# Data Visualization in Python

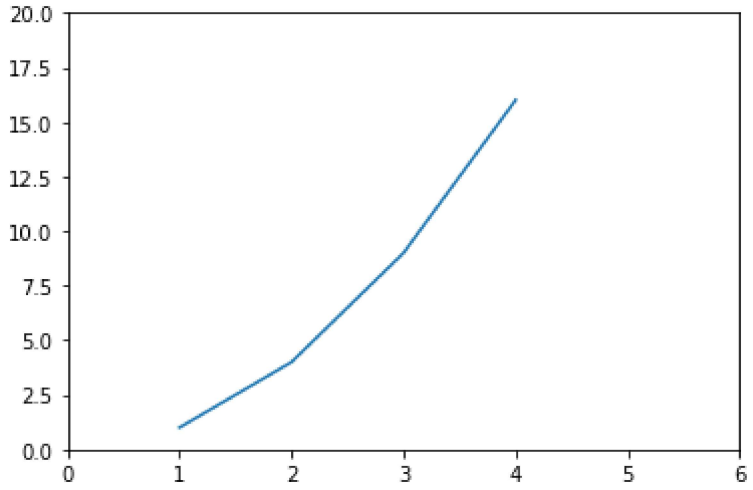
In [1]:
```
#Matplotlib is a python library built on top of numpy.
#It is a low level module and provide a lot of flexibility but at the cost of wri
```

In [2]:
```
#pyplot is matplotlib module which provide a MATLAB like interface
#eg... line plot, histogram, scatter, 3d plot, image, contour, polar
```

In [3]:
```
#importing libraries for data visualization
```

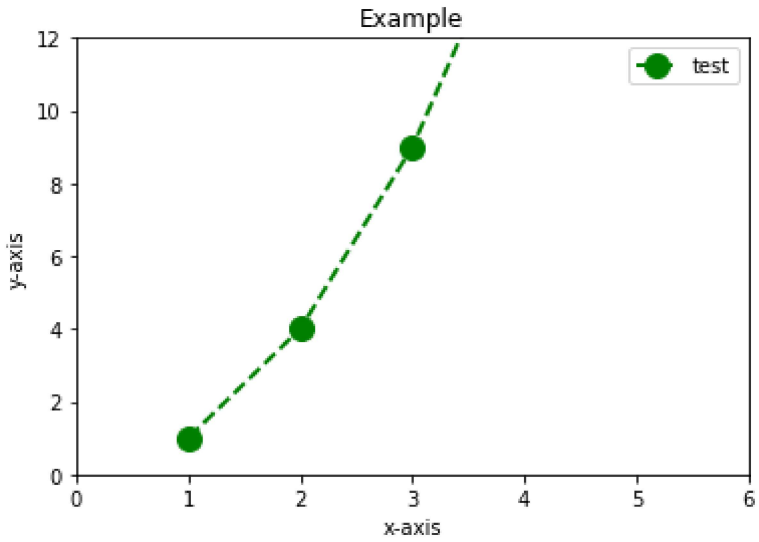
In [6]:
```
import matplotlib.pyplot as plt
```

In [8]:
```
plt.plot([1, 2, 3, 4],[1, 4, 9, 16])   #graph where lines to be drawn
plt.axis([0, 6, 0, 20])                #x-axis and y-axis range
plt.show()                             #to display
```




In [9]:
```
#plot axis
#syntax :- plot.axis([xmin, xmax, ymin, ymax])
```

In [35]:
```
plt.axis([0, 6, 0, 12])
plt.plot([1, 2, 3, 4],[1, 4, 9, 16], color='green',
     marker='o',
     linestyle='dashed',
     linewidth=2,
     markersize=12, label='test')
plt.xlabel('x-axis')
plt.ylabel('y-axis')
plt.title('Example')
plt.legend()
plt.show()
```



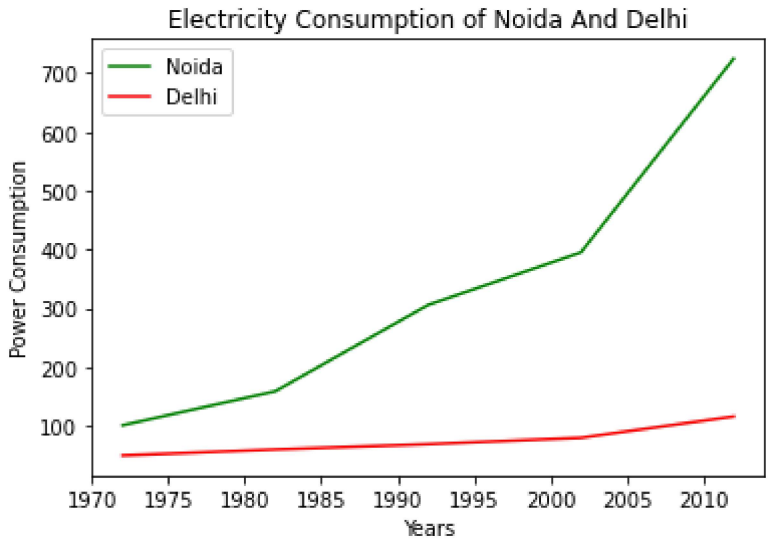

## Electricity power consumption dataset of noida and delhi

In [36]:
```
#Linear PLot
#year = x-axis
#noida and delhi data = y-axis
```

In [28]:
```
year = [1972, 1982, 1992, 2002, 2012]
e_noida = [100.6, 158.61, 305.54, 394.96, 724.79]
e_delhi = [49.2, 59.4, 68.4, 79.3, 115.6]
```

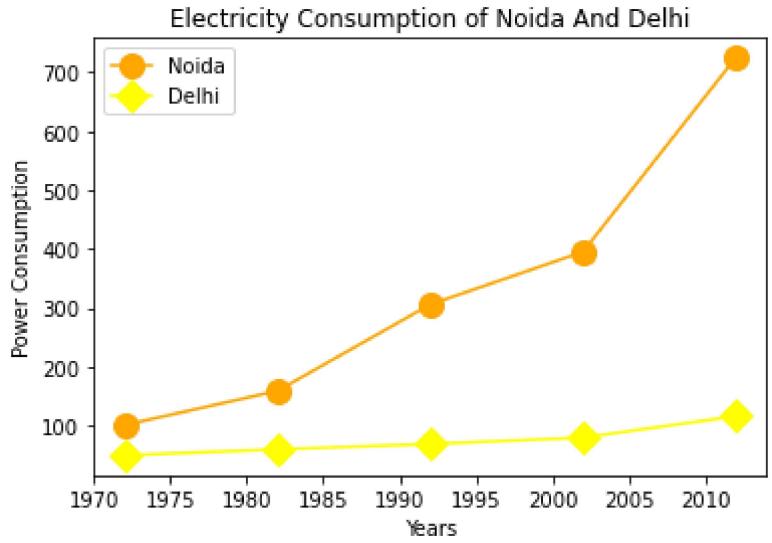
In [29]:
```
#different coloured labels of two countries
```

In [32]:
```
plt.plot(year, e_noida, color='green', label='Noida')
plt.plot(year, e_delhi, color='red', label='Delhi')
plt.xlabel('Years')
plt.ylabel('Power Consumption')
plt.title('Electricity Consumption of Noida And Delhi')
plt.legend()
plt.show()
```

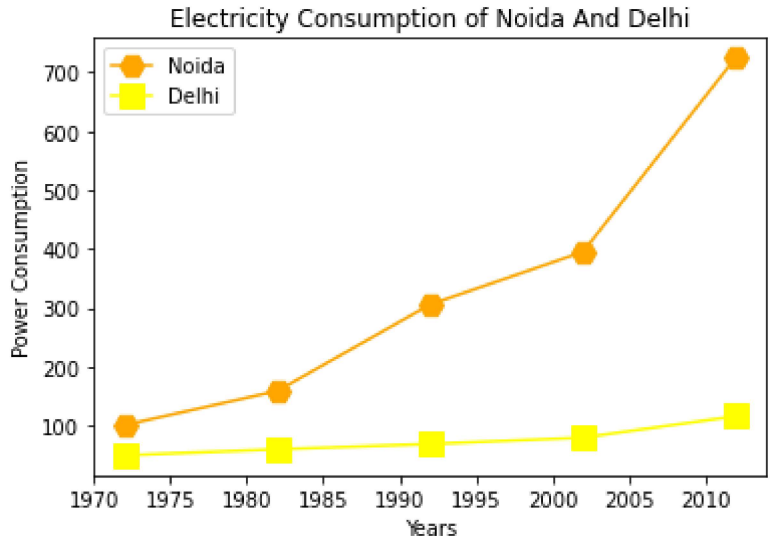



In [37]:
```
#Linear PLot with Line Formatting
```

In [38]:
```
plt.plot(year, e_noida, color='orange',
        marker='o',
        markersize=12,
        label='Noida')
plt.plot(year, e_delhi, color='yellow',
        marker='D',
        markersize=12,
        label='Delhi')
plt.xlabel('Years')
plt.ylabel('Power Consumption')
plt.title('Electricity Consumption of Noida And Delhi')
plt.legend()
plt.show()
```



In [40]:
```
plt.plot(year, e_noida, color='orange',
        marker='H',
        markersize=12,
        label='Noida')
plt.plot(year, e_delhi, color='yellow',
        marker='s',
        markersize=12,
        label='Delhi')
plt.xlabel('Years')
plt.ylabel('Power Consumption')
plt.title('Electricity Consumption of Noida And Delhi')
plt.legend()
plt.show()
```




In [ ]: