

Review Length Class

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1  ## Author : Goh Boon Xiang
2  from pyspark.sql.functions import size, col
3  import matplotlib.pyplot as plt
4
5  class ReviewLengthAnalyzer:
6      def __init__(self, df_tokenized):
7          """
8          Initializes the ReviewLengthAnalyzer with the tokenized DataFrame.
9          :param df_tokenized: Spark DataFrame containing tokenized reviews.
10         """
11         self.df_tokenized = df_tokenized
12
13     def calculate_review_lengths(self):
14         """
15         Calculate the length of each review based on the number of tokens.
16         :return: DataFrame with review lengths added.
17         """
18         df_review_length = self.df_tokenized.withColumn("review_length",
size(col("tokens")))
19         return df_review_length
20
21     def collect_review_lengths(self, df_review_length):
22         """
23         Collect the review lengths from the DataFrame as a list.
24         :param df_review_length: DataFrame with review lengths.
25         :return: List of review lengths.
26         """
27         return df_review_length.select("review_length").rdd.flatMap(lambda x:
x).collect()
28
29     def plot_review_length_distribution(self, review_lengths):
30         """
31         Plot a histogram of review lengths.
32         :param review_lengths: List of review lengths.
33         """
34         plt.figure(figsize=(10, 6))
35         plt.hist(review_lengths, bins=30, color='mistyrose', edgecolor='black')
36         plt.xlabel('Number of Tokens (Review Length)')
37         plt.ylabel('Frequency')
38         plt.title('Distribution of Review Lengths (Number of Tokens)')
39         plt.show()
```