Python for Data Science

Matplotlib

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jupyter Matplotlib Concepts Lecture (unsaved changes)

Matplotlib Overview Lecture

In [2]:
```
import matplotlib.pyplot as plt
```

In [3]:
```
%matplotlib inline
```

In [5]:
```
import numpy as np
x = np.linspace(0,5,11)
y = x ** 2
```

In [6]:
```
x
```

Out[6]:
```
array([ 0. ,  0.5,  1. ,  1.5,  2. ,  2.5,  3. ,  3.5,  4. ,  4.5,  5. ])
```

In [ ]:

Python-for-Data-Visualiz | matplotlib

localhost:8888/notebooks/Python-Data-Science-and-Machine-Learning-Bootcamp-master/Python-Data-Science-and-Machine-Learning-Bootcamp-master/Python-for-Data-Visualization/Matplotlib/matplotlib.ipynb

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In [3]:
```
%matplotlib inline
```

In [5]:
```
import numpy as np
x = np.linspace(0,5,11)
y = x ** 2
```

In [6]:
```
x
```

Out[6]:
```
array([ 0. ,  0.5,  1. ,  1.5,  2. ,  2.5,  3. ,  3.5,  4. ,  4.5,  5. ])
```

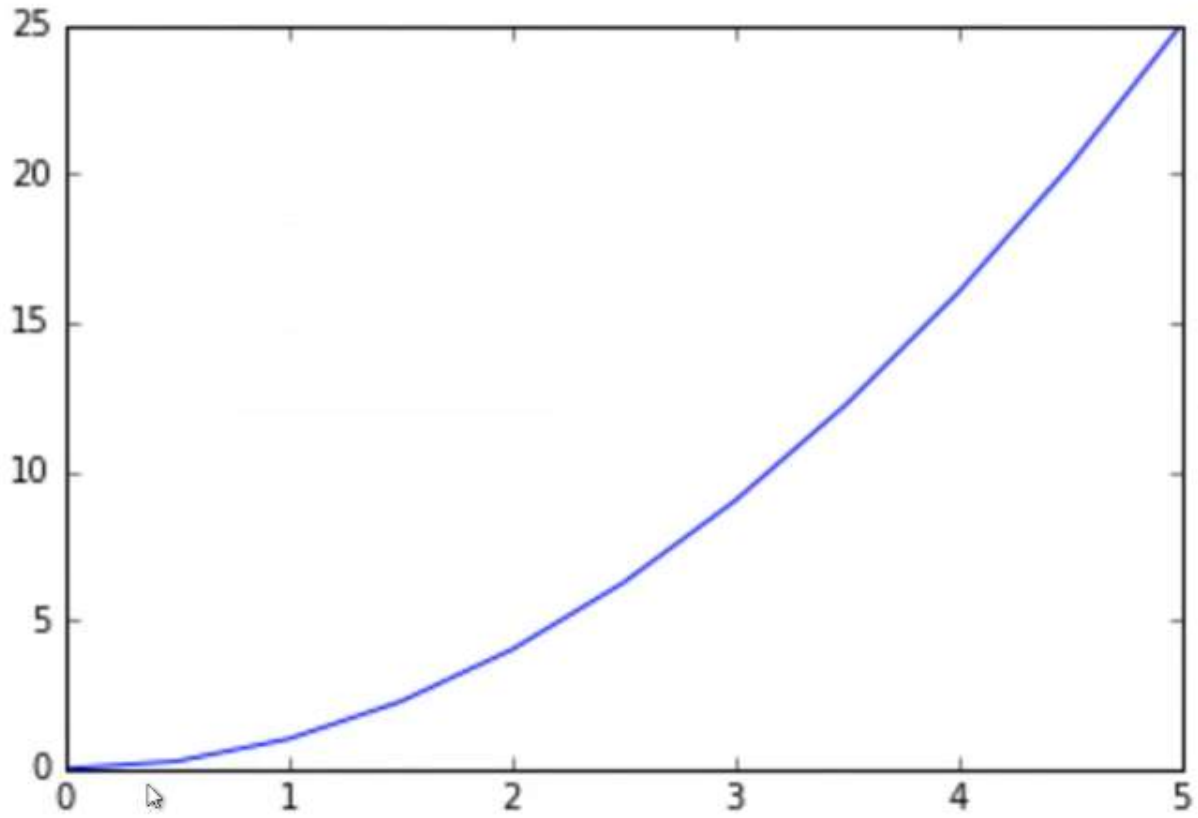
In [7]:
```
y
```

Out[7]:
```
array([  0.  ,   0.25,   1.  ,   2.25,   4.  ,   6.25,   9.  ,  12.25,
        16.  ,  20.25,  25.  ])
```

In [ ]:

