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## 環境設置

#### 1. Windows

• 環境版本

• Java: 17.0.12

Python: 3.10.10

PySpark: 3.5.3

Pandas: 2.2.3

- 執行指令 spark-class org.apache.spark.deploy.master.Master,並打開 URL
  - 指令結果

```
FS D: Code\Big_Data_Mring> spark-class org.apache.spark.deploy.master.Master
Using Spark's default logdj profile: org/apache/spark/logdj2-defaults.properties
24/18/16 23:33:15 TMFO Master: Started daemon with process name: 12148@DESKTOP-FBUSCHM
24/18/16 23:33:15 TMFO Master: Started daemon with process name: 12148@DESKTOP-FBUSCHM
24/18/16 23:33:15 TMFO SecurityManager: Changing view acls to: Zhe
24/18/16 23:33:16 TMFO SecurityManager: Changing wiew acls to: Zhe
24/18/16 23:33:16 TMFO SecurityManager: Changing wiew acls groups to:
24/18/16 23:33:16 TMFO SecurityManager: Changing wiew acls groups to:
24/18/16 23:33:16 TMFO SecurityManager: SecurityManager: acleration disabled; ui acls disabled; users with view permissions: Zhe; groups with view permissions: EMPTY; users with vodify permissions: Zhe; groups with modify permissions: EMPTY; users with vodify permissions: Zhe; groups with modify permissions: EMPTY
24/18/16 23:33:16 TMFO Master: Starting Spark master at spark://192.168.18.5:7877
24/18/16 23:33:16 TMFO Master: Registering spark master at spark://192.168.18.5:7877
24/18/16 23:33:16 TMFO Master: Start Jetty 0.0.0:8880 for MasterUI
24/18/16 23:33:16 TMFO Master: Start Sund Service Service
```

#### 2. Ubuntu

• 環境版本

Memory: 8GB

• Processors: 16

Java: 17.0.12

• Python: 3.10.12

• Spark: 3.5.3

• 執行 spark-class org.apache.spark.deply.worker.Worker spark://192.168.18.5:7077

# 資料夾結構

- homework2.py
- Data
  - all of datasets
- Output
  - all of output csv

## 源代碼

```
from pyspark.sql.functions import explode, split, lower, regexp_replace, to_date, avg, col, expr, sum, regexp_replace, udf
  from itertools import combinations
  # Create SparkSession
  spark = SparkSession.builder.appName("News Word Frequency Analysis").getOrCreate()
  file_path = './Data/News_Final.csv'
  df = pd.read_csv(file_path)
  df.dropna(inplace=True)
  spark df origin = spark.createDataFrame(df)
  spark_df_origin = spark_df_origin.withColumn('PublishDate', to_date(col('PublishDate'), 'yyyy-MM-dd HH:mm:ss'))
  spark_df = spark_df_origin
  spark_df = spark_df.withColumn('Title', lower(col('Title')))
spark_df = spark_df.withColumn('Title', regexp_replace(col('Title'), '[^\w\s]', ''))
spark_df = spark_df.withColumn('word', explode(split(col('Title'), '\s+')))
  # Total word frequency
  total_word_freq = spark_df.groupBy('word').count().orderBy(col('count').desc())
  # Daily word frequency
  daily_word_freq = spark_df.groupBy('PublishDate', 'word').count().orderBy(col('PublishDate'), col('count').desc())
  topic_word_freq = spark_df.groupBy('Topic', 'word').count().orderBy(col('Topic'), col('count').desc())
  total_word_freq.show()
  daily_word_freq.show(
  topic_word_freq.show()
  # Save results as CSV
  total_word_freq_path = "./output/total_word_frequency.csv"
daily_word_freq_path = "./output/daily_word_frequency.csv"
topic_word_freq_path = "./output/topic_word_frequency.csv"
  total_word_freq.toPandas().to_csv(total_word_freq_path, index=False)
   daily_word_freq.toPandas().to_csv(daily_word_freq_path, index=Fals
  topic_word_freq.toPandas().to_csv(topic_word_freq_path, index=False)
  print(f"Total word frequency saved to: {total_word_freq_path}")
  print(f"Daily word frequency saved to: (daily_word_freq_path)")
print(f"Topic word frequency saved to: {topic_word_freq_path}")
         : Social Media word frequency
  platforms = ['Facebook', 'GooglePlus', 'LinkedIn']
topics = ['Economy', 'microsoft', 'obama', 'palestine']
  hourly_avg_combined = {topic: [] for topic in topics} # 初始化字典
  daily_avg_combined = {topic: [] for topic in topics} # 初始化字典

√ for topic in topics:
       hourly_results = []
       daily_results = []
            file_path = f'./Data/{platform}_{topic}.csv'
           df_platform = pd.read_csv(file_path)
df platform.dropna(inplace=True)
            spark_df = spark.createDataFrame(df_platform)
            hourly_avg_df = spark_df.select(
    [avg(col(f'TS{i}')).alias(f'Hour_{i}') for i in range(1, 145)]
            hourly_results.append(hourly_avg_df.toPandas())
            daily_avg_df = spark_df.withColumn(
            "Daily_Avg", expr(" + ".join([f"TS{i}" for i in range(1, 145)]) + " / 144")
).select(avg(col("Daily_Avg")).alias("Daily_Avg_Popularity"))
            daily_results.append(daily_avg_df.toPandas())
       hourly_combined = pd.concat(hourly_results, axis=1)
       daily_combined = pd.concat(daily_results, axis=1)
```

```
hourly_avg_combined[topic] = hourly_combined
      daily_avg_combined[topic] = daily_combined
      hourly_output_path = f"./output/{topic}_hourly_avg.csv"
daily_output_path = f"./output/{topic}_daily_avg.csv"
      hourly_combined.to_csv(hourly_output_path, index=False)
      daily_combined.to_csv(daily_output_path, index=False)
      print(f"Hourly average for topic '{topic}' saved to: {hourly_output_path}")
print(f"Daily average for topic '{topic}' saved to: {daily_output_path}")
  for topic in topics:
     print(f"\nHourly average for topic '{topic}':")
      print(hourly_avg_combined[topic])
     print(f"\nDaily average for topic '{topic}':")
print(daily_avg_combined[topic])
 spark_df = spark_df_origin
 sentiment_results = spark_df.groupBy("Topic").agg(
     sentiment_results.show(truncate=False)
 sentiment_results_pd = sentiment_results.toPandas()
 output_path = "./output/sentiment_analysis_results.csv"
  sentiment_results_pd.to_csv(output_path, index=False)
  print(f"Sentiment analysis results saved to: {output_path}")
 # 04 : Top 100 words in title and content
  def preprocess_text(df, column_name):
      df = df.withColumn(column_name, lower(col(column_name)))
      df = df.withColumn(column_name, regexp_replace(col(column_name), r"[^\w\s]", ""))
v def get top words(df, column name, topic):
      df = df.filter(col("Topic") == topic)
     top_words = word_freq.limit(100).select("word").rdd.flatMap(lambda x: x).collect()
      return top_words
  # Calculate top 100 words for each topic

∨ def compute_cooccurrence_matrix(df, column_name, topic, top_words):
      df = df.filter(col("Topic") == topic)
      df = df.withColumn("words", split(col(column_name), r"\s+"))
      # Filter top 100 words
      @udf("array<string>")
      def filter_top_words(words):
          return [word for word in words if word in top_words]
      df = df.withColumn("filtered_words", filter_top_words(col("words")))
      # Create word pairs
      @udf("array<string>")
      def generate_word_pairs(words):
          return ["|".join(sorted(pair)) for pair in combinations(words, 2)]
      df = df.withColumn("word_pairs", generate_word_pairs(col("filtered_words")))
exploded_df = df.select(explode(col("word_pairs")).alias("word_pair"))
cooccurrence_count = exploded_df.groupBy("word_pair").count()
```

## 輸出結果

執行 spark-submit --master spark://192.168.18.5:7077 --conf spark.driver.host=192.168.18.5 homework1.py

#### 第一題

Words frequency

Total word frequency

|    | Α          | В     |
|----|------------|-------|
| 1  | word       | count |
| 2  | to         | 27406 |
| 3  | economy    | 26197 |
| 4  |            | 22647 |
| 5  | obama      | 22572 |
| 6  | the        | 17732 |
| 7  | microsoft  | 17584 |
| 8  | in         | 15782 |
| 9  | for        | 12469 |
| 10 | of         | 11407 |
| 11 | on         | 10594 |
| 12 | and        | 7772  |
| 13 | a          | 7555  |
| 14 | is         | 6653  |
| 15 | with       | 5421  |
| 16 | obamas     | 5203  |
| 17 | us         | 4708  |
| 18 | as         | 4199  |
| 19 | palestine  | 3831  |
| 20 | new        | 3739  |
| 21 | says       | 3514  |
| 22 | at         | 3479  |
| 23 | president  | 3040  |
| 24 | will       | 2971  |
| 25 | economic   | 2950  |
| 26 | microsofts | 2944  |
| 27 | windows    | 2739  |
| 28 | 2016       | 2238  |
| 29 | from       | 2216  |
| 20 | :4         | 2204  |

Daily word frequency

|    | D 111 1 D   |           |       |
|----|-------------|-----------|-------|
| 1  | PublishDate |           | count |
| 2  | 2002/4/2    |           | 1     |
| 3  | 2002/4/2    | cemetery  | 1     |
| 4  | 2002/4/2    | obama     | 1     |
| 5  | 2002/4/2    | at        | 1     |
| 6  | 2002/4/2    | lays      | 1     |
| 7  | 2002/4/2    | wreath    | 1     |
| 8  | 2002/4/2    | arlington | 1     |
| 9  | 2008/9/20   | the       | 2     |
| 10 | 2008/9/20   | look      | 1     |
| 11 | 2008/9/20   | of        | 1     |
| 12 | 2008/9/20   | a         | 1     |
| 13 | 2008/9/20   | at        | 1     |
| 14 | 2008/9/20   | chinese   | 1     |
| 15 | 2008/9/20   | economy   | 1     |
| 16 | 2008/9/20   |           | 1     |
| 17 | 2012/1/28   | 2008      | 1     |
| 18 | 2012/1/28   | not       | 1     |
| 19 | 2012/1/28   | to        | 1     |
| 20 | 2012/1/28   | roubini   | 1     |
| 21 | 2012/1/28   | global    | 1     |
| 22 | 2012/1/28   |           | 1     |
| 23 | 2012/1/28   | nouriel   | 1     |
| 24 | 2012/1/28   |           | 1     |
| 25 | 2015/3/1    |           | 65    |
| 26 | 2015/3/1    |           | 46    |
| 27 | 2015/3/1    |           | 42    |
| 28 | 2015/3/1    |           | 32    |
| 29 | 2015/3/1    |           | 27    |

# Topic word frequency

| 1  | Topic   | word     | count |
|----|---------|----------|-------|
| 2  | economy | economy  | 26078 |
| 3  | economy | the      | 8973  |
| 4  | economy | to       | 8813  |
| 5  | economy | in       | 6852  |
| 6  | economy |          | 6731  |
| 7  | economy | of       | 4055  |
| 8  | economy | for      | 3978  |
| 9  | economy | on       | 3601  |
| 10 | economy | us       | 2876  |
| 11 | economy | economic | 2790  |
| 12 | economy | a        | 2707  |
| 13 | economy | is       | 2521  |
| 14 | economy | as       | 2329  |
| 15 | economy | and      | 2204  |
| 16 | economy | global   | 1945  |
| 17 | economy | growth   | 1810  |
| 18 | economy | says     | 1727  |
| 19 | economy | china    | 1237  |
| 20 | economy | will     | 1231  |
| 21 | economy | 2016     | 1155  |
| 22 | economy | chinas   | 1131  |
| 23 | economy | new      | 1075  |
| 24 | economy | at       | 1066  |
| 25 | economy | brexit   | 984   |
| 26 | economy | about    | 945   |
| 27 | economy | by       | 940   |
| 28 | economy | with     | 924   |
| 29 | economy | how      | 899   |
| 20 |         | 1.       | 000   |

# 第二題

Social Media word frequency

#### economy

Hours

 Hour\_1
 Hour\_2
 Hour\_3
 Hour\_4
 Hour\_5
 Hour\_6
 Hour\_7
 Hour\_8
 Hour\_9
 Hour\_10
 Hour\_11
 Hour\_12
 Hour\_13
 Hour\_14
 Hour\_15
 Hou

 -0.42071
 0.0198142
 2.0610799
 2.5862403
 2.994988
 3.2852513
 3.8130847
 4.3452954
 4.7017509
 5.2442195
 5.7185245
 6.1137396
 6.644313
 7.1203555
 7.4252874
 7.9

- Daily
  - Facebook \ GooglePlus \ LinkedIn

Daily\_Avg\_Daily\_Avg\_Daily\_Avg\_Popularity 4085.3437 157.59615 1460.5405

#### microsoft

Hours

Hour 1 Hour 2 Hour 3 Hour 4 Hour 5 Hour 6 Hour 7 Hour 8 Hour 9 Hour 10 Hour 11 Hour 12 Hour 13 Hour 14 Hour 15 Hour 16 Hour 17 Hour 18 Fox0631 1,3760725 1,6718472 2,1459716 2,4443905 2,673574 3,1357725 3,464357 3,7843613 4,1010199 4,486859 4,7153958 5,1086827 5,3317684 5,6526361

