Student Satisfaction Analysis

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Project Objectives

Key Goals for Analyzing Feedback

- Analyze student satisfaction survey data
- Understand overall event and teaching quality
- Perform sentiment analysis on textual feedback
- Validate the relationship between ratings and sentiment
- Compare feedback across event types (Workshops vs Seminars)
- Provide data-driven recommendations for improvement
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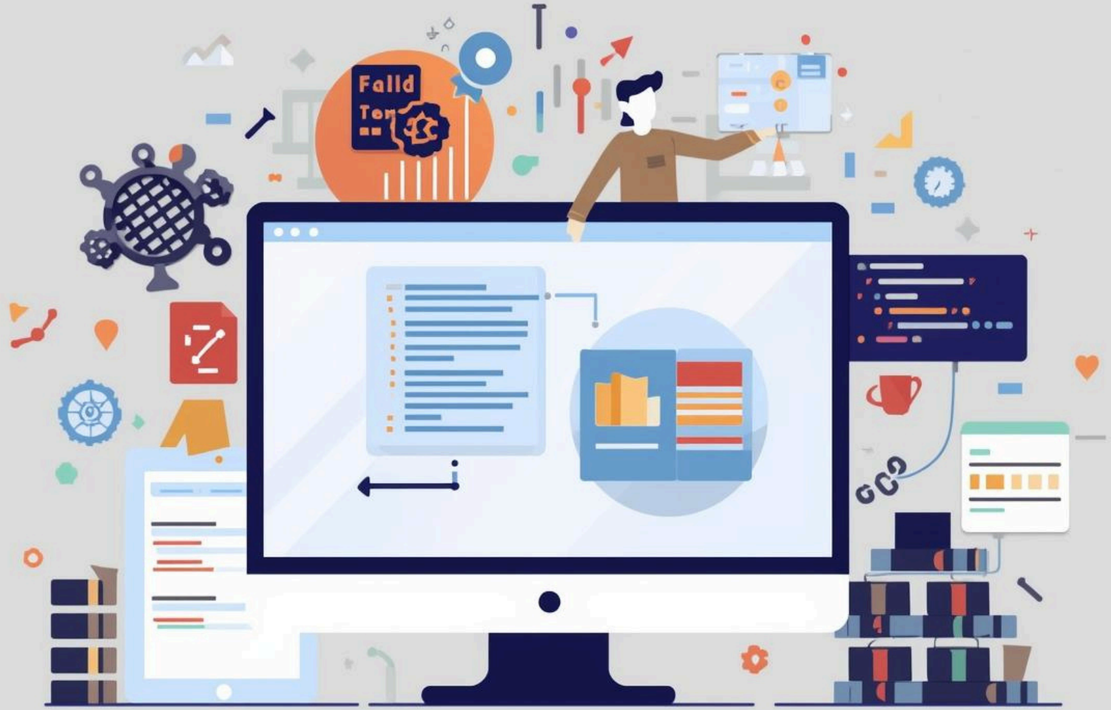
Dataset Overview: Feedback Analysis

The dataset, **Student_Satisfaction_Survey.csv**, contains structured survey data with numeric ratings. Key fields include Survey Question, Total Feedback Given, and Average Score, enabling detailed analysis of student satisfaction metrics.

Tools and Technologies for Analysis

This project utilized **Google Colab** for collaborative coding, with **Python** libraries like pandas and NumPy for data manipulation, and matplotlib and seaborn for creating clear visualizations of student feedback data.

