Line Plot

Importing Libraries

```
In [1]:   import numpy as np
          import pandas as pd

          import matplotlib.pyplot as plt
          import seaborn as sns
```
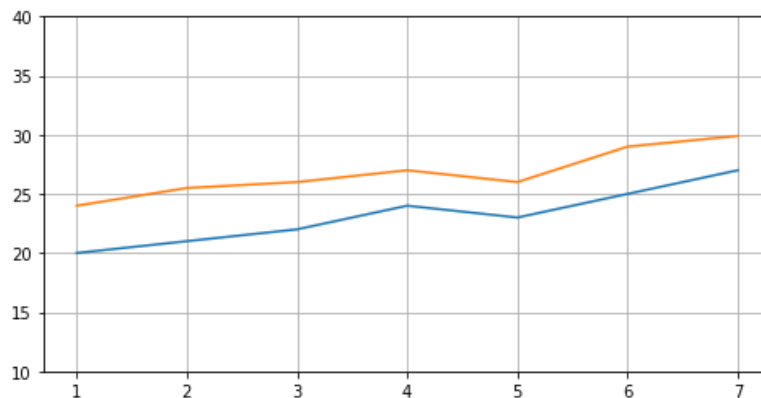
Dummy data

```
In [13]:  days =     [1,2,3,4,5,6,7]
          min_temp = [20, 21,22,24,23,25,27]

          max_temp = [24, 25.5,26,27,26,29,29.9]
```

Line Plot with Matplolib

```
In [63]:  plt.figure(figsize=(8,4))
          plt.grid()
          plt.ylim([10,40])
          plt.plot(days, min_temp);
          plt.plot(days, max_temp);
```


Line plot with Seaborn & Saving Graph in png file

```
In [66]:   plt.figure(figsize=(8,4))
           plt.grid()
           plt.ylim([10,40])
           plt.title('Temperature of the Week')
           plt.xlabel('Days')
           plt.ylabel('Temperature')


           sns.lineplot(x = days, y=min_temp, marker='s', label='Min Temp');
           sns.lineplot(x = days, y=max_temp, marker='o', label='Max Temp');
           plt.legend()
           plt.savefig('Weekly Temperature')
```
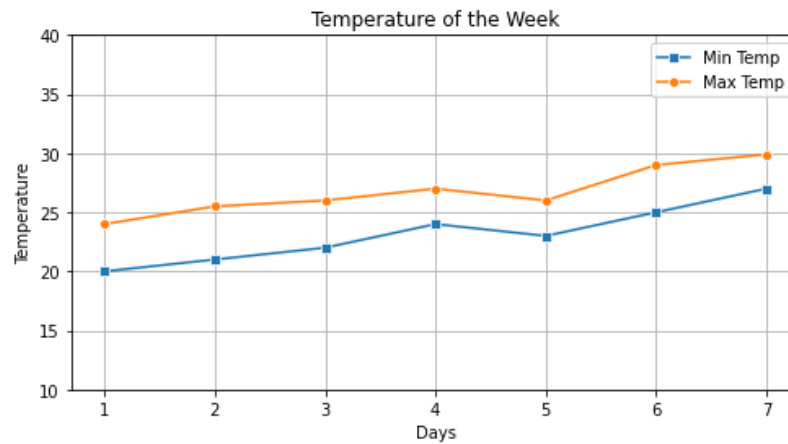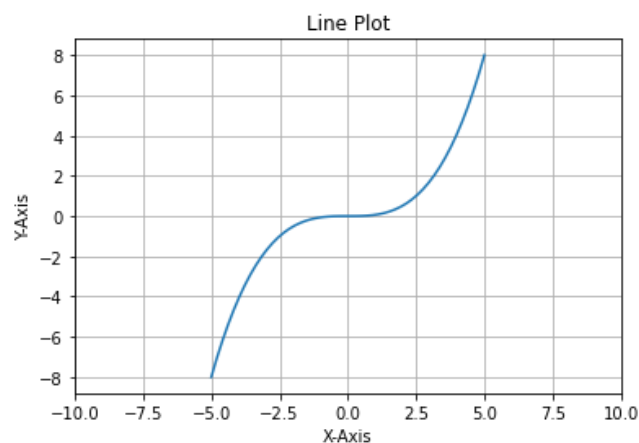

