Perform Data cleaning process

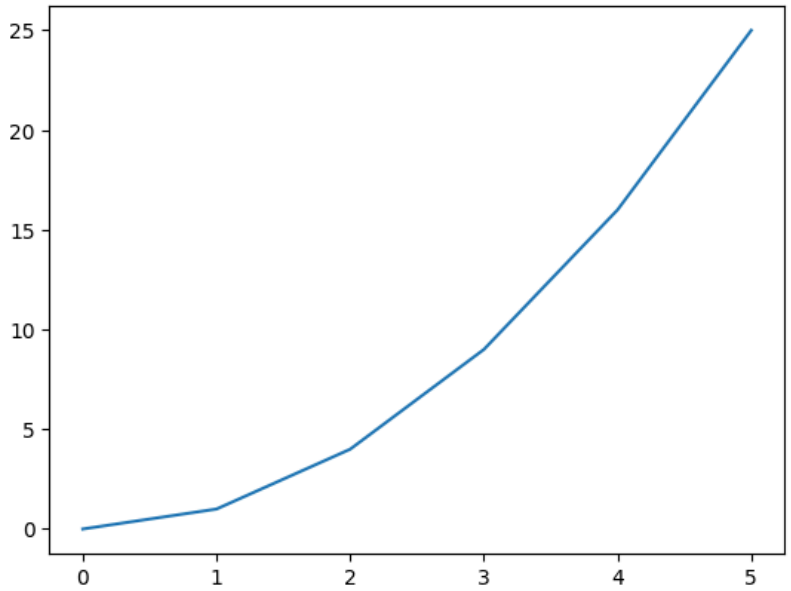
```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```
import matplotlib.pyplot as plt
```

```
x_values=[0,1,2,3,4,5]
y_values=[0,1,4,9,16,25]
plt.plot(x_values,y_values)
```

```
[<matplotlib.lines.Line2D at 0x7a2f992a60e0>]
```

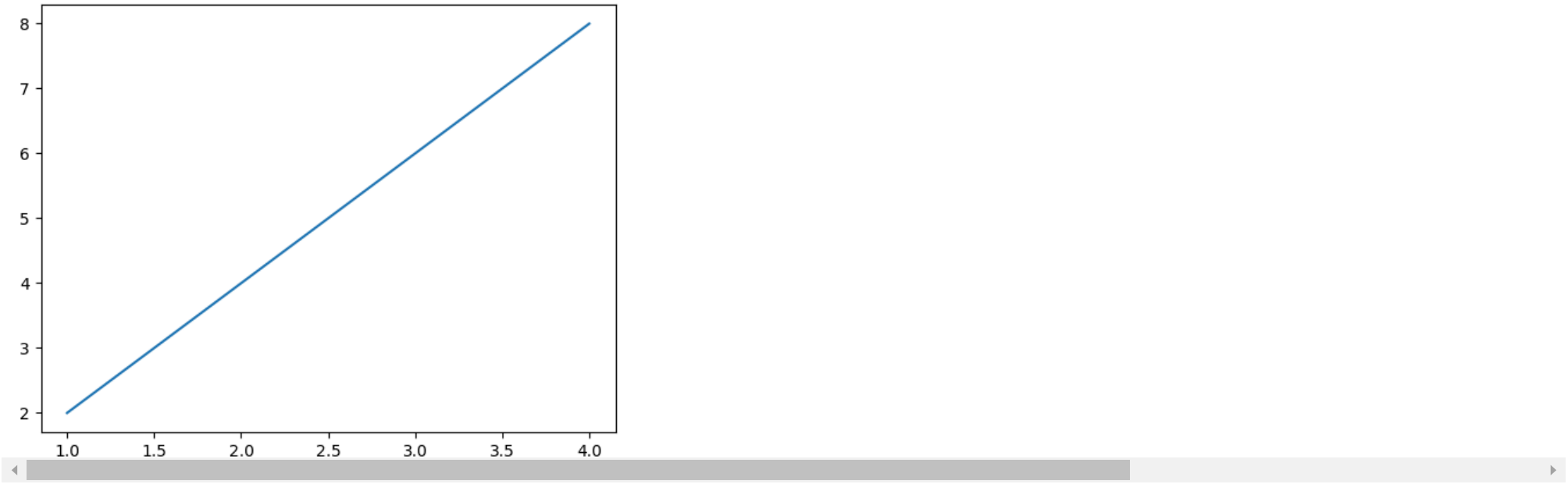


New Section

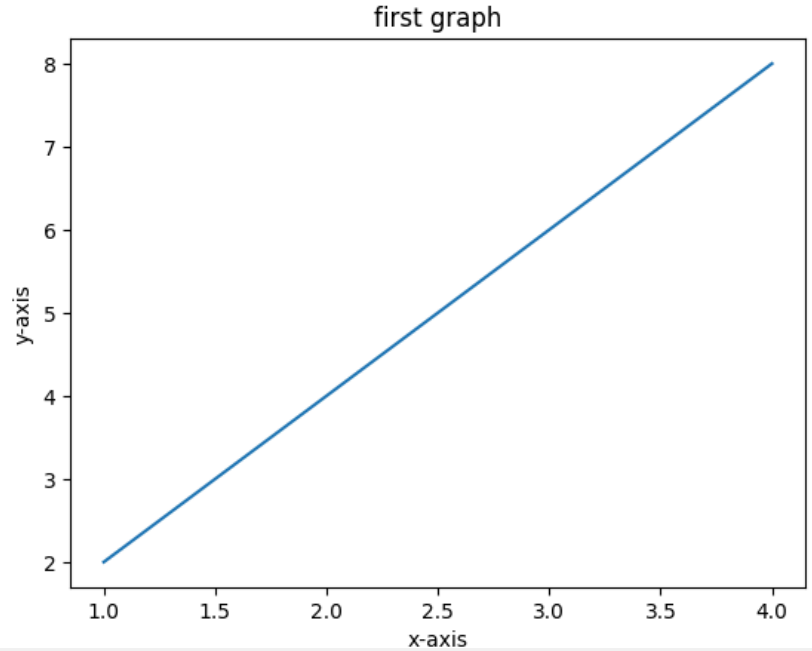
```
plt.show()
```

```
x=[1,2,3,4]
y=[2,4,6,8]


plt.plot(x,y)
```

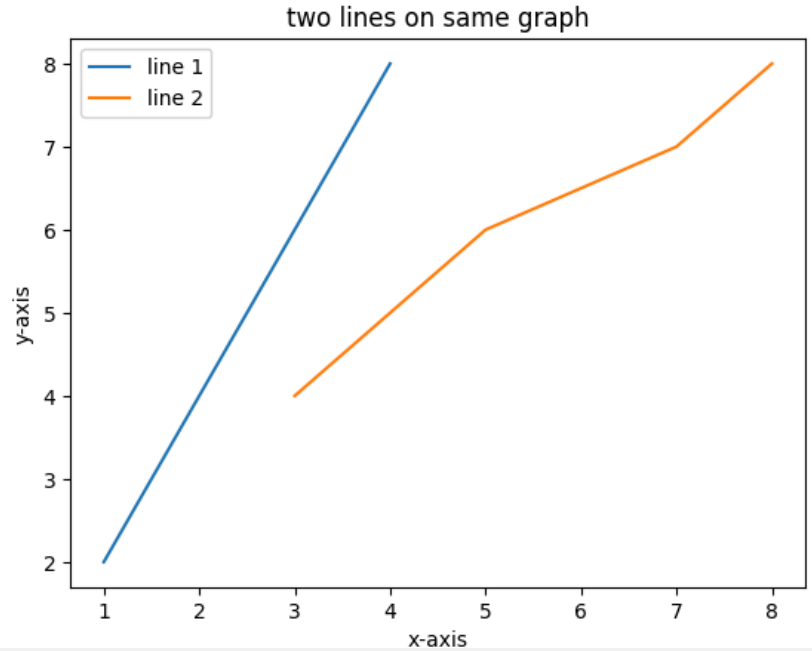
```
[<matplotlib.lines.Line2D at 0x7a2f9925d690>]
```




```
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.title("first graph")
plt.plot(x,y)
plt.show()
```

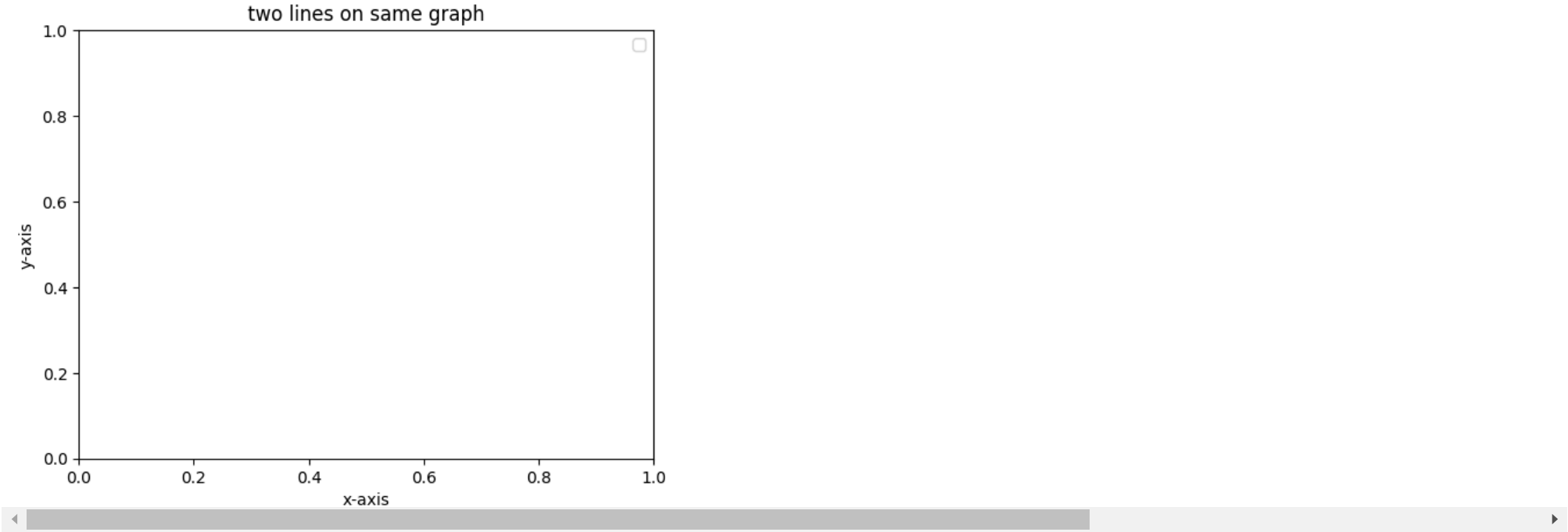



```
x1=[1,2,3,4]
y1=[2,4,6,8]


x2=[3,5,7,8]
y2=[4,6,7,8]
plt.plot(x1,y1,label="line 1")
plt.plot(x2,y2,label="line 2")
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.title("two lines on same graph")
plt.legend()
plt.show()
```