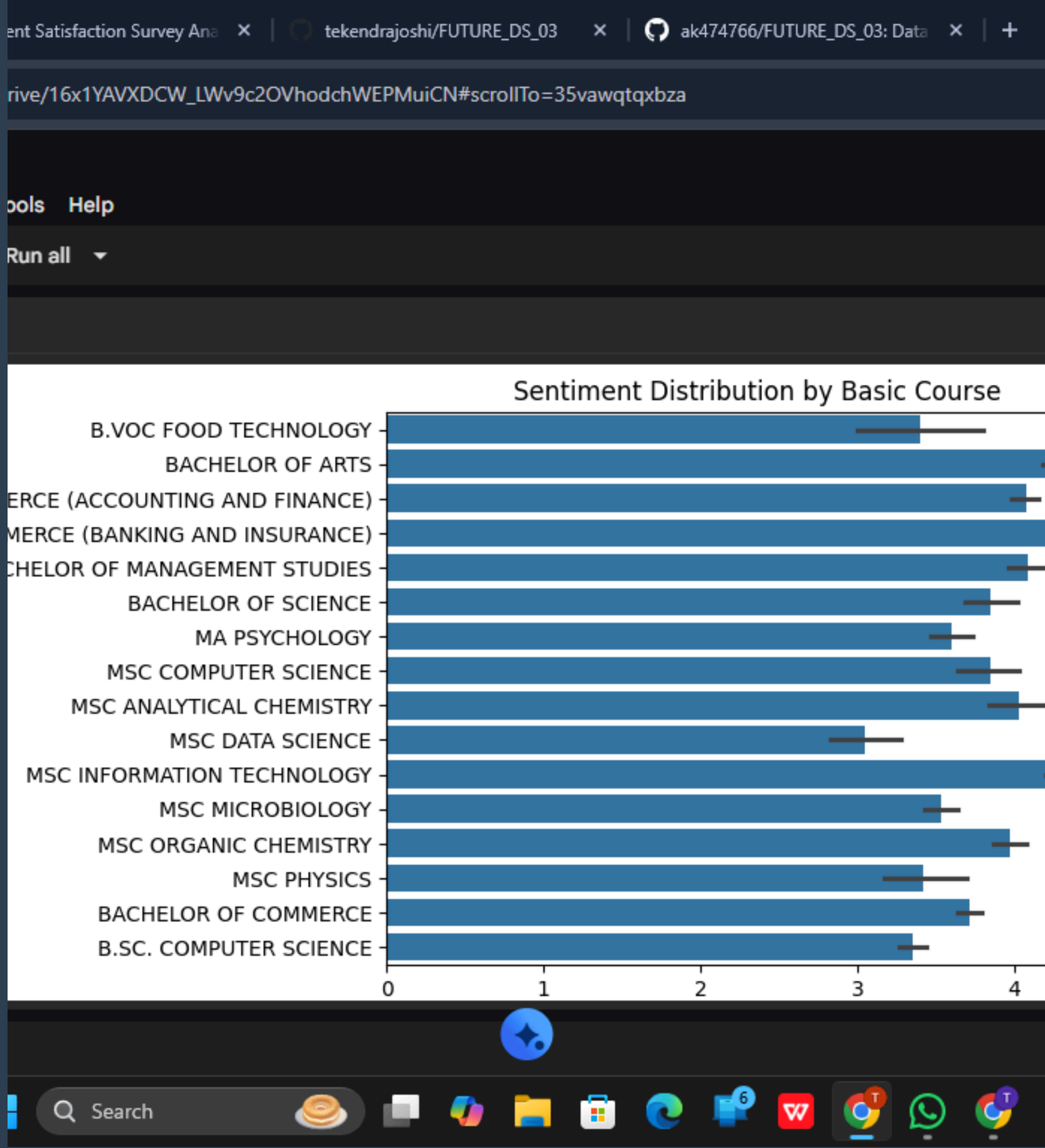
Data Cleaning and Preparation



The first step involves **loading the dataset** into a pandas DataFrame, ensuring numeric types for ratings and averages, and calculating the response rate to assess feedback utilization effectively.

Exploratory Data Analysis (EDA) Overview

In this phase, we count unique questions, summarize mean ratings, and visualize rating distributions. This step provides valuable insights into student perceptions and identifies trends across the feedback data.