In [8]:
```
# FUNCTIONAL
plt.plot(x,y)
```

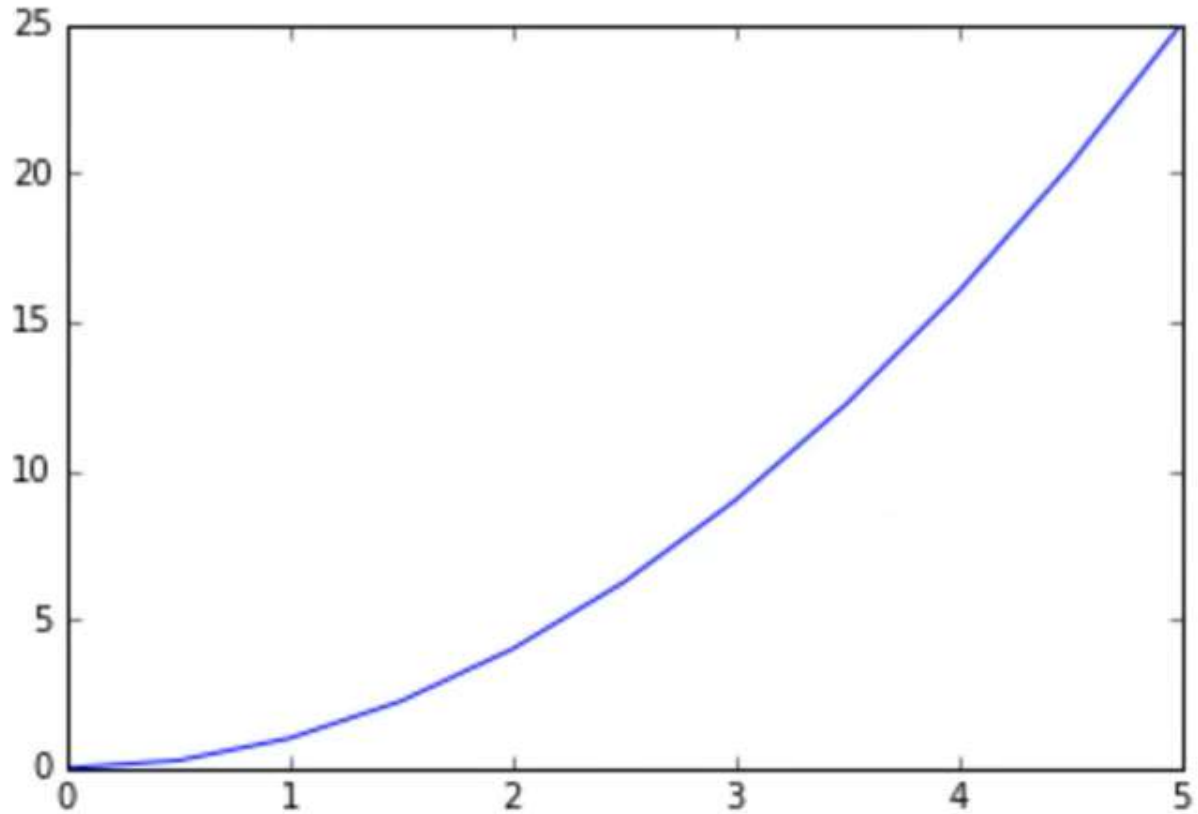
Out[8]: [<matplotlib.lines.Line2D at 0x164ae1ea438>]



These are Functional Method

In [ ]:

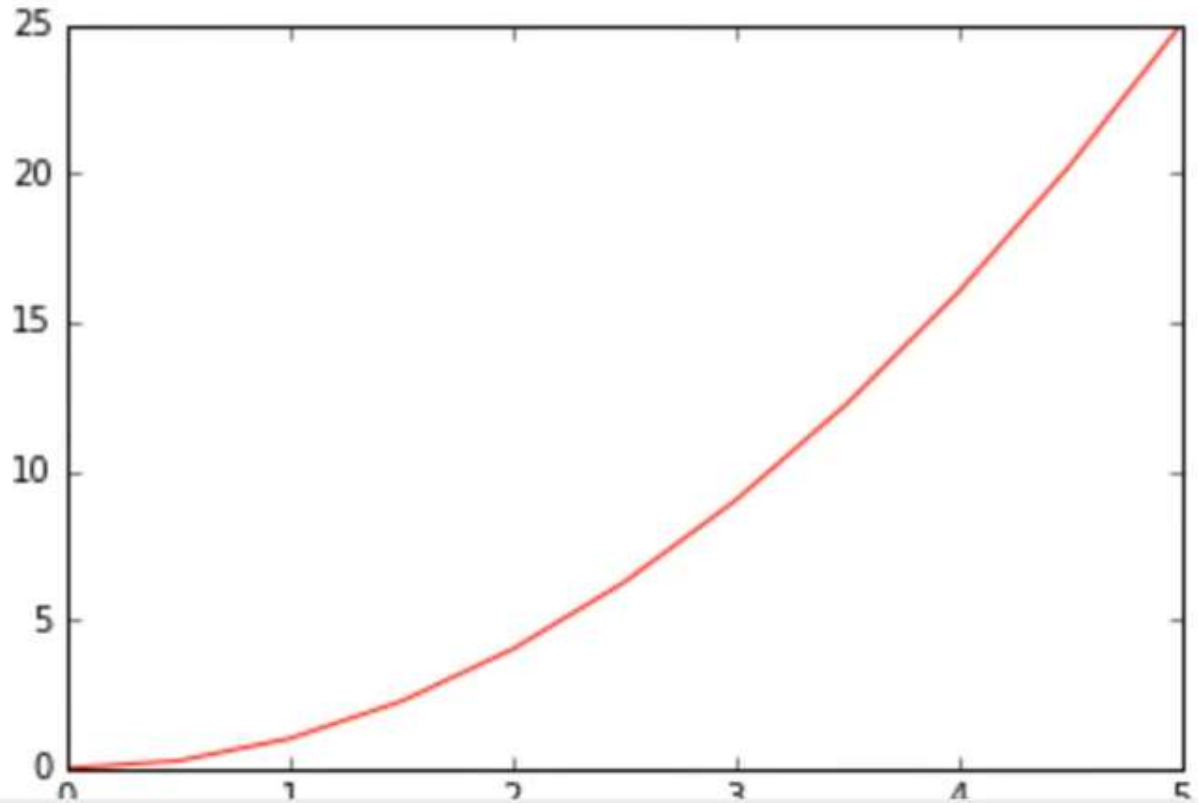
In [9]:
```
# FUNCTIONAL
plt.plot(x,y)
plt.show()
```



```
16.  ,  20.25,  25.  ])
```