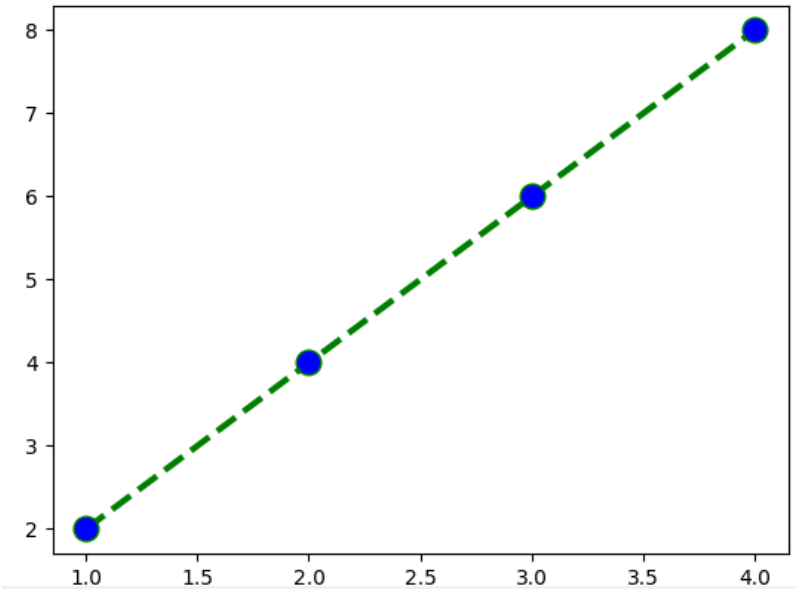

```
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.title("two lines on same graph")
plt.legend()
plt.show()
```

```
WARNING:matplotlib.legend:No artists with labels found to put in legend.  Note that artists whose label start with an underscore are ignored when legend() is called with no ar
```



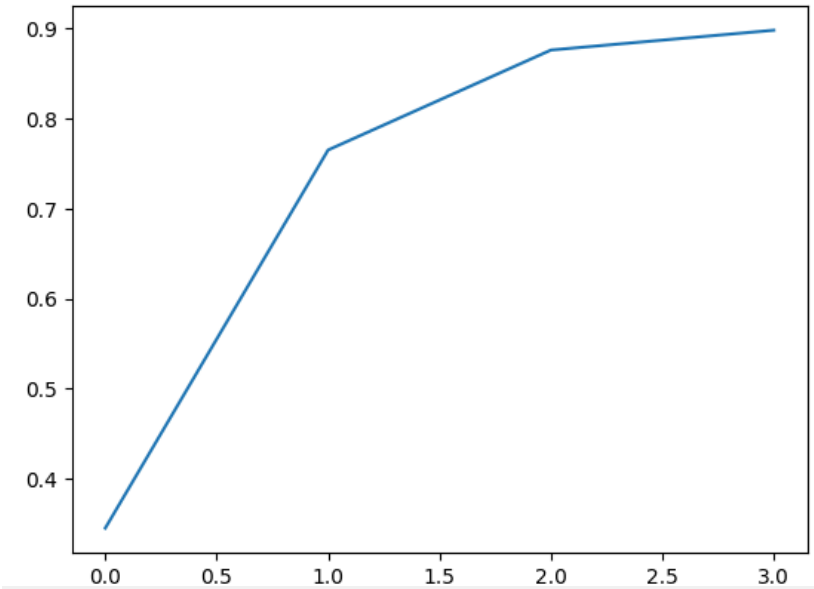

```
x=[1,2,3,4]
y=[2,4,6,8]
plt.plot(x,y,color="green",linestyle="dashed",linewidth=3,marker='o',markerfacecolor="blue",markersize=12)
```

```
[<matplotlib.lines.Line2D at 0x7a2f98ec11e0>]
```



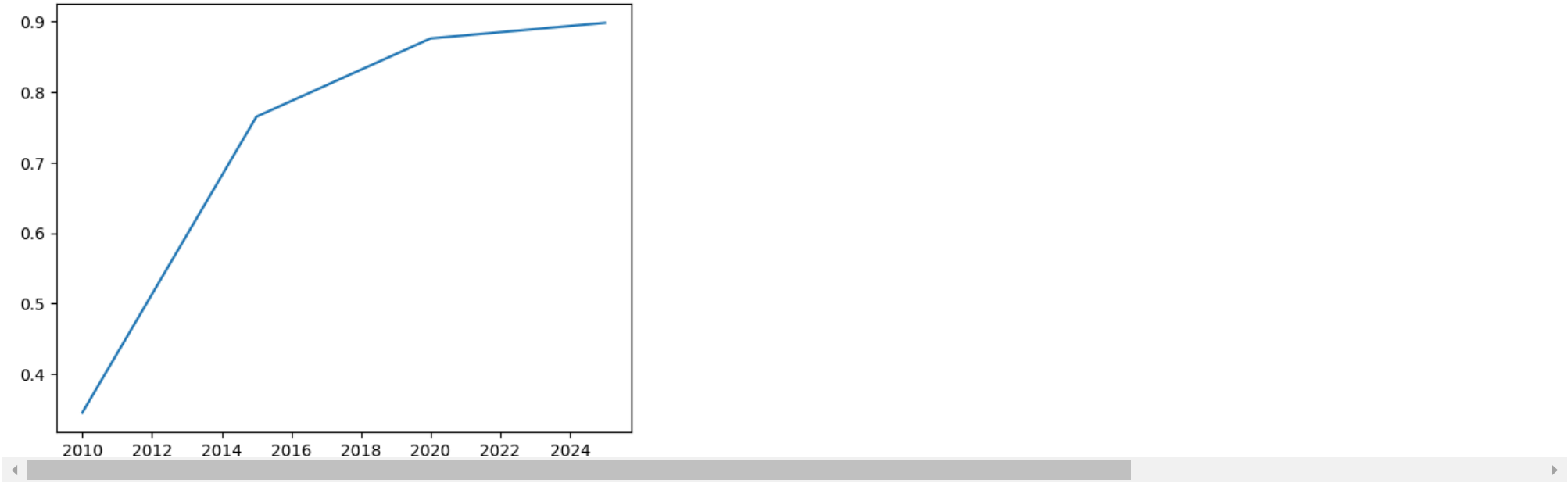

```
yield_apples=[0.345,0.765,0.876,0.898]
plt.plot(yield_apples)
```

```
[<matplotlib.lines.Line2D at 0x7a2f992a5c60>]
```



