

Matplotlib example

August 19, 2021

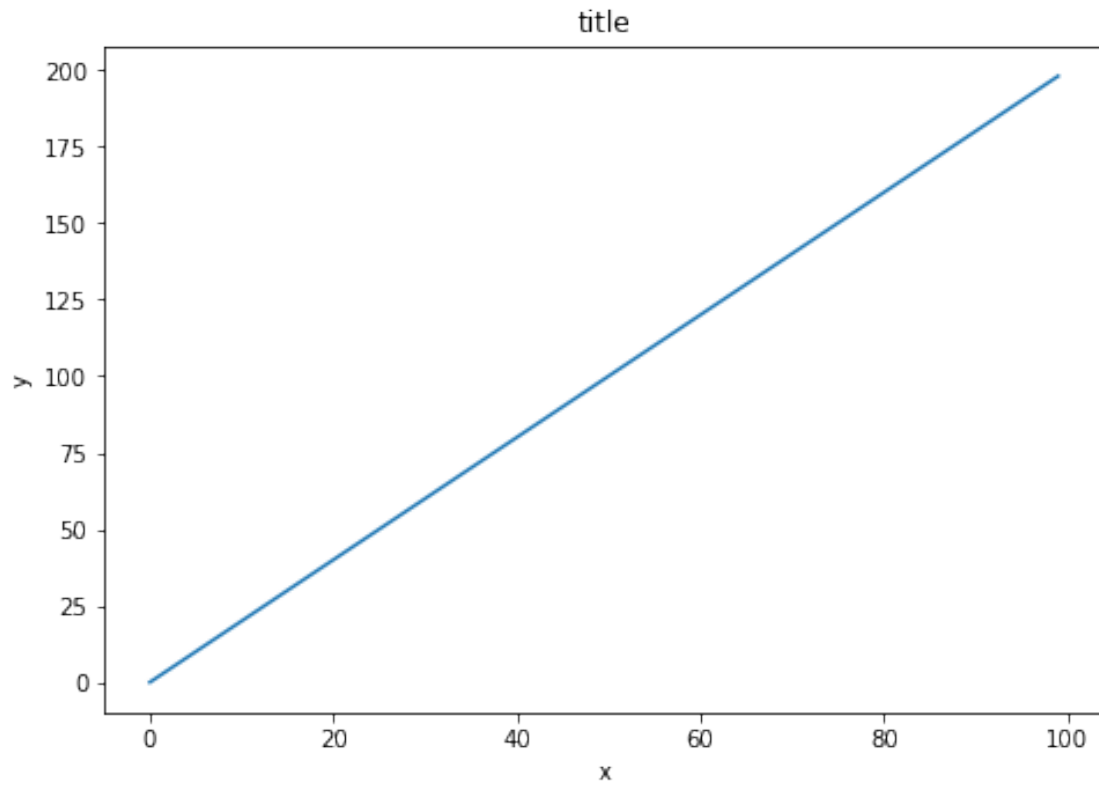
```
[4]: import numpy as np
import matplotlib.pyplot as plt

%matplotlib inline
```

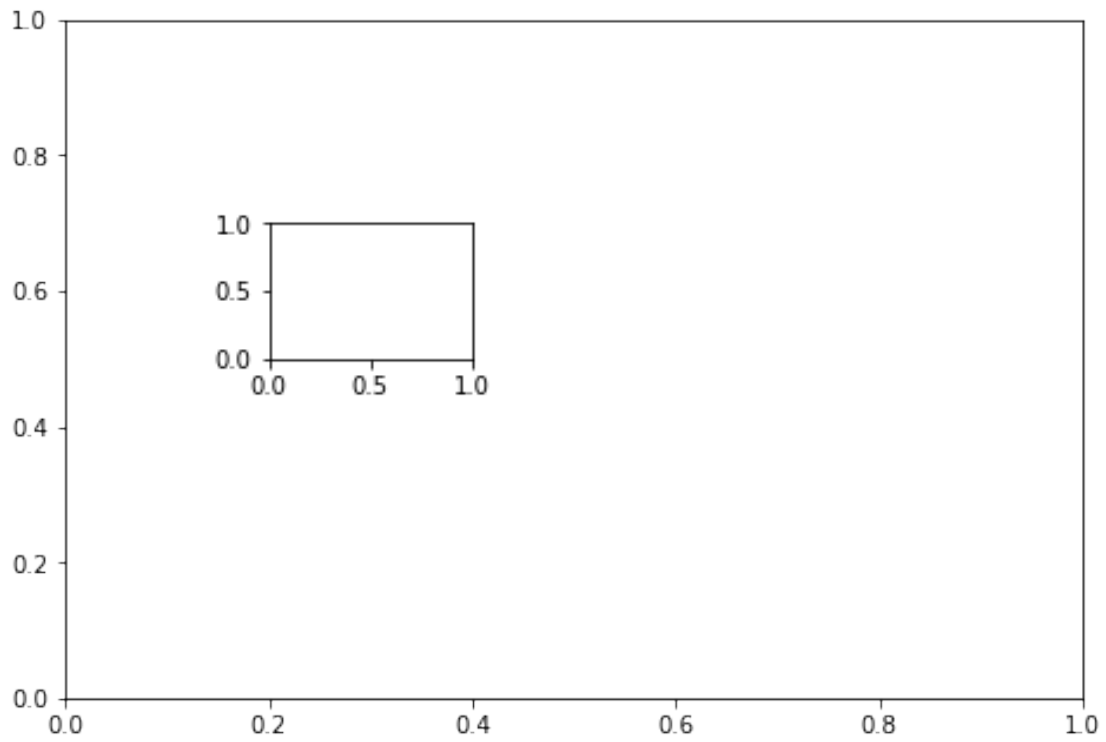
```
[5]: x = np.arange(0,100)
y = x*2
z = x**2
```

```
[6]: fig = plt.figure()
ax = fig.add_axes([0,0,1,1])
ax.plot(x,y)
ax.set_xlabel('x')
ax.set_ylabel('y')
ax.set_title('title')
```

```
[6]: Text(0.5, 1.0, 'title')
```



```
[7]: # create figure object of two axes  
  
fig = plt.figure()  
  
ax1 = fig.add_axes([0,0,1,1])  
ax2 = fig.add_axes([0.2,0.5,.2,.2])
```



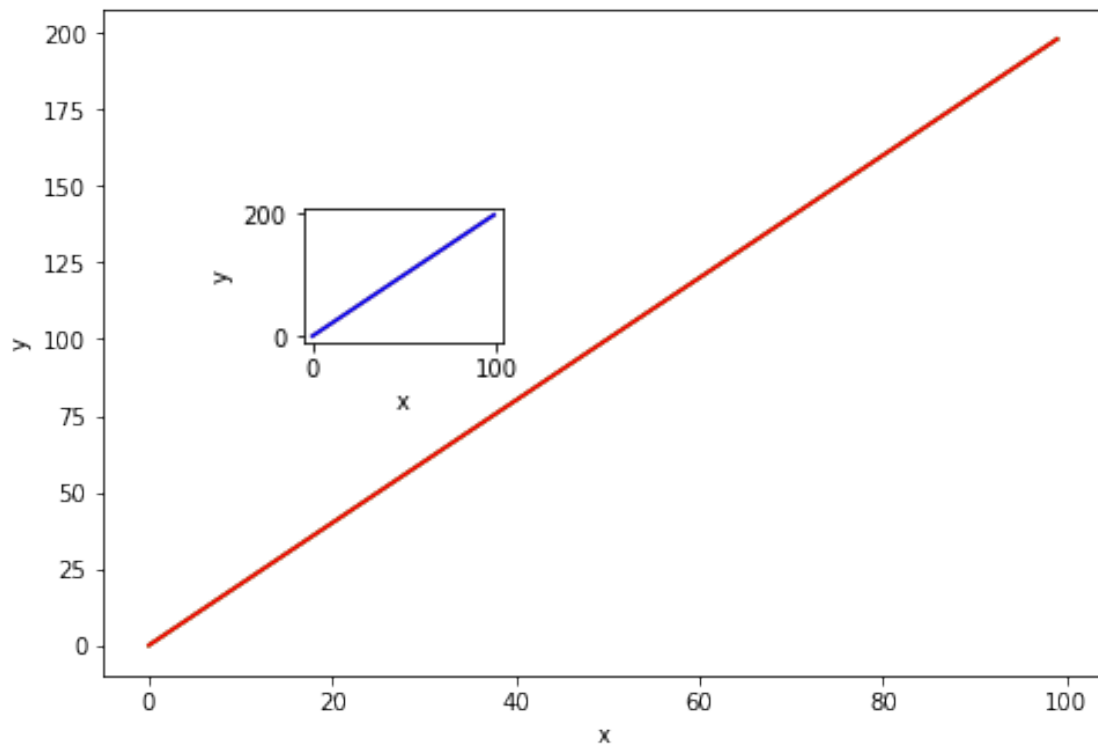
```
[11]: # Now plot (x,y) on both axes.
```

```
ax1.plot(x,y, 'r')  
ax1.set_xlabel('x')  
ax1.set_ylabel('y')
```

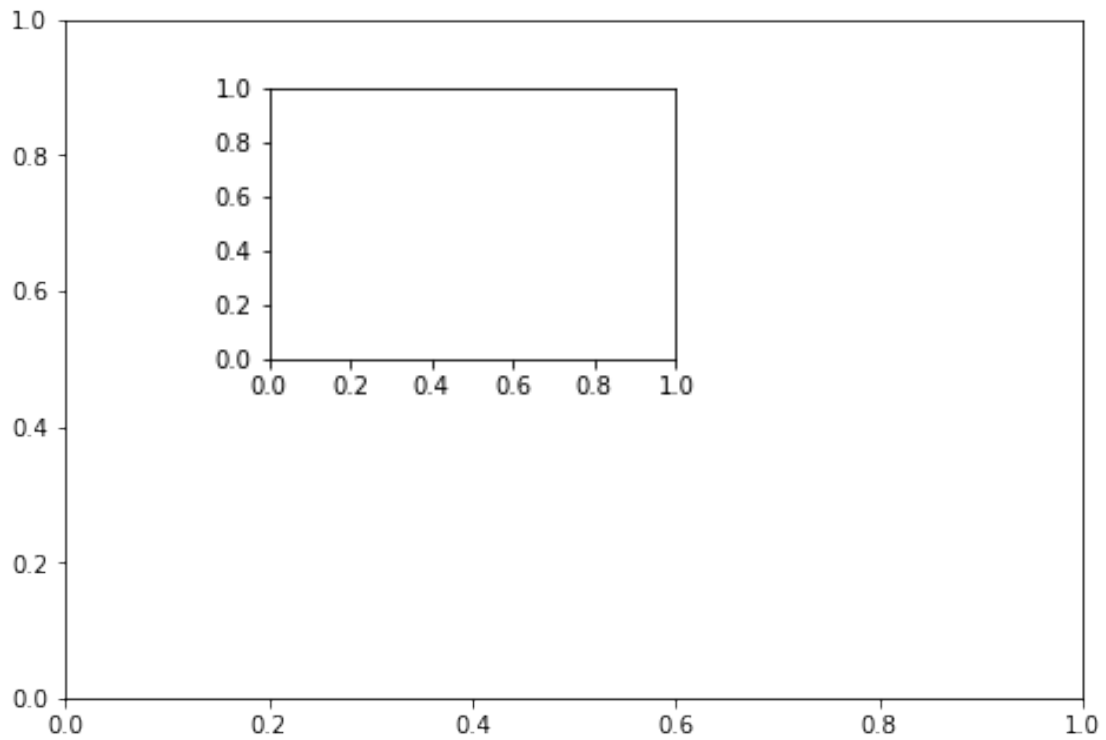
```
ax2.plot(x,y, 'b')  
ax2.set_xlabel('x')  
ax2.set_ylabel('y')
```

```
fig
```

```
[11]:
```



```
[12]: # create a plot by adding two axes  
  
fig = plt.figure()  
  
ax1 = fig.add_axes([0,0,1,1])  
ax2 = fig.add_axes([0.2,0.5,.4,.4])
```



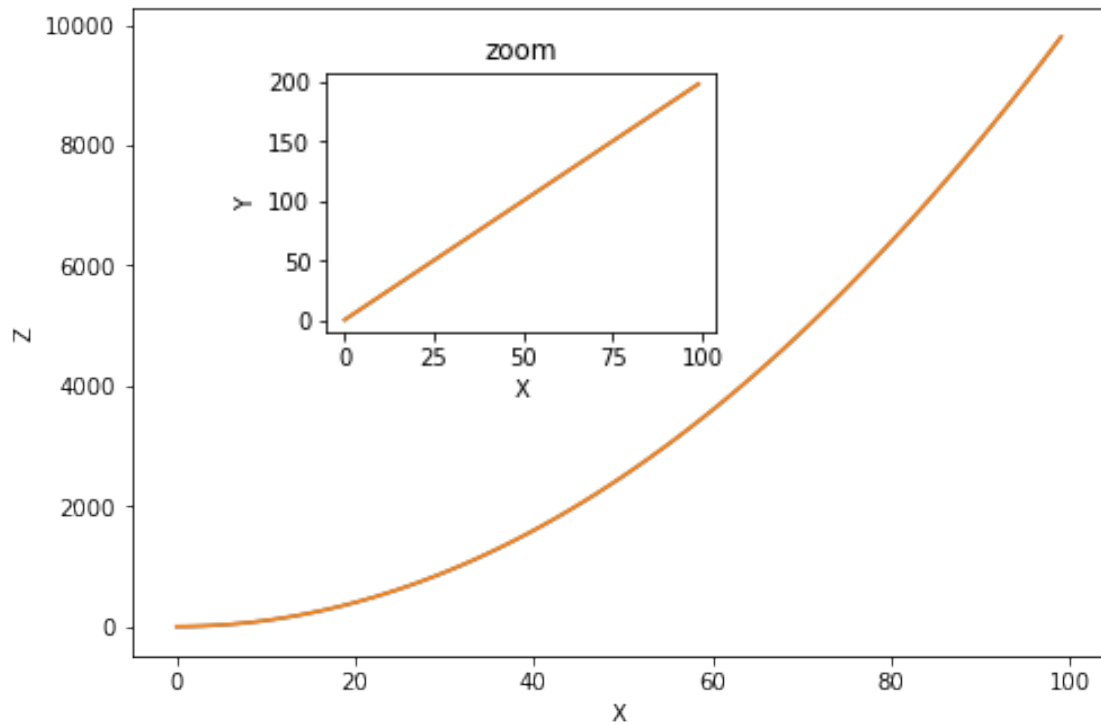
[14]: *# Now use x,y, and z arrays to recreate the plot below*

```
ax1.plot(x,z)
ax1.set_xlabel('X')
ax1.set_ylabel('Z')

ax2.plot(x,y)
ax2.set_xlabel('X')
ax2.set_ylabel('Y')
ax2.set_title('zoom')

fig
```

[14]:



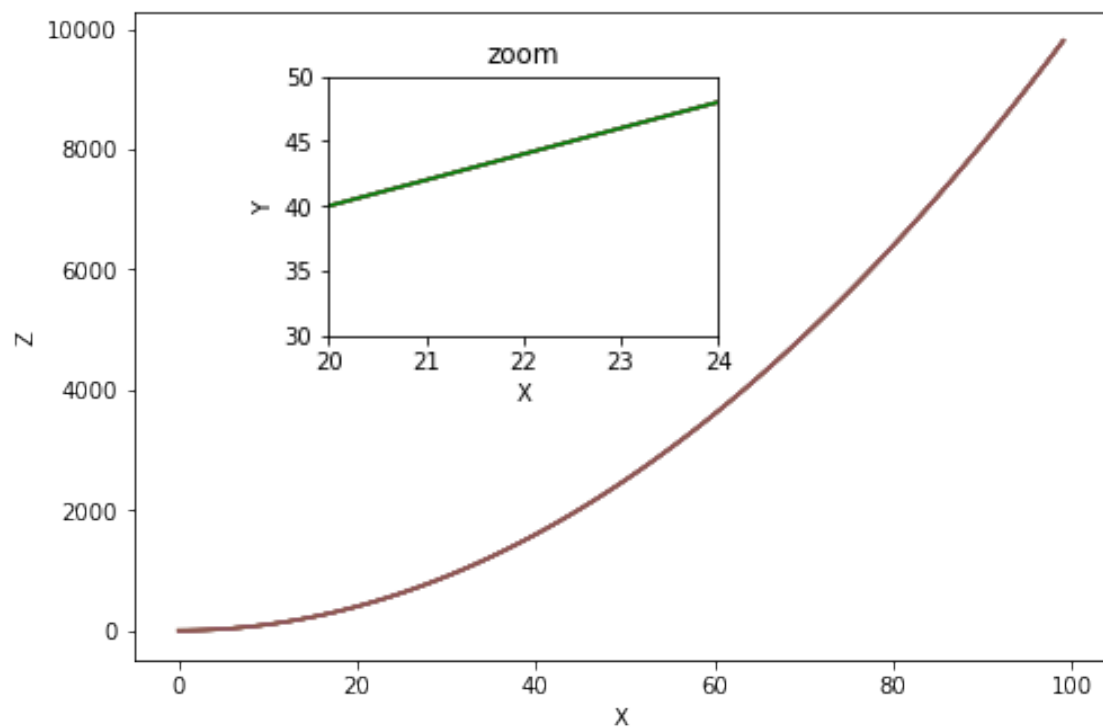
```
[18]: # insert x and y limits
```

```
ax1.plot(x,z)
ax1.set_xlabel('X')
ax1.set_ylabel('Z')

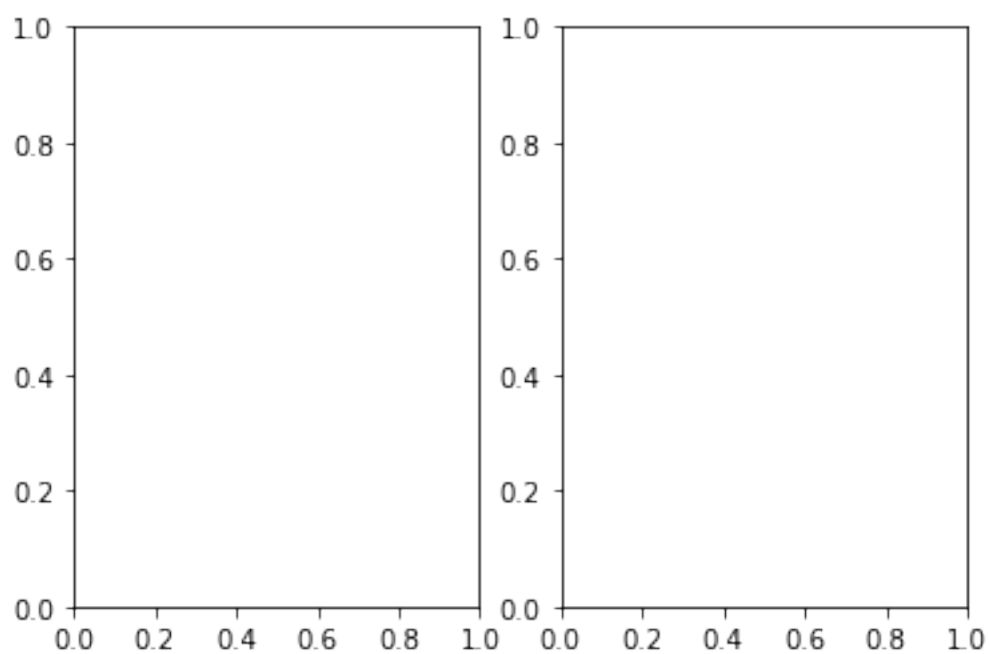
ax2.plot(x,y, 'g')
ax2.set_xlabel('X')
ax2.set_ylabel('Y')
ax2.set_title('zoom')
ax2.set_xlim(20,24)
ax2.set_ylim(30,50)

fig
```

```
[18]:
```



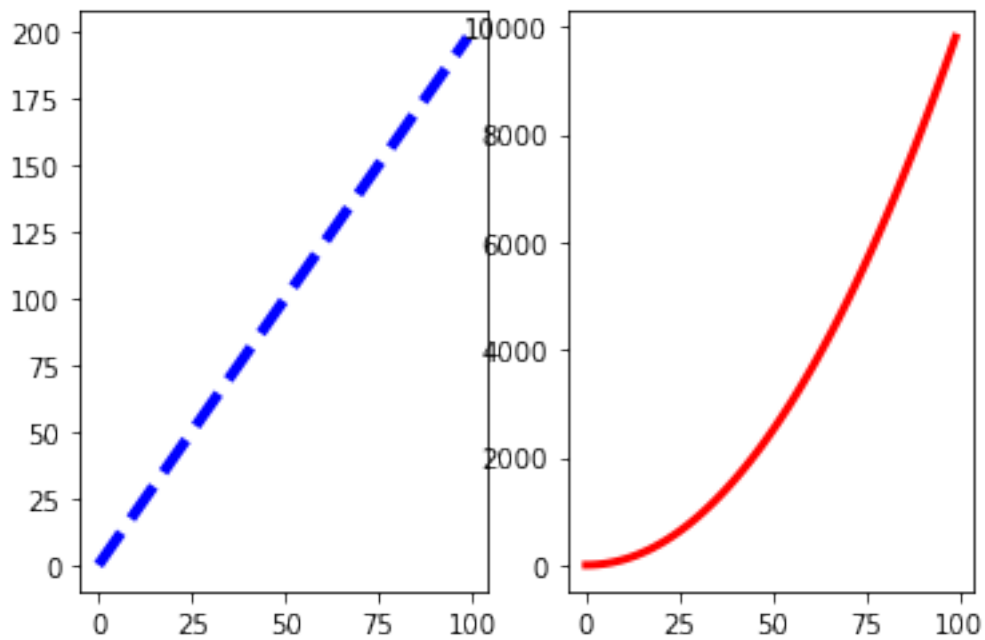
```
[19]: # creat subplot
fig, axes = plt.subplots(nrows=1, ncols=2)
```



```
[20]: # Now plot (x,y) and (x,z) on the axes.

axes[0].plot(x,y,color="blue", lw=4, ls='--')
axes[1].plot(x,z,color="red", lw=3, ls='-')
fig
```

[20]:



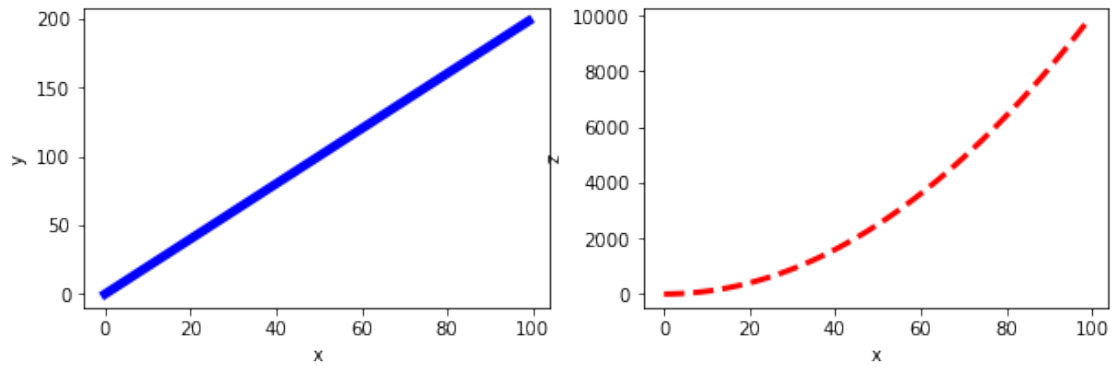
```
[24]: # resize the plot

fig, axes = plt.subplots(nrows=1, ncols=2,figsize=(10,3))

axes[0].plot(x,y,color="blue", lw=5)
axes[0].set_xlabel('x')
axes[0].set_ylabel('y')

axes[1].plot(x,z,color="red", lw=3, ls='--')
axes[1].set_xlabel('x')
axes[1].set_ylabel('z')
```

[24]: Text(0, 0.5, 'z')



[]: