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Prn no. 20221070082

E1 519

ASSIGNMENT 5

INPUT:

```python
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd

# Create a DataFrame with the provided data
data = {
    'GrainName': ['Ragi', 'Bajra', 'Ragi', 'Bajra', 'Ragi', 'Bajra',
'Oats', 'Sattu', 'Sooji', 'Brown rice', 'Wheat', 'Corn',
                  'Ragi', 'Bajra', 'Oats', 'Sattu', 'Sooji', 'Brown
rice', 'Wheat', 'Corn', 'Sooji', 'Brown rice', 'Wheat',
                  'Corn', 'Ragi', 'Brown rice', 'Wheat'],
    'State': ['Maharashtra', 'Panjab', 'Maharashtra', 'Panjab',
'Maharashtra', 'Panjab', 'Hariyana', 'Gujarat', 'Tamil Nadu',
              'Telangana', 'West Bengol', 'UP', 'Maharashtra',
'Panjab', 'Hariyana', 'Gujarat', 'Tamil Nadu', 'Telangana',
              'West Bengol', 'UP', 'Tamil Nadu', 'Telangana', 'West
Bengol', 'UP', 'Maharashtra', 'Telangana', 'West Bengol'],
    'City': ['Nagpur', 'Amritsar', 'Nagpur', 'Amritsar', 'Nagpur',
'Amritsar', 'Gurugram', 'Surat', 'Madurai', 'Hyderabad',
             'Asansole', 'Kanpur', 'Nagpur', 'Amritsar', 'Gurugram',
'Surat', 'Madurai', 'Hyderabad', 'Asansole', 'Kanpur',
             'Madurai', 'Hyderabad', 'Asansole', 'Kanpur', 'Nagpur',
'Hyderabad', 'Asansole'],
    'Months': ['JAN', 'FEB', 'JAN', 'FEB', 'JAN', 'FEB', 'MARCH',
'APRIL', 'MAY', 'JUNE', 'JULY', 'AUG', 'JAN', 'FEB', 'MARCH',
               'APRIL', 'MAY', 'JUNE', 'JULY', 'AUG', 'MAY', 'JUNE',
'JULY', 'AUG', 'JAN', 'JUNE', 'JULY'],
    'Year': [2023] * 27,
    'Sales': [1000000, 1500000, 1000000, 1500000, 1000000, 1500000,
2000000, 2500000, 3000000, 3500000, 4000000, 4500000,
              1000000, 1500000, 2000000, 2500000, 3000000, 3500000,
4000000, 4500000, 3000000, 3500000, 4000000, 4500000,
              1000000, 3500000, 4000000]
}

df = pd.DataFrame(data)

# Create the interactive dashboard
sns.set(style="darkgrid")
```

```python
# Plot 1: Count of Grains
plt.subplot(2, 3, 1)
sns.countplot(data=df, x='GrainName')
plt.title('Count of Grains')
plt.xlabel('Grain Name')
plt.ylabel('Count')

# Plot 2: Sales by State
plt.subplot(2, 3, 2)
sns.barplot(data=df, x='State', y='Sales')
plt.title('Sales by State')
plt.xlabel('State')
plt.ylabel('Sales')

# Plot 3: Sales by City
plt.subplot(2, 3, 3)
sns.barplot(data=df, x='City', y='Sales')
plt.title('Sales by City')
plt.xlabel('City')
plt.ylabel('Sales')
plt.xticks(rotation=45)

# Plot 4: Sales by Month
plt.subplot(2, 3, 4)
sns.lineplot(data=df, x='Months', y='Sales')
plt.title('Sales by Month')
plt.xlabel('Month')
plt.ylabel('Sales')

# Plot 5: Sales by Year
plt.subplot(2, 3, 5)
sns.lineplot(data=df, x='Year', y='Sales')
plt.title('Sales by Year')
plt.xlabel('Year')
plt.ylabel('Sales')

# Plot 6: Sales by GrainName and Month
plt.subplot(2, 3, 6)
sns.boxplot(data=df, x='GrainName', y='Sales', hue='Months')
plt.title('Sales by Grain and Month')
plt.xlabel('Grain Name')
plt.ylabel('Sales')
plt.legend(title='Month', loc='upper right')

# Adjust layout
plt.tight_layout()

# Show the dashboard
```

```
plt.show()
```

OUTPUT: