https://www.youtube.com/watch?v=DAQNHzOcO5A (https://www.youtube.com/watch?v=DAQNHzOcO5A)

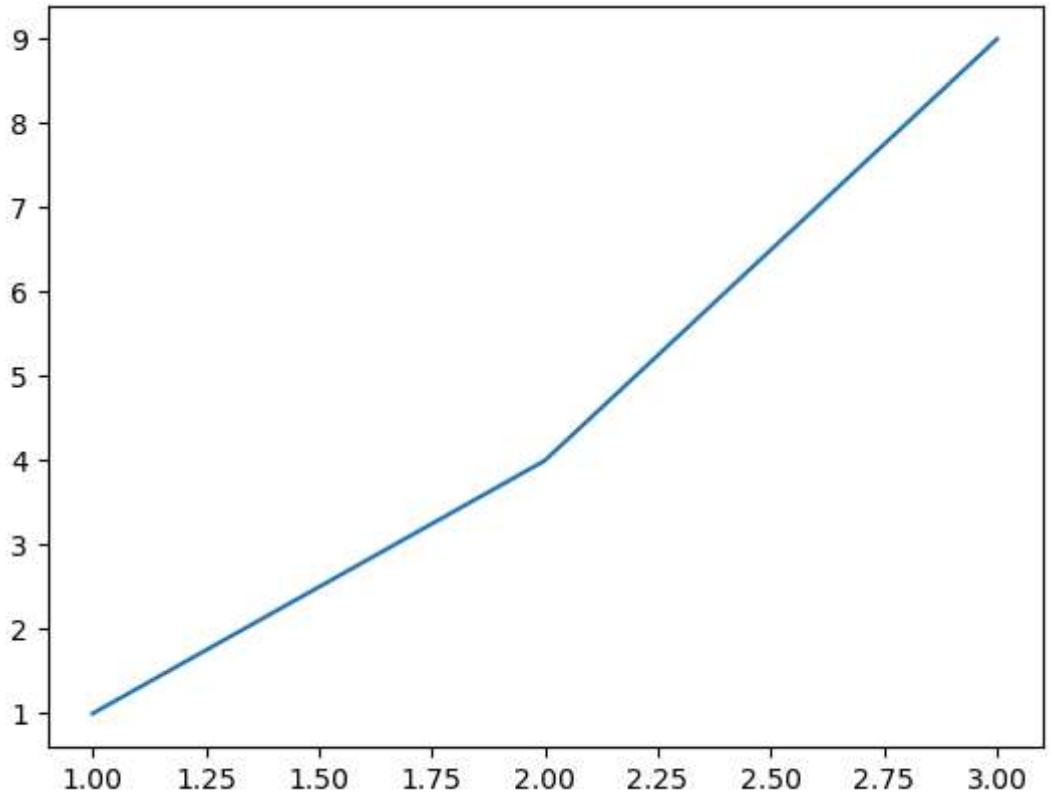
## load libraries

In [2]:
```
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
```

## Basic graph

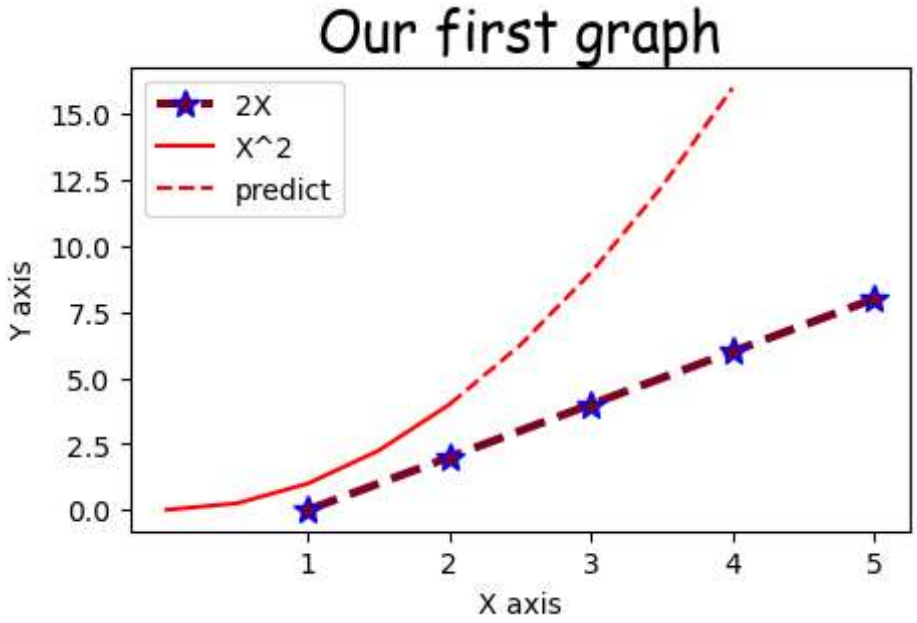
In [3]:
```
plt.plot([1,2,3],[1,4,9])
```

Out[3]:
```
[<matplotlib.lines.Line2D at 0x19e70c4d590>]
```



In [43]:

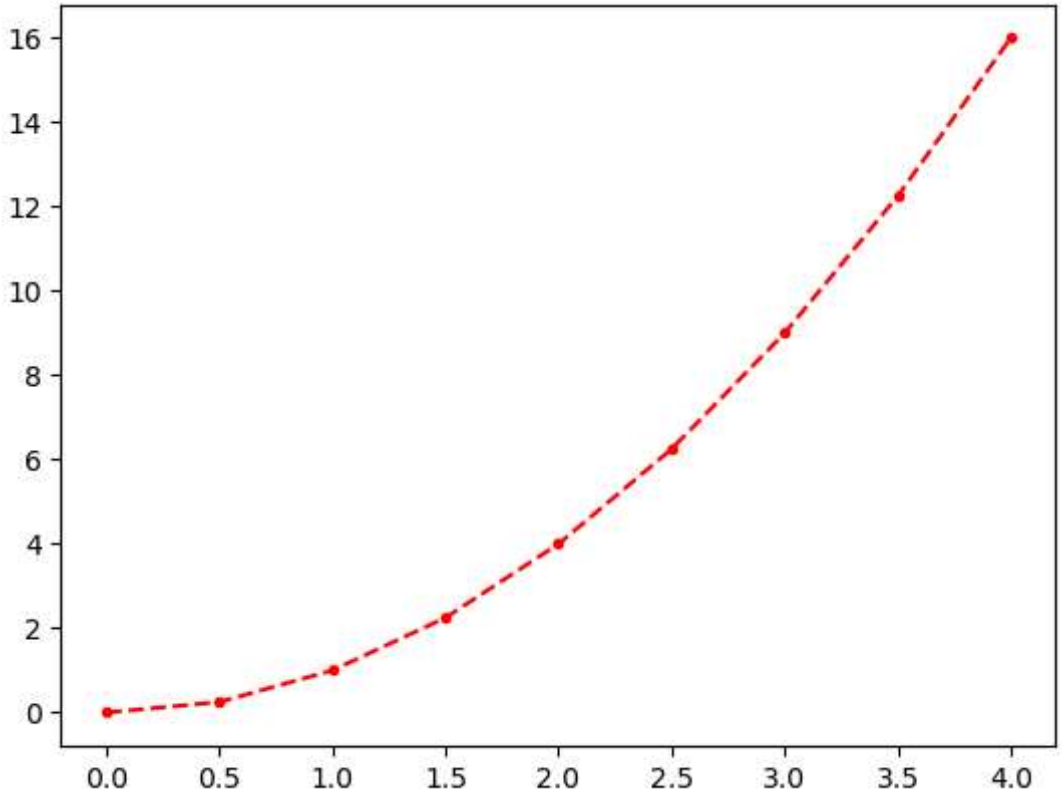
```
x=[1,2,3,4,5]
y=[0,2,4,6,8]

#resize figure
plt.figure(figsize=(5,3),dpi=100)

plt.plot(x,y,label='2X',color='#800020',linewidth=3,marker='*',markersize=10,markeredgecolor='blue',linestyle='--')

#2ndplot in same graph
x2=np.arange(0,4.5,0.5)
#plt.plot(x2,x2**2, 'r',label='X^2')
plt.plot(x2[:5],x2[:5]**2, 'r',label='X^2')
plt.plot(x2[4:],x2[4:]**2, 'r--',label='predict')

#instead short hand notations can also be used
#format='[color][marker][line]'
#e.g. plt.plot(x,y,'r*-',label='2x')

#plt.title('Our first graph')
plt.title('Our first graph',fontdict={'fontname':'Comic Sans MS','fontsize':20})
plt.xlabel('X axis')
plt.ylabel('Y axis')

plt.xticks([1,2,3,4,5])
#plt.yticks([0,2,4,6,8])

plt.legend()

#save graph
plt.savefig('mygraph.png',dpi=300)

plt.show()
```