Daily

Facebook \ GooglePlus \ LinkedIn

```
Daily_Avg_Daily_Avg_Daily_Avg_Popularity 3369.3239 463.57691 3250.1672
```

#### obama

Hours

 Hour\_1
 Hour\_2
 Hour\_3
 Hour\_4
 Hour\_5
 Hour\_6
 Hour\_7
 Hour\_8
 Hour\_9
 Hour\_10
 Hour\_11
 Hour\_12
 Hour\_13
 Hour\_14
 Hour\_15
 Hour\_16
 Hour\_16
 Hour\_17

 2.773903
 4.434833
 6.643272
 11.19937
 13.37342
 15.51816
 19.44686
 22.26045
 24.85726
 29.55606
 32.44038
 35.29998
 39.93781
 43.19693
 46.7598
 51.67792
 54.726

- Daily
  - Facebook \ GooglePlus \ LinkedIn

```
Daily_Avg_Daily_Avg_Daily_Avg_Popularity 27092.455 681.34804 754.51823
```

### palestine

Hours

 Hour 1
 Hour 2
 Hour 3
 Hour 4
 Hour 5
 Hour 6
 Hour 7
 Hour 8
 Hour 9
 Hour 10
 Hour 11
 Hour 12
 Hour 13
 Hour 14
 Hour 15
 Hour 16
 Hour 17

 -0.177442
 0.18432
 0.516977
 2.32363
 2.673735
 3.123715
 3.651359
 4.105373
 4.566671
 5.092754
 5.616495
 6.192923
 6.694159
 7.158319
 7.53558
 8.051385
 8.4480

- Daily
  - Facebook \ GooglePlus \ LinkedIn

```
Daily_Avg_Daily_Avg_Daily_Avg_Popularity 4696.3331 183.54797 73.945923
```

### 第三題

Social Media word frequency

| Topic     | Sum_Sentin | Avg_Sentin | Sum_Sentin | Avg_Sentin | nentHeadline |
|-----------|------------|------------|------------|------------|--------------|
| microsoft | 51.850245  | 0.0023729  | -322.1031  | -0.014741  |              |
| economy   | -350.9222  | -0.010355  | -1340.504  | -0.039556  |              |
| obama     | -28.52565  | -0.000997  | -507.265   | -0.017738  |              |
| palestine | -167.4022  | -0.01945   | -385.2141  | -0.044756  |              |

| Topic            | Sum_SentimentTitle                         | Avg_SentimentTitle  | Sum_SentimentHeadline                       | Avg_SentimentHeadline  |
|------------------|--|---|---|--|
| economy<br>obama | -350.9221887940765<br> -28.525649749692626 | 0.002372900342354466<br> -0.010355047029834946<br> -9.974700940517738E-4<br> -0.01944954013163993 | -1340.5043008124867<br> -507.26499424680156 | -0.014740885521094094<br> -0.03955573492320478  <br> -0.017737778664480088<br> -0.044755909550515935 |

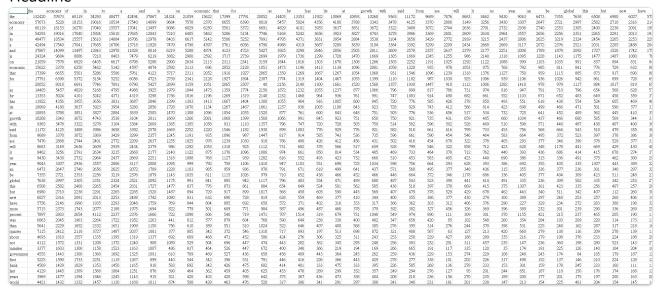
### 第四題

Top 100 words in title and content

#### enconomy

|          | economy th | e to | in   |      | of   | for  | on   |      |      | onomic a | is   | 20   | an   | d glo |      | owth say |      | na will |     | 2016 chin | as ne |     | brez |     |     | with |     |     | be  | cou |     |     |        |
|----------|------------|------|------|------|------|------|------|------|------|----------|------|------|------|-------|------|----------|------|---------|-----|-----------|-------|-----|------|-----|-----|------|-----|-----|-----|-----|-----|-----|--------|
| economy  | 128        | 7340 | 6762 | 5448 | 3987 | 2941 | 3082 | 2831 | 2249 | 161      | 2125 | 2053 | 1809 | 1626  | 1566 | 823      | 1429 | 837     | 996 | 894       | 875   | 793 | 802  | 754 | 764 | 781  | 688 | 702 | 692 | 631 | 611 | 726 | 624 60 |
| the      | 7340       | 3372 | 1636 | 1438 | 2211 | 1853 | 1241 | 912  | 981  | 452      | 973  | 1636 | 252  | 1174  | 666  | 125      | 201  | 144     | 444 | 283       | 177   | 340 | 173  | 283 | 528 | 145  | 184 | 640 | 220 | 279 | 262 | 85  | 132 25 |
| 10       | 6762       | 1636 | 1262 | 1517 | 2061 | 723  | 531  | 722  | 533  | 618      | 601  | 421  | 448  | 374   | 430  | 575      | 416  | 423     | 175 | 420       | 232   | 321 | 217  | 249 | 158 | 245  | 231 | 250 | 237 | 345 | 119 | 565 | 229 15 |
| in       | 5448       | 1438 | 1517 | 466  | 1314 | 684  | 504  | 369  | 773  | 459      | 550  | 305  | 357  | 310   | 327  | 528      | 299  | 232     | 205 | 718       | 220   | 207 | 329  | 70  | 69  | 266  | 159 | 113 | 204 | 136 | 110 | 98  | 180 10 |
|          | 3987       | 2211 | 2061 | 1314 | 0    | 1126 | 872  | 796  | 419  | 675      | 687  | 577  | 581  | 812   | 410  | 266      | 387  | 207     | 360 | 202       | 211   | 269 | 221  | 169 | 207 | 234  | 283 | 215 | 153 | 258 | 223 | 146 | 204 2  |
| of       | 2941       | 1853 | 723  | 684  | 1126 | 268  | 300  | 403  | 352  | 386      | 408  | 306  | 188  | 294   | 236  | 171      | 160  | 109     | 97  | 114       | 145   | 119 | 159  | 146 | 52  | 90   | 80  | 76  | 125 | 95  | 51  | 40  | 79 (   |
| for      | 3082       | 1241 | 531  | 504  | 872  | 300  | 118  | 199  | 340  | 269      | 545  | 358  | 238  | 229   | 277  | 254      | 146  | 141     | 91  | 184       | 120   | 175 | 64   | 189 | 33  | 28   | 52  | 36  | 162 | 185 | 101 | 70  | 89 (   |
| on       | 2831       | 912  | 722  | 369  | 796  | 403  | 199  | 110  | 323  | 234      | 194  | 187  | 167  | 250   | 232  | 147      | 136  | 165     | 64  | 72        | 101   | 100 | 68   | 137 | 36  | 35   | 116 | 62  | 89  | 54  | 35  | 43  | 73 (   |
| us       | 2249       | 981  | 533  | 773  | 419  | 352  | 340  | 323  | 48   | 197      | 246  | 279  | 200  | 159   | 145  | 213      | 113  | 68      | 82  | 73        | 24    | 35  | 173  | 66  | 114 | 48   | 82  | 68  | 6   | 55  | 63  | 19  | 91 8   |
| economic | 161        | 452  | 618  | 459  | 675  | 386  | 269  | 234  | 197  | 8        | 173  | 164  | 190  | 162   | 183  | 497      | 108  | 142     | 75  | 121       | 151   | 94  | 79   | 70  | 43  | 42   | 68  | 42  | 62  | 76  | 69  | 23  | 46 (   |
| 3.       | 2125       | 973  | 601  | 550  | 687  | 408  | 545  | 194  | 246  | 173      | 200  | 419  | 129  | 212   | 194  | 52       | 94   | 70      | 112 | 59        | 104   | 153 | 86   | 98  | 39  | 53   | 97  | 96  | 51  | 126 | 93  | 49  | 41 8   |
| is       | 2053       | 1636 | 421  | 305  | 577  | 306  | 358  | 187  | 279  | 164      | 419  | 144  | 100  | 209   | 161  | 50       | 161  | 57      | 23  | 41        | 128   | 61  | 54   | 75  | 79  | 36   | 43  | 171 | 57  | 33  | 14  | 12  | 44 14  |
| 3.0      | 1809       | 252  | 448  | 357  | 581  | 188  | 238  | 167  | 200  | 190      | 129  | 100  | 156  | 59    | 133  | 159      | 64   | 164     | 16  | 41        | 117   | 73  | 57   | 58  | 36  | 36   | 34  | 12  | 83  | 31  | 12  | 37  | 61 (   |
| and      | 1626       | 1174 | 374  | 310  | 812  | 294  | 229  | 250  | 159  | 162      | 212  | 209  | 59   | 50    | 149  | 75       | 66   | 64      | 85  | 74        | 73    | 73  | 40   | 87  | 76  | 42   | 58  | 86  | 69  | 34  | 49  | 47  | 25 4   |
| global   | 1566       | 666  | 430  | 327  | 410  | 236  | 277  | 232  | 145  | 183      | 194  | 161  | 133  | 149   | 12   | 131      | 95   | 90      | 67  | 90        | 49    | 56  | 58   | 115 | 89  | 29   | 25  | 56  | 41  | 70  | 61  | 16  | 36 4   |
| growth   | 823        | 125  | 575  | 528  | 266  | 171  | 254  | 147  | 213  | 497      | 52   | 50   | 159  | 75    | 131  | 4        | 97   | 139     | 47  | 107       | 76    | 24  | 69   | 17  | 16  | 32   | 63  | 9   | 107 | 38  | 38  | 21  | 54 1   |
| 33,9'8   | 1429       | 201  | 416  | 299  | 387  | 160  | 146  | 136  | 113  | 108      | 94   | 161  | 64   | 66    | 95   | 97       | 2    | 86      | 127 | 63        | 97    | 56  | 39   | 102 | 41  | 30   | 34  | 2   | 85  | 69  | 65  | 35  | 25 (   |
| china    | 837        | 144  | 423  | 232  | 207  | 109  | 141  | 165  | 68   | 142      | 70   | 57   | 164  | 64    | 90   | 139      | 86   | 2       | 45  | 39        | 5     | 51  | 34   | 6   | 26  | 26   | 37  | 19  | 5   | 20  | 26  | 37  | 32 1   |
| will     | 996        | 444  | 175  | 205  | 360  | 97   | 91   | 64   | 82   | 75       | 112  | 23   | 16   | 85    | 67   | 47       | 127  | 45      | 12  | 101       | 46    | 47  | 13   | 85  | 8   | 28   | 20  | 87  | 35  | 130 | 1   | 55  | 29 (   |
