

## Sentiment Visual Class

```
1  ## Author : Ashantha Rosary James
2  import matplotlib.pyplot as plt
3
4  class SentimentPlotter:
5      def __init__(self, df, data_type='percentage'):
6          """
7          Initialize the class with a Spark DataFrame.
8          :param df: Spark DataFrame containing sentiment data
9          :param data_type: Type of data ('percentage' or 'count')
10          """
11          self.df = df
12          self.data_type = data_type
13
14      def extract_data(self):
15          """
16          Extract sentiment data based on the type of data (percentage or count).
17          :return: Two lists, sentiments and percentages or counts
18          """
19          if self.data_type == 'percentage':
20              sentiments = self.df.select('Sentiment').rdd.flatMap(lambda x: x).collect()
21              percentages = self.df.select('Percentage').rdd.flatMap(lambda x: x).collect()
22              return sentiments, percentages
23          elif self.data_type == 'count':
24              rdd = self.df.rdd.map(lambda row: (row.Sentiment, row["count"]))
25              data = rdd.collect()
26              sentiments = [x[0] for x in data]
27              counts = [x[1] for x in data]
28              return sentiments, counts
```

```

30 def plot_data(self, sentiments, values):
31     """
32     Plot the sentiment distribution as a bar chart (percentage or count).
33     :param sentiments: List of sentiment categories
34     :param values: List of percentages or counts for each category
35     """
36     if self.data_type == 'percentage':
37         labels = {0: 'Negative', 2: 'Positive'}
38         colors = ['limegreen', 'orangered']
39         ylabel = 'Percentage'
40         title = 'Sentiment Percentage Distribution'
41     else:
42         labels = {0: 'Negative', 1: 'Neutral', 2: 'Positive'}
43         colors = ['pink', 'orange', 'purple']
44         ylabel = 'Count'
45         title = 'Sentiment Count Distribution'
46
47     plt.figure(figsize=(8, 6))
48     bars = plt.bar(sentiments, values, color=colors, tick_label=[labels[s] for s in
sentiments])
49
50     for bar in bars:
51         yval = bar.get_height()
52         plt.text(bar.get_x() + bar.get_width() / 2, yval + (1 if self.data_type ==
'percentage' else 10),
53                 f'{yval:.2f}%' if self.data_type == 'percentage' else int(yval),
ha='center', va='bottom')
54
55     plt.xlabel('Sentiment')
56     plt.ylabel(ylabel)
57     plt.title(title)
58     plt.show()
59

```