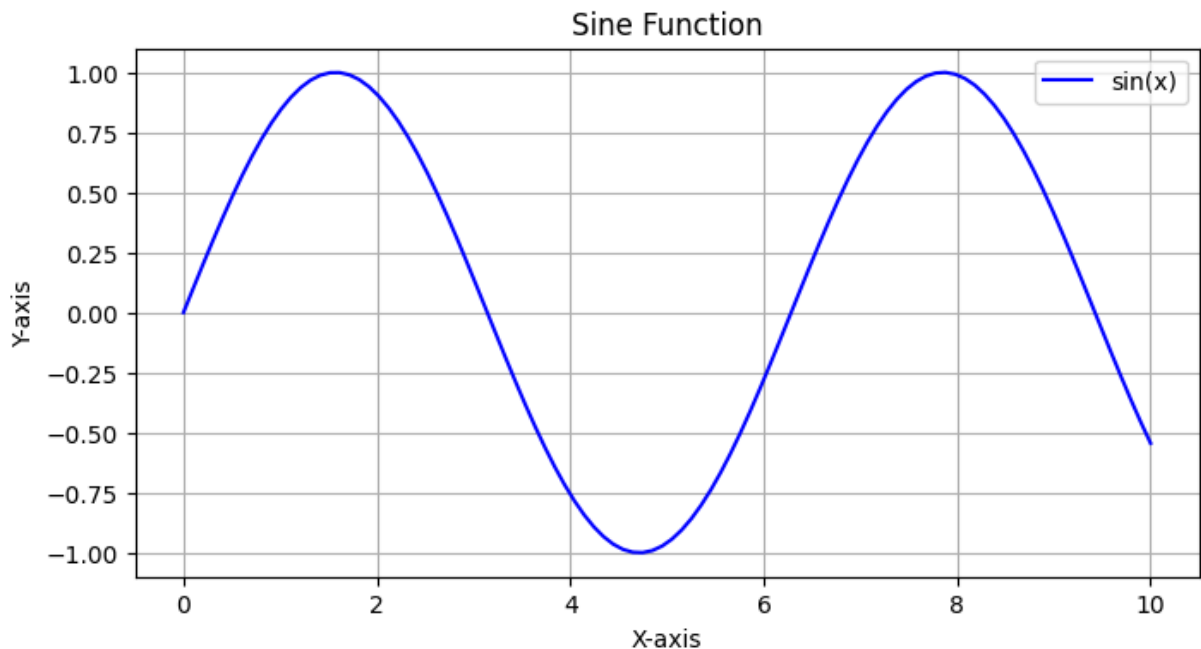


```
In [1]: import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
```

```
In [2]: #line plot
x = np.linspace(0, 10, 100)
y = np.sin(x)

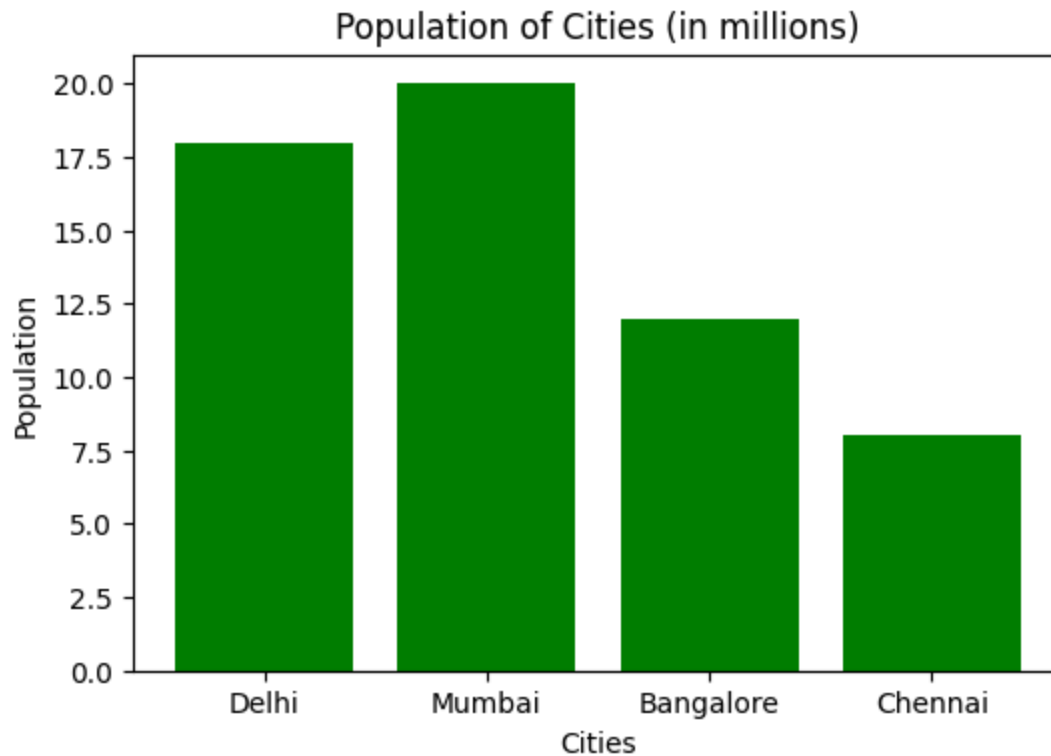
plt.figure(figsize=(8, 4))
plt.plot(x, y, label="sin(x)", color='blue')
plt.title("Sine Function")
plt.xlabel("X-axis")
plt.ylabel("Y-axis")
plt.grid(True)
plt.legend()
plt.show()
```



```
In [3]: #bar chat

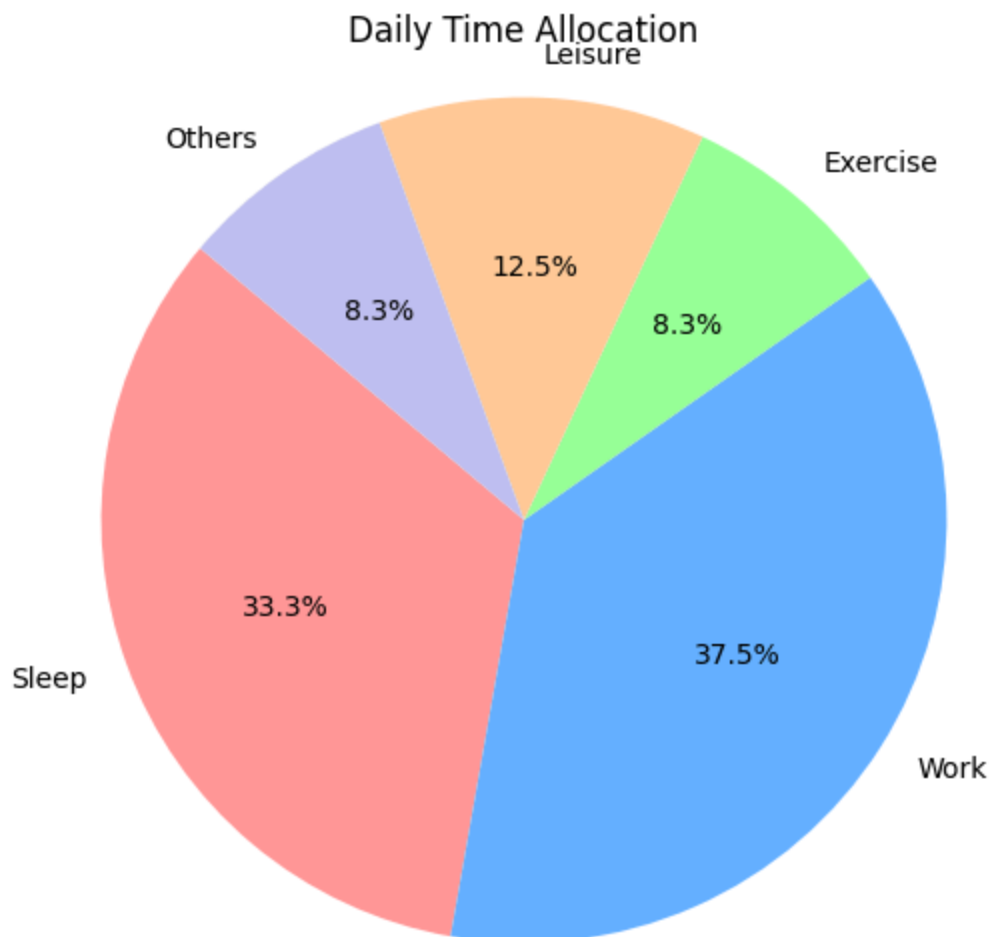
cities = ['Delhi', 'Mumbai', 'Bangalore', 'Chennai']
population = [18, 20, 12, 8]

