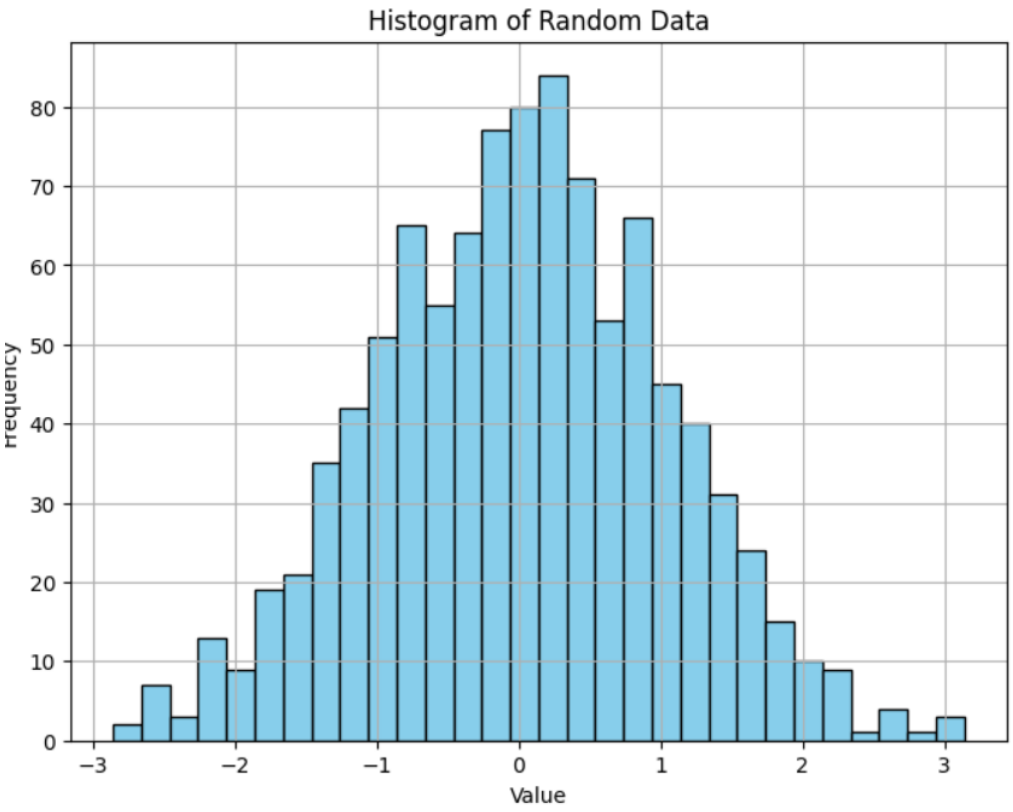
Practical Ques. P8

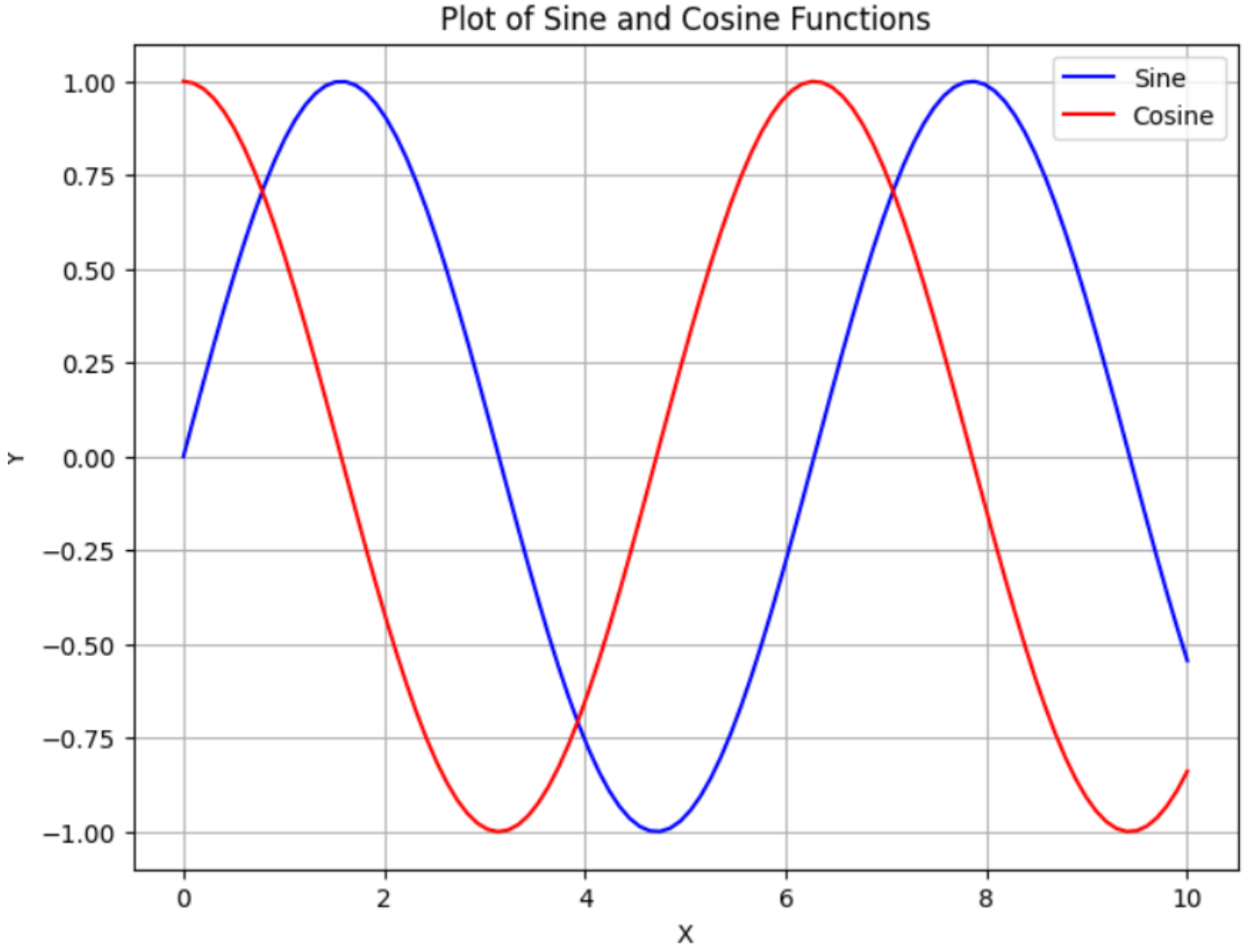
#Create various type of plots/charts like histograms, plot based on sine/cosine function based on data from a matrix.

#Further label different axes in a plot and data in a plot.

```
import numpy as np

import matplotlib.pyplot as plt


# Create sample data

data = np.random.randn(1000)  # Random data for histogram

x = np.linspace(0, 10, 100)    # Data for sine and cosine functions

y_sin = np.sin(x)

y_cos = np.cos(x)


# Create histogram

plt.figure(figsize=(8, 6))

plt.hist(data, bins=30, color='skyblue', edgecolor='black')

plt.title('Histogram of Random Data')

plt.xlabel('Value')

plt.ylabel('Frequency')

plt.grid(True)

plt.show()


# Create plot for sine and cosine functions

plt.figure(figsize=(8, 6))

plt.plot(x, y_sin, label='Sine', color='blue')

plt.plot(x, y_cos, label='Cosine', color='red')
```

```
plt.title('Plot of Sine and Cosine Functions')
plt.xlabel('X')
plt.ylabel('Y')
plt.legend()
plt.grid(True)
plt.show()
```




Plot of Sine and Cosine Functions
Sine
Cosine
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
Y
0
2
4
6
8
10
X