**another plot**

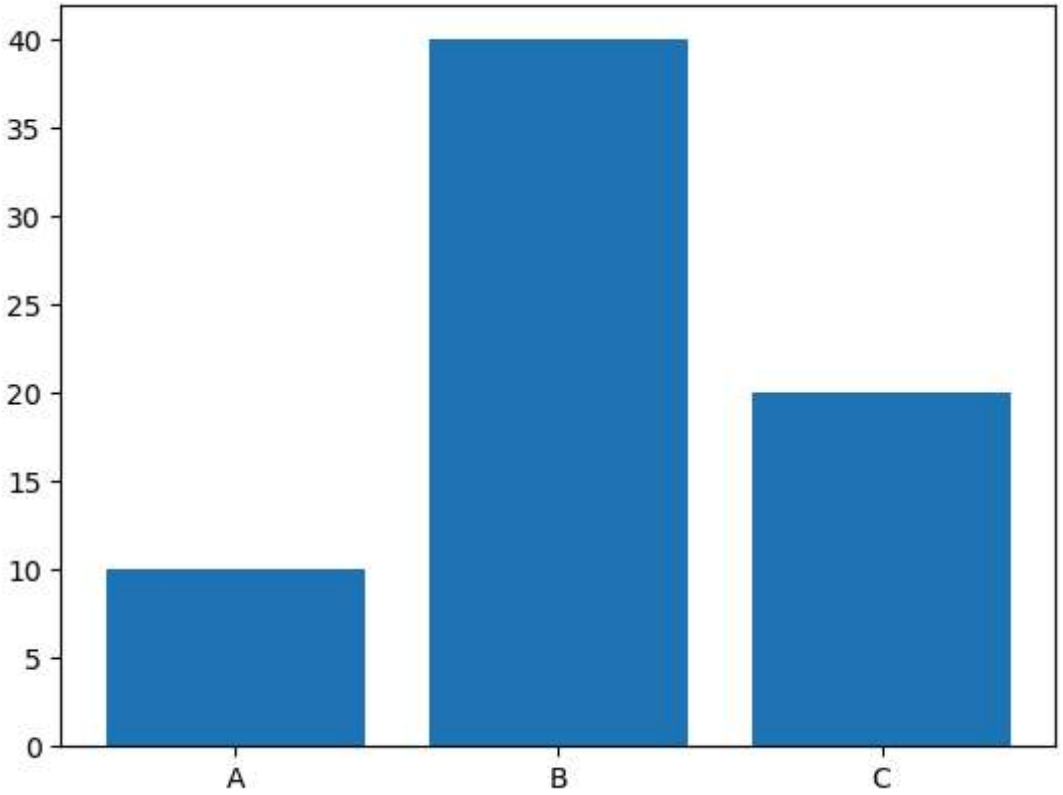
In [31]:
```
x2=np.arange(0,4.5,0.5)
plt.plot(x2,x2*x2, 'r.--',label='X^2')
```

Out[31]:
```
[<matplotlib.lines.Line2D at 0x19e76582c90>]
```



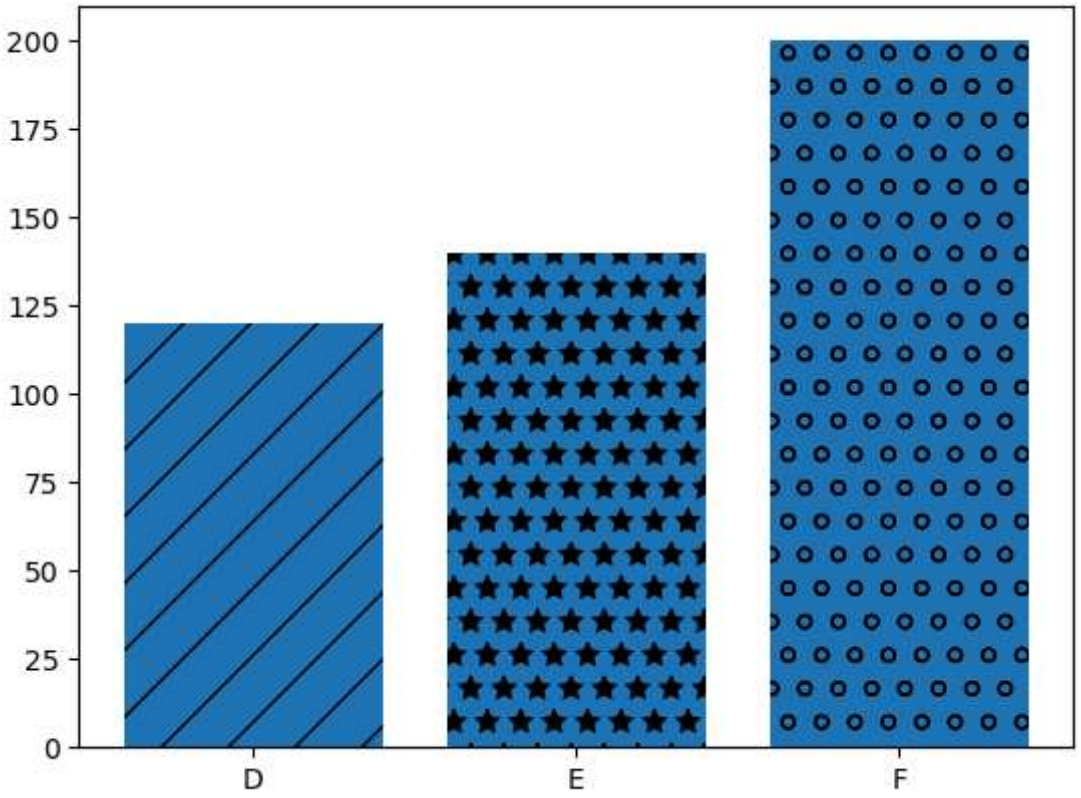

## Bar charts

In [49]:
```
labels=['A','B','C']
values=[10,40,20]

plt.bar(labels,values)

plt.figure(figsize=(5,4),dpi=300)

plt.show()
```




```
<Figure size 1500x1200 with 0 Axes>
```

In [56]:
```
labels=['D','E','F']
values=[120,140,200]

bars=plt.bar(labels,values)
bars[0].set_hatch('/')
bars[1].set_hatch('*')
bars[2].set_hatch('o')

#or

patter

plt.figure(figsize=(5,4),dpi=300)

plt.show()
```



```
<Figure size 1500x1200 with 0 Axes>
```

In [ ]: