🔍 Dataset Name

[Dataset.csv]

📌 Objective

To analyze relationships between personality types and behavioral traits such as **stage fear** and **social exhaustion**, using statistical and visual exploration methods.

🗒️ Dataset Description

Column Name	Description
`Personality`	Categorical value representing personality type (e.g., Introvert, Extrovert)
`Stage_fear`	Yes/No response indicating whether the respondent has stage fear
`Drained_after_socializing`	Yes/No response indicating if the respondent feels drained after socializing
(Optional additional fields)	Can include other numeric or categorical traits (e.g., age, gender, etc.)

🔄 Preprocessing Steps

Binary Encoding
The Yes/No responses were mapped to numeric values to enable correlation and aggregation:

```
df['Stage_fear'] = df['Stage_fear'].map({'Yes': 1, 'No': 0})
df['Drained_after_socializing'] =
df['Drained_after_socializing'].map({'Yes': 1, 'No': 0})
```

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📈 Analysis & Visualizations

1. Grouped Mean by Personality

```
grouped = df.groupby('Personality').mean()
```

- This computes the **average value of each numeric column per personality type**.
- It gives insights such as:
  ➤ What percentage of introverts have stage fear?
  ➤ Do extroverts report lower exhaustion after socializing?

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2. Bar Plot of Averages by Personality

```
grouped.plot(kind='bar', figsize=(12, 6))
```

- Visualizes how traits like `Stage_fear` or `Drained_after_socializing` vary across personality types.
- Example Insight: "Introverts average 0.85 for stage fear, while extroverts average 0.2."

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3. Count Plot of Personality Types

```
sns.countplot(x='Personality', data=df)
```

- Displays the **distribution of respondents** by personality type.
- Useful for understanding sample balance.

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4. Heatmap of Correlations

```
sns.heatmap(df.corr(numeric_only=True), annot=True, cmap='coolwarm', fmt=".2f")
```

- Shows **pairwise correlations** between numeric features.
- Key insights:
    - Strong correlation between `Stage_fear` and `Drained_after_socializing`?
    - Are certain traits inversely correlated?

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5. Pair Plot by Personality (Optional Deep Dive)

```
sns.pairplot(df, hue='Personality')
```

- Visualizes pairwise relationships between multiple features.
- Colored by personality type, useful for clustering behavior.

Google Collab: Personality Trait