| 2016     | 894        | 283  | 420  | 718  | 202  | 114  | 184  | 72   | 73   | 121      | 59   | 41   | 41   | 74    | 90   | 107      | 63   | 39      | 101 | 4         | 47    | 23  | 62   | 8   | 17  | 37   | 25  | 28  | 27  | 41  | 27  | 8   | 17     |
| chinas   | 875        | 177  | 232  | 220  | 211  | 145  | 120  | 101  | 24   | 151      | 104  | 128  | 117  | 73    | 49   | 76       | 97   | 5       | 46  | 47        | 4     | 44  | 29   | 3   | 46  | 13   | 20  | 39  | 0   | 19  | 21  | 9   | 25 1   |
| new      | 793        | 340  | 321  | 207  | 269  | 119  | 175  | 100  | 35   | 94       | 153  | 61   | 73   | 73    | 56   | 24       | 56   | 51      | 47  | 23        | 44    | 46  | 21   | 7   | 17  | 21   | 37  | 24  | 10  | 30  | 24  | 32  | 15     |
| at       | 802        | 173  | 217  | 329  | 221  | 159  | 64   | 68   | 173  | 79       | 86   | 54   | 57   | 40    | 58   | 69       | 39   | 34      | 13  | 62        | 29    | 21  | 14   | 9   | 11  | 17   | 25  | 7   | 27  | 15  | 11  | 4   | 11     |
| brexit   | 754        | 283  | 249  | 70   | 169  | 146  | 189  | 137  | 66   | 70       | 98   | 75   | 58   | 87    | 115  | 17       | 102  | 6       | 85  | 8         | 3     | 7   | 9    | 4   | 14  | 36   | 28  | 56  | 259 | 72  | 113 | 3   | 7 1    |
| about    | 764        | 528  | 158  | 69   | 207  | 52   | 33   | 36   | 114  | 43       | 39   | 79   | 36   | 76    | 89   | 16       | 41   | 26      | 8   | 17        | 46    | 17  | 11   | 14  | 18  | 5    | 8   | 29  | 9   | 24  | 3   | 0   | 48 1   |
| by       | 781        | 145  | 245  | 266  | 234  | 90   | 28   | 35   | 48   | 42       | 53   | 36   | 36   | 42    | 29   | 32       | 30   | 26      | 28  | 37        | 13    | 21  | 17   | 36  | 5   | 16   | 10  | 13  | 46  | 46  | 57  | 46  | 19 1   |
| with     | 688        | 184  | 231  | 159  | 283  | 80   | 52   | 116  | 82   | 68       | 97   | 43   | 34   | 58    | 25   | 63       | 34   | 37      | 20  | 25        | 20    | 37  | 25   | 28  | 8   | 10   | 12  | 17  | 28  | 24  | 13  | 21  | 12     |
| how      | 702        | 640  | 250  | 113  | 215  | 76   | 36   | 62   | 68   | 42       | 96   | 171  | 12   | 86    | 56   | 9        | 2    | 19      | 87  | 28        | 39    | 24  | 7    | 56  | 29  | 13   | 17  | 2   | 14  | 11  | 52  | 19  | 5      |
| uk       | 692        | 220  | 237  | 204  | 153  | 125  | 162  | 89   | 6    | 62       | 51   | 57   | 83   | 69    | 41   | 107      | 85   | 5       | 35  | 27        | 0     | 10  | 27   | 259 | 9   | 46   | 28  | 14  | 2   | 34  | 66  | 17  | 24     |
| be       | 631        | 279  | 345  | 136  | 258  | 95   | 185  | 54   | 55   | 76       | 126  | 33   | 31   | 34    | 70   | 38       | 69   | 20      | 130 | 41        | 19    | 30  | 15   | 72  | 24  | 46   | 24  | 11  | 34  | 10  | 119 | 8   | 29 4   |
| could    | 611        | 262  | 119  | 110  | 223  | 51   | 101  | 35   | 63   | 69       | 93   | 14   | 12   | 49    | 61   | 38       | 65   | 26      | 1   | 27        | 21    | 24  | 11   | 113 | 3   | 57   | 13  | 52  | 66  | 119 | 4   | 50  | 23     |
| boost    | 726        | 85   | 565  | 98   | 146  | 40   | 70   | 43   | 19   | 23       | 49   | 12   | 37   | 47    | 16   | 21       | 35   | 37      | 55  | 8         | 9     | 32  | 4    | 3   | 0   | 46   | 21  | 19  | 17  | 8   | 50  | 0   | 17     |
| more     | 624        | 132  | 229  | 180  | 204  | 79   | 89   | 73   | 91   | 46       | 41   | 44   | 61   | 25    | 36   | 54       | 25   | 32      | 29  | 17        | 25    | 15  | 11   | 7   | 48  | 19   | 12  | 5   | 24  | 29  | 23  | 17  | 6      |
| not      | 623        | 297  | 157  | 102  | 214  | 87   | 83   | 68   | 81   | 66       | 86   | 146  | 68   | 47    | 47   | 23       | 68   | 39      | 62  | 11        | 25    | 6   | 18   | 22  | 28  | 22   | 15  | 8   | 11  | 43  | 5   | 6   | 16     |
| but      | 615        | 141  | 107  | 119  | 211  | 73   | 78   | 53   | 84   | 43       | 66   | 110  | 21   | 11    | 24   | 94       | 53   | 56      | 25  | 29        | 23    | 15  | 18   | 12  | 17  | 12   | 24  | 13  | 22  | 26  | 14  | 9   | 30 8   |
| up       | 554        | 139  | 316  | 164  | 129  | 56   | 71   | 60   | 70   | 70       | 41   | 40   | 91   | 40    | 35   | 89       | 27   | 55      | 22  | 16        | 17    | 35  | 11   | 18  | 7   | 33   | 23  | 25  | 24  | 9   | 16  | 12  | 14     |
| world    | 588        | 286  | 179  | 176  | 136  | 132  | 145  | 63   | 35   | 58       | 59   | 62   | 49   | 44    | 65   | 69       | 60   | 37      | 26  | 39        | 19    | 13  | 20   | 48  | 24  | 11   | 25  | 27  | 13  | 18  | 27  | 5   | 2      |
| quarter  | 614        | 58   | 101  | 619  | 52   | 44   | 29   | 25   | 233  | 32       | 17   | 6    | 32   | 1     | 2    | 123      | 10   | 16      | 1   | 9         | 14    | 6   | 73   | 2   | 1   | 50   | 13  | 1   | 40  | 8   | 4   | 1   | 43     |
| oil      | 531        | 150  | 189  | 93   | 146  | 71   | 106  | 105  | 62   | 41       | 41   | 37   | 91   | 83    | 62   | 23       | 40   | 15      | 36  | 12        | 5     | 12  | 19   | 4   | 13  | 33   | 16  | 25  | 9   | 14  | 22  | 15  | 8 :    |
| its      | 580        | 312  | 239  | 64   | 160  | 69   | 85   | 78   | 47   | 46       | 80   | 94   | 47   | 60    | 25   | 10       | 29   | 46      | 23  | 18        | 37    | 15  | 16   | 15  | 38  | 8    | 13  | 50  | 7   | 12  | 9   | 9   | 6 1    |
| are      | 445        | 379  | 113  | 97   | 218  | 74   | 86   | 55   | 58   | 60       | 78   | 37   | 31   | 101   | 43   | 14       | 30   | 9       | 11  | 10        | 34    | 20  | 10   | 6   | 65  | 18   | 13  | 48  | 9   | 12  | 2   | 3   | 31 1   |
| than     | 538        | 129  | 90   | 186  | 150  | 42   | 34   | 27   | 105  | 38       | 38   | 79   | 35   | 8     | 16   | 41       | 20   | 18      | 25  | 14        | 14    | 16  | 18   | 13  | 21  | 23   | 5   | 3   | 21  | 36  | 17  | 6   | 278    |
| from     | 478        | 209  | 225  | 64   | 198  | 50   | 20   | 58   | 48   | 75       | 61   | 32   | 16   | 38    | 30   | 20       | 28   | 26      | 32  | 15        | 15    | 22  | 13   | 32  | 9   | 4    | 10  | 32  | 20  | 17  | 17  | 18  | 9      |
| bank     | 436        | 56   | 250  | 96   | 139  | 237  | 59   | 89   | 24   | 64       | 21   | 26   | 39   | 15    | 52   | 64       | 91   | 22      | 36  | 36        | 10    | 21  | 26   | 26  | 12  | 19   | 13  | 3   | 24  | 18  | 14  | 11  | 19     |
| jobs     | 459        | 153  | 93   | 222  | 129  | 58   | 62   | 45   | 194  | 35       | 39   | 44   | 55   | 86    | 14   | 40       | 19   | 5       | 32  | 13        | 4     | 45  | 46   | 7   | 12  | 7    | 15  | 10  | 10  | 9   | 12  | 13  | 18     |
| minister | 529        | 37   | 214  | 80   | 137  | 82   | 52   | 63   | 6    | 36       | 14   | 32   | 12   | 13    | 4    | 29       | 95   | 9       | 34  | 34        | 2     | 20  | 14   | 19  | 9   | 12   | 28  | 2   | 15  | 18  | 13  | 10  | 15 2   |
| rate     | 435        | 55   | 143  | 192  | 102  | 77   | 60   | 54   | 171  | 41       | 38   | 35   | 63   | 16    | 29   | 57       | 41   | 6       | 19  | 15        | 11    | 14  | 130  | 2   | 5   | 8    | 24  | 7   | 17  | 6   | 6   | 15  | 28     |
| over     | 464        | 94   | 111  | 65   | 139  | 57   | 41   | 42   | 36   | 48       | 21   | 32   | 64   | 31    | 66   | 9        | 19   | 30      | 13  | 13        | 18    | 13  | 24   | 41  | 3   | 9    | 7   | 4   | 20  | 24  | 10  | 3   | 6      |
|          |            |      |      |      |      |      |      |      |      |          |      |      |      |       |      |          |      |         |     |           |       |     |      |     |     |      |     |     |     |     |     |     |        |