In [14]:
```
# FUNCTIONAL
plt.plot(x,y,'r-')
```

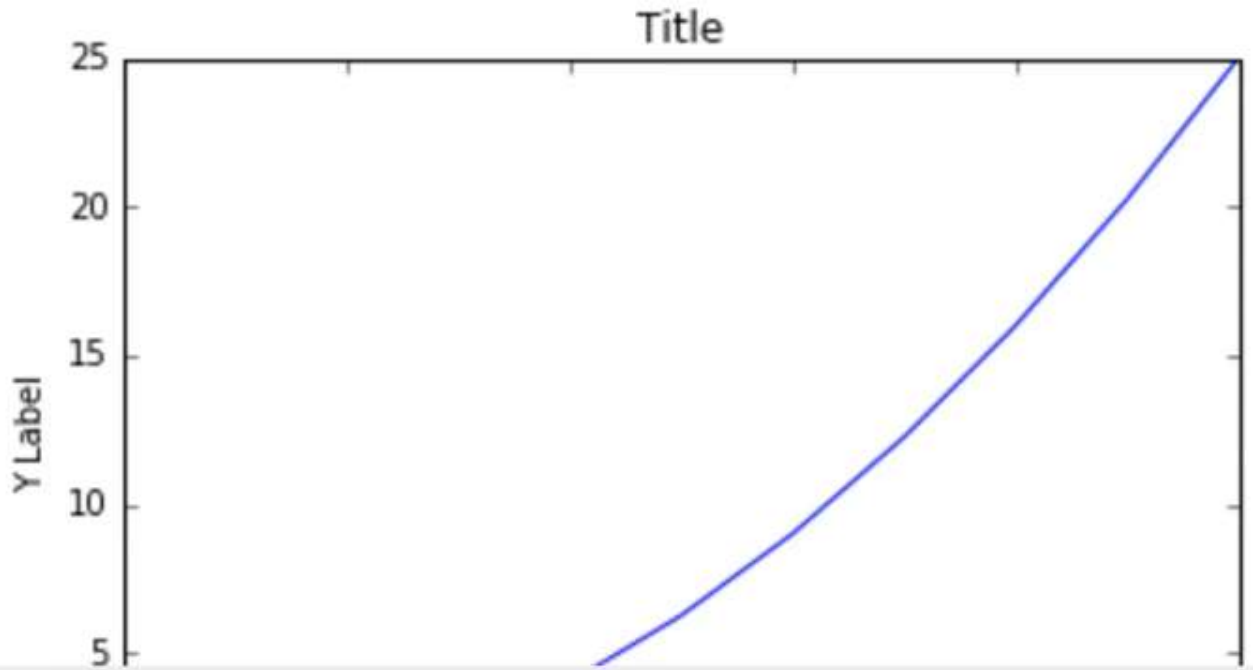
Out[14]:
```
[<matplotlib.lines.Line2D at 0x164ae3ecd68>]
```



```
       16.  ,  20.25,  25.  ])
```

In [16]:
```
# FUNCTIONAL
plt.plot(x,y)
plt.xlabel('X Label')
plt.ylabel('Y Label')
plt.title('Title')
```

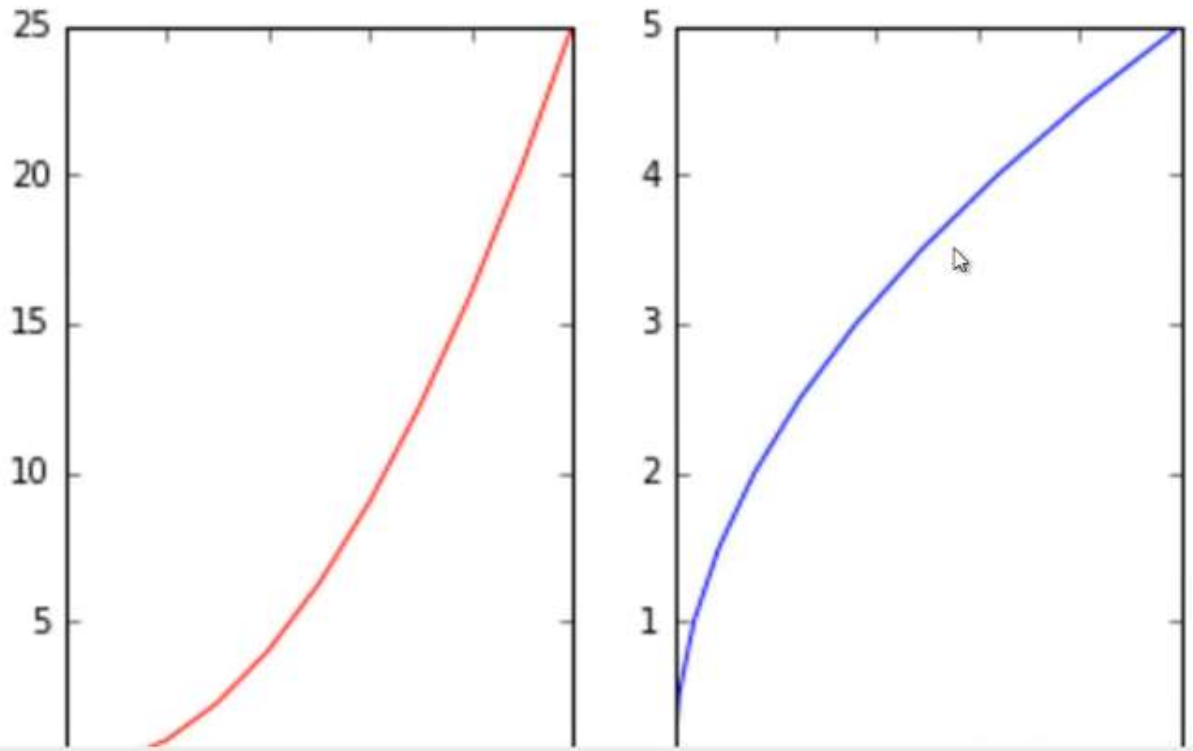
Out[16]: <matplotlib.text.Text at 0x164ae44c6d8>

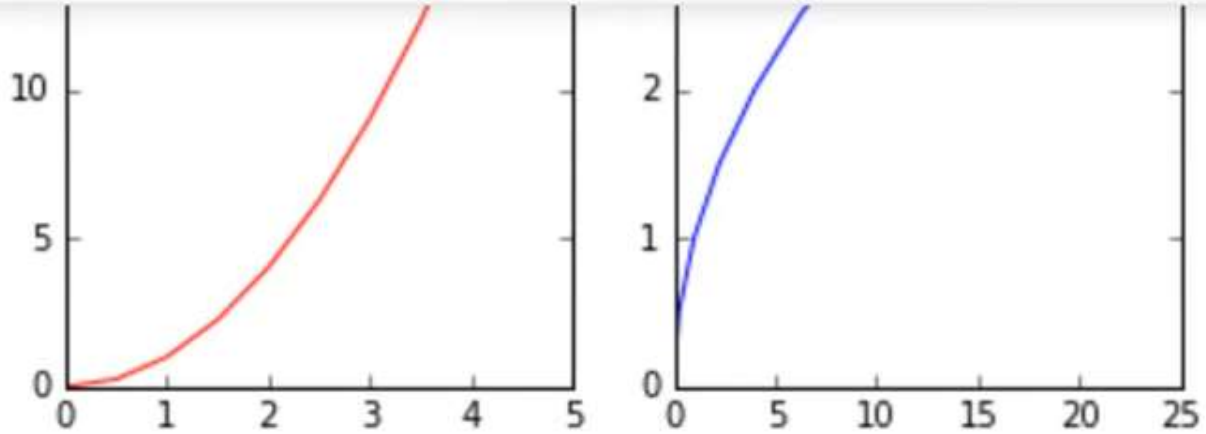


In [17]:
```
plt.subplot(1,2,1)
plt.plot(x,y,'r')

plt.subplot(1,2,2)
plt.plot(y,x,'b')
```

Out[17]:
```
[<matplotlib.lines.Line2D at 0x164ae6526d8>]
```



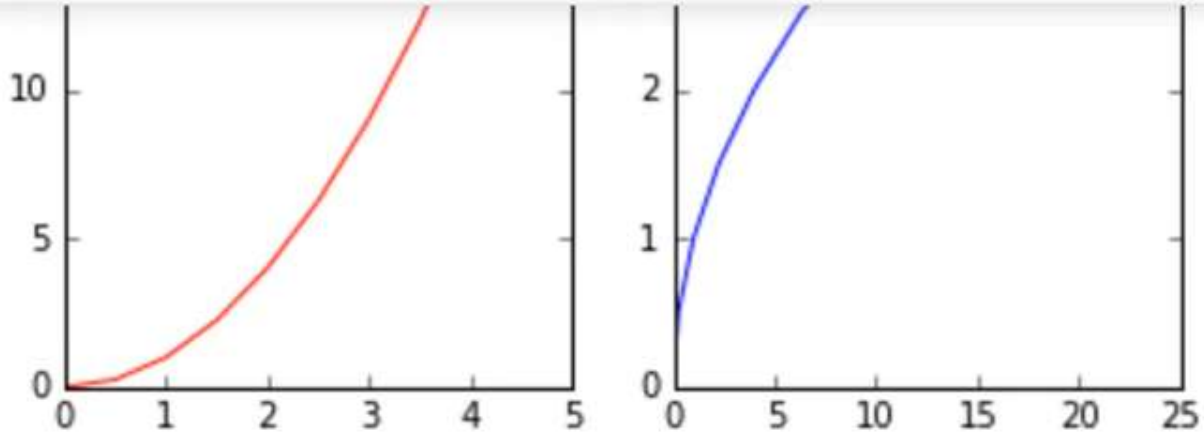


In [18]:
```
# OO
fig = plt.figure()
```

These are Object Oriented Method

```
<matplotlib.figure.Figure at 0x164ae432550>
```

In [ ]:



In [18]:
```
# OO
fig = plt.figure()

axes = fig.add_axes([0.1,0.1,0.8,0.8])
```

```
<matplotlib.figure.Figure at 0x164ae432550>
```

In [ ]:

Width of the axes —it takes up 80% Canvas size **Width**.

Width of the axes —it takes up 80% Canvas size **Height**.