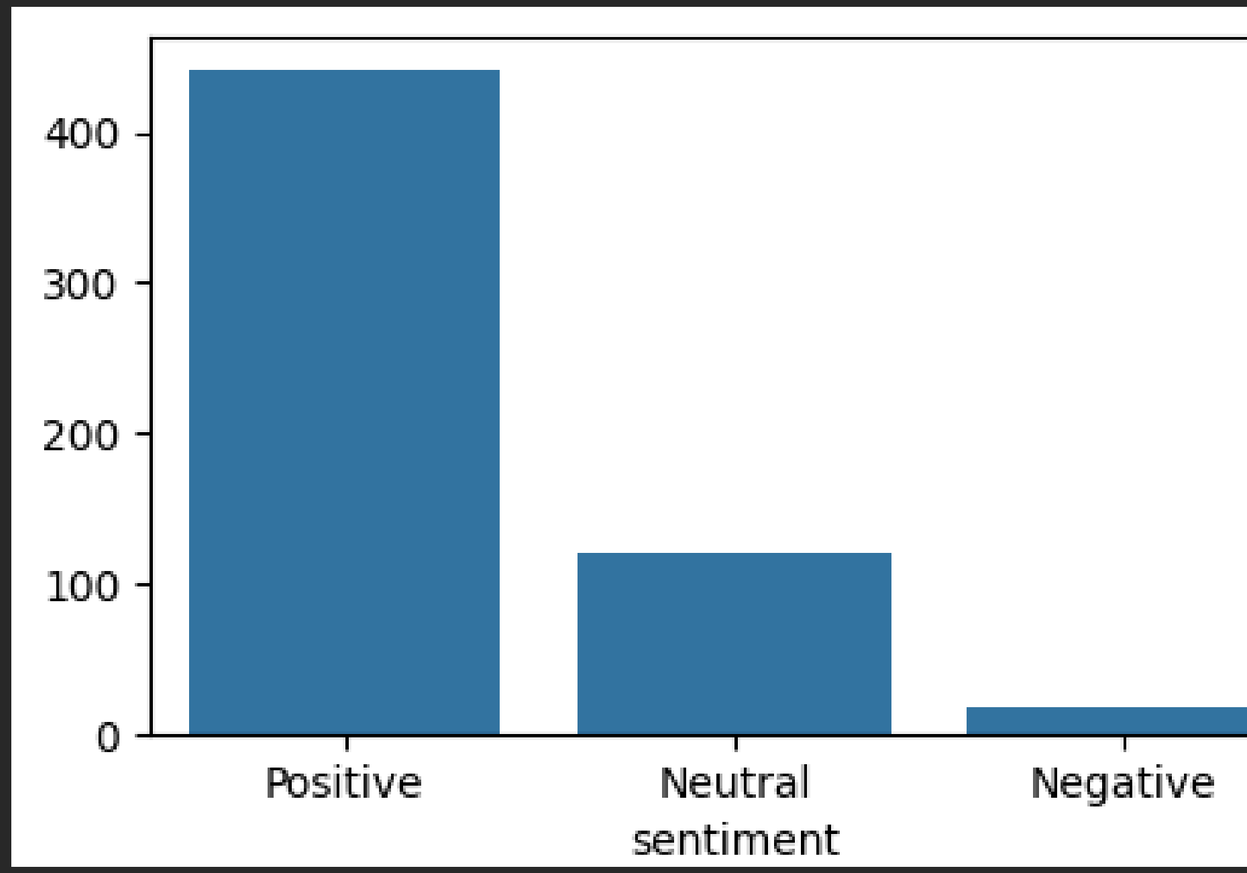


Rating-Based Sentiment Classification

This step involves classifying sentiment categories based on average ratings from the survey, using defined thresholds to determine Positive, Neutral, and Negative sentiments, thereby guiding actionable insights for improvement.

```
# Create a bar plot
plt.figure(figsize=(5, 3))
sns.barplot(x=sentiment_counts.index, y=sentiment_cou
```

