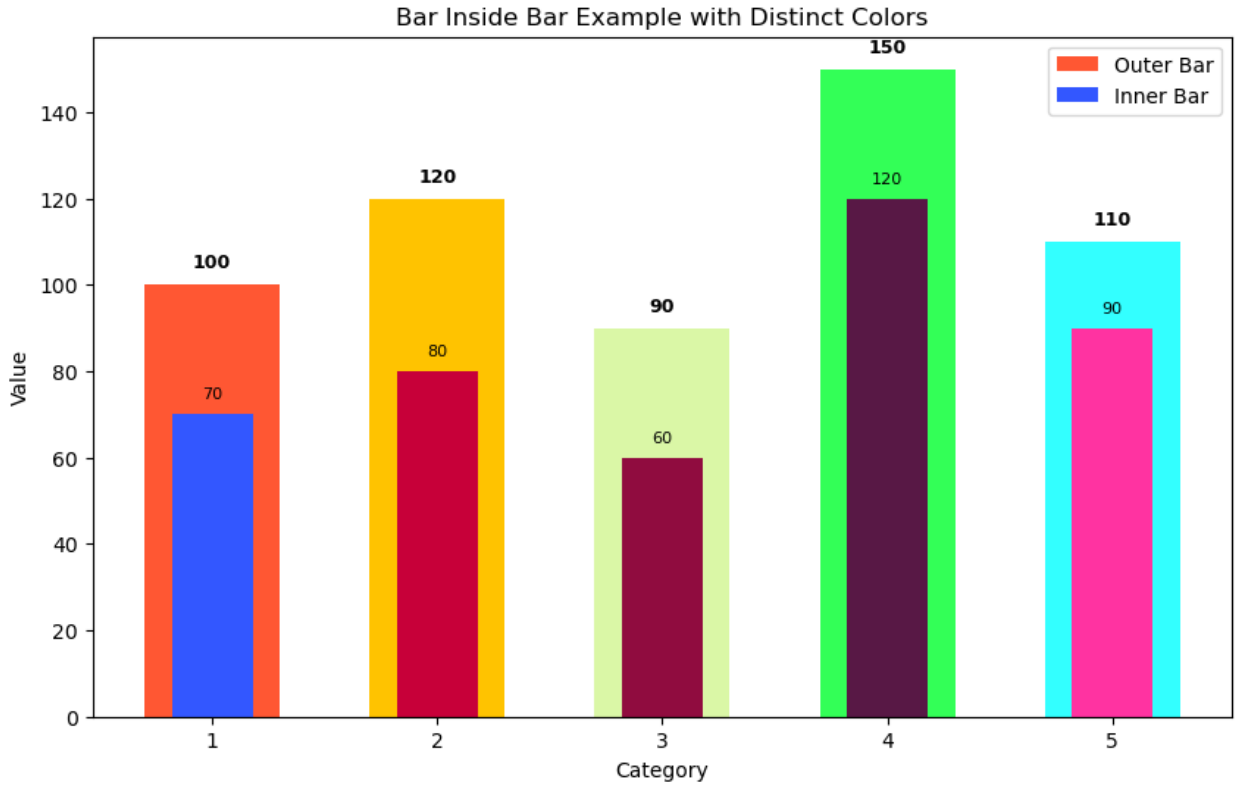
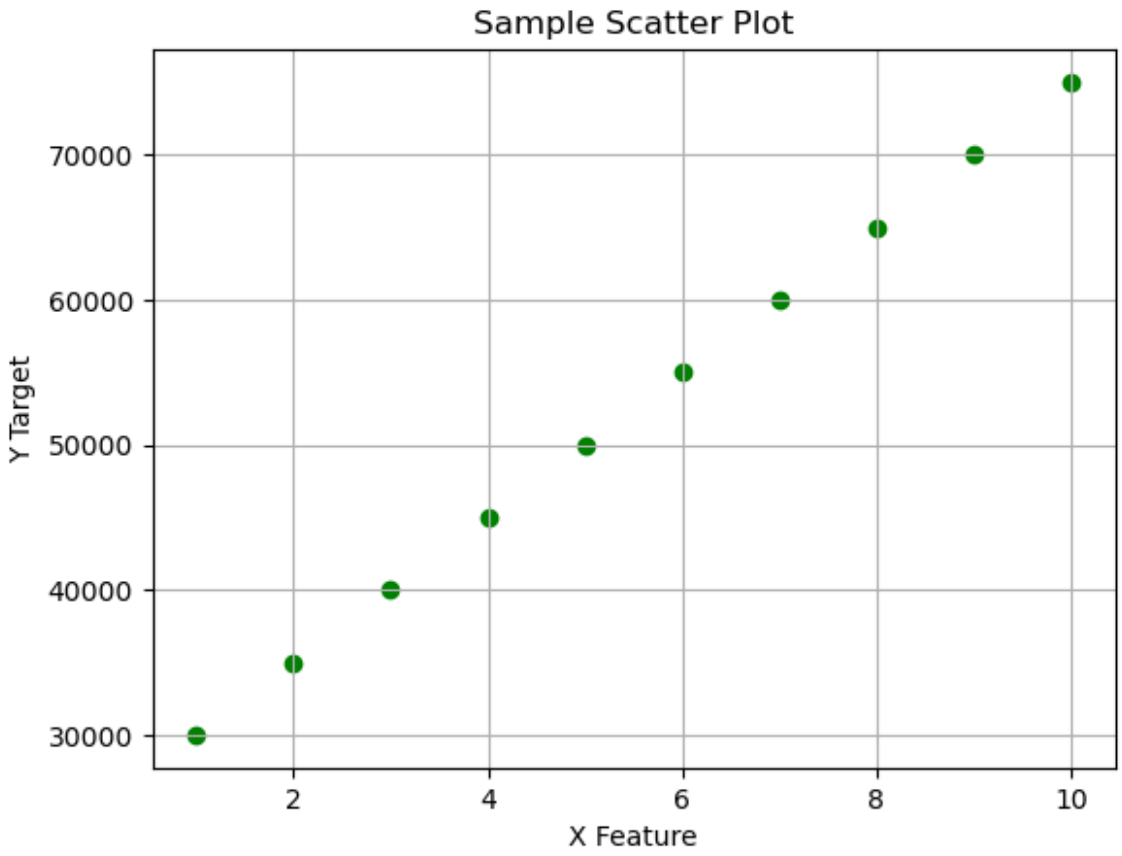
```
import matplotlib.pyplot as plt
import numpy as np

X = np.array([1, 2, 3, 4, 5])
outer_bar = np.array([100, 120, 90, 150, 110])
inner_bar = np.array([70, 80, 60, 120, 90])
bar_width = 0.6
outer_colors = ['#FF5733', '#FFC300', '#DAF7A6', '#33FF57', '#33FFFF']
inner_colors = ['#3357FF', '#C70039', '#900C3F', '#581845', '#FF33A1']

plt.figure(figsize=(10, 6))
plt.bar(X, outer_bar, width=bar_width, color=outer_colors,
label='Outer Bar')
plt.bar(X, inner_bar, width=bar_width * 0.6, color=inner_colors,
label='Inner Bar')

# Add values on top of outer bars
for x, val in zip(X, outer_bar):
    plt.text(x, val + 3, str(val), ha='center', va='bottom',
fontsize=9, fontweight='bold')

# Add values on top of inner bars
for x, val in zip(X, inner_bar):
    plt.text(x, val + 3, str(val), ha='center', va='bottom',
fontsize=8)

plt.xlabel('Category')
plt.ylabel('Value')
plt.title('Bar Inside Bar Example with Distinct Colors')
plt.legend()
plt.show()
```

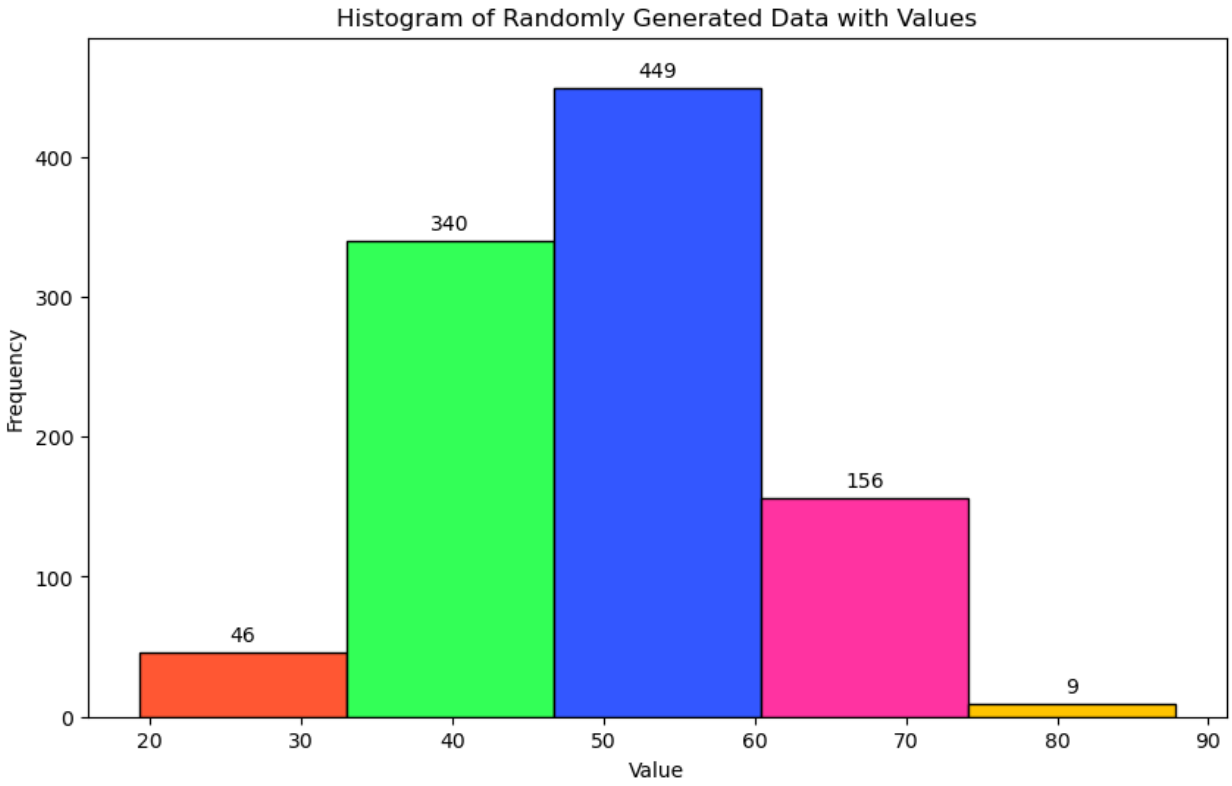



```
import matplotlib.pyplot as plt
import numpy as np


X = np.array([1, 2, 3, 4, 5, 6, 7, 8, 9, 10])
Y = np.array([30000, 35000, 40000, 45000, 50000,
              55000, 60000, 65000, 70000, 75000])

plt.scatter(X, Y, color='green', marker='o')

plt.title('Sample Scatter Plot')
plt.xlabel('X Feature')
plt.ylabel('Y Target')

plt.grid(True)

plt.show()
```



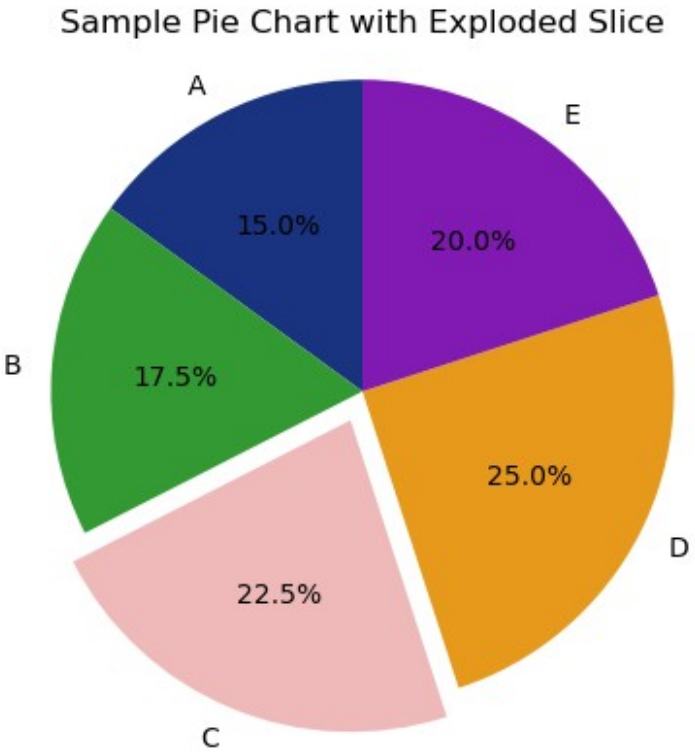

```
import matplotlib.pyplot as plt
import numpy as np

distinct_colors = ['#FF5733', '#33FF57', '#3357FF', '#FF33A1',
'#FFC300']

random_data = np.random.normal(loc=50, scale=10, size=1000)

plt.figure(figsize=(10, 6))

n, bins, patches = plt.hist(random_data, bins=5, edgecolor='black')

for i in range(len(patches)):
    patches[i].set_facecolor(distinct_colors[i])

for i in range(len(n)):
    x_center = (bins[i] + bins[i+1]) / 2
    y_height = n[i]
    plt.text(x_center, y_height + 5, str(int(y_height)),
             ha='center',
             va='bottom',
             fontsize=10)
```

```
plt.ylim(top=n.max() * 1.08)

plt.title('Histogram of Randomly Generated Data with Values')
plt.xlabel('Value')
plt.ylabel('Frequency')

plt.show()
```



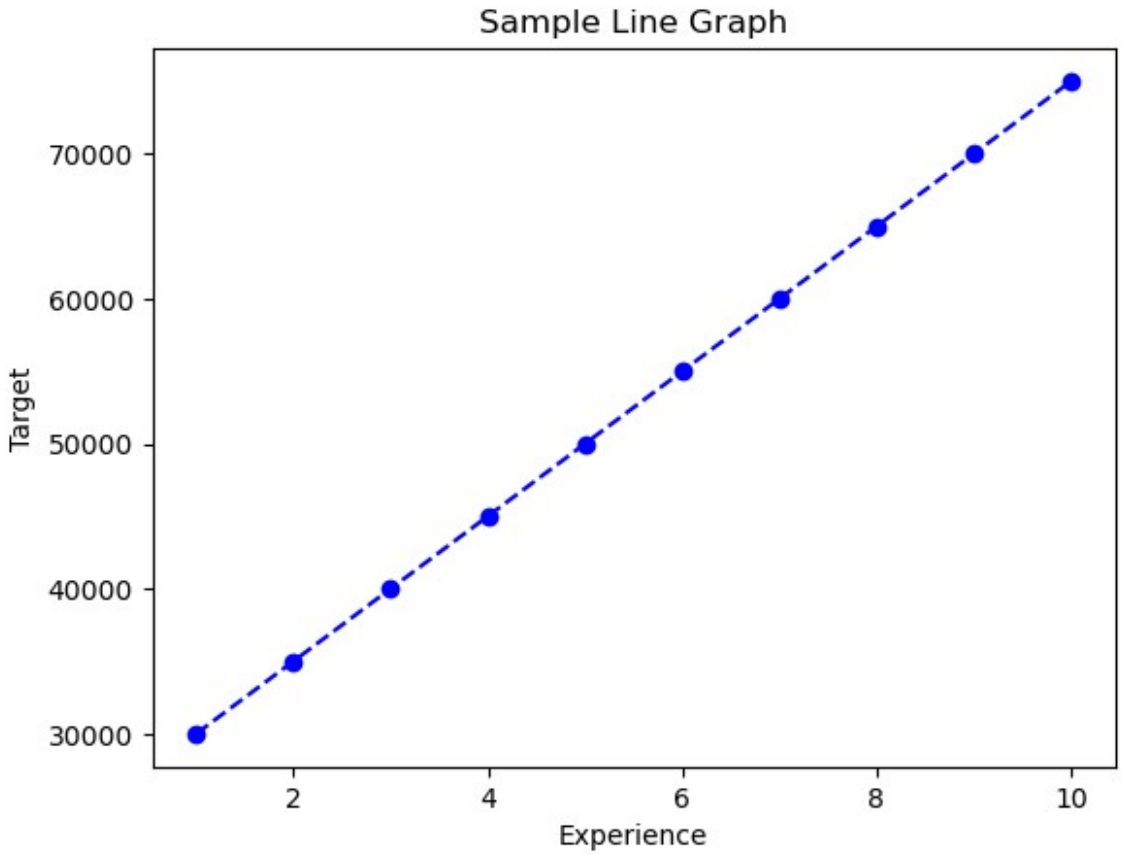

```
import matplotlib.pyplot as plt

categories = ['A', 'B', 'C', 'D', 'E']
values = [15000, 17500, 22500, 25000, 20000]