Headline



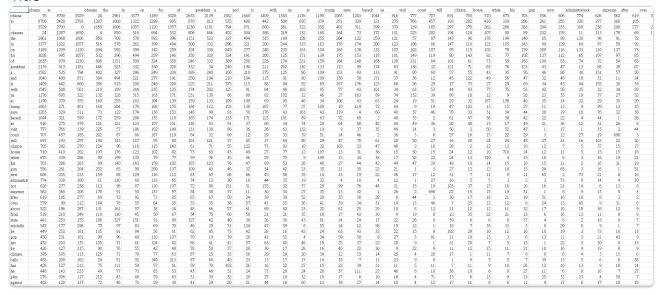
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|            | microsoft to |      | fc   | c the | e mi | icrosofts an | i in | Wi   | ndows wi | th a | on   | of   |      | 10 is | tie  | W 803 | rface xbo | ox its | clo  | ud on | te of | fice app | a1  | will | 200 | ogle ap | pple | 2016 from | h 88 | pro | you | lur | mia up |
|------------|--------------|------|------|-------|------|--------------|------|------|----------|------|------|------|------|-------|------|-------|-----------|--------|------|-------|-------|----------|-----|------|-----|---------|------|-----------|------|-----|-----|-----|--------|
| microsoft  | 290          | 5277 | 4848 | 3096  | 2565 | 15           | 2354 | 2269 | 2080     | 1897 | 1715 | 1737 | 1593 | 1497  | 1404 | 1152  | 1011      | 893    | 1009 | 800   | 561   | 642      | 519 | 556  | 490 | 583     | 540  | 502       | 509  | 508 | 521 | 393 | 503    |
| 10         | 5277         | 1110 | 1843 | 625   | 818  | 658          | 790  | 735  | 857      | 666  | 590  | 493  | 426  | 595   | 511  | 341   | 220       | 313    | 381  | 332   | 181   | 204      | 167 | 148  | 131 | 219     | 149  | 146       | 196  | 96  | 88  | 261 | 100    |
|            | 4848         | 1843 | 0    | 1030  | 1032 | 829          | 1200 | 733  | 879      | 789  | 667  | 615  | 718  | 618   | 534  | 527   | 409       | 459    | 268  | 157   | 308   | 165      | 185 | 227  | 231 | 255     | 243  | 161       | 196  | 235 | 236 | 174 | 201    |
| for        | 3096         | 625  | 1030 | 160   | 608  | 382          | 442  | 359  | 512      | 259  | 405  | 216  | 225  | 376   | 323  | 294   | 173       | 221    | 206  | 155   | 127   | 226      | 182 | 67   | 65  | 80      | 67   | 127       | 49   | 64  | 80  | 75  | 82     |
| the        | 2565         | 818  | 1032 | 608   | 544  | 481          | 494  | 593  | 299      | 274  | 342  | 352  | 785  | 200   | 539  | 189   | 260       | 220    | 190  | 214   | 150   | 83       | 97  | 129  | 141 | 98      | 133  | 91        | 114  | 91  | 115 | 99  | 139    |
| microsofts | 15           | 658  | 829  | 382   | 481  | 0            | 290  | 308  | 350      | 201  | 330  | 284  | 373  | 243   | 397  | 313   | 218       | 192    | 104  | 138   | 134   | 62       | 171 | 117  | 148 | 44      | 48   | 85        | 80   | 68  | 72  | 125 | 68     |
| and        | 2354         | 790  | 1200 | 442   | 494  | 290          | 226  | 320  | 299      | 280  | 258  | 302  | 243  | 230   | 210  | 218   | 169       | 170    | 106  | 155   | 122   | 114      | 70  | 95   | 74  | 277     | 207  | 95        | 62   | 62  | 85  | 73  | 103    |
| in         | 2269         | 735  | 733  | 359   | 593  | 308          | 320  | 108  | 255      | 161  | 247  | 155  | 222  | 178   | 180  | 190   | 140       | 97     | 137  | 219   | 76    | 99       | 44  | 56   | 119 | 109     | 135  | 104       | 50   | 49  | 53  | 42  | 114    |
| windows    | 2080         | 857  | 879  | 512   | 299  | 350          | 299  | 255  | 132      | 248  | 225  | 322  | 225  | 1898  | 259  | 258   | 41        | 60     | 141  | 11    | 56    | 47       | 141 | 52   | 121 | 12      | 14   | 53        | 93   | 73  | 36  | 103 | 73     |
| with       | 1897         | 666  | 789  | 259   | 274  | 201          | 280  | 161  | 248      | 30   | 268  | 182  | 147  | 190   | 123  | 245   | 93        | 109    | 137  | 93    | 70    | 115      | 94  | 42   | 37  | 72      | 63   | 55        | 31   | 23  | 41  | 50  | 41     |
| 3          | 1715         | 580  | 667  | 405   | 342  | 330          | 258  | 247  | 225      | 268  | 190  | 203  | 292  | 152   | 415  | 254   | 155       | 117    | 132  | 58    | 85    | 63       | 122 | 115  | 84  | 50      | 65   | 35        | 73   | 83  | 61  | 123 | 67     |
| on         | 1737         | 493  | 615  | 216   | 352  | 284          | 302  | 155  | 322      | 182  | 203  | 58   | 137  | 221   | 229  | 129   | 117       | 161    | 118  | 104   | 87    | 57       | 65  | 41   | 79  | 74      | 70   | 42        | 26   | 52  | 44  | 43  | 64     |
| of         | 1593         | 426  | 718  | 225   | 785  | 373          | 243  | 222  | 225      | 147  | 292  | 137  | 124  | 150   | 190  | 147   | 78        | 131    | 150  | 47    | 139   | 52       | 41  | 64   | 64  | 52      | 54   | 74        | 40   | 81  | 23  | 50  | 32     |
| 10         | 1497         | 595  | 618  | 376   | 200  | 243          | 230  | 178  | 1898     | 190  | 152  | 221  | 150  | 44    | 178  | 180   | 30        | 46     | 93   | 11    | 40    | 29       | 93  | 37   | 86  | 11      | 12   | 21        | 71   | 50  | 31  | 88  | 54     |
| is         | 1404         | 511  | 534  | 323   | 539  | 397          | 210  | 180  | 259      | 123  | 415  | 229  | 190  | 178   | 82   | 132   | 121       | 109    | 199  | 57    | 87    | 50       | 71  | 46   | 16  | 69      | 66   | 35        | 39   | 47  | 63  | 45  | 35     |
| Detr       | 1152         | 341  | 527  | 294   | 189  | 313          | 218  | 190  | 258      | 245  | 254  | 129  | 147  | 180   | 132  | 34    | 86        | 153    | 69   | 62    | 111   | 88       | 116 | 46   | 52  | 32      | 24   | 45        | 41   | 36  | 34  | 47  | 27     |
| surface    | 1011         | 220  | 409  | 173   | 260  | 218          | 169  | 140  | 41       | 93   | 155  | 117  | 78   | 30    | 121  | 86    | 198       | 21     | 60   | 6     | 30    | 5        | 3   | 43   | 51  | 2       | 48   | 33        | 15   | 31  | 647 | 30  | 15     |
| zboz       | 893          | 313  | 459  | 221   | 220  | 192          | 170  | 97   | 60       | 109  | 117  | 161  | 131  | 46    | 109  | 153   | 21        | 144    | 38   | 4     | 658   | 5        | 20  | 72   | 64  | 0       | 11   | 52        | 32   | 34  | 8   | 31  | 3      |
| its        | 1009         | 381  | 268  | 206   | 190  | 104          | 106  | 137  | 141      | 137  | 132  | 118  | 150  | 93    | 199  | 69    | 60        | 38     | 54   | 83    | 39    | 18       | 49  | 24   | 29  | 16      | 26   | 14        | 39   | 26  | 19  | 15  | 18     |
| cloud      | 800          | 332  | 157  | 155   | 214  | 138          | 155  | 219  | 11       | 93   | 58   | 104  | 47   | 11    | 57   | 62    | 6         | 4      | 83   | 14    | 9     | 20       | 9   | 12   | 29  | 55      | 4    | 13        | 27   | 35  | - 1 | 5   | 2      |
| one        | 561          | 181  | 308  | 127   | 150  | 134          | 122  | 76   | 56       | 70   | 85   | 87   | 139  | 40    | 87   | 111   | 30        | 658    | 39   | 9     | 24    | 6        | 5   | 25   | 30  | 9       | 8    | 34        | 18   | 16  | 18  | 31  | 12     |
| office     | 642          | 204  | 165  | 226   | 83   | 62           | 114  | 99   | 47       | 115  | 63   | 57   | 52   | 29    | 50   | 88    | 5         | 5      | 18   | 20    | 6     | 32       | 23  | 7    | 9   | 27      | 7    | 56        | 15   | 15  | 12  | 19  | 8      |
| арр        | 519          | 167  | 185  | 182   | 97   | 171          | 70   | 44   | 141      | 94   | 122  | 65   | 41   | 93    | 71   | 116   | 3         | 20     | 49   | 9     | . 5   | 23       | 8   | 12   | 27  | 15      | 11   | 2         | 31   | 15  | 6   | 48  | 2      |
| at         | 556          | 148  | 227  | 67    | 129  | 117          | 95   | 56   | 52       | 42   | 115  | 41   | 64   | 37    | 46   | 46    | 43        | 72     | 24   | 12    | 25    | 7        | 12  | 10   | 29  | 18      | 18   | 42        | 12   | 11  | 21  | 16  | 57     |
| will       | 490          | 131  | 231  | 65    | 141  | 148          | 74   | 119  | 121      | 37   | 84   | 79   | 64   | 86    | 16   | 52    | 51        | 64     | 29   | 29    | 30    | 9        | 27  | 29   | 10  | 17      | 17   | 30        | 24   | 13  | 18  | 77  | 20     |
| google     | 583          | 219  | 255  | 80    | 98   | 44           | 277  | 109  | 12       | 72   | 50   | 74   | 52   | 11    | 69   | 32    | 2         | 0      | 16   | 55    | 9     | 27       | 15  | 18   | 17  | 20      | 138  | 7         | 18   | 24  | 4   | 3   | 4      |
| apple      | 540          | 149  | 243  | 67    | 133  | 48           | 207  | 135  | 14       | 63   | 65   | 70   | 54   | 12    | 66   | 24    | 48        | 11     | 26   | 4     | 8     | 7        | 11  | 18   | 17  | 138     | 8    | 9         | 21   | 31  | 76  | 7   | 5      |
| 2016       |              | 146  | 161  | 127   | 91   | 85           | 95   | 104  | 53       | 55   | 35   | 42   | 74   | 21    | 35   | 45    | 33        | 52     | 14   | 13    | 34    | 56       | 2   | 42   | 30  | 7       | q    | 18        | 32   | 19  | 7   | 16  | 7      |
| from       | 509          | 196  | 196  | 49    | 114  | 80           | 62   | 50   | 93       | 31   | 73   | 26   | 40   | 71    | 39   | 41    | 15        | 32     | 39   | 27    | 18    | 15       | 31  | 12   | 24  | 18      | 21   | 32        | 2    | 10  | 10  | 31  | 6      |
| 38         | 508          | 96   | 235  | 64    | 91   | 68           | 62   | 49   | 73       | 23   | 83   | 52   | 81   | 50    | 47   | 36    | 31        | 34     | 26   | 35    | 16    | 15       | 15  | 11   | 13  | 24      | 31   | 19        | 10   | 58  | 16  | 2   | 10     |
| nro        | 521          | 88   | 236  | 80    | 115  | 72           | 85   | 53   | 36       | 41   | 61   | 44   | 23   | 31    | 63   | 34    | 647       | 8      | 19   | - 1   | 18    | 12       | 6   | 21   | 18  | 4       | 76   | 7         | 10   | 16  | 150 | 17  | 6      |
| you        | 393          | 261  | 174  | 75    | 99   | 125          | 73   | 42   | 103      | 50   | 123  | 43   | 50   | 88    | 45   | 47    | 30        | 31     | 15   | 5     | 31    | 19       | 48  | 16   | 77  | 3       | 7    | 16        | 31   | 2   | 17  | 70  | 17     |
| lumia      | 503          | 100  | 201  | 82    | 139  | 68           | 103  | 114  | 73       | 41   | 67   | 64   | 32   | 54    | 35   | 27    | 15        | 3      | 18   | 2     | 12    | 8        | 2   | 57   | 20  | 4       | 5    | 7         | 6    | 10  | 6   | 17  | 94     |
| up         | 483          | 272  | 134  | 97    | 66   | 64           | 95   | 73   | 63       | 85   | 40   | 100  | 31   | 37    | 47   | 46    | 37        | 21     | 54   | 35    | 17    | 19       | 11  | 11   | 10  | 18      | 16   | 11        | 18   | 28  | 12  | 16  | 8      |
| bow        | 421          | 275  | 183  | 35    | 144  | 90           | 95   | 74   | 90       | 43   | 58   | 56   | 40   | 66    | 88   | 23    | 14        | 23     | 44   | 25    | 13    | 34       | 10  | 10   | 31  | 28      | 24   | 9         | 25   | 1   | 7   | 40  | 4      |
| data       | 504          | 185  | 125  | 103   | 73   | 40           | 52   | 89   | 22       | 38   | 33   | 44   | 41   | 14    | 38   | 43    | 2         | 0      | 30   | 51    | 1     | 7        | 16  | 12   | 12  | 1       | 6    | 12        | 28   | 9   | 0   | 4   | 0      |
| update     | 449          | 104  | 208  | 105   | 51   | 50           | 54   | 45   | 276      | 49   | 55   | 57   | 35   | 228   | 14   | 62    | 34        | 70     | 15   | 2     | 60    | 17       | 19  | 5    | 28  | - 1     | 2    | 16        | 7    | 19  | 19  | 17  | 13     |
| DOM        | 389          | 82   | 165  | 119   | 90   | 124          | 63   | 96   | 66       | 43   | 32   | 84   | 23   | 49    | 99   | 13    | 41        | 29     | 18   | 15    | 22    | 30       | 45  | 23   | 20  | 8       | - 11 | 21        | 30   | 9   | 17  | 51  | 40     |
| azure      | 460          | 172  | 106  | 78    | 47   | 81           | 93   | 70   | 8        | 90   | 16   | 75   | 33   | 3     | 41   | 35    | 0         | 0      | 26   | 103   | 1     | 28       | 2   | 13   | 16  | 6       | 0    | 13        | 9    | 14  | 0   | 7   | 0      |
| vour       | 383          | 219  | 152  | 83    | 65   | 107          | 51   | 53   | 66       | 44   | 81   | 49   | 38   | 47    | 62   | 50    | 21        | 29     | 14   | 6     | 20    | 15       | 58  | 13   | 40  | 5       | 8    | 3         | 36   | 3   | 12  | 81  | 6      |
| hololens   | 393          | 167  | 128  | 94    | 91   | 126          | 75   | 55   | 16       | 80   | 71   | 55   | 52   | 10    | 48   | 24    | 3         | 10     | 30   | 0     | 11    | 1        | 25  | 26   | 22  | 15      | 1    | 8         | 14   | 6   | 0   | 23  | 0      |
| it         | 414          | 194  | 158  | 68    | 94   | 60           | 68   | 51   | 82       | 41   | 69   | 29   | 36   | 59    | 106  | 26    | 28        | 12     | 43   | 20    | 11    | 14       | 20  | 12   | 45  | 14      | 14   | 3         | 19   | 55  | 15  | 48  | 10     |
| mobile     | 346          | 146  | 137  | 81    | 56   | 85           | 50   | 48   | 247      | 59   | 34   | 57   | 27   | 221   | 30   | 39    | 6         | 1      | 30   | 8     | 3     | 23       | 39  | 9    | 18  | 5       | 1    | 8         | 6    | 8   | 0   | .6  | 24     |
| he         | 346          | 220  | 134  | 63    | 116  | 83           | 43   | 72   | 48       | 33   | 99   | 50   | 47   | 32    | 20   | 28    | 53        | 42     | 19   | 6     | 27    | 10       | 10  | 21   | 88  | 28      | 13   | 21        | 15   | 13  | 17  | 11  | 33     |
| more       | 366          | 158  | 143  | 63    | 46   | 67           | 116  | 54   | 79       | 54   | 43   | 54   | 32   | 66    | 55   | 35    | 28        | 35     | 26   | 16    | 21    | 30       | 7   | 15   | 20  | 28      | 21   | 18        | 11   | 4   | 19  | 20  | 1      |
| msft       | 405          | 89   | 129  | 72    | 76   | 31           | 42   | 58   | 21       | 16   | 55   | 79   | 37   | 13    | 69   | 17    | 9         | 17     | 25   | 27    | 10    | 3        | 12  | 19   | 6   | 12      | 11   | 18        | 15   | 5   | 4   | 5   | î      |
| support    | 388          | 115  | 126  | 195   | 25   | 25           | 80   | 69   | 115      | 53   | 12   | 38   | 44   | 63    | 21   | 24    | 4         | 15     | 16   | 9     | 7     | 20       | 15  | 2    | 34  | 16      | 25   | 10        | 17   | 10  | 0   | - 1 | 2      |
| out        | 340          | 134  | 129  | 92    | 87   | 55           | 37   | 60   | 71       | 30   | 51   | 38   | 105  | 52    | 46   | 37    | 23        | 23     | 18   | 6     | 13    | 21       | 18  | 12   | 12  | 9       | 15   | 15        | - 5  | 17  | 8   | 14  | 7      |
| yur        | 340          | 134  | 169  | 92    | 07   |              | 37   | - 00 | 7.1      | 30   | - 31 | 30   | 200  | 32    | +0   | 31    | 43        | 40     | 10   | - 0   | 1.0   | - 21     | 10  | 16   | 16  | - 9     | 13   | 13        |      | 47  |     | 4.4 |        |