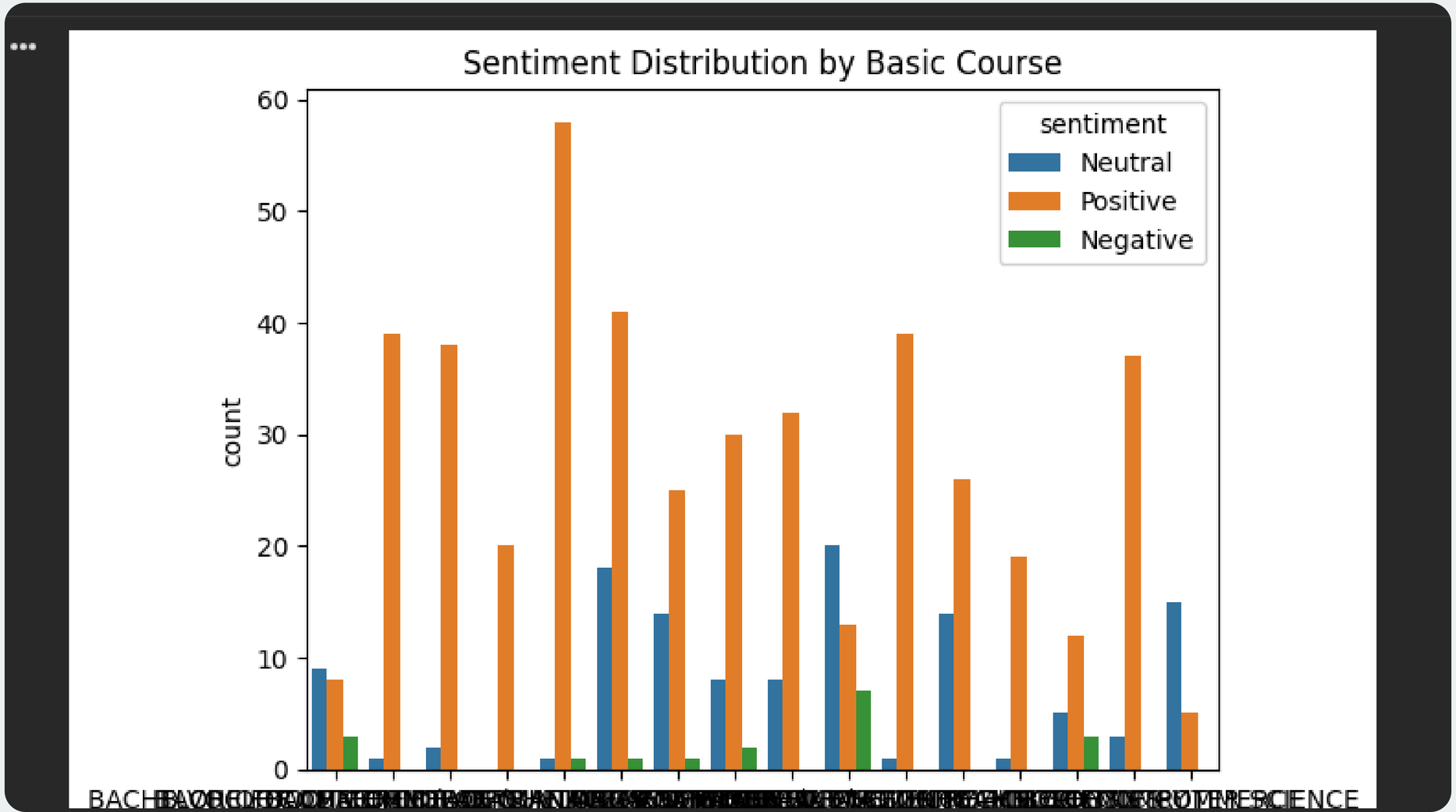
```
<Axes: xlabel='sentiment'>
```



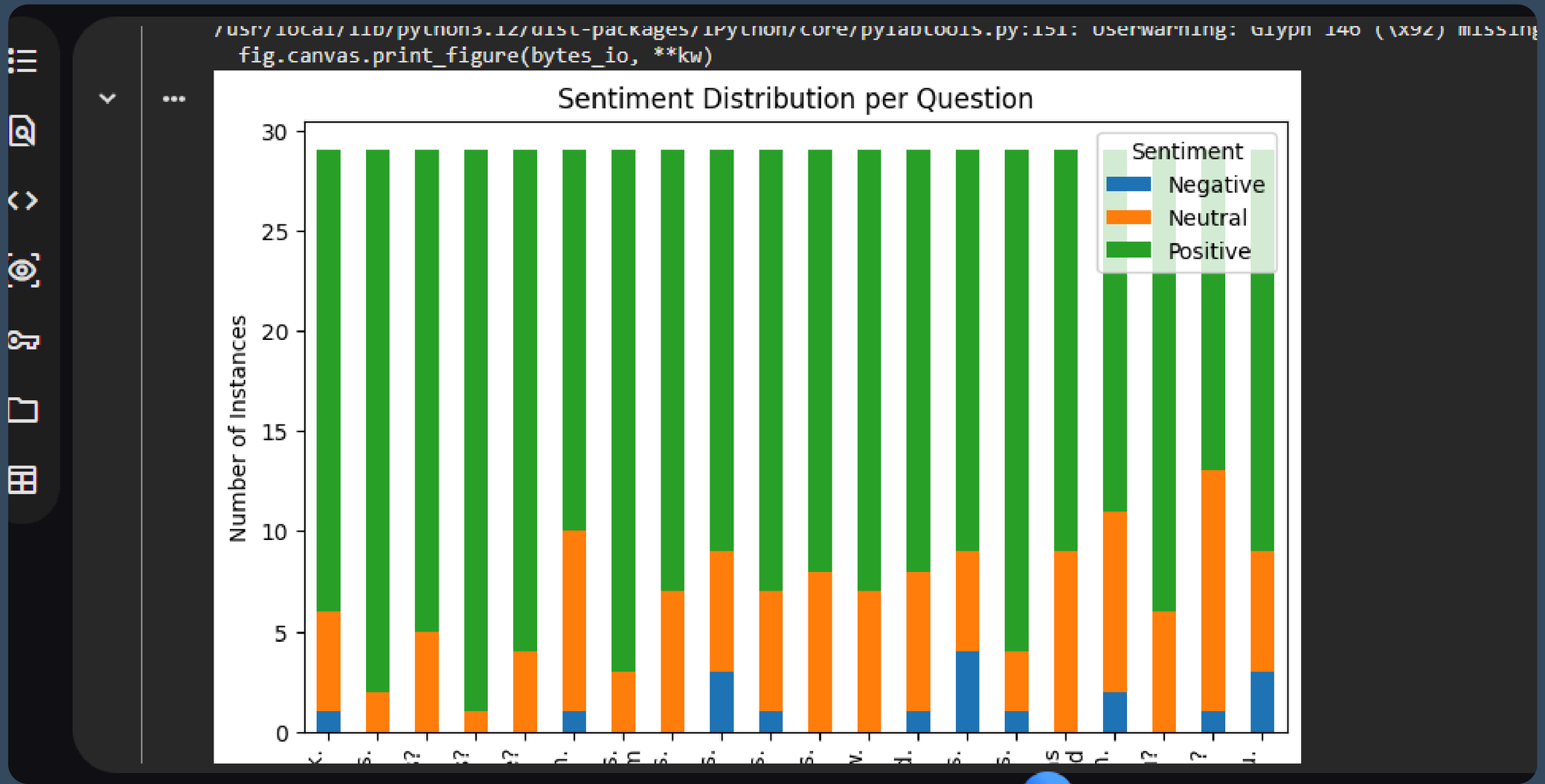
Terminal

Search

Question-wise and Course-wise Analysis



Data Visualization Techniques and Reporting

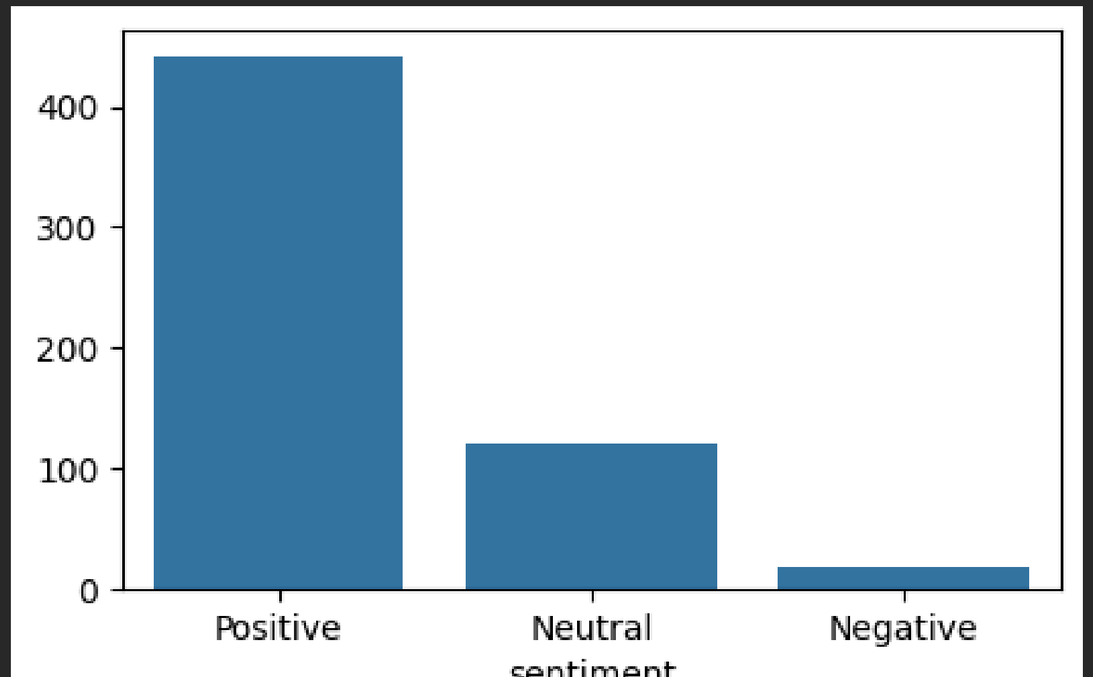


Key Insights: Positive Sentiment Trend

[69]

```
import matplotlib.pyplot as plt
import seaborn as sns
# Count the occurrences of each sentiment category
sentiment_counts = df['sentiment'].value_counts()
# Create a bar plot
plt.figure(figsize=(5, 3))
sns.barplot(x=sentiment_counts.index, y=sentiment_counts.values)
```

```
<Axes: xlabel='sentiment'>
```



Neutral and Negative Feedback Insights

- Strong positive correlation between **ratings and sentiment**
- Workshops generally received **higher ratings** than seminars
- Majority of feedback was **positive**, indicating good overall satisfaction
- Teaching quality and learning process were the most frequently mentioned themes

Conclusion and Recommendations

In summary, leveraging data insights is essential to enhance student satisfaction. Prioritizing areas needing improvement ensures a better educational experience. Continuous feedback collection will drive ongoing enhancements in teaching and program quality.