Left of the axes—10% in from the **Left**

Bottom of the axes —10% in from the **Bottom**

matplotlib

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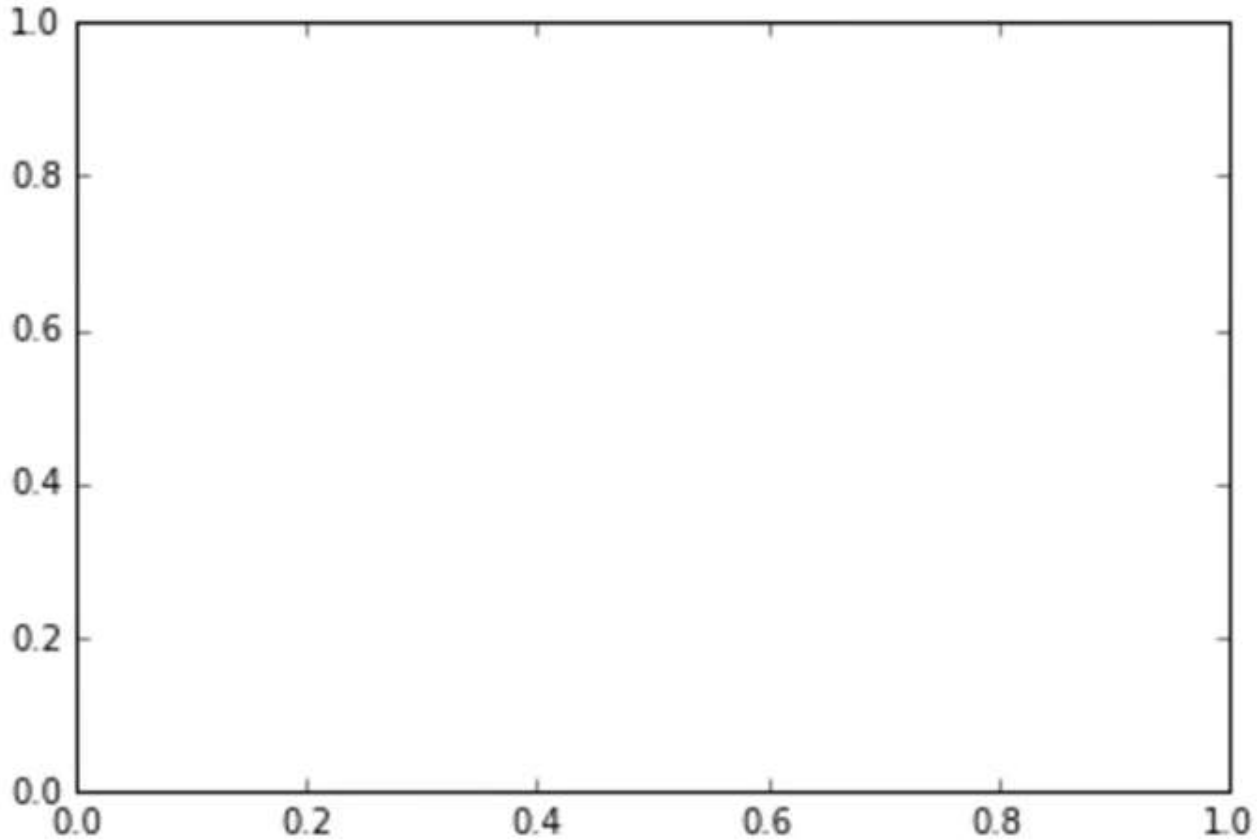
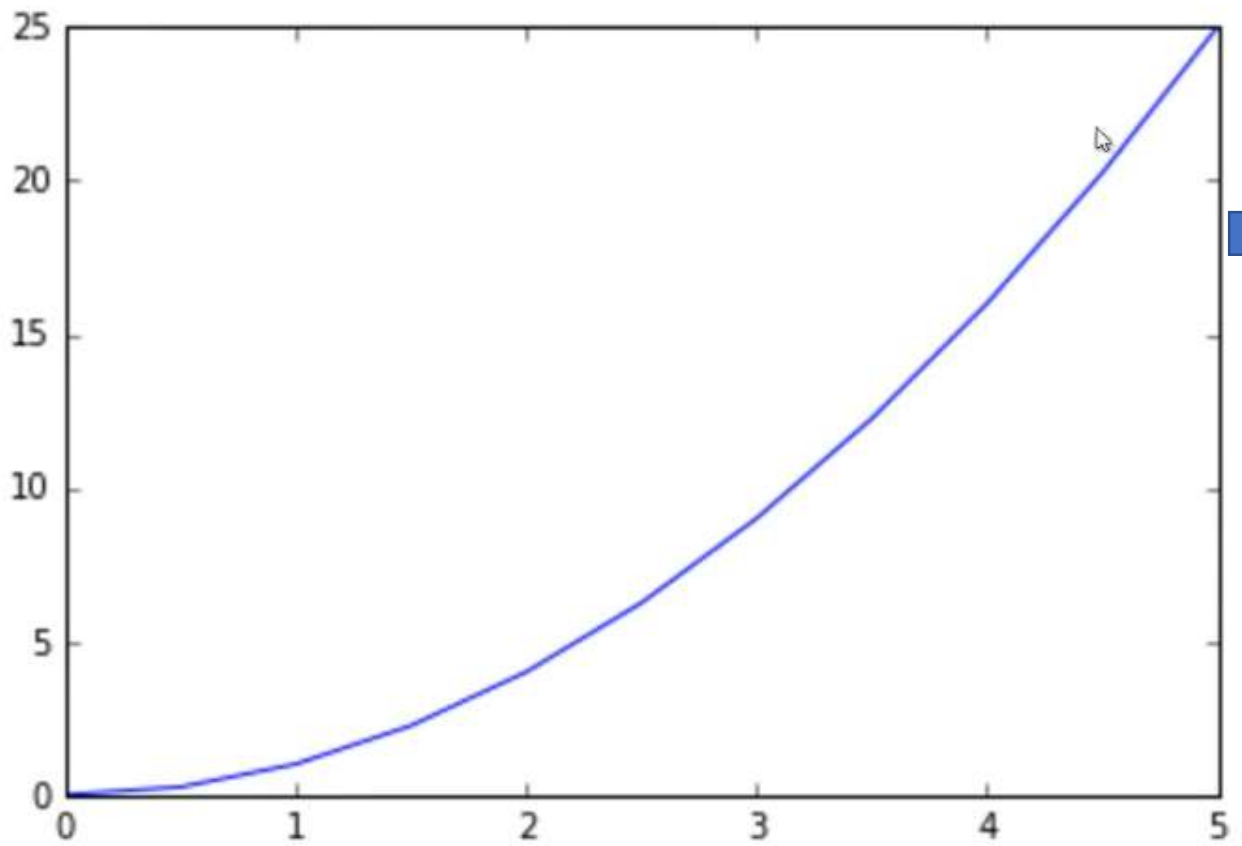
In [19]:
```
# OO
fig = plt.figure()

axes = fig.add_axes([0.1,0.1,0.8,0.8])
```



```
axes.plot(x,y)
```

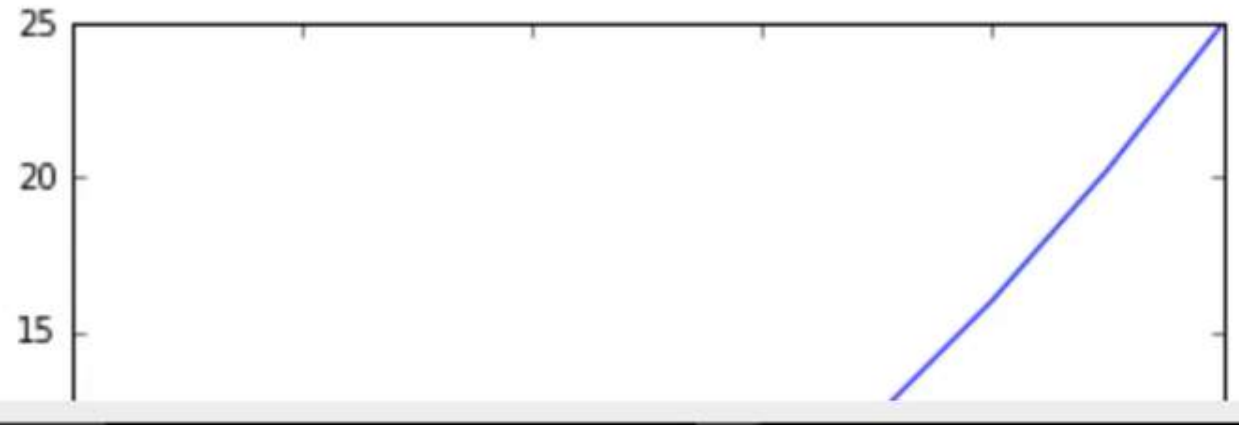
Out[20]: [<matplotlib.lines.Line2D at 0x164ae0a1da0>]



Same figure with Object Oriented method.