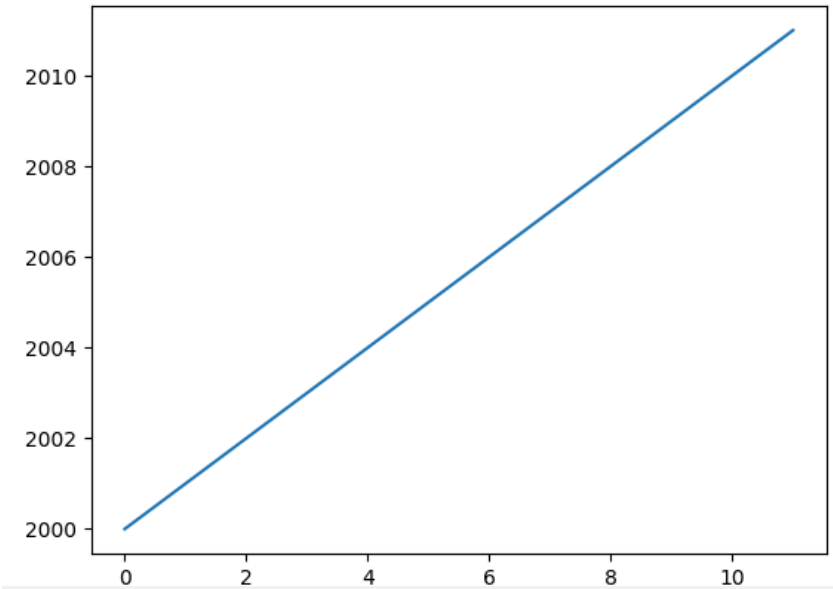
```
years=[2010,2015,2020,2025]
yield_apples=[0.345,0.765,0.876,0.898]
plt.plot(years,yield_apples)
```

```
[<matplotlib.lines.Line2D at 0x7a2f99002d70>]
```



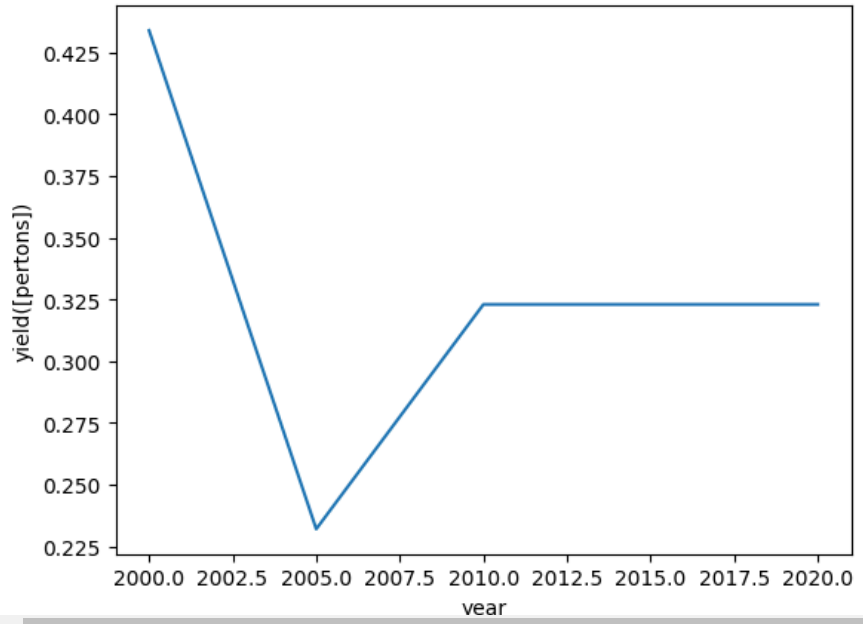

```
years=range(2000,2012)
apples=[0.455,0.563,0.356,0.536]


oranges=[0.242,0.344,0.244,0.324]




plt.plot(years)
```

```
[<matplotlib.lines.Line2D at 0x7a2f99006d40>]
```



