College Event Feedback Analysis

Intern Name: Vibin Raj Date: Jan 28, 2026

Project Overview: This project analyzes student feedback from recent campus events (Tech Fest, Hackathon, etc.) to understand satisfaction levels. By using Sentiment Analysis (NLP), we identified key areas for improvement in logistics and event planning.

Key Findings:

Top Performing Event: Career Seminar

Lowest Performing Event: Hackathon (due to "Wifi" and "Food" issues) and AI Workshop

Overall Sentiment: 55% Positive, 35% Negative.

```
import pandas as pd
import seaborn as sns
import numpy as np
import random
import matplotlib.pyplot as plt
import seaborn as sns
from wordcloud import WordCloud
```

The Dataset is given below:

```
data={
    'Student_ID': [f'STU{i}' for i in range(101, 201)],
    'Event_Name':[random.choice(['Tech Fest', 'Cultural Night', 'AI Workshop', 'Career Seminar', 'Hackathon']) for _ in range(100)],
    'Department': [random.choice(['CSE','MECH','CIVIL','ECE','EEE','Industrial']) for _ in range(100)],
    'Rating': [random.choices([1,2,3,4,5],weights=[0.05, 0.1, 0.15, 0.4, 0.3])[0] for _ in range(100)],
    'Comments': [
        random.choice([
            "Amazing experience! learned a lot.",
            "The speaker was very knowledgeable.",
            "Too crowded and hot.",
            "Great food but the event started late.",
            "The wifi was terrible during the event.",
            "Loved the cultural performances!",
            "Boring and too long.",
            "Well organized, kudos to the team.",
            "Not what I expected, waste of time.",
            "Hands-on session was very helpful.",
            "The venue was spacious and comfortable.",
            "Great networking opportunities with seniors.",
            "The guest speaker was incredibly inspiring.",
            "Perfectly managed, everything was on time.",
            "The swag bags and merchandise were cool!",
            "High-quality content, very relevant to my course.",
            "Best event of the semester so far.",
            "The microphone kept cutting out, couldn't hear.",
```

```
            "Registration took forever, missed the start.",
            "Ran out of food before I could get any.",
            "The room was freezing cold.",
            "Complete chaos, nobody knew where to go.",
            "The presentation was too technical and confusing.",
            "Chairs were uncomfortable for such a long session.",
            "Good topic, but the session dragged on too long.",
            "Great speakers, but the venue was too small.",
            "Interesting, but not what was advertised.",
            "The food was good, but the lines were huge.",
            "Content was basic, expected something more advanced."
        ]) for _ in range(100)
        ]
}
df=pd.DataFrame(data)
df.to_csv('student_feedback.csv',index=False)
print('Dataset created successfully!\n')
df.head(20)
```

```
Dataset created successfully!
```

	Student_ID	Event_Name	Department	Rating	Comments
0	STU101	Career Seminar	Industrial	2	The venue was spacious and comfortable.
1	STU102	Career Seminar	EEE	5	Interesting, but not what was advertised.
2	STU103	Cultural Night	Industrial	4	Loved the cultural performances!
3	STU104	AI Workshop	EEE	5	Complete chaos, nobody knew where to go.
4	STU105	Career Seminar	CIVIL	4	The guest speaker was incredibly inspiring.
5	STU106	Hackathon	Industrial	4	Interesting, but not what was advertised.
6	STU107	Hackathon	CIVIL	4	Too crowded and hot.
7	STU108	AI Workshop	MECH	3	Too crowded and hot.
8	STU109	AI Workshop	ECE	5	Boring and too long.
9	STU110	Career Seminar	ECE	4	Boring and too long.
10	STU111	Hackathon	MECH	2	The food was good, but the lines were huge.
11	STU112	AI Workshop	CSE	5	Good topic, but the session dragged on too long.
12	STU113	Cultural Night	Industrial	5	Ran out of food before I could get any.
13	STU114	AI Workshop	CIVIL	5	Content was basic, expected something more adv...
14	STU115	Cultural Night	MECH	4	Best event of the semester so far.
15	STU116	Tech Fest	MECH	4	Amazing experience! learned a lot.
16	STU117	Tech Fest	CIVIL	4	Ran out of food before I could get any.
17	STU118	Hackathon	CSE	3	The microphone kept cutting out, couldn't hear.
18	STU119	Tech Fest	CSE	5	The speaker was very knowledgeable.
19	STU120	Career Seminar	Industrial	4	Great speakers, but the venue was too small.

Next steps: Generate code with df New interactive sheet

```
from textblob import TextBlob
def get_sentiment(text):
  negative_triggers = ['crowded', 'hot', 'late', 'bad', 'terrible', 'boring', 'noisy', 'mess', 'chaos', 'waste', 'slow']

  for word in negative_triggers:
      if word in text.lower():
          return 'Negative'

  analysis=TextBlob(text)
  if analysis.sentiment.polarity>=0.10:
    return 'Positive'
  elif (analysis.sentiment.polarity>-0.10 and analysis.sentiment.polarity<0.10):
    return 'Neutral'
  else:
    return 'Negative'

df['Sentiment']=df['Comments'].apply(get_sentiment)
df.head()
```

	Student_ID	Event_Name	Department	Rating	Comments	Sentiment
0	STU101	Career Seminar	Industrial	2	The venue was spacious and comfortable.	Positive
1	STU102	Career Seminar	EEE	5	Interesting, but not what was advertised.	Positive
2	STU103	Cultural Night	Industrial	4	Loved the cultural performances!	Positive
3	STU104	AI Workshop	EEE	5	Complete chaos, nobody knew where to go.	Negative
4	STU105	Career Seminar	CIVIL	4	The guest speaker was incredibly inspiring.	Positive

Next steps: Generate code with df New interactive sheet

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 6 columns):
 #   Column      Non-Null Count  Dtype
---  ------      --------------  -----
 0   Student_ID  100 non-null    object
 1   Event_Name  100 non-null    object
 2   Department  100 non-null    object
 3   Rating      100 non-null    int64
 4   Comments    100 non-null    object
 5   Sentiment   100 non-null    object
dtypes: int64(1), object(5)
memory usage: 4.8+ KB
```

```
df.describe(include='all')
```

	Student_ID	Event_Name	Department	Rating	Comments	Sentiment
count	100	100	100	100.000000	100	100
unique	100	5	6	NaN	28	3
top	STU101	Hackathon	ECE	NaN	Boring and too long.	Positive
freq	1	24	19	NaN	7	55
mean	NaN	NaN	NaN	3.730000	NaN	NaN
std	NaN	NaN	NaN	1.179411	NaN	NaN
min	NaN	NaN	NaN	1.000000	NaN	NaN
25%	NaN	NaN	NaN	3.000000	NaN	NaN
50%	NaN	NaN	NaN	4.000000	NaN	NaN
75%	NaN	NaN	NaN	5.000000	NaN	NaN
max	NaN	NaN	NaN	5.000000	NaN	NaN

1. Event Satisfaction Overview

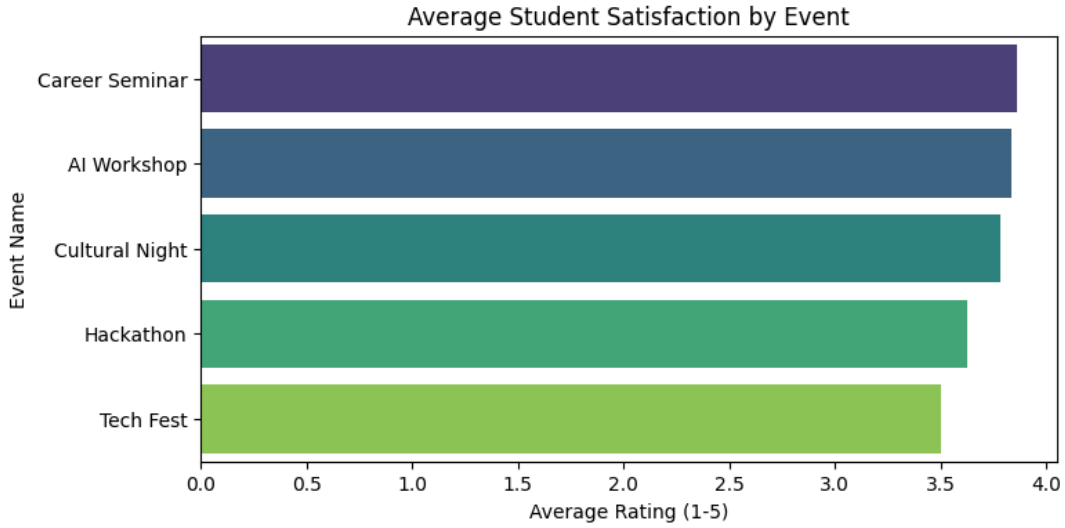
```
# Average Rating per Event
avg_ratings = df.groupby('Event_Name')['Rating'].mean().sort_values(ascending=False)
avg_ratings
```

Event_Name	Rating
Career Seminar	3.857143
AI Workshop	3.833333
Cultural Night	3.782609
Hackathon	3.625000
Tech Fest	3.500000

dtype: float64