plt.figure(figsize=(6,4))
plt.bar(cities, population, color='green')
plt.title("Population of Cities (in millions)")
plt.xlabel("Cities")
plt.ylabel("Population")
plt.show()
```



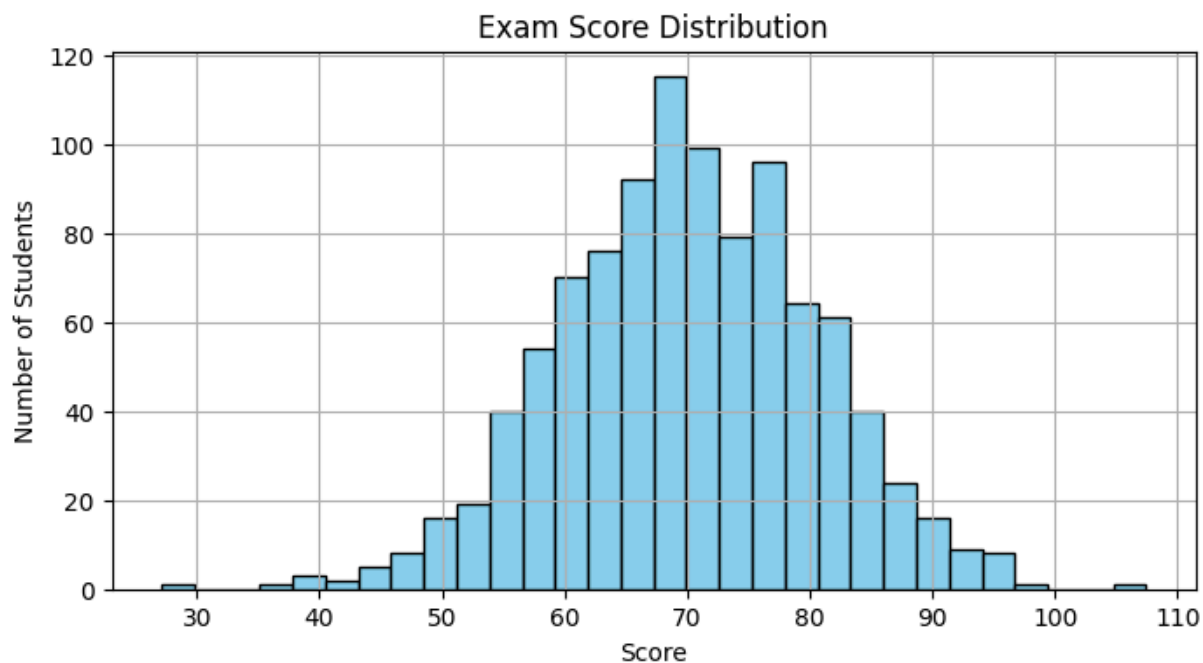
```
In [4]: #pie chart
labels = ['Sleep', 'Work', 'Exercise', 'Leisure', 'Others']
sizes = [8, 9, 2, 3, 2]
colors = ['#ff9999', '#66b3ff', '#99ff99', '#ffcc99', '#c2c2f0']

plt.figure(figsize=(6,6))
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', startangle=140)
plt.title("Daily Time Allocation")
plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.
plt.show()
```



```
In [5]: #histogarm
scores = np.random.normal(loc=70, scale=10, size=1000)

plt.figure(figsize=(8,4))
plt.hist(scores, bins=30, color='skyblue', edgecolor='black')
plt.title("Exam Score Distribution")
plt.xlabel("Score")
plt.ylabel("Number of Students")
plt.grid(True)
plt.show()
```



```
In [6]: #heatmap
data = np.random.rand(10, 10)

plt.figure(figsize=(6, 5))
plt.imshow(data, cmap='hot', interpolation='nearest')
plt.colorbar(label='Value')
plt.title("Random Heatmap")
plt.show()
```