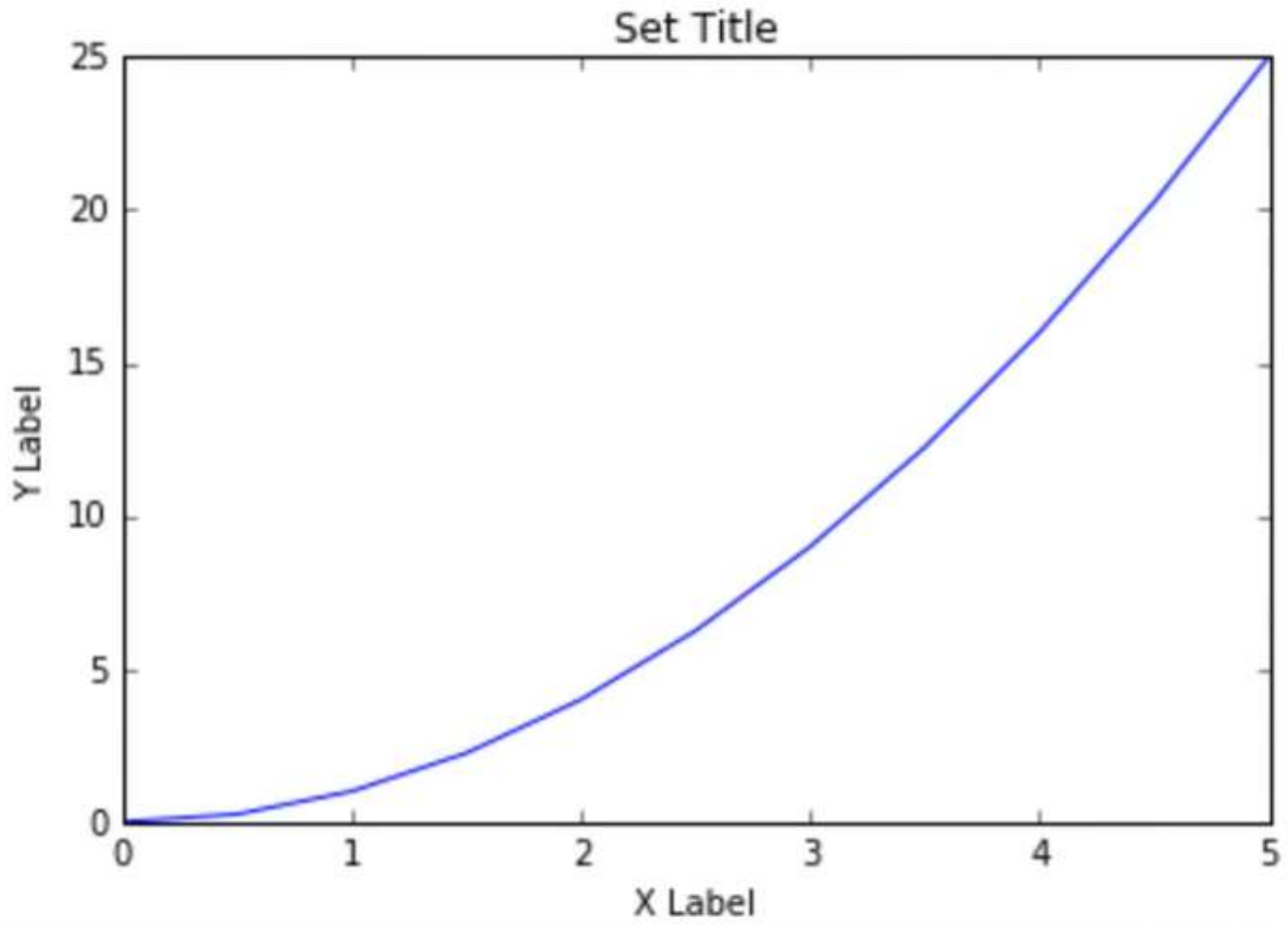
In [20]:
```
# OO
fig = plt.figure()

axes = fig.add_axes([0.1,0.1,0.8,0.8])

axes.plot(x,y)
axes.set_xlabel('X Label')
axes.set_ylabel('Y Label')
axes.set_title('Set Title')
```

Out[20]: [<matplotlib.lines.Line2D at 0x164ae0a1da0>]



```
axes.set_xlabel('X Label')
axes.set_ylabel('Y Label')
axes.set_title('Set Title')
```

Out[21]: <matplotlib.text.Text at 0x164ae22f748>



matplotlib

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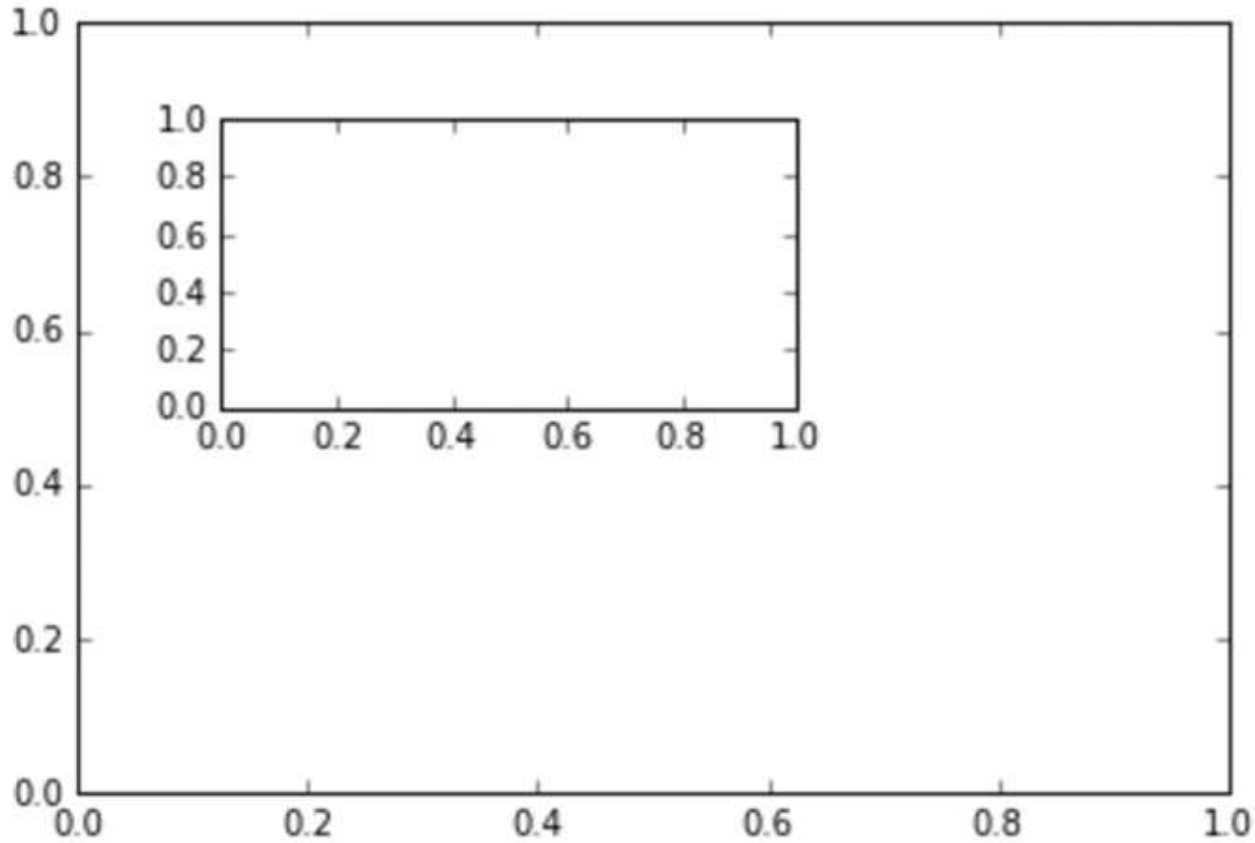
Python [conda env:py35]

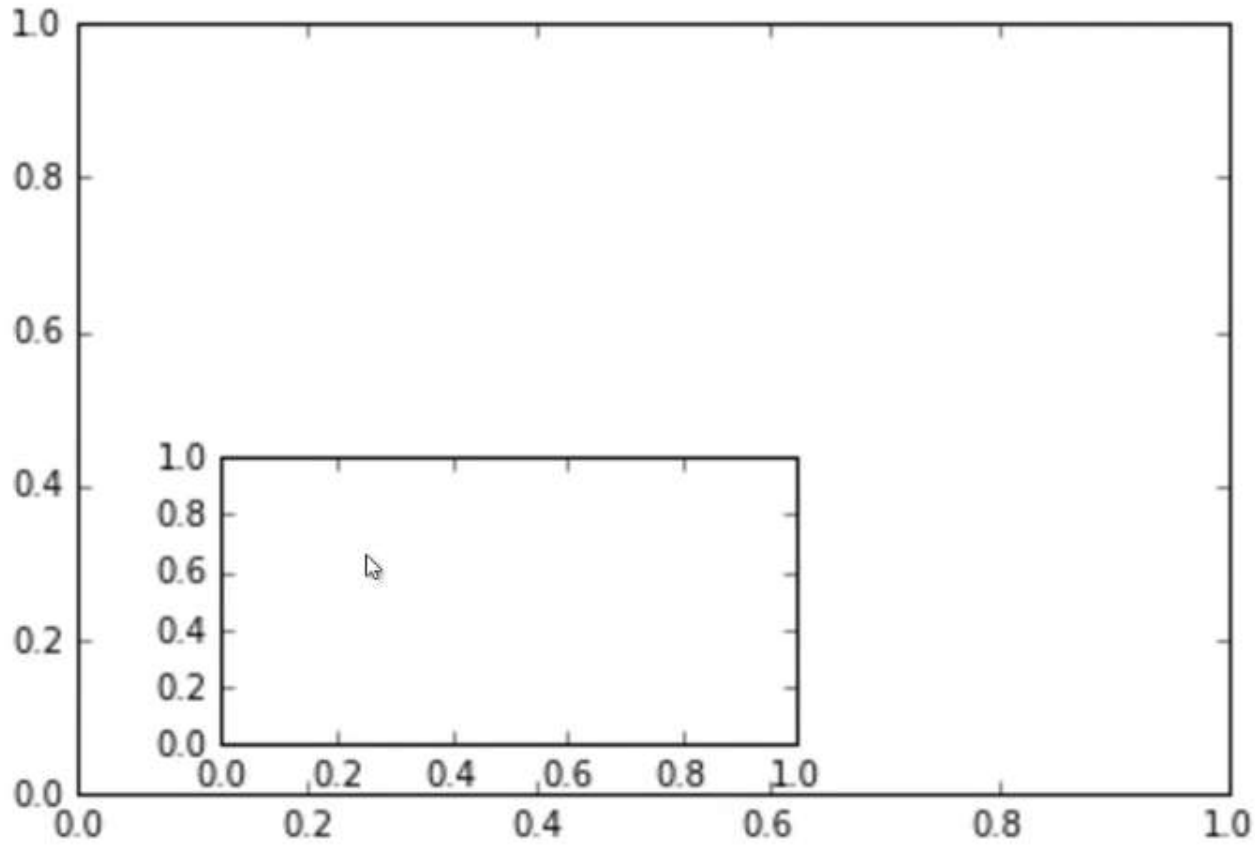
In [22]:
```
fig = plt.figure()

axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.2,0.5,0.4,0.3])
```