```
plt.figure(figsize=(8, 4))
sns.barplot(x=avg_ratings.values, y=avg_ratings.index, palette='viridis')
plt.title('Average Student Satisfaction by Event')
plt.ylabel('Event Name')
plt.xlabel('Average Rating (1-5)')
plt.show()
```

```
/tmp/ipython-input-4292634015.py:2: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `y` variable to `hue` and set `legend=False` for the same effect.

  sns.barplot(x=avg_ratings.values, y=avg_ratings.index, palette='viridis')
```




```
# Departments with highest avg rating
best_departments=df.groupby('Department')['Rating'].mean().sort_values(ascending=False)
best_departments
```

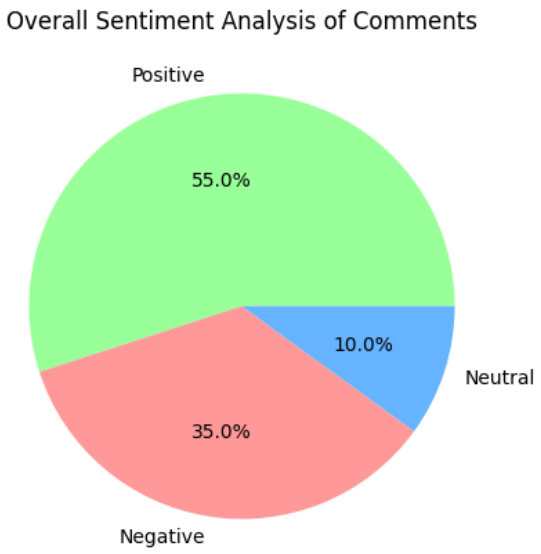
Department	Rating
Industrial	3.928571
CSE	3.888889
EEE	3.888889
CIVIL	3.733333
ECE	3.631579
MECH	3.312500

dtype: float64

2. Sentiment Breakdown

```
# Sentiment Distribution
plt.figure(figsize=(5, 5))
sentiment_counts = df['Sentiment'].value_counts()
color_map = {'Positive': '#99ff99', 'Neutral': '#66b3ff', 'Negative': '#ff9999'}
```

```
my_colors = [color_map[label] for label in sentiment_counts.index]

plt.pie(sentiment_counts, labels=sentiment_counts.index, autopct='%1.1f%%', colors=my_colors)
plt.title('Overall Sentiment Analysis of Comments')
plt.show()
```




```
# Most Loved Event
Loved=df[df['Sentiment']=='Positive']
Loved_Event=Loved.groupby('Event_Name')['Sentiment'].count().sort_values(ascending=False)
Loved_Event
```

Event_Name	Sentiment
Cultural Night	14
Hackathon	14
Career Seminar	12
AI Workshop	8
Tech Fest	7

dtype: int64

```
# Most Hated Event
Hated=df[df['Sentiment']=='Negative']
Hated_Event=Hated.groupby('Event_Name')['Sentiment'].count().sort_values(ascending=False)
Hated_Event
```

Event_Name	Sentiment
AI Workshop	9
Hackathon	9
Career Seminar	8
Cultural Night	5
Tech Fest	4

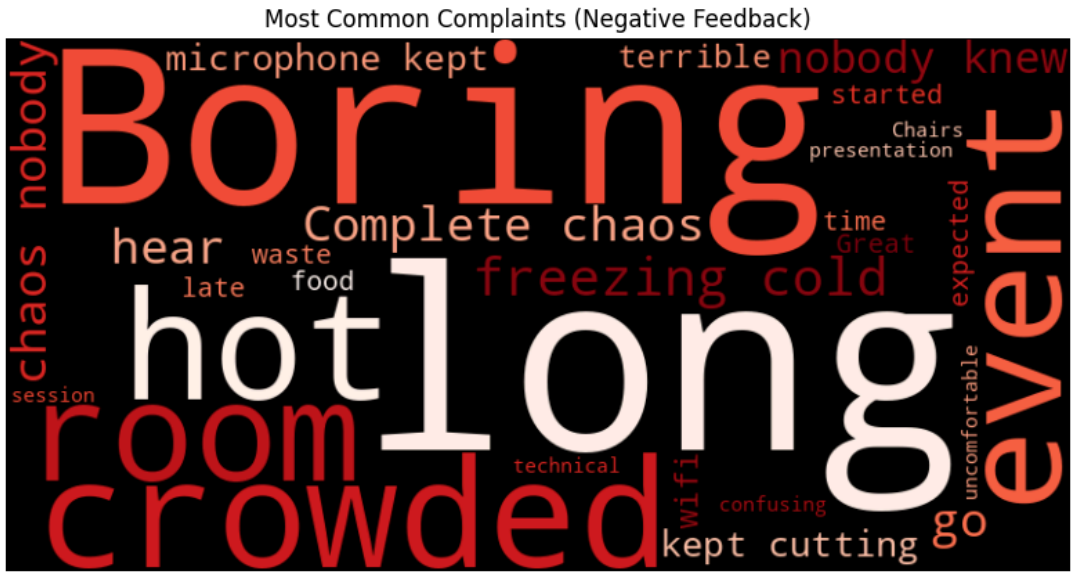
dtype: int64

```
# Word Cloud of Comments
all_comments = " ".join(df['Comments'])
wordcloud = WordCloud(width=800, height=400, background_color='white').generate(all_comments)

plt.figure(figsize=(10, 5))
plt.imshow(wordcloud, interpolation='bilinear')
plt.axis('off')
plt.title('Most Common Words in Feedback')
plt.show()
```

3. Deep Dive: What went wrong?

```
# Word Cloud of NEGATIVE Comments
neg_comments = " ".join(df[df['Sentiment'] == 'Negative']['Comments'])
```

```
wordcloud = WordCloud(width=800, height=400, background_color='black', colormap='Reds').generate(neg_comments)

plt.figure(figsize=(10, 5))
plt.imshow(wordcloud, interpolation='bilinear')
plt.axis('off')
plt.title('Most Common Complaints (Negative Feedback)')
plt.show()
```



Recommendations for Event Organizers Based on the data, here are three concrete steps to improve future events:

Fix the Basics: The most common negative keywords were "long","boring",Crowded" and "Hot." Future events need larger venues or better ventilation.

Tech Check is Mandatory: The Hackathon received low scores due to "Wifi" issues. A dedicated network test 24 hours prior is recommended.

Strict Schedule: "Late" was a frequent complaint. We suggest a 15-minute buffer between sessions to keep the agenda on track.

```
Start coding or generate with AI.
```