Polynomial Plot

$$f(x) = x^3$$

```
In [35]:   x = np.linspace(-2,2)
           y = x**3
```

```
In [51]:   plt.figure(figsize=(6,4))
           plt.grid()
           plt.xlim([-10,10])
           plt.title('Line Plot')
           plt.xlabel('X-Axis')
           plt.ylabel('Y-Axis')
           plt.plot(x, y);
```
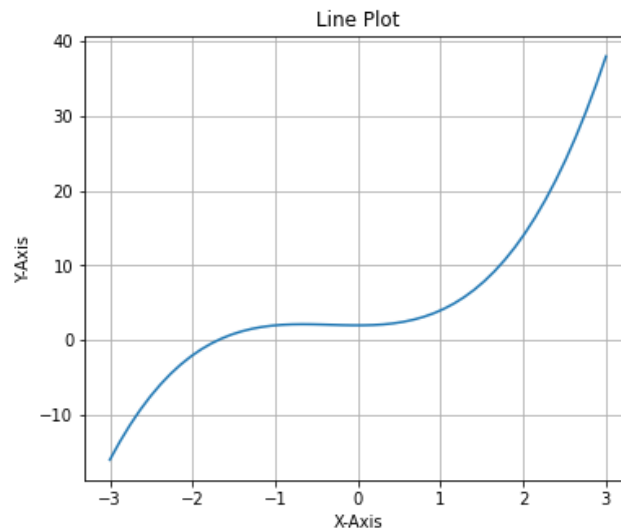

Polynomial Equation

$$ f(x) = x^3 + x^2 + 2 $$

In [55]: ▾
```python
def f(x):
    return x**3 + x**2 + 2
```

In [57]:
```python
x = np.linspace(-3,3)
```

In [59]:
```python
plt.figure(figsize=(6,5))
plt.grid()
plt.title('Line Plot')
plt.xlabel('X-Axis')
plt.ylabel('Y-Axis')
plt.plot(x, f(x));
```


Trigonometric plot

$$ f(x) = cos(x) $$

In [48]: ▾
```python
def f(x):
    return np.cos(x)

x = np.linspace(-5,5)
```

In [49]:
```python
f(x)
```

Out[49]: array([0.28366219, 0.08343229, -0.12026046, -0.31896181, -0.50442466,
               -0.66895138, -0.80571331, -0.90903414, -0.97462554, -0.99976516,
               -0.98340956, -0.92623759, -0.83062217, -0.70053181, -0.5413659 ,
               -0.35973063, -0.16316476, 0.04017327, 0.2418439 , 0.43347681,
                0.60711829, 0.75556135, 0.87264486, 0.95350929, 0.99479835,
                0.99479835, 0.95350929, 0.87264486, 0.75556135, 0.60711829,
                0.43347681, 0.2418439 , 0.04017327, -0.16316476, -0.35973063,
               -0.5413659 , -0.70053181, -0.83062217, -0.92623759, -0.98340956,
               -0.99976516, -0.97462554, -0.90903414, -0.80571331, -0.66895138,
               -0.50442466, -0.31896181, -0.12026046, 0.08343229, 0.28366219])

```
In [42]:    plt.figure(figsize=(10,4))
            plt.grid()
            plt.ylim([-10, 10])
            plt.title('Line Plot')
            plt.xlabel('X-Axis')
            plt.ylabel('Y-Axis')

            plt.plot(x, f(x));
```
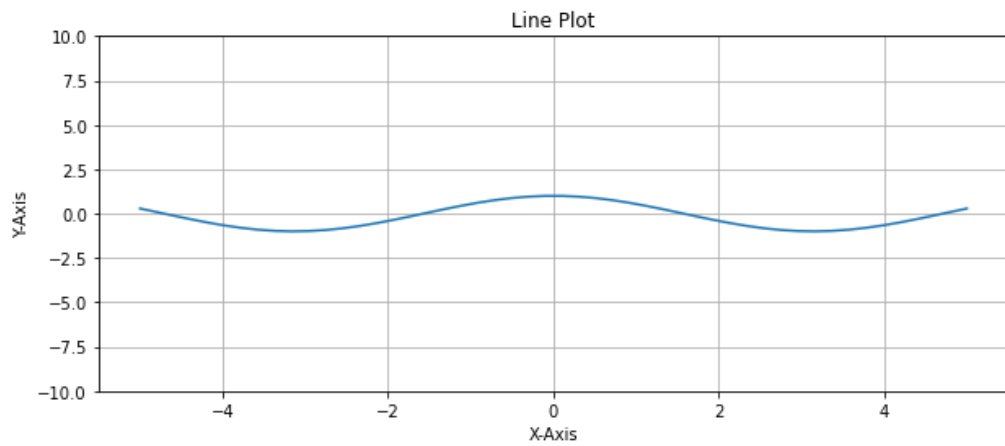

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