# Explode only the 'C' slice (index 2)
explode = [0, 0, 0.1, 0, 0]  # 0.1 means "explode out" by 10%

colors = [
    (0.1, 0.2, 0.5, 1),    # color for 'A' (blue-ish, opaque)
    (0.2, 0.6, 0.2, 1),    # 'B' (green, opaque)
    (0.8, 0.1, 0.1, 0.3),  # 'C' (red, lighter with alpha=0.3)
    (0.9, 0.6, 0.1, 1),    # 'D' (orange, opaque)
    (0.5, 0.1, 0.7, 1)     # 'E' (purple, opaque)
]
```

```
plt.pie(values, labels=categories, autopct='%1.1f%%', startangle=90,
explode=explode,colors=colors)

plt.title('Sample Pie Chart with Exploded Slice')
plt.axis('equal')
plt.show()
```

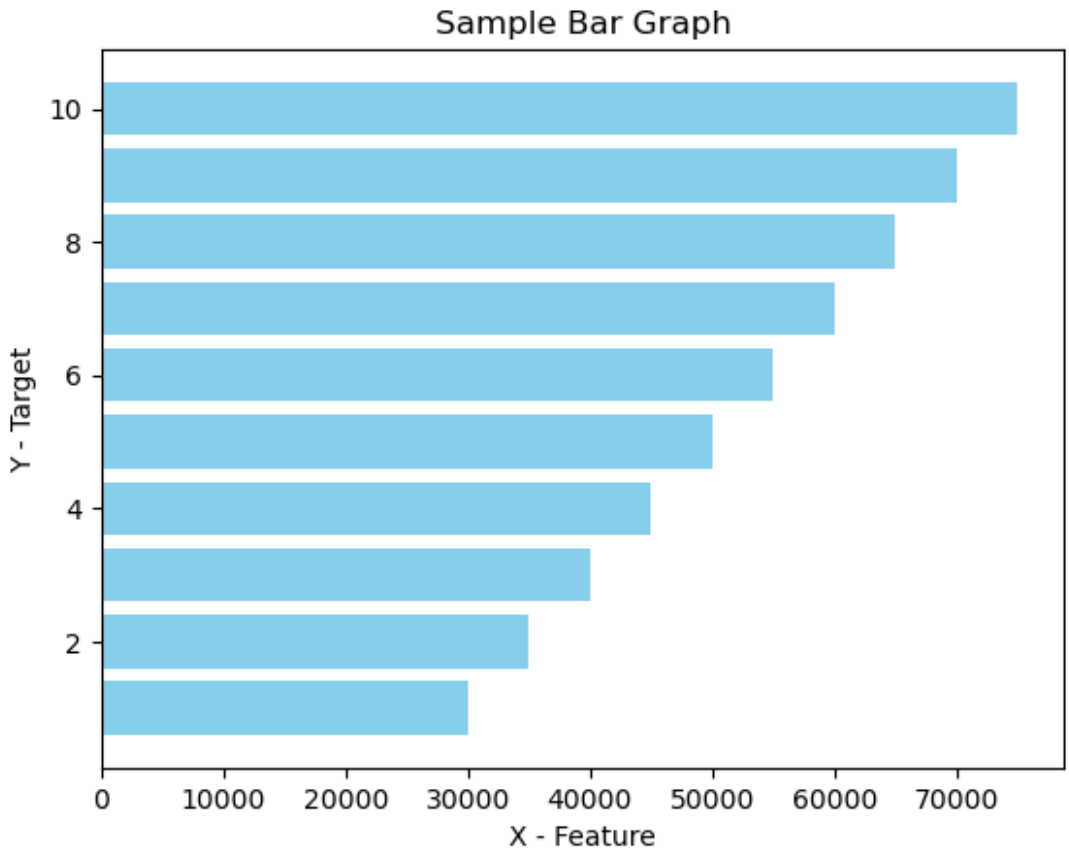



```
import matplotlib.pyplot as plt
import numpy as np

# Sample data for the line graph
X = np.array([1,2,3,4,5,6,7,8,9,10])
Y = np.array([30000, 35000, 40000, 45000, 50000, 55000, 60000, 65000,
70000, 75000])

# Create a line graph with markers
plt.plot(X, Y, marker='o', linestyle='--', color='b')

# Add labels and a title
plt.title('Sample Line Graph')
plt.xlabel('Experience')
plt.ylabel('Target')

# Show the plot
```

```
plt.show()
```




```
Y_bar = np.array([1, 2, 3, 4, 5, 6, 7, 8, 9, 10]) # Corrected to match
the visible bar graph
X_bar = np.array([30000, 35000, 40000, 45000, 50000, 55000, 60000,
65000, 70000, 75000]) # Corrected to match the visible bar graph

# Create a horizontal bar chart
plt.barh(Y_bar, X_bar, color='skyblue')
plt.title('Sample Bar Graph')
plt.xlabel('X - Feature')
plt.ylabel('Y - Target')
plt.show()
```


Sample Bar Graph
Y - Target
X - Feature
10
8
6
4
2
0
10000
20000
30000
40000
50000
60000
70000