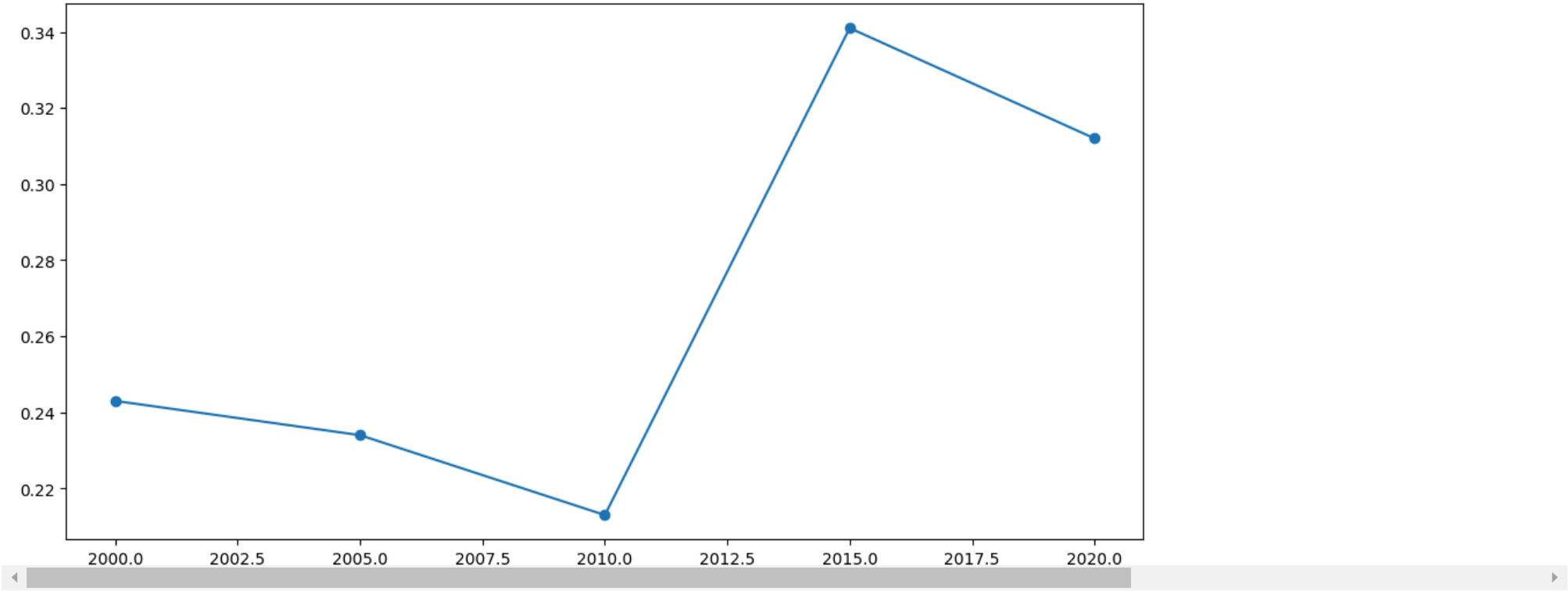

```
years=[2000,2005,2010,2015,2020]
yield_apples=[0.434,0.232,0.323,0.323,0.323]
plt.plot(years,yield_apples)
plt.xlabel('year')
plt.ylabel("yield([pertons])")
```

```
Text(0, 0.5, 'yield([pertons])')
```



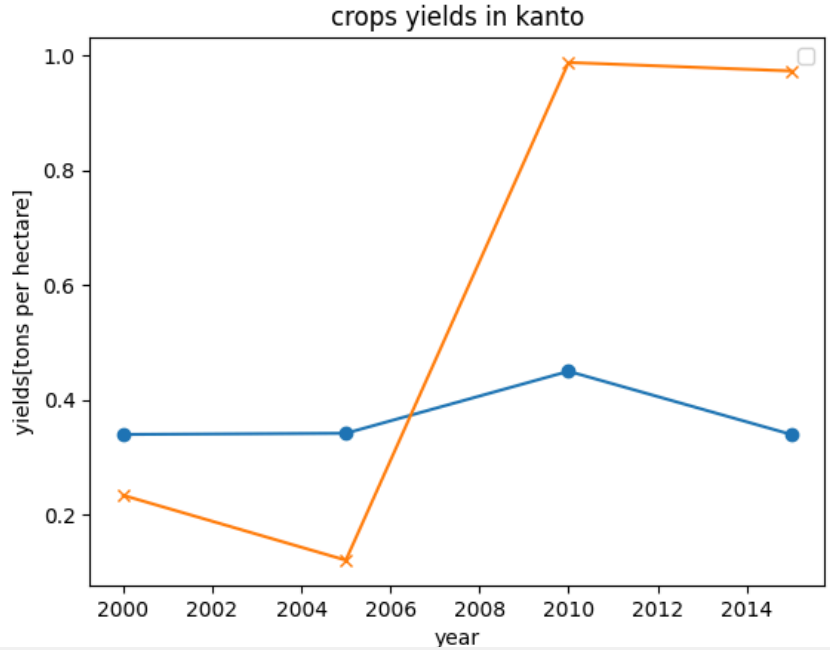

```
plt.figure(figsize=(12,6))
years=[2000,2005,2010,2015,2020]
apples=[0.243,0.234,0.213,0.341,0.312]

plt.plot(years,apples,marker='o')
```

```
[<matplotlib.lines.Line2D at 0x7a2f98ac6b00>]
```




```
years=[2000,2005,2010,2015]
apples=[0.34,0.342,0.45,0.34]
oranges=[0.234,0.121,0.9878,0.973]

plt.plot(years,apples,marker='o')
plt.plot(years,oranges,marker='x')
plt.xlabel("year")
plt.ylabel("yields[tons per hectare]")
plt.title("crops yields in kanto")
plt.legend(apples,oranges)
```

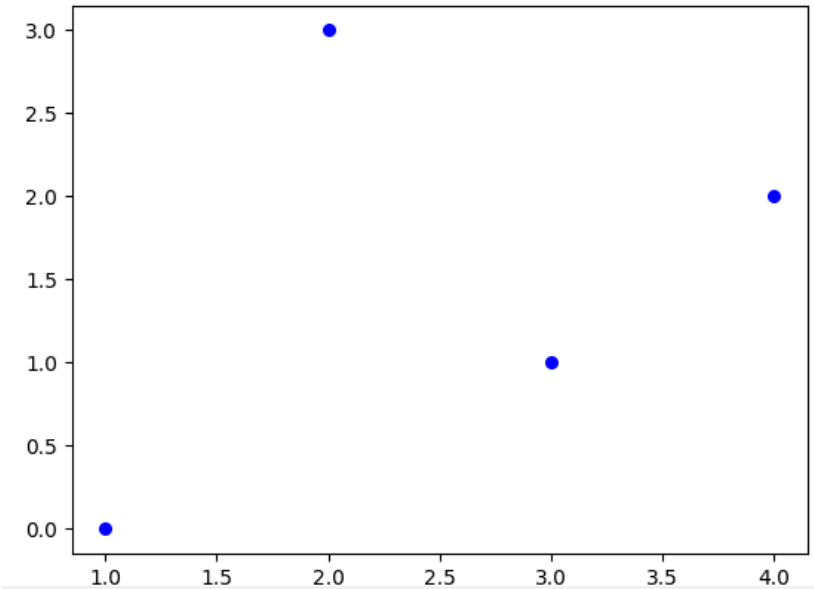
```
<ipython-input-22-4837b5c81319>:10: UserWarning: Legend does not support handles for float instances.
A proxy artist may be used instead.
See: https://matplotlib.org/stable/users/explain/axes/legend_guide.html#controlling-the-legend-entries
  plt.legend(apples,oranges)
<matplotlib.legend.Legend at 0x7a2f9899ded0>
```



SCATTER PLOTS

```
import matplotlib.pyplot as plt
x_values=[1,2,3,4]
y_values=[0,3,1,2]
plt.scatter(x_values,y_values,s=30,color="blue")
```

```
<matplotlib.collections.PathCollection at 0x7a2f98a4ed70>
```




```
import numpy as np
import pandas as pd
```

```
x=np.arange(0,10)
y=np.arange(11,21)
```

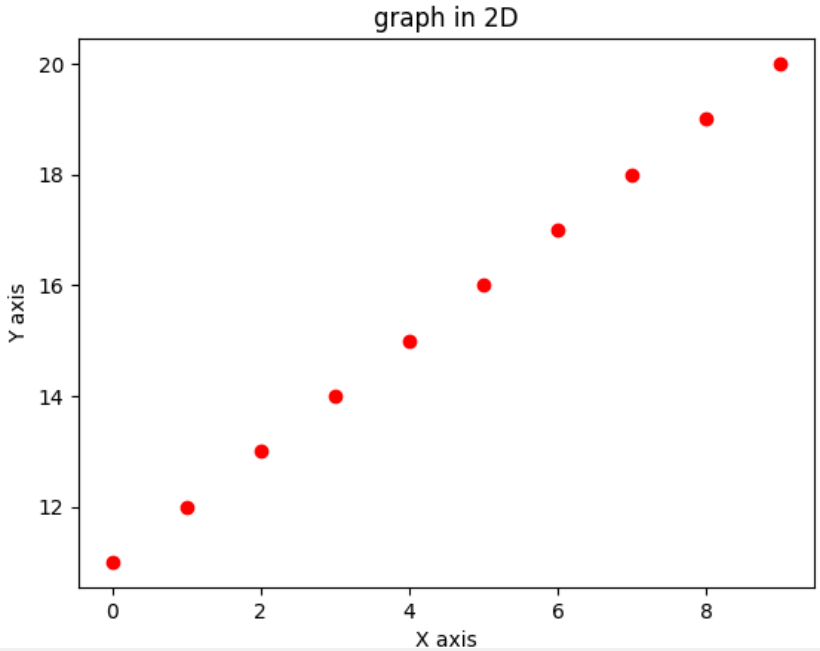
```
x
```

```
array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])
```

```
y
```

```
array([11, 12, 13, 14, 15, 16, 17, 18, 19, 20])
```

```
plt.scatter(x,y,c='r')
plt.xlabel("X axis")
plt.ylabel("Y axis")
plt.title("graph in 2D")
plt.savefig("Test.png")
```

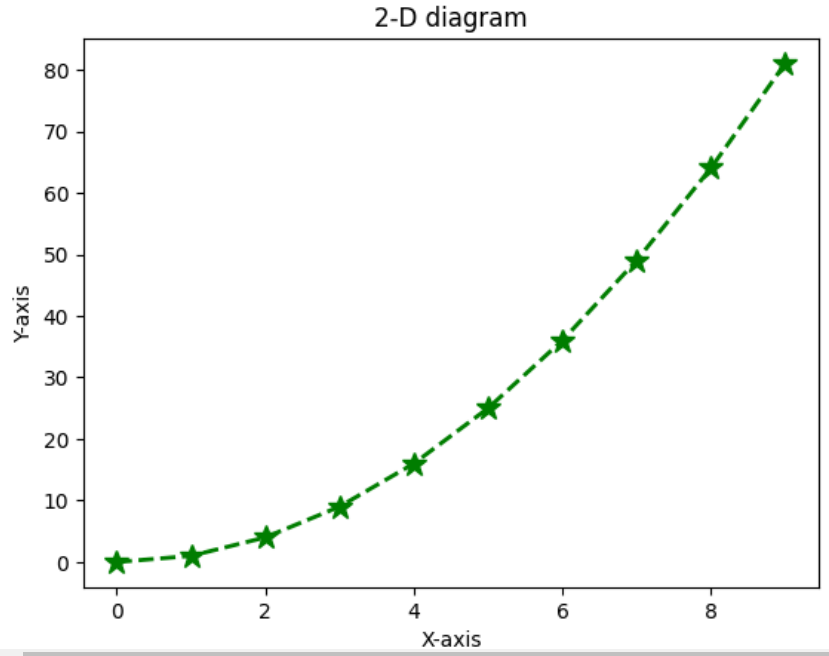



```
y=x*x
y
```

```
array([ 0,  1,  4,  9, 16, 25, 36, 49, 64, 81])
```

