Exp 1: Visualize data using basic plotting techniques in Python.

```
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns

# 1. Line Plot
x = np.linspace(0, 10, 100)
y = np.sin(x)

plt.figure(figsize=(10, 8))

plt.subplot(2, 2, 1)  # 2 rows, 2 columns, 1st plot
plt.plot(x, y, color='blue')
plt.title('Line Plot of y = sin(x)')
plt.xlabel('x')
plt.ylabel('y')
plt.grid(True)

# 2. Bar Plot
categories = ['A', 'B', 'C', 'D']
values = [10, 20, 15, 25]

plt.subplot(2, 2, 2)  # 2nd plot
plt.bar(categories, values, color='green')
plt.title('Bar Plot')
plt.xlabel('Category')
plt.ylabel('Values')

# 3. Histogram
```

```
data = np.random.randn(1000)


plt.subplot(2, 2, 3)  # 3rd plot
plt.hist(data, bins=30, edgecolor='black', color='orange')
plt.title('Histogram of Normally Distributed Data')
plt.xlabel('Value')
plt.ylabel('Frequency')

# 4. Scatter Plot
x_scatter = np.random.rand(50)
y_scatter = np.random.rand(50)


plt.subplot(2, 2, 4)  # 4th plot
plt.scatter(x_scatter, y_scatter, color='red')
plt.title('Scatter Plot')
plt.xlabel('x')
plt.ylabel('y')

# Adjust layout
plt.tight_layout()

# Show all plots
plt.show()

# 5. Seaborn-enhanced Histogram with KDE
plt.figure(figsize=(6, 4))
sns.histplot(data, kde=True, color='purple')
plt.title('Seaborn Histogram with KDE')
plt.show()
```