D9...	1
1627	Check out this video on YouTube:	1
1628	Check out this video on YouTube:	1
1630	Check out this video on YouTube:	1
1631	Please check out my New Song (MUSIC VIDEO) AD ...	1
1632	follow me on twitter: freyacumqueen	1
1636	subscribed :) btw you have a good style keep i...	1
1637	Check out this video on YouTube:	1
1639	Subscribe if you are watching in 2015	1
1641	The TREU DETECTIVE alternate ending! __ http://...	1
1643	Check out this playlist on YouTube:	1
1645	Subscribe to me for clean Eminem!	1
1646	Thank you. Please give your email.	1
1647	Check out this video on YouTube: Looking ...	1
1649	Thumbs up if shrek is gay	1
1650	please look up DHG SONGS this is my playlist w...	1
1659	Get free gift cards and pay pal money!	1
1660	Please help me go to college guys! Thanks from...	1
1663	please read this please! i am a country singer...	1
1665	please like : http://www.bubblews.com/news/927...	1
1667	Check out this video on YouTube:	1
1669	Hey Music Fans I really appreciate any of you ...	1
1672	Check out this video on YouTube:	1
1677	I know someone will see this I have a dream...	1
1678	Check out this video on YouTube:	1
1681	Hey Guys, I know you tend to skip these commen...	1
1685	HOW MANY THUMBS UP FOR LOUIS SAVING THE DAY!?!?	1
1687	Check out our vids, our songs are awesome! And...	1
1688	Hey guys please just spent one minute for me:))...	1
1689	Please give us a chance and check out the new ...	1
1690	#nowplaying "Weekendmix" track 04 : Katy Perry...	1
1692	You guys should check out this EXTRAORDINARY w...	1
1693	Check out this playlist on YouTube: 	1
1694	Men stop being naive idiots believing in love ...	1
1695	Check out our app to solve all your party/drun...	1

1696	How did you know that people makes another acc...	1
1699	if you want to win money at hopme click here <...	1
1701	http://www.twitch.tv/tareko100 Follow him on t...	1
1703	hi beaties! i made a new channel please go che...	1
1704	Check out my Music Videos! and PLEASE SUBSCRIB...	1
1705	Meet The Richest Online Marketer NOW CLICK : ...	1
1706	Facebook account HACK!! http://hackfbaccountl...	1
1707	Subscribe to My CHANNEL	1
1708	this song is so addicting. the hook is dope an...	1
1709	:D subscribe to me for daily vines	1
1710	Katy has the voice of gold. this video really ...	1
1711	Hey everyone, I'm Dakota Bigelow. I'm...	1
1714	check out mah girl it duh shit yo	1
1716	Check out this video on YouTube:	1
1717	look at my channel i make minecraft pe lets pl...	1
1718	Check out this playlist on YouTube:	1
1719	She loves Vena. trojmiasto.pl/Vena-Bus-Taxi-o5...	1
1720	EH! GUYS CAN YOU SUBSCRIBE IN MY CHANNEL? I AM...	1
1723	I love katy fashions tiger, care to visit my b...	1
1724	Listen...Check out Andrew Guasch - Crazy, Sick...	1
1725	Check out this video on YouTube:	1
1726	Plz help me getting 1.000 Subscribers tonight/...	1
1727	Check out this video on YouTube:opponents mm <...	1
1728	Check out this video on YouTube:it is a old tr...	1
1729	http://binbox.io/1FIr0#123	1
1730	Check out this video on YouTube:	1
1732	yo I know nobody will probably even read this...	1
1735	CHECK OUT Eminem - Rap God LYRIC VIDEO	1
1736	check out eminem latest track survival if u didnt	1
1737	For latest movies 2014 please visit this site ...	1
1738	Please share and help to my Friend! http://www...	1
1741	j aiiima plzzz https://www.facebook.com/pages...	1
1742	CHECK OUT MY CHANNEL	1
1745	Please subscribe to my channel!Thanks!	1
1750	Usually guys I would vote people like this dow...	1
1751	EVERYBODY PLEASE VOTE KATY AT EMA 2014 !!!!! ...	1
1752	You guys should check out this EXTRAORDINARY w...	1
1755	I really love this video.. http://www.bubblews...	1
1757	Check out this video on YouTube:	1
1760	Check out this video on YouTube:	1
1764	You guys should check out this EXTRAORDINARY w...	1
1765	i am from Brazil please subscribe my channel l...	1
1769	https://www.facebook.com/pages/Komedi-burda-ge...	1
1770	We can have a party next share	1
1772	hey guys i know you wanna skip over this but p...	1
1773	PLEASE CHECK OUT MY VIDEO CALLED "WE LOVE...	1
1776	<script>document.write('<a target="_s...	1

1779	Check out my YouTube channel I can rap	1
1780	Check out this video on YouTube:	1
1782	Check out this video on YouTube:	1
1783	Check out this video on YouTube:	1
1784	this song gives me strength! love her lyrics. ...	1
1785	You guys should check out this EXTRAORDINARY w...	1
1786	Check out this playlist on YouTube:hbbhhgh	1
1787	like this comment then type 1337	1
1792	katy perry will u sit on my face please. it wo...	1
1794	Like getting Gift cards..but hate spending the...	1
1795	Check out this video on YouTube:	1
1797	we are 14 year old boys we are trying to enter...	1
1798	Hey Katycats! We are releasing a movie at midn...	1
1799	1 753 682 421 GANGNAM STYLE ^^	1
1800	Hey guys please check out my new Google+ page ...	1
1802	could you guys please check out my channel for...	1
1804	Yea stil the best WK song ever Thumbs up ...	1
1806	Guys lmfaois going to have a reunion on June/2...	1
1807	My three bigger secrets are: I don't think I'm...	1
1808	If you could take time & spare a min to re...	1
1810	Does anyone here use gift cards like Amazon, i...	1
1811	check out my page ADAM B BEATS 2013	1
1814	my sister just received over 6,500 new <a rel=...	1
1815	Hey! I'm NERDY PEACH and I'm a new youtuber an...	1
1818	ALL SCHOOL DROP OUTS I KNEW AS FRIENDS BEFORE ...	1
1822	EVERYONE PLEASE GO SUBSCRIBE TO MY CHANNEL OR ...	1
1824	Check out this video on YouTu	1
1827	Can you check my videos please? Don't hate me ...	1
1828	Hi everyone! Do you like music? Then why not c...	1
1830	just for test I have to say murdev.com	1
1834	Waka Waka!:D Check out my new HALLOWEEN VIDE...	1
1836	Hey Music Fans I really appreciate any of you ...	1
1837	Subscribe me and i subscribe you back!!	1
1838	adf.ly /K1D3Y	1
1842	Look at the pictures, if not difficult http://...	1
1843	Check my first video out	1
1845	Please friend read my book and repass: http://...	1
1847	hi guys please check out my vids , i will prom...	1
1850	subscribe to my channel people :D	1
1851	check out my playlist	1
1852	do you want to make some easy money? check out...	1
1855	Hi. Check out and share our songs.	1
1860	CHECK OUT THIS NEW VIDEO I MADE CALLED "W...	1
1861	Hey guys love this but check out this girl nam...	1
1862	please visit my channel	1
1863	Hey youtubers... I really appreciate all of yo...	1
1866	Check out my channel for some lyricism...	1

