```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from textblob import TextBlob
```

```
df = pd.read_json('All_Beauty_5.json',lines=True)
df.head(2)
```

	overall	verified	reviewTime	reviewerID	asin	style	reviewerI
0	5	True	09 1, 2016	A3CIUOJXQ5VDQ2	B0000530HU	{'Size:': ' 7.0 oz', 'Flavor:': ' Classic Ice ...	She
						{'Size:': ' 7.0 oz'	

```
df.columns
```

```
Index(['overall', 'verified', 'reviewTime', 'reviewerID', 'asin', 'style',
       'reviewerName', 'reviewText', 'summary', 'unixReviewTime', 'vote',
       'image'],
      dtype='object')
```

```
df2 = df[['overall','verified','reviewTime','reviewerName','reviewText','summary']].copy()
df2.head(2)
```

	overall	verified	reviewTime	reviewerName	reviewText	summary
0	5	True	09 1, 2016	Shelly F	As advertised. Reasonably priced	Five Stars
1	5	True	11 14, 2013	housecrules18	Like the oder and the feel	Good for

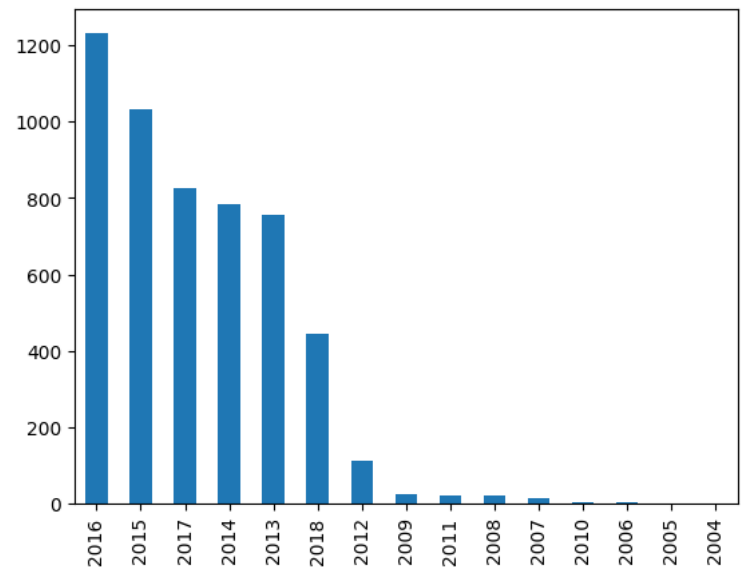
```
df2['reviewTime'] = df2['reviewTime'].apply(lambda x: x.split(',')[-1].strip())
```

```
df2.head(2)
```

	overall	verified	reviewTime	reviewerName	reviewText	summary
0	5	True	2016	Shelly F	As advertised. Reasonably priced	Five Stars
1	5	True	2013	housecrules18	Like the oder and the feel	Good for

```
df2['reviewTime'].value_counts().plot.bar()
```

```
<Axes: >
```




```
sen = TextBlob('I love this product')
sen1 = TextBlob('It is not good product')
sen2 = TextBlob('It is fine product')
```

```
sen.sentiment.polarity
```

```
0.5
```

```
sen1.sentiment.polarity
```

```
-0.35
```

```
sen2.sentiment.polarity
```

```
0.4166666666666667
```

```
def get_sentiment(usr_txt) :
  sen = TextBlob(str(usr_txt)).sentiment.polarity
  if sen > 0 :
    return "Positive"
  elif sen < 0 :
    return "Negative"
  return "Neutral"

df2["sentiment"] = df2["reviewText"].apply(lambda x : get_sentiment(x))
df2.to_csv("sentiment.csv")
```

```
df2.head(2)
```

	overall	verified	reviewTime	reviewerName	reviewText	summary	sentiment
0	5	True	2016	Shelly F	As advertised. Reasonably priced	Five Stars	Positive

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