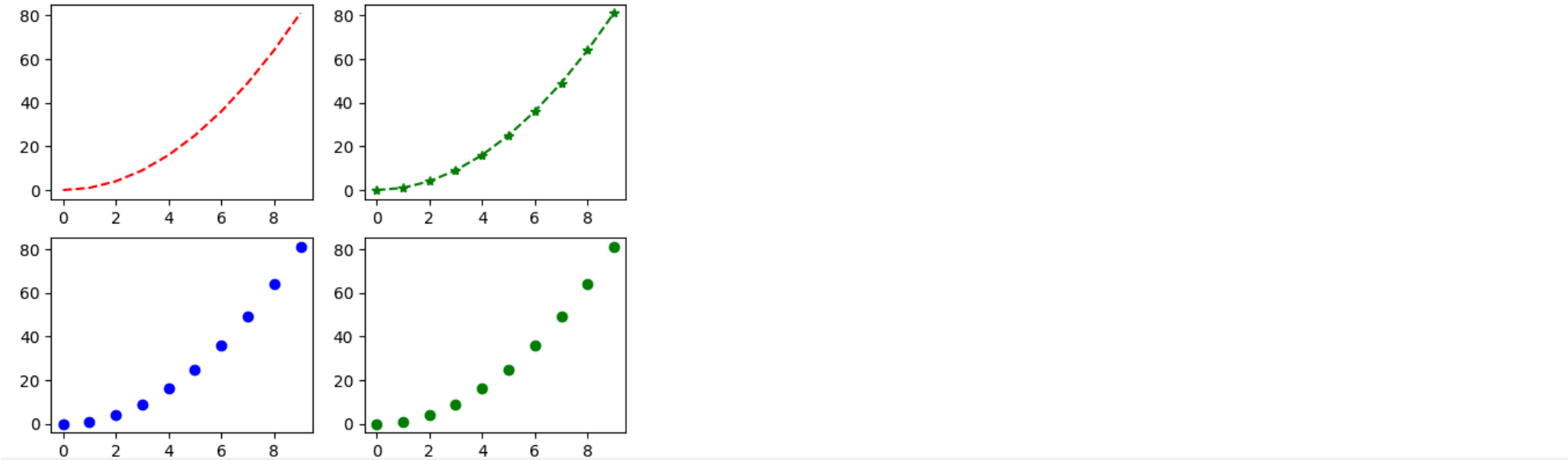
```
plt.plot(x,y,'g*',linestyle='dashed',linewidth=2,markersize=12)
plt.xlabel("X-axis")
plt.ylabel("Y-axis")
plt.title("2-D diagram")
```

```
Text(0.5, 1.0, '2-D diagram')
```




```
plt.subplot(2,2,1)
plt.plot(x,y,'r--')
plt.subplot(2,2,2)
plt.plot(x,y,'g*--')
plt.subplot(2,2,3)
plt.plot(x,y,'bo')
plt.subplot(2,2,4)
plt.plot(x,y,'go')
```

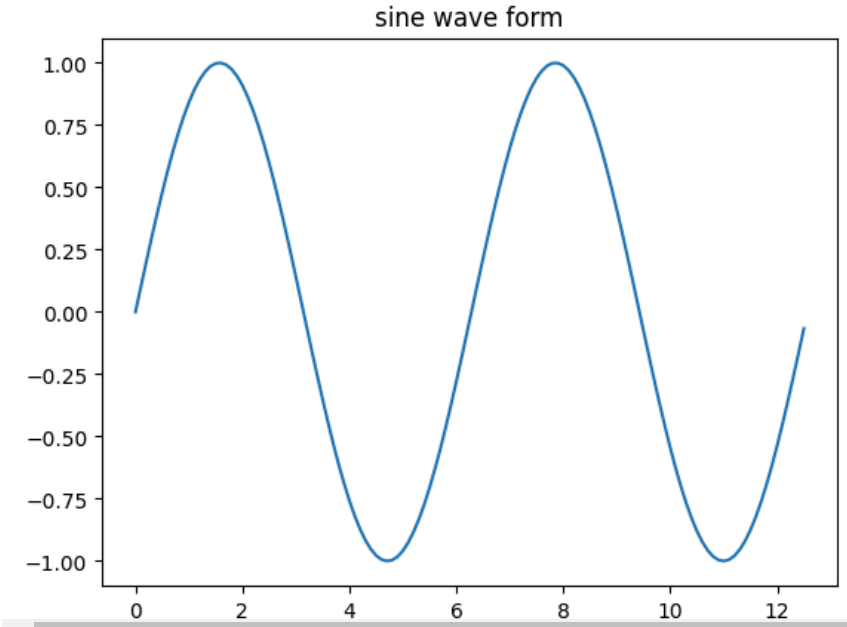
```
[<matplotlib.lines.Line2D at 0x7a2f630428c0>]
```



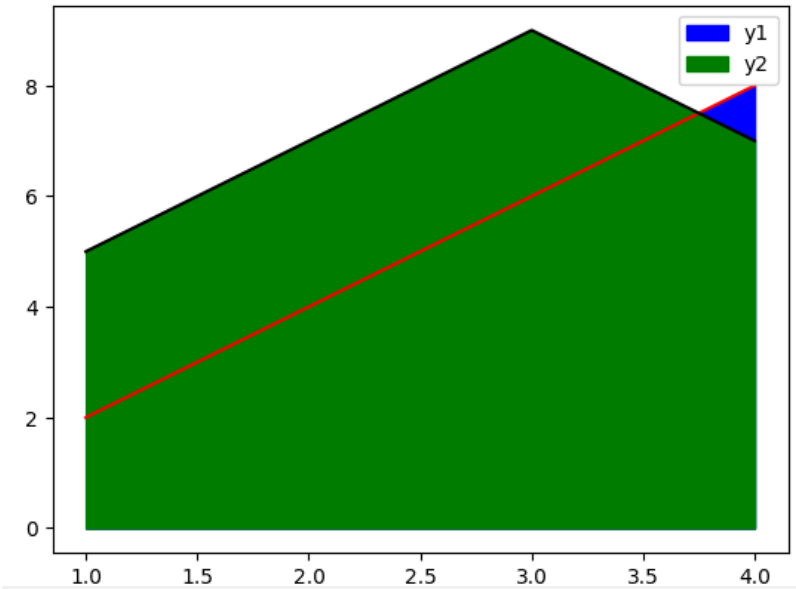

```
np.pi
```

```
3.141592653589793
```

```
x=np.arange(0,4*np.pi,0.1)
y=np.sin(x)
plt.title("sine wave form")
plt.plot(x,y)
plt.show()
```

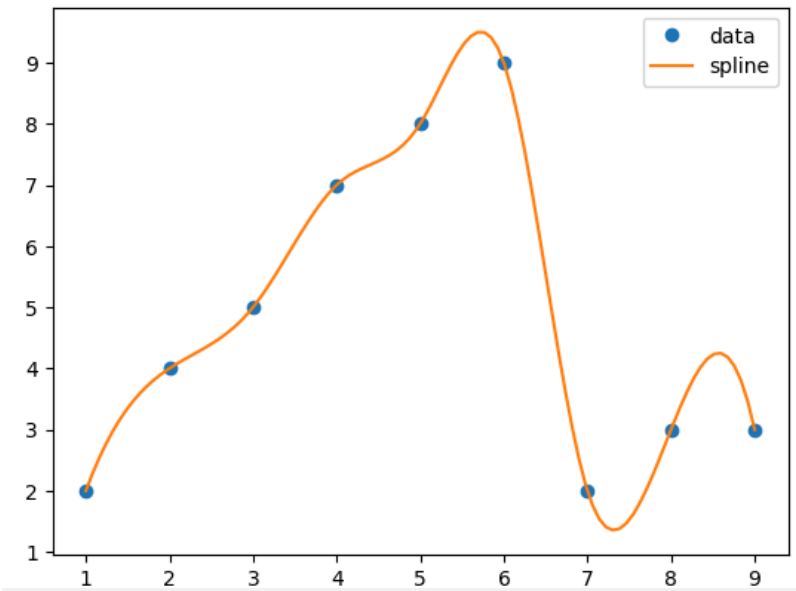



```
import matplotlib.pyplot as plt
import numpy as np
x=[1,2,3,4]
y1=[2,4,6,8]
y2=[5,7,9,7]
y3=[1,2,4,6]
plt.fill_between(x,y1,color='blue')
plt.fill_between(x,y2,color='green')
plt.plot(x,y1,color='red')
plt.plot(x,y2,color='black')
plt.legend(['y1','y2'])
plt.show()
```

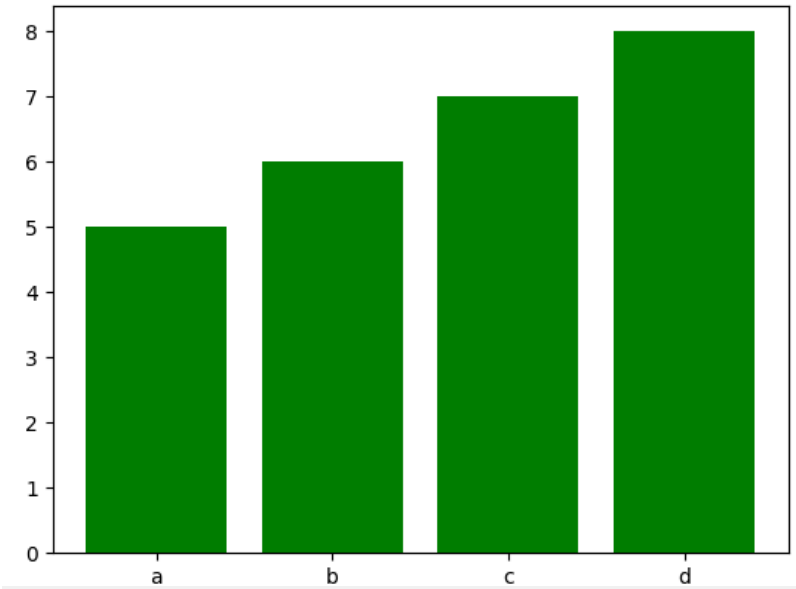



```
plt.stackplot(x,y1,y2,y3,labels=['line1','line2','line3'])
plt.legend(loc='upper left')
plt.title('Stacked line chart')
plt.xlabel('X-Axis')
plt.ylabel('Y-Axis')
plt.show()
```

```
import numpy as np
import matplotlib.pyplot as plt
from scipy.interpolate import make_interp_spline
x=np.array([1,2,3,4,5,6,7,8,9])
y=np.array([2,4,5,7,8,9,2,3,3])
spl=make_interp_spline(x,y)
x_smooth=np.linspace(x.min(),x.max(),100)
y_smooth=spl(x_smooth)
plt.plot(x,y,'o',label='data')
plt.plot(x_smooth,y_smooth,'-',label='spline')
plt.legend()
plt.show()
```




```
values=[5,6,7,8]
name=["a","b","c","d"]
plt.bar(name,values,color="green")
plt.show()
```




```
height=[23,24,25,26]
name=["one","two","three","four"]
c1=['red','green']
c2=['b','g']
plt.bar(name,height,width=0.8,color=c1)
plt.xlabel('x-axis')
plt.ylabel('Y-axis')
plt.title("MY bar chart")
plt.show()
```