1867	like this comment please	1
1868	Gusttavo Lima Você não me conhece Check ...	1
1870	Check out this video on YouTube:	1
1871	Hi everyone! Do you like music? Then why not c...	1
1872	Incmedia.org where the truth meets you.	1
1874	I hope everyone is in good spirits I'm a h...	1
1878	https://soundcloud.com/artady please check my ...	1
1879	If I get 300 subscribers by tomorrow I'll do a...	1
1880	YouTube/codytolleson for awesome videos I'll s...	1
1883	Hi there, have you heard about DribbleProShot?...	1
1886	Recommend: Apple iPad 4th Gen 32GB Unlocked W...	1
1887	get GVAR to play 2015 superbowl http://www.ch...	1
1889	Please check out my vidios guys	1
1890	help me click on the subscribe Mai Nguyen, tha...	1
1891	Check out this video on YouTube:	1
1892	everyone please come check our newest song in ...	1
1894	/watch?v=DtqcftriFac JUSTIEN BIEBER CAR 2013. ...	1
1895	SEE SOME MORE SONG OPEN GOOGLE AND TYPE Shakir...	1
1896	Check out this video on YouTube:	1
1898	O peoples of the earth, I have seen how you pe...	1
1899	WOW muslims are really egoistic... 23% of th...	1
1900	WAYS TO MAKE MONEY 50k Per Month Search google...	1
1902	Hi everyone. We are a duo and we are starting ...	1
1903	Check out my dubstep song "Fireball", made wit...	1
1905	Check out my covers I have a video coming out ...	1
1906	Check out this playlist on YouTube: 	1
1909	People, here is a new network like FB...you re...	1
1910	Wats Good Go Check Out My Music On Da Channel ...	1
1912	Thumbs up if your watching in 2015	1
1913	You guys should check out this EXTRAORDINARY w...	1
1917	YO GUYS SORRY IF THIS ANNOYS YOU!!! BUT CHECK ...	1
1919	EVERYONE PLEASE SUBSCRIBE TO MY CHANNEL OR CAN...	1
1921	Northland Paranormal Society is now on YouTube...	1
1923	I really love watching football and also I've ...	1
1926	Check out this video on YouTube:	1
1928	Could Spanish people understand this? <br...	1
1929	Help shakira's waka waka be the first song...	1
1930	Hello I'm from Palastine	1
1934	Take a look at this video on YouTube:	1
1940	You guys should check out this EXTRAORDINARY w...	1
1941	Check Out The New Hot Video By Dante B Called ...	1
1946	Check out this video on YouTube: Em...	1
1949	Can anyone sub to my channel? :D	1
1950	Lol check out my chanell and subscribe please ...	1
1953	Hey guys. I am a very small YouTuber I upload ...	1
1955	Hi Guys! check this awesome EDM & House mi...	1

```
[53]: def your_labeling_rules(x):

    # Convert text to lowercase
    x = x.lower()

    # Define your rules for classifying as NOT_SPAM
    not_spam_rules = [
        "view" in x,
        "song" in x,
        len(x) < 30
    ]

    # Define your rules for classifying as SPAM
    spam_rules = [
        "free" in x,
        "subs" in x,
        "gift" in x,
        "follow" in x,
        "http" in x,
        "check out" in x,
        "visit" in x
    ]

    # Classify depending on your rules
    if any(not_spam_rules):
        return 0

    if any(spam_rules):
        return 1

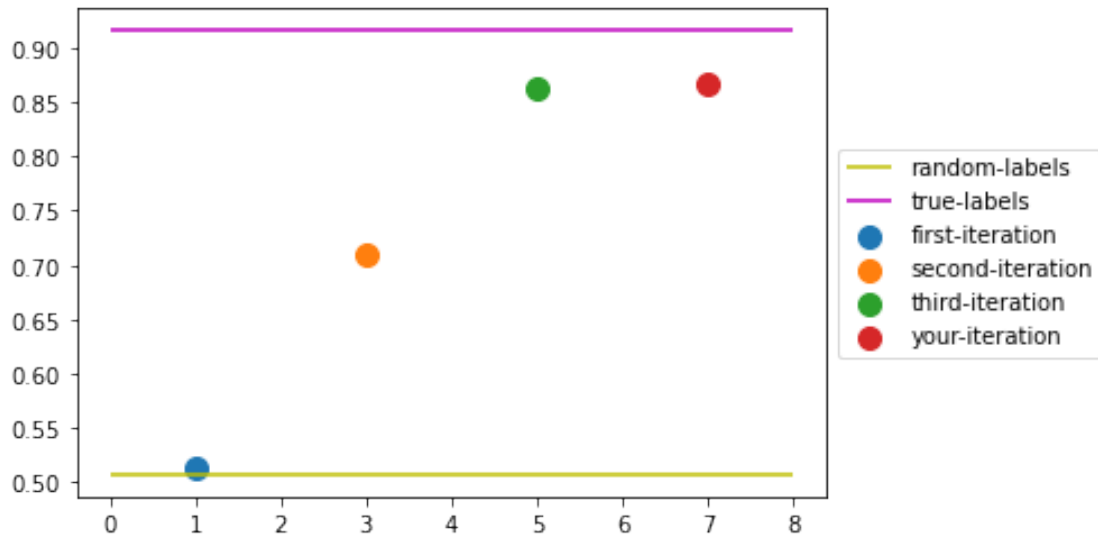
    return -1

try:
    label_given_rules(X_train, your_labeling_rules, "your-iteration")
    plot_accuracies()

except ValueError:
    print("You have not defined any rules.")
```

Proportion of data points kept: 78.71%

your-iteration labeling has an accuracy of 86.73%



Congratulations on finishing this ungraded lab!

By now you should have a better understanding of having good labelled data. In general, **the better your labels are, the better your models will be**. Also it is important to realize that the process of correctly labeling data is a very complex one. **Remember, you can think of each one of the iterations of the automatic labeling process to be a different labeler with different criteria for labeling**. If you assume you are hiring labelers you will want to hire the latter for sure!

Another important point to keep in mind is that establishing baselines to compare against is really important as they provide perspective on how well your data and models are performing.

Keep it up!