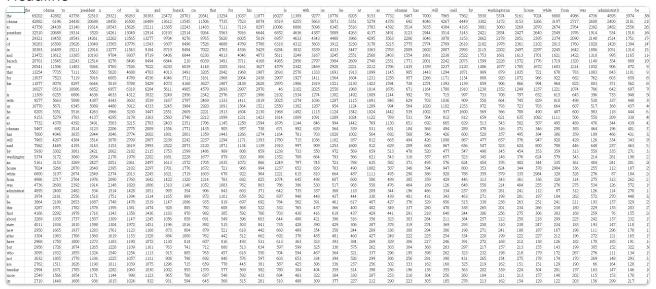
# Headline

|          |       | icrosoft to |       |       |       | ed in |       |       |       | it    |       |       |       |      | ith it |      | ndows ne |      | crosofts as |      | ill at |      | 10 be |      |      |      |      |      | mpany an |      |      |      |      |
|----------|-------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|------|----------|------|-------------|------|--------|------|-------|------|------|------|------|------|----------|------|------|------|------|
| e        | 49110 | 30886       | 29785 | 23670 | 26877 | 20630 | 17625 | 13681 | 13191 | 14862 | 11146 | 11146 | 11703 | 9837 | 8719   | 8123 | 8264     | 6502 | 5570        | 6053 | 5527   | 4972 | 4902  | 4707 | 3849 | 3522 | 3996 | 3970 | 4844     | 3303 | 4163 | 3213 | 3178 |
| crosoft  | 30886 | 7246        | 18190 | 15684 | 13587 | 12942 | 10206 | 8519  | 7839  | 7924  | 8250  | 7058  | 6769  | 6549 | 5548   | 5104 | 4742     | 4190 | 1192        | 3538 | 3299   | 3011 | 2749  | 2548 | 2484 | 2511 | 2500 | 2544 | 2167     | 2438 | 1972 | 1925 | 1928 |
|          | 29785 | 18190       | 16036 | 14752 | 12445 | 12128 | 8922  | 7061  | 7743  | 8845  | 7423  | 6480  | 6472  | 5380 | 5268   | 5429 | 5779     | 3717 | 3254        | 3401 | 3109   | 2097 | 3272  | 3272 | 2595 | 2128 | 2460 | 2181 | 2178     | 1702 | 1967 | 2016 | 2269 |
|          | 23670 | 15684       | 14752 | 11334 | 12315 | 9701  | 8174  | 6960  | 6333  | 7136  | 5551  | 6148  | 5440  | 4929 | 4739   | 4372 | 3762     | 4236 | 2602        | 3180 | 2346   | 2477 | 2105  | 2203 | 1871 | 1842 | 2012 | 2044 | 2102     | 1545 | 1659 | 1381 | 1624 |
|          | 26877 | 13587       | 12445 | 12315 | 9304  | 9287  | 7097  | 5581  | 5369  | 6575  | 5579  | 4666  | 4791  | 4199 | 3649   | 3558 | 3436     | 2952 | 2844        | 2779 | 2147   | 2038 | 2022  | 1845 | 2014 | 1722 | 1595 | 1728 | 1553     | 1512 | 2142 | 1517 | 1414 |
| 1        | 20630 | 12942       | 12128 | 9701  | 9287  | 7448  | 6387  | 5694  | 4975  | 6440  | 4772  | 4238  | 4597  | 3641 | 3718   | 3320 | 3313     | 2772 | 2288        | 2340 | 2403   | 1760 | 1787  | 1727 | 1536 | 1430 | 1590 | 1549 | 1357     | 1401 | 1306 | 1766 | 1697 |
|          | 17625 | 10206       | 8922  | 8174  | 7097  | 6387  | 4526  | 3830  | 3751  | 4554  | 3990  | 3443  | 3127  | 2962 | 2521   | 2740 | 2087     | 1863 | 1768        | 1792 | 1741   | 1507 | 1203  | 1380 | 1508 | 1230 | 1162 | 1241 | 1237     | 1073 | 998  | 1058 | 958  |
|          | 13681 | 8519        | 7061  | 6960  | 5581  | 5694  | 3830  | 3506  | 3383  | 3976  | 3344  | 2845  | 2682  | 2839 | 1973   | 2338 | 2605     | 1947 | 1441        | 1548 | 1421   | 1056 | 1456  | 1184 | 1222 | 1010 | 764  | 764  | 1045     | 1014 | 933  | 849  | 817  |
|          | 13191 | 7839        | 7743  | 6333  | 5369  | 4975  | 3751  | 3383  | 2744  | 3316  | 3187  | 3082  | 2572  | 1573 | 2229   | 2254 | 2349     | 1652 | 1528        | 1533 | 998    | 1104 | 1362  | 1015 | 999  | 1130 | 924  | 887  | 1060     | 555  | 1105 | 642  | 530  |
|          | 14862 | 7924        | 8845  | 7136  | 6575  | 6440  | 4554  | 3976  | 3316  | 1090  | 3641  | 3249  | 3385  | 2487 | 2519   | 2539 | 2583     | 1836 | 1527        | 1708 | 1753   | 1222 | 1467  | 1241 | 1199 | 887  | 1123 | 1113 | 1196     | 969  | 1010 | 936  | 847  |
|          | 11146 | 8250        | 7423  | 5551  | 5579  | 4772  | 3990  | 3344  | 3187  | 3641  | 3000  | 2725  | 2828  | 2828 | 2154   | 2219 | 2090     | 1680 | 1103        | 1506 | 1255   | 1058 | 1150  | 878  | 944  | 866  | 902  | 966  | 1129     | 996  | 776  | 548  | 522  |
|          | 11146 | 7058        | 6480  | 6148  | 4666  | 4238  | 3443  | 2845  | 3082  | 3249  | 2725  | 2108  | 2459  | 2472 | 1802   | 2653 | 1990     | 1426 | 1176        | 1209 | 1537   | 892  | 1097  | 1331 | 1033 | 864  | 912  | 779  | 892      | 1102 | 863  | 901  | 853  |
|          | 11703 | 6769        | 6472  | 5440  | 4791  | 4597  | 3127  | 2682  | 2572  | 3385  | 2828  | 2459  | 2252  | 1827 | 1775   | 1965 | 2103     | 1487 | 1248        | 1271 | 1267   | 934  | 1255  | 962  | 953  | 724  | 736  | 775  | 873      | 778  | 825  | 698  | 639  |
| 3        | 9837  | 6549        | 5380  | 4929  | 4199  | 3641  | 2982  | 2839  | 1573  | 2487  | 2828  | 2472  | 1827  | 1200 | 1555   | 1939 | 1825     | 1276 | 868         | 1163 | 748    | 662  | 1071  | 658  | 820  | 623  | 701  | 663  | 905      | 757  | 630  | 421  | 429  |
| fh       | 8719  | 5548        | 5268  | 4739  | 3649  | 3718  | 2521  | 1973  | 2229  | 2519  | 2154  | 1802  | 1775  | 1555 | 1304   | 1434 | 1313     | 1384 | 939         | 909  | 942    | 632  | 769   | 771  | 799  | 640  | 566  | 583  | 595      | 560  | 555  | 527  | 494  |
|          | 8123  | 5104        | 5429  | 4372  | 3558  | 3320  | 2740  | 2338  | 2254  | 2539  | 2219  | 2653  | 1965  | 1939 | 1434   | 1824 | 1497     | 906  | 832         | 1143 | 1055   | 652  | 857   | 888  | 735  | 591  | 627  | 590  | 746      | 807  | 607  | 368  | 545  |
| ndows    | 8264  | 4742        | 5779  | 3762  | 3436  | 3313  | 2087  | 2605  | 2349  | 2583  | 2090  | 1990  | 2103  | 1825 | 1313   | 1497 | 3366     | 1299 | 1103        | 1047 | 912    | 580  | 4184  | 697  | 635  | 669  | 675  | 487  | 616      | 428  | 481  | 576  | 527  |
| M        | 6502  | 4190        | 3717  | 4236  | 2952  | 2772  | 1863  | 1947  | 1652  | 1836  | 1680  | 1426  | 1487  | 1276 | 1384   | 906  | 1299     | 966  | 789         | 698  | 814    | 676  | 839   | 511  | 440  | 534  | 464  | 447  | 415      | 545  | 535  | 418  | 361  |
| crosofts | 5570  | 1192        | 3254  | 2602  | 2844  | 2288  | 1768  | 1441  | 1528  | 1527  | 1103  | 1176  | 1248  | 868  | 939    | 832  | 1103     | 789  | 276         | 634  | 524    | 609  | 568   | 506  | 450  | 416  | 399  | 368  | 425      | 216  | 456  | 378  | 372  |
|          | 6053  | 3538        | 3401  | 3180  | 2779  | 2340  | 1792  | 1548  | 1533  | 1706  | 1506  | 1209  | 1271  | 1163 | 909    | 1143 | 1047     | 698  | 634         | 1242 | 608    | 422  | 594   | 584  | 468  | 506  | 409  | 401  | 433      | 279  | 415  | 404  | 393  |
|          | 5527  | 3299        | 3109  | 2346  | 2147  | 2403  | 1741  | 1421  | 998   | 1753  | 1255  | 1537  | 1267  | 748  | 942    | 1055 | 912      | 814  | 524         | 608  | 882    | 434  | 557   | 1292 | 443  | 411  | 430  | 371  | 418      | 593  | 450  | 221  | 352  |
|          | 4972  | 3011        | 2097  | 2477  | 2038  | 1760  | 1507  | 1056  | 1104  | 1222  | 1058  | 892   | 934   | 662  | 632    | 652  | 580      | 676  | 609         | 422  | 434    | 482  | 345   | 417  | 383  | 455  | 293  | 316  | 291      | 295  | 383  | 296  | 236  |
| 10       | 4902  | 2749        | 3272  | 2105  | 2022  | 1787  | 1203  | 1456  | 1362  | 1467  | 1150  | 1097  | 1255  | 1071 | 769    | 857  | 4184     | 839  | 568         | 594  | 557    | 345  | 840   | 414  | 317  | 414  | 340  | 271  | 387      | 265  | 295  | 307  | 283  |
|          | 4707  | 2548        | 3272  | 2203  | 1845  | 1727  | 1380  | 1184  | 1015  | 1241  | 878   | 1331  | 962   | 658  | 771    | 888  | 697      | 511  | 508         | 584  | 1292   | 417  | 414   | 418  | 362  | 377  | 337  | 328  | 305      | 350  | 473  | 309  | 302  |
|          | 3849  | 2484        | 2595  | 1871  | 2014  | 1536  | 1508  | 1222  | 999   | 1199  | 944   | 1033  | 953   | 820  | 799    | 735  | 635      | 440  | 450         | 468  | 443    | 383  | 317   | 362  | 346  | 329  | 336  | 286  | 285      | 274  | 311  | 236  | 245  |
| 18       | 3522  | 2511        | 2128  | 1842  | 1722  | 1430  | 1230  | 1010  | 1130  | 887   | 866   | 864   | 724   | 623  | 640    | 591  | 669      | 534  | 416         | 506  | 411    | 455  | 414   | 377  | 329  | 242  | 283  | 267  | 247      | 263  | 346  | 267  | 225  |
| m        | 3996  | 2500        | 2460  | 2012  | 1595  | 1590  | 1162  | 764   | 924   | 1123  | 902   | 912   | 736   | 701  | 566    | 627  | 675      | 464  | 399         | 409  | 430    | 293  | 340   | 337  | 336  | 283  | 250  | 281  | 257      | 189  | 237  | 245  | 234  |
|          | 3970  | 2544        | 2181  | 2044  | 1728  | 1549  | 1241  | 764   | 887   | 1113  | 966   | 779   | 775   | 663  | 583    | 590  | 487      | 447  | 368         | 401  | 371    | 316  | 271   | 328  | 286  | 267  | 281  | 330  | 305      | 158  | 263  | 264  | 236  |
| mpany    | 4844  | 2167        | 2178  | 2102  | 1553  | 1357  | 1237  | 1045  | 1060  | 1196  | 1129  | 892   | 873   | 905  | 595    | 746  | 616      | 415  | 425         | 433  | 418    | 291  | 387   | 305  | 285  | 247  | 257  | 305  | 198      | 359  | 226  | 177  | 170  |
| nounced  | 3303  | 2438        | 1702  | 1545  | 1512  | 1401  | 1073  | 1014  | 555   | 969   | 996   | 1102  | 778   | 757  | 560    | 807  | 428      | 545  | 216         | 279  | 593    | 295  | 265   | 350  | 274  | 263  | 189  | 158  | 359      | 64   | 230  | 140  | 152  |
| e        | 4163  | 1972        | 1967  | 1659  | 2142  | 1306  | 998   | 933   | 1105  | 1010  | 776   | 863   | 825   | 630  | 555    | 607  | 481      | 535  | 456         | 415  | 450    | 383  | 295   | 473  | 311  | 346  | 237  | 263  | 226      | 230  | 528  | 221  | 230  |
| 0        | 3213  | 1925        | 2016  | 1381  | 1517  | 1766  | 1058  | 849   | 642   | 936   | 548   | 901   | 698   | 421  | 527    | 368  | 576      | 418  | 378         | 404  | 221    | 296  | 307   | 309  | 236  | 267  | 245  | 264  | 177      | 140  | 221  | 338  | 243  |
| rre      | 3178  | 1928        | 2269  | 1624  | 1414  | 1697  | 958   | 817   | 530   | 847   | 522   | 853   | 639   | 429  | 494    | 545  | 527      | 361  | 372         | 393  | 352    | 236  | 283   | 302  | 245  | 225  | 234  | 236  | 170      | 152  | 230  | 243  | 248  |
| t        | 3480  | 1849        | 1961  | 1671  | 1390  | 1066  | 904   | 835   | 977   | 954   | 895   | 779   | 690   | 657  | 499    | 855  | 688      | 347  | 462         | 382  | 280    | 287  | 406   | 412  | 258  | 310  | 242  | 196  | 262      | 99   | 293  | 248  | 290  |
| 18       | 3385  | 1822        | 1591  | 1639  | 1287  | 1042  | 1026  | 740   | 369   | 775   | 569   | 876   | 725   | 341  | 436    | 895  | 490      | 255  | 368         | 393  | 117    | 364  | 291   | 186  | 195  | 251  | 231  | 334  | 251      | 218  | 288  | 79   | 133  |
| u        | 2604  | 1577        | 2010  | 1692  | 1147  | 1172  | 695   | 796   | 718   | 779   | 513   | 796   | 675   | 459  | 484    | 599  | 616      | 373  | 402         | 318  | 260    | 209  | 365   | 334  | 284  | 274  | 253  | 155  | 131      | 75   | 262  | 291  | 355  |
| XOX      | 3260  | 1557        | 1531  | 1464  | 1320  | 1070  | 738   | 763   | 717   | 810   | 637   | 690   | 807   | 466  | 467    | 441  | 283      | 485  | 350         | 346  | 496    | 388  | 186   | 434  | 272  | 271  | 166  | 217  | 192      | 253  | 1477 | 166  | 173  |
| eir      | 2295  | 1749        | 2030  | 1110  | 1201  | 1275  | 807   | 740   | 563   | 819   | 427   | 635   | 620   | 439  | 490    | 361  | 362      | 342  | 222         | 318  | 332    | 220  | 208   | 223  | 185  | 187  | 222  | 239  | 128      | 189  | 170  | 294  | 277  |
| rface    | 3503  | 1609        | 1265  | 1484  | 1267  | 1325  | 705   | 688   | 803   | 747   | 653   | 595   | 506   | 546  | 510    | 405  | 172      | 364  | 453         | 235  | 224    | 187  | 85    | 267  | 197  | 188  | 171  | 188  | 133      | 108  | 137  | 238  | 191  |
| W        | 2637  | 1574        | 1530  | 1104  | 1022  | 1196  | 729   | 835   | 933   | 722   | 669   | 670   | 597   | 652  | 503    | 444  | 530      | 337  | 341         | 296  | 235    | 197  | 340   | 254  | 187  | 145  | 237  | 185  | 197      | 189  | 182  | 249  | 209  |
| n.       | 2649  | 1510        | 1294  | 1258  | 1113  | 1021  | 781   | 747   | 409   | 587   | 581   | 565   | 466   | 1306 | 416    | 478  | 502      | 225  | 284         | 376  | 156    | 180  | 266   | 172  | 180  | 201  | 177  | 246  | 191      | 90   | 206  | 132  | 490  |
| re       | 2602  | 1528        | 1670  | 1261  | 1122  | 1315  | 765   | 661   | 725   | 888   | 659   | 594   | 612   | 491  | 511    | 515  | 497      | 341  | 325         | 305  | 315    | 195  | 319   | 242  | 144  | 210  | 201  | 200  | 218      | 148  | 208  | 244  | 195  |
| ich      | 2795  | 1543        | 1508  | 1394  | 1222  | 1018  | 903   | 710   | 884   | 779   | 650   | 473   | 596   | 619  | 432    | 450  | 429      | 364  | 295         | 343  | 423    | 230  | 243   | 312  | 204  | 148  | 179  | 224  | 194      | 189  | 234  | 221  | 182  |
| 18       | 2514  | 1610        | 2360  | 1202  | 1273  | 1122  | 653   | 920   | 673   | 977   | 666   | 754   | 656   | 581  | 490    | 542  | 1017     | 455  | 320         | 306  | 381    | 112  | 554   | 227  | 248  | 180  | 261  | 231  | 230      | 152  | 163  | 229  | 293  |
| be       | 2156  | 1614        | 1375  | 981   | 1038  | 1310  | 961   | 595   | 498   | 817   | 770   | 485   | 464   | 403  | 346    | 355  | 64       | 253  | 303         | 350  | 251    | 144  | 33    | 151  | 124  | 132  | 166  | 184  | 179      | 291  | 73   | 167  | 131  |
| lay      | 2189  | 1553        | 942   | 977   | 953   | 969   | 626   | 714   | 505   | 568   | 570   | 551   | 349   | 261  | 348    | 392  | 311      | 370  | 168         | 164  | 262    | 212  | 176   | 171  | 203  | 132  | 130  | 84   | 208      | 510  | 152  | 115  | 90   |
| ftware   | 2253  | 1415        | 1311  | 1107  | 991   | 937   | 645   | 718   | 612   | 765   | 689   | 495   | 565   | 428  | 435    | 421  | 337      | 254  | 226         | 274  | 226    | 148  | 149   | 141  | 166  | 139  | 156  | 209  | 249      | 183  | 87   | 106  | 110  |
|          | 2009  | 1240        | 1584  | 966   | 862   | 849   | 639   | 522   | 500   | 593   | 564   | 430   | 541   | 403  | 462    | 396  | 220      | 252  | 215         | 233  | 200    | 150  | 153   | 187  | 178  | 166  | 166  | 174  | 123      | 99   | 111  | 178  | 134  |

obama



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| l l          | salestine in | to   |     | of  | pai | lestinian the | for | isra | el on | and | 3   | isra | eli with | is  | at  | new | isra | aelpalest peac | e un | from | by  | pales | stinian: afte: | r state | east | Over | pales | tines as | us | gaza | confli | t says | bank |
|--------------|--------------|------|-----|-----|-----|---------------|-----|------|-------|-----|-----|------|----------|-----|-----|-----|------|----------------|------|------|-----|-------|----------------|---------|------|------|-------|----------|----|------|--------|--------|------|
| palestine    | 10           | 1023 | 977 | 639 | 656 | 48            | 487 | 568  | 437   | 355 | 339 | 216  | 142      | 211 | 121 | 140 | 169  | 2              | 116  | 123  | 101 | 83    | 23             | 106     | 118  | 106  | 85    | 0        | 77 | 54   | 29     | 31     | 51   |
| in           | 1023         | 170  | 417 | 426 | 355 | 319           | 337 | 211  | 205   | 107 | 137 | 115  | 143      | 93  | 73  | 39  | 65   | 65             | 57   | 51   | 33  | 57    | 76             | 51      | 29   | 84   | 41    | 47       | 32 | 42   | 75     | 48     | 32   |
| 10           | 977          | 417  | 232 | 508 | 260 | 417           | 246 | 234  | 332   | 197 | 136 | 122  | 96       | 72  | 79  | 56  | 67   | 61             | 83   | 97   | 89  | 38    | 48             | 34      | 73   | 44   | 30    | 33       | 35 | 56   | 33     | 37     | 44   |
|              | 639          | 426  | 508 | 6   | 466 | 392           | 382 | 264  | 224   | 200 | 243 | 156  | 148      | 116 | 90  | 66  | 60   | 69             | 71   | 69   | 78  | 58    | 49             | 59      | 32   | 19   | 58    | 37       | 70 | 34   | 14     | 36     | 50   |
| of           | 656          | 355  | 260 | 466 | 194 | 322           | 533 | 162  | 170   | 132 | 124 | 152  | 99       | 76  | 66  | 72  | 45   | 58             | 35   | 69   | 35  | 39    | 49             | 20      | 107  | 37   | 23    | 36       | 40 | 24   | 31     | 35     | 32   |
| palestinian  | 48           | 319  | 417 | 392 | 322 | 18            | 240 | 190  | 195   | 101 | 103 | 115  | 196      | 81  | 69  | 59  | 39   | 4              | 20   | 49   | 69  | 73    | 1              | 47      | 55   | 12   | 38    | 2        | 30 | 28   | 32     | 6      | 28   |
| the          | 487          | 337  | 246 | 382 | 533 | 240           | 368 | 135  | 115   | 126 | 210 | 151  | 47       | 49  | 113 | 56  | 30   | 64             | 27   | 26   | 62  | 27    | 27             | 28      | 28   | 46   | 16    | 34       | 18 | 37   | 12     | 74     | 10   |
| for          | 568          | 211  | 234 | 264 | 162 | 190           | 135 | 68   | 177   | 61  | 76  | 98   | 50       | 30  | 48  | 30  | 71   | 32             | 78   | 67   | 16  | 13    | 34             | 16      | 40   | 11   | 14    | 24       | 32 | 32   | 18     | 9      | 16   |
| israel       | 437          | 205  | 332 | 224 | 170 | 195           | 115 | 177  | 4     | 106 | 178 | 58   | 5        | 72  | 49  | 24  | 14   | 2              | 58   | 38   | 48  | 37    | 54             | 21      | 14   | 6    | 41    | 11       | 41 | 31   | 24     | 14     | 22   |
| on           | 355          | 107  | 197 | 200 | 132 | 101           | 126 | 61   | 106   | 66  | 67  | 54   | 50       | 23  | 26  | 14  | 28   | 55             | 27   | 34   | 11  | 9     | 16             | 6       | 20   | 11   | 12    | 12       | 13 | 37   | 16     | 20     | 13   |
| and          | 339          | 137  | 136 | 243 | 124 | 103           | 210 | 76   | 178   | 67  | 36  | 77   | 43       | 31  | 33  | 26  | 21   | 17             | 42   | 14   | 11  | 18    | 18             | 5       | 7    | 8    | 10    | 14       | 10 | 14   | 6      | 12     | 12   |
| 3.           | 216          | 115  | 122 | 156 | 152 | 115           | 151 | 98   | 58    | 54  | 77  | 96   | 16       | 24  | 80  | 21  | 31   | 37             | 20   | 2    | 30  | 18    | 15             | 15      | 39   | 9    | 11    | 12       | 31 | 11   | 10     | 24     | 11   |
| israeli      | 142          | 143  | 96  | 148 | 99  | 196           | 47  | 50   | 5     | 50  | 43  | 16   | 2        | 31  | 25  | 24  | 11   | 0              | 11   | 21   | 24  | 21    | 49             | 15      | 6    | 7    | 14    | 2        | 15 | 7    | 32     | 2      | 16   |
| with         | 211          | 93   | 72  | 116 | 76  | 81            | 49  | 30   | 72    | 23  | 31  | 24   | 31       | 6   | 22  | 10  | 18   | 7              | 23   | 7    | 7   | 3     | 8              | 8       | 9    | 14   | 8     | 4        | 8  | 6    | 8      | 4      | 6    |
| is           | 121          | 73   | 79  | 90  | 66  | 69            | 113 | 48   | 49    | 26  | 33  | 80   | 25       | 22  | 18  | 6   | 12   | 17             | 21   | 2    | 13  | 12    | 7              | 3       | 4    | 1    | 4     | 12       | 6  | 9    | 1      | 15     | 21   |
| at           | 140          | 39   | 56  | 66  | 72  | 59            | 56  | 30   | 24    | 14  | 26  | 21   | 24       | 10  | 6   | 2   | 8    | 14             | 4    | 25   | 4   | 11    | 18             | 17      | 12   | 4    | 6     | 9        | 4  | 5    | 6      | 8      | 2    |
| Dem          | 169          | 65   | 67  | 60  | 45  | 39            | 30  | 71   | 14    | 28  | 21  | 31   | 11       | 18  | 12  | 8   | 4    | 8              | 6    | 18   | 3   | 18    | 6              | 11      | 13   | 6    | 12    | 9        | 7  | 2    | 4      | 4      | 8    |
| israelpalest | 2            | 65   | 61  | 69  | 58  | 4             | 64  | 32   | 2     | 55  | 17  | 37   | 0        | 7   | 17  | 14  | 8    | 0              | 43   | 10   | 2   | 5     | 0              | 1       | 3    | 0    | 17    | 0        | 5  | 10   | 0      | 66     | 9    |
| peace        | 116          | 57   | 83  | 71  | 35  | 20            | 27  | 78   | 58    | 27  | 42  | 20   | 11       | 23  | 21  | 4   | 6    | 43             | 6    | 6    | 8   | 5     | 5              | 0       | 1    | 10   | 4     | 3        | 1  | 6    | 0      | 5      | 12   |
| un           | 123          | 51   | 97  | 69  | 69  | 49            | 26  | 67   | 38    | 34  | 14  | 2    | 21       | 7   | 2   | 25  | 18   | 10             | 6    | 4    | 9   | 8     | 7              | 2       | 5    | 3    | 13    | 2        | 8  | 7    | 3      | 5      | 2    |
| from         | 101          | 33   | 89  | 78  | 35  | 69            | 62  | 16   | 48    | 11  | 11  | 30   | 24       | 7   | 13  | 4   | 3    | 2              | 8    | 9    | 2   | 4     | 8              | 8       | 1    | 2    | 3     | 0        | 3  | 4    | 9      | 2      | 3    |
| by           | 83           | 57   | 38  | 58  | 39  | 73            | 27  | 13   | 37    | 9   | 18  | 18   | 21       | 3   | 12  | 11  | 18   | 5              | 5    | 8    | 4   | 2     | 13             | 5       | 4    | 8    | 3     | 1        | 5  | 4    | 6      | 2      | 6    |
| palestinians | 23           | 76   | 48  | 49  | 49  | 1             | 27  | 34   | 54    | 16  | 18  | 15   | 49       | 8   | 7   | 18  | 6    | 0              | 5    | 7    | 8   | 13    | 0              | 4       | 2    | 0    | 5     | 2        | 9  | 1    | 6      | 1      | 2    |
| after        | 106          | 51   | 34  | 59  | 20  | 47            | 28  | 16   | 21    | 6   | 5   | 15   | 15       | 8   | 3   | 17  | 11   | 1              | 0    | 2    | 8   | 5     | 4              | 0       | 1    | 1    | 5     | 0        | 0  | 3    | 5      | 0      | 1    |
| state        | 118          | 29   | 73  | 32  | 107 | 55            | 28  | 40   | 14    | 20  | 7   | 39   | 6        | 9   | 4   | 12  | 13   | 3              | 1    | 5    | 1   | 4     | 2              | 1       | 4    | 8    | 2     | 5        | 8  | 12   | 2      | 1      | 11   |
| east         | 106          | 84   | 44  | 19  | 37  | 12            | 46  | 11   | 6     | 11  | 8   | 9    | 7        | 14  | 1   | 4   | 6    | 0              | 10   | 3    | 2   | 8     | 0              | 1       | 8    | 0    | 0     | 6        | 5  | 2    | 0      | 1      | 2    |
| over         | 85           | 41   | 30  | 58  | 23  | 38            | 16  | 14   | 41    | 12  | 10  | 11   | 14       | 8   | 4   | 6   | 12   | 17             | 4    | 13   | 3   | 3     | 5              | 5       | 2    | 0    | 0     | 1        | 1  | 7    | 4      | 3      | 1    |
| palestines   | 0            | 47   | 33  | 37  | 36  | 2             | 34  | 24   | 11    | 12  | 14  | 12   | 2        | 4   | 12  | 9   | 9    | 0              | 3    | 2    | 0   | 1     | 2              | 0       | 5    | 6    | 1     | 0        | 5  | 2    | 1      | 6      | 2    |
| 3.8          | 77           | 32   | 35  | 70  | 40  | 30            | 18  | 32   | 41    | 13  | 10  | 31   | 15       | 8   | 6   | 4   | 7    | 5              | 1    | 8    | 3   | 5     | 9              | 0       | 8    | 5    | 1     | 5        | 14 | 3    | 3      | 2      | 1    |
| us           | 54           | 42   | 56  | 34  | 24  | 28            | 37  | 32   | 31    | 37  | 14  | 11   | 7        | 6   | 9   | 5   | 2    | 10             | 6    | 7    | 4   | 4     | 1              | 3       | 12   | 2    | 7     | 2        | 3  | 0    | 0      | 4      | 9    |
| gaza         | 29           | 75   | 33  | 14  | 31  | 32            | 12  | 18   | 24    | 16  | 6   | 10   | 32       | 8   | 1   | 6   | 4    | 0              | 0    | 3    | 9   | 6     | 6              | 5       | 2    | 0    | 4     | 1        | 3  | 0    | 0      | 0      | 3    |
| conflict     | 31           | 48   | 37  | 36  | 35  | 6             | 74  | 9    | 14    | 20  | 12  | 24   | 2        | 4   | 15  | 8   | 4    | 66             | 5    | 5    | 2   | 2     | 1              | 0       | 1    | 1    | 3     | 6        | 2  | 4    | 0      | 0      | 5    |
| says         | 51           | 32   | 44  | 50  | 32  | 28            | 10  | 16   | 22    | 13  | 12  | 11   | 16       | 6   | 21  | 2   | 8    | 9              | 12   | 2    | 3   | 6     | 2              | 1       | 11   | 2    | 1     | 2        | 1  | 9    | 3      | 5      | 0    |
| bank         | 48           | 79   | 26  | 24  | 26  | 34            | 23  | 10   | 27    | 9   | 9   | 8    | 22       | 6   | 2   | 7   | 10   | 2              | 1    | 6    | 10  | 5     | 22             | 5       | 0    | 0    | 6     | 2        | 4  | 2    | 12     | 0      | 2    |
| support      | 74           | 30   | 68  | 34  | 25  | 33            | 8   | 67   | 11    | 7   | 11  | 3    | 0        | 2   | 2   | 1   | 2    | 2              | 3    | 6    | 2   | 3     | 4              | 3       | 10   | 0    | 5     | 3        | 1  | 9    | 2      | 1      | 2    |
| will         | 73           | 20   | 35  | 38  | 18  | 24            | 21  | 20   | 29    | 15  | 14  | 8    | 1        | 3   | 2   | 6   | 8    | 1              | 10   | 1    | 4   | 2     | 7              | 1       | 14   | 7    | 2     | 4        | 3  | 6    | 1      | 1      | 10   |
| teccas       | 21           | 82   | 18  | 10  | 26  | 1             | 27  | 6    | 0     | 8   | 1   | 0    | 3        | 14  | 0   | 9   | 0    | 0              | 0    | 0    | 1   | 10    | 0              | 23      | 5    | 56   | 3     | 1        | 4  | 2    | 0      | 0      | 1    |
| west         | 34           | 81   | 25  | 28  | 21  | 31            | 29  | 9    | 35    | 13  | 12  | 8    | 27       | 3   | 2   | 2   | 8    | 2              | 3    | 6    | 13  | 3     | 26             | 4       | 1    | 0    | 6     | 3        | 4  | 3    | 11     | 0      | 0 1  |
| 2016         | 117          | 46   | 11  | 7   | 20  | 5             | 4   | 3    | 1     | 0   | 1   | 3    | 3        | 2   | 0   | 3   | 1    | 3              | 0    | 1    | 0   | 4     | 2              | 0       | 7    | 1    | 0     | 1        | 0  | 0    | 0      | 1      | 4    |
| killed       | 39           | 94   | 8   | 24  | 19  | 35            | 6   | 3    | 13    | 8   | 6   | 3    | 19       | 4   | 1   | 2   | 2    | 0              | 0    | 2    | 1   | 28    | 21             | 6       | 0    | 19   | 1     | 0        | 8  | 3    | 4      | 0      | 0    |
| abbas        | 44           | 26   | 54  | 21  | 49  | 27            | 20  | 17   | 5     | 11  | 3   | 16   | 7        | 5   | 7   | 10  | 5    | 1              | 2    | 4    | 1   | 7     | 5              | 14      | 21   | 0    | 1     | 13       | 4  | 2    | 1      | 0      | 11   |
| world        | 72           | 47   | 64  | 22  | 14  | 11            | 23  | 13   | 7     | 49  | 5   | 6    | 4        | 4   | 4   | 5   | 1    | 1              | 6    | 1    | 4   | 2     | 3              | 2       | 1    | 2    | 3     | 4        | 4  | 0    | 0      | 0      | 7    |
| visit        | 97           | 12   | 107 | 14  | 17  | 10            | 3   | 17   | 73    | 15  | 12  | 2    | 0        | 4   | 0   | 2   | 0    | 1              | 4    | 0    | 8   | 0     | 1              | 4       | 2    | 0    | 2     | 1        | 2  | 3    | 2      | 1      | 2    |
| not          | 55           | 18   | 23  | 21  | 12  | 15            | 15  | 5    | 25    | 5   | 12  | 16   | 1        | 10  | 21  | 3   | 0    | 6              | 13   | 2    | 0   | 1     | 7              | 1       | 4    | 3    | 2     | 1        | 5  | 2    | 3      | 3      | 19   |
| be           | 54           | 28   | 58  | 39  | 22  | 23            | 16  | 16   | 16    | 21  | 7   | 14   | 10       | 5   | 5   | 4   | 3    | 8              | 4    | 4    | 3   | 5     | 0              | 2       | 5    | 4    | 1     | 3        | 2  | 5    | 1      | 4      | 7    |
| police       | 80           | 41   | 16  | 17  | 10  | 8             | 6   | 25   | 3     | 8   | 4   | 3    | 8        | 3   | 0   | 3   | 1    | 0              | 0    | 1    | 1   | 11    | 0              | 7       | 1    | 2    | 5     | 0        | 1  | 0    | 0      | 0      | 0    |
| calls        | 71           | 20   | 58  | 28  | 31  | 19            | 1   | 74   | 19    | 60  | 10  | 3    | 14       | 3   | 1   | 1   | 3    | 4              | 10   | 14   | 1   | 2     | 3              | 0       | 4    | 0    | 1     | 1        | 4  | 3    | 2      | 0      | 0    |
| talks        | 52           | 21   | 37  | 23  | 19  | 10            | 11  | 23   | 34    | 12  | 14  | 2    | 1        | 20  | 0   | 2   | 1    | 15             | 29   | 4    | 5   | 3     | 5              | 1       | 2    | 4    | 5     | 2        | 1  | 4    | 1      | 1      | 3    |

Headline

|           | the of |       | in   | to    |      | destine an |      | alestinian on |      |      | is   | th   |      |      |      | by   |      | raeli an | Wa   |      | rael as |      |      |      |      |      |      | its | are  |      |      | it   | be   |
|-----------|--------|-------|------|-------|------|------------|------|---------------|------|------|------|------|------|------|------|------|------|----------|------|------|---------|------|------|------|------|------|------|-----|------|------|------|------|------|
| he        | 23894  | 15380 | 9503 | 10472 | 9729 | 7721       | 8093 | 6000          | 4952 | 4250 | 4190 | 3139 | 2885 | 2471 | 2213 | 2468 | 2337 | 1904     | 1751 | 1998 | 1913    | 1937 | 1792 | 1122 | 1287 | 1165 | 1099 | 887 | 1258 | 1165 | 1315 | 1036 | 1134 |
|           | 15380  | 5532  | 5325 | 4783  | 4357 | 3948       | 3945 | 2863          | 2303 | 1845 | 2122 | 1584 | 1272 | 1148 | 1065 | 1057 | 1065 | 983      | 975  | 897  | 928     | 891  | 803  | 577  | 480  | 563  | 568  | 524 | 595  | 636  | 579  | 530  | 494  |
|           | 9503   | 5325  | 4516 | 4582  | 4070 | 3335       | 3135 | 2525          | 2033 | 1914 | 2005 | 1444 | 1250 | 1051 | 1084 | 1140 | 910  | 867      | 953  | 1112 | 742     | 857  | 856  | 884  | 441  | 633  | 500  | 486 | 432  | 424  | 528  | 479  | 481  |
|           | 10472  | 4783  | 4582 | 3332  | 3384 | 3300       | 3226 | 2148          | 1794 | 1549 | 1786 | 1196 | 1048 | 869  | 914  | 869  | 833  | 781      | 773  | 888  | 708     | 720  | 644  | 504  | 487  | 476  | 459  | 518 | 449  | 499  | 475  | 451  | 389  |
|           | 9729   | 4357  | 4070 | 3384  | 3408 | 3078       | 3035 | 1965          | 1821 | 1555 | 1810 | 1275 | 1007 | 852  | 734  | 667  | 741  | 607      | 763  | 615  | 903     | 724  | 665  | 426  | 543  | 487  | 443  | 490 | 509  | 411  | 556  | 448  | 469  |
| lestine   | 7721   | 3948  | 3335 | 3300  | 3078 | 1110       | 2663 | 528           | 1562 | 1535 | 1457 | 1015 | 828  | 670  | 725  | 879  | 625  | 287      | 623  | 624  | 647     | 584  | 628  | 392  | 497  | 589  | 347  | 251 | 413  | 357  | 375  | 365  | 331  |
| 1         | 8093   | 3945  | 3135 | 3226  | 3035 | 2663       | 2178 | 1714          | 1531 | 1255 | 1539 | 1072 | 870  | 614  | 706  | 654  | 713  | 616      | 553  | 561  | 916     | 632  | 542  | 336  | 475  | 344  | 425  | 340 | 370  | 449  | 399  | 347  | 365  |
| lestinian | 6000   | 2863  | 2525 | 2148  | 1965 | 528        | 1714 | 626           | 1054 | 751  | 516  | 624  | 595  | 524  | 575  | 420  | 542  | 821      | 444  | 430  | 408     | 455  | 316  | 267  | 258  | 102  | 266  | 292 | 241  | 238  | 336  | 194  | 211  |
|           | 4952   | 2303  | 2033 | 1794  | 1821 | 1562       | 1531 | 1054          | 814  | 716  | 959  | 444  | 560  | 335  | 413  | 500  | 399  | 387      | 401  | 404  | 438     | 290  | 301  | 193  | 298  | 208  | 180  | 228 | 203  | 168  | 316  | 186  | 194  |
|           | 4250   | 1845  | 1914 | 1549  | 1555 | 1535       | 1255 | 751           | 716  | 596  | 773  | 530  | 405  | 456  | 324  | 347  | 309  | 211      | 359  | 327  | 319     | 262  | 244  | 191  | 204  | 297  | 206  | 162 | 252  | 170  | 193  | 232  | 183  |
|           | 4190   | 2122  | 2005 | 1786  | 1810 | 1457       | 1539 | 516           | 959  | 773  | 32   | 507  | 502  | 442  | 400  | 458  | 391  | 254      | 416  | 385  | 371     | 334  | 332  | 307  | 217  | 254  | 233  | 217 | 236  | 220  | 285  | 163  | 194  |
|           | 3139   | 1584  | 1444 | 1196  | 1275 | 1015       | 1072 | 624           | 444  | 530  | 507  | 492  | 516  | 198  | 264  | 218  | 261  | 184      | 254  | 118  | 275     | 250  | 220  | 125  | 139  | 125  | 83   | 136 | 155  | 125  | 159  | 217  | 248  |
| 4         | 2885   | 1272  | 1250 | 1048  | 1007 | 828        | 870  | 595           | 560  | 405  | 502  | 516  | 314  | 346  | 227  | 173  | 203  | 218      | 256  | 269  | 323     | 239  | 210  | 110  | 166  | 105  | 177  | 115 | 129  | 168  | 245  | 119  | 220  |
| 3         | 2471   | 1148  | 1051 | 869   | 852  | 670        | 614  | 524           | 335  | 456  | 442  | 198  | 346  | 152  | 192  | 150  | 184  | 179      | 271  | 106  | 218     | 187  | 140  | 115  | 77   | 91   | 43   | 129 | 204  | 59   | 106  | 77   | 132  |
| h         | 2213   | 1065  | 1084 | 914   | 734  | 725        | 706  | 575           | 413  | 324  | 400  | 264  | 227  | 192  | 186  | 209  | 125  | 162      | 201  | 187  | 221     | 179  | 141  | 122  | 113  | 124  | 105  | 157 | 101  | 92   | 111  | 77   | 82   |
|           | 2468   | 1057  | 1140 | 869   | 667  | 879        | 654  | 420           | 500  | 347  | 458  | 218  | 173  | 150  | 209  | 252  | 185  | 150      | 242  | 236  | 114     | 95   | 162  | 156  | 178  | 109  | 95   | 102 | 89   | 80   | 85   | 88   | 90   |
|           | 2337   | 1065  | 910  | 833   | 741  | 625        | 713  | 542           | 399  | 309  | 391  | 261  | 203  | 184  | 125  | 185  | 154  | 240      | 202  | 342  | 183     | 133  | 136  | 107  | 114  | 79   | 94   | 80  | 87   | 82   | 95   | 107  | 108  |
| eli       | 1904   | 983   | 867  | 781   | 607  | 287        | 616  | 821           | 387  | 211  | 254  | 184  | 218  | 179  | 162  | 150  | 240  | 226      | 281  | 185  | 117     | 128  | 108  | 142  | 49   | 47   | 99   | 80  | 57   | 78   | 131  | 55   | 64   |
|           | 1751   | 975   | 953  | 773   | 763  | 623        | 553  | 444           | 401  | 359  | 416  | 254  | 256  | 271  | 201  | 242  | 202  | 281      | 178  | 251  | 154     | 197  | 125  | 199  | 85   | 150  | 89   | 91  | 129  | 54   | 112  | 54   | 119  |
|           | 1998   | 897   | 1112 | 888   | 615  | 624        | 561  | 430           | 404  | 327  | 385  | 118  | 269  | 106  | 187  | 236  | 342  | 185      | 251  | 258  | 125     | 177  | 152  | 233  | 29   | 112  | 76   | 121 | 82   | 40   | 102  | 90   | 181  |
| el        | 1913   | 928   | 742  | 708   | 903  | 647        | 916  | 408           | 438  | 319  | 371  | 275  | 323  | 218  | 221  | 114  | 183  | 117      | 154  | 125  | 120     | 175  | 121  | 71   | 126  | 48   | 99   | 66  | 104  | 103  | 102  | 56   | 111  |
|           | 1937   | 891   | 857  | 720   | 724  | 584        | 632  | 455           | 290  | 262  | 334  | 250  | 239  | 187  | 179  | 95   | 133  | 128      | 197  | 177  | 175     | 234  | 145  | 76   | 84   | 87   | 104  | 107 | 122  | 109  | 59   | 82   | 107  |
| m         | 1792   | 803   | 856  | 644   | 665  | 628        | 542  | 316           | 301  | 244  | 332  | 220  | 210  | 140  | 141  | 162  | 136  | 108      | 125  | 152  | 121     | 145  | 202  | 96   | 79   | 55   | 96   | 100 | 54   | 80   | 88   | 82   | 103  |
| er        | 1122   | 577   | 884  | 504   | 426  | 392        | 336  | 267           | 193  | 191  | 307  | 125  | 110  | 115  | 122  | 156  | 107  | 142      | 199  | 233  | 71      | 76   | 96   | 54   | 38   | 82   | 56   | 96  | 93   | 41   | 55   | 28   | 50   |
| 1         | 1287   | 480   | 441  | 487   | 543  | 497        | 475  | 258           | 298  | 204  | 217  | 139  | 166  | 77   | 113  | 178  | 114  | 49       | 85   | 29   | 126     | 84   | 79   | 38   | 146  | 54   | 34   | 56  | 61   | 33   | 112  | 77   | 60   |
| t         | 1165   | 563   | 633  | 476   | 487  | 589        | 344  | 102           | 208  | 297  | 254  | 125  | 105  | 91   | 124  | 109  | 79   | 47       | 150  | 112  | 48      | 87   | 55   | 82   | 54   | 90   | 40   | 15  | 62   | 39   | 37   | 91   | 44   |
| 9         | 1099   | 568   | 500  | 459   | 443  | 347        | 425  | 266           | 180  | 206  | 233  | 83   | 177  | 43   | 105  | 95   | 94   | 99       | 89   | 76   | 99      | 104  | 96   | 56   | 34   | 40   | 44   | 41  | 40   | 79   | 68   | 56   | 34   |
|           | 887    | 524   | 486  | 518   | 490  | 251        | 340  | 292           | 228  | 162  | 217  | 136  | 115  | 129  | 157  | 102  | 80   | 80       | 91   | 121  | 66      | 107  | 100  | 96   | 56   | 15   | 41   | 194 | 33   | 37   | 74   | 29   | 38   |
|           | 1258   | 595   | 432  | 449   | 509  | 413        | 370  | 241           | 203  | 252  | 236  | 155  | 129  | 204  | 101  | 89   | 87   | 57       | 129  | 82   | 104     | 122  | 54   | 93   | 61   | 62   | 40   | 33  | 90   | 41   | 52   | 38   | 84   |
|           | 1165   | 636   | 424  | 499   | 411  | 357        | 449  | 238           | 168  | 170  | 220  | 125  | 168  | 59   | 92   | 80   | 82   | 78       | 54   | 40   | 103     | 109  | 80   | 41   | 33   | 39   | 79   | 37  | 41   | 106  | 63   | 47   | 48   |
| d         | 1315   | 579   | 528  | 475   | 556  | 375        | 399  | 336           | 316  | 193  | 285  | 159  | 245  | 106  | 111  | 85   | 95   | 131      | 112  | 102  | 102     | 59   | 88   | 55   | 112  | 37   | 68   | 74  | 52   | 63   | 62   | 42   | 86   |
|           | 1036   | 530   | 479  | 451   | 448  | 365        | 347  | 194           | 186  | 232  | 163  | 217  | 119  | 77   | 77   | 88   | 107  | 55       | 54   | 90   | 56      | 82   | 82   | 28   | 77   | 91   | 56   | 29  | 38   | 47   | 42   | 50   | 43   |
|           | 1134   | 494   | 481  | 389   | 469  | 331        | 365  | 211           | 194  | 183  | 194  | 248  | 220  | 132  | 82   | 90   | 108  | 64       | 119  | 181  | 111     | 107  | 103  | 50   | 60   | 44   | 34   | 38  | 84   | 48   | 86   | 43   | 74   |
|           | 1055   | 458   | 442  | 389   | 605  | 327        | 333  | 189           | 211  | 153  | 212  | 169  | 181  | 84   | 92   | 89   | 101  | 47       | 70   | 53   | 80      | 84   | 89   | 49   | 247  | 57   | 36   | 49  | 46   | 30   | 73   | 59   | 66   |
| te        | 1175   | 633   | 462  | 399   | 440  | 365        | 272  | 258           | 192  | 127  | 178  | 150  | 137  | 109  | 95   | 90   | 84   | 41       | 85   | 52   | 101     | 77   | 60   | 41   | 99   | 40   | 34   | 43  | 66   | 38   | 77   | 36   | 70   |
| άΤ        | 750    | 389   | 261  | 380   | 410  | 299        | 422  | 186           | 207  | 189  | 189  | 93   | 112  | 43   | 95   | 89   | 68   | 47       | 52   | 31   | 41      | 65   | 78   | 65   | 49   | 57   | 97   | 22  | 29   | 84   | 49   | 33   | 32   |
| sident    | 797    | 478   | 294  | 270   | 434  | 219        | 196  | 319           | 227  | 119  | 149  | 96   | 89   | 84   | 133  | 52   | 73   | 37       | 56   | 44   | 69      | 69   | 31   | 26   | 68   | 16   | 22   | 90  | 18   | 10   | 83   | 18   | 16   |
| en        | 908    | 463   | 441  | 377   | 285  | 271        | 248  | 183           | 146  | 223  | 174  | 84   | 158  | 366  | 73   | 78   | 92   | 69       | 74   | 48   | 80      | 78   | 74   | 39   | 11   | 48   | 154  | 31  | 59   | 56   | 34   | 46   | 40   |
| emation:  | 875    | 433   | 337  | 269   | 503  | 303        | 169  | 155           | 151  | 280  | 120  | 72   | 66   | 68   | 75   | 72   | 56   | 37       | 107  | 31   | 47      | 46   | 25   | 24   | 42   | 144  | 22   | 16  | 61   | 28   | 33   | 66   | 27   |
| f         | 885    | 378   | 455  | 376   | 309  | 341        | 267  | 131           | 176  | 156  | 157  | 114  | 67   | 75   | 82   | 100  | 57   | 29       | 40   | 70   | 62      | 61   | 76   | 46   | 55   | 31   | 36   | 38  | 40   | 46   | 20   | 40   | 47   |
| t         | 1114   | 550   | 424  | 552   | 309  | 187        | 324  | 314           | 182  | 110  | 173  | 82   | 76   | 75   | 88   | 88   | 91   | 182      | 71   | 78   | 87      | 55   | 61   | 57   | 74   | 30   | 37   | 22  | 51   | 39   | 52   | 40   | 33   |
| ,         | 772    | 399   | 487  | 318   | 333  | 247        | 227  | 241           | 120  | 144  | 138  | 139  | 76   | 75   | 104  | 67   | 69   | 101      | 87   | 126  | 57      | 53   | 82   | 38   | 28   | 36   | 61   | 53  | 14   | 59   | 49   | 34   | 24   |
|           | 722    | 339   | 416  | 345   | 321  | 227        | 246  | 203           | 130  | 144  | 140  | 130  | 167  | 95   | 75   | 55   | 61   | 73       | 84   | 152  | 74      | 134  | 64   | 57   | 39   | 18   | 35   | 141 | 35   | 32   | 81   | 25   | 35   |
| ister     | 636    | 318   | 263  | 237   | 375  | 230        | 264  | 222           | 255  | 127  | 196  | 84   | 79   | 64   | 146  | 73   | 65   | 99       | 51   | 51   | 132     | 47   | 38   | 28   | 102  | 19   | 12   | 61  | 29   | 9    | 68   | 25   | 20   |
| ık        | 1034   | 520   | 386  | 504   | 271  | 162        | 261  | 295           | 133  | 96   | 159  | 76   | 73   | 84   | 56   | 85   | 79   | 167      | 66   | 68   | 55      | 48   | 70   | 55   | 53   | 20   | 47   | 19  | 70   | 41   | 52   | 34   | 31   |
| t         | 842    | 376   | 293  | 279   | 364  | 254        | 254  | 167           | 127  | 119  | 145  | 166  | 144  | 66   | 53   | 58   | 74   | 38       | 59   | 76   | 91      | 82   | 76   | 29   | 67   | 27   | 51   | 56  | 39   | 73   | 97   | 40   | 75   |
| 2016      | 631    | 322   | 278  | 248   | 247  | 308        | 125  | 89            | 148  | 170  | 101  | 55   | 29   | 33   | 59   | 90   | 62   | 32       | 32   | 56   | 22      | 30   | 59   | 19   | 31   | 103  | 17   | 17  | 42   | 20   | 8    | 54   | 11   |
| re        | 702    | 316   | 324  | 336   | 265  | 267        | 303  | 142           | 162  | 82   | 164  | 23   | 118  | 27   | 64   | 83   | 99   | 70       | 86   | 60   | 43      | 66   | 85   | 56   | 6    | 60   | 28   | 15  | 35   | 18   | 48   | 26   | 19   |

# 小組分工

| 學號、姓名 | 貢獻比例 | 工作內容          |
|-------|------|---------------|
| 楊明哲   | 100% | 程式編寫、除錯以及文書處理 |