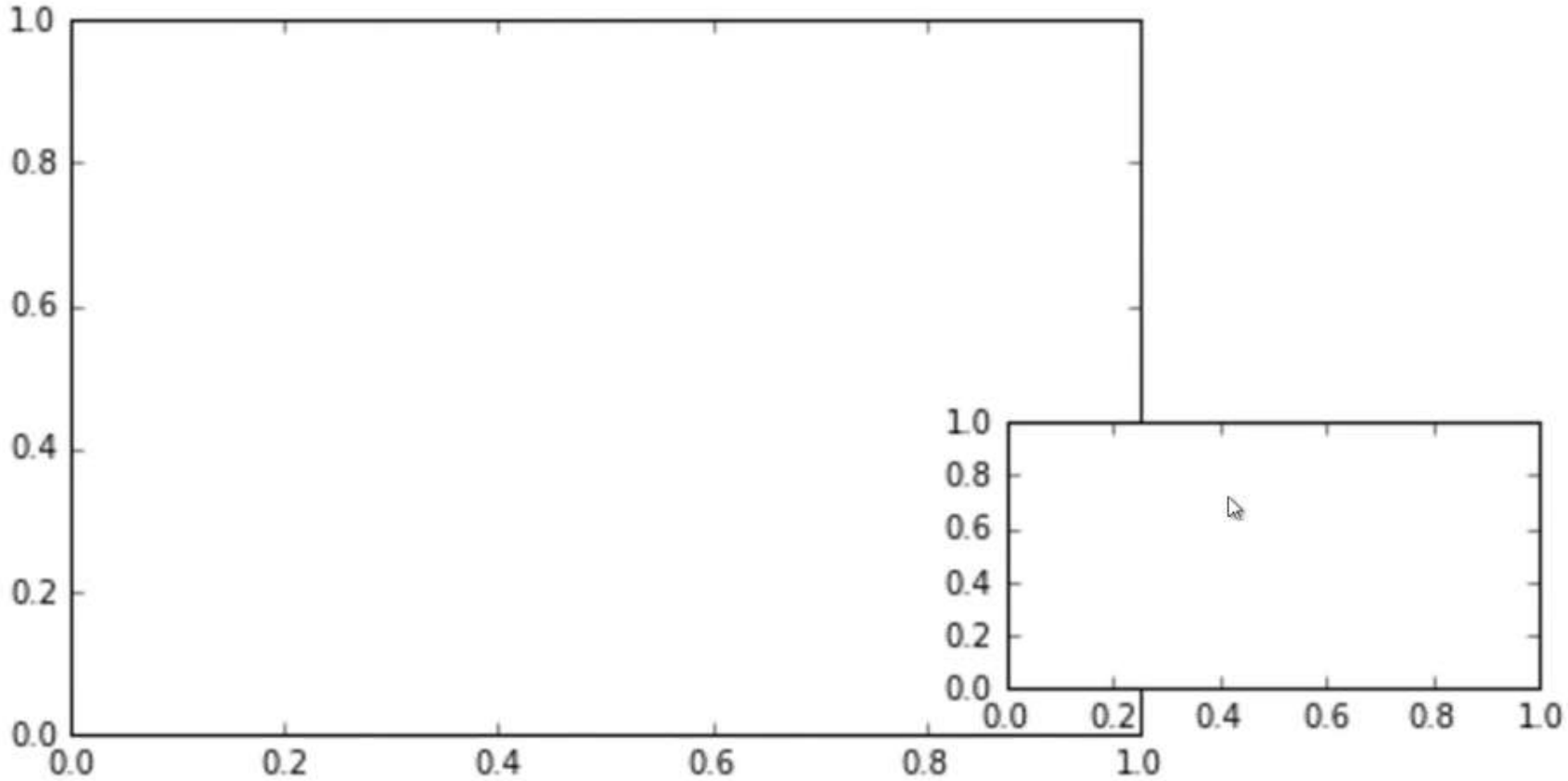


In [23]:
```
fig = plt.figure()

axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.2,0.15,0.4,0.3])
```

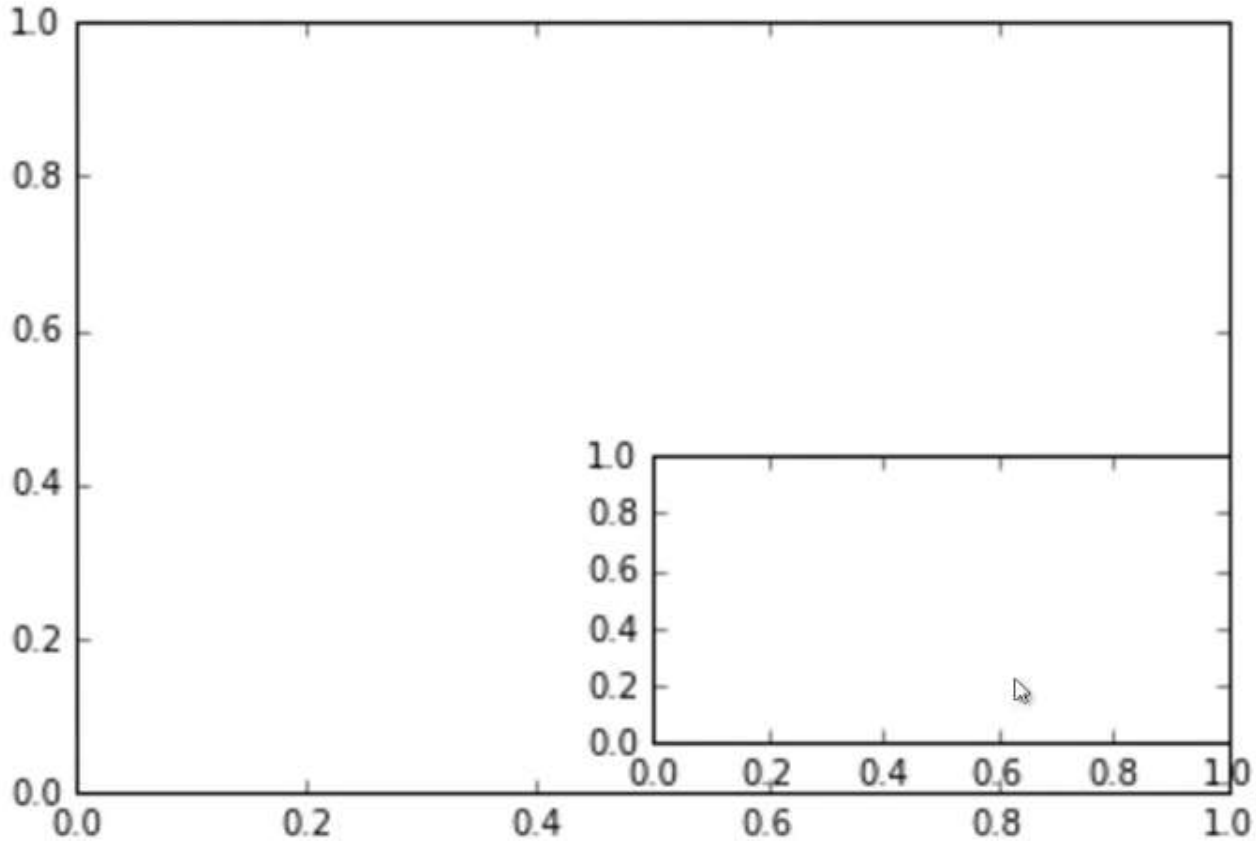


```
axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.8,0.15,0.4,0.3])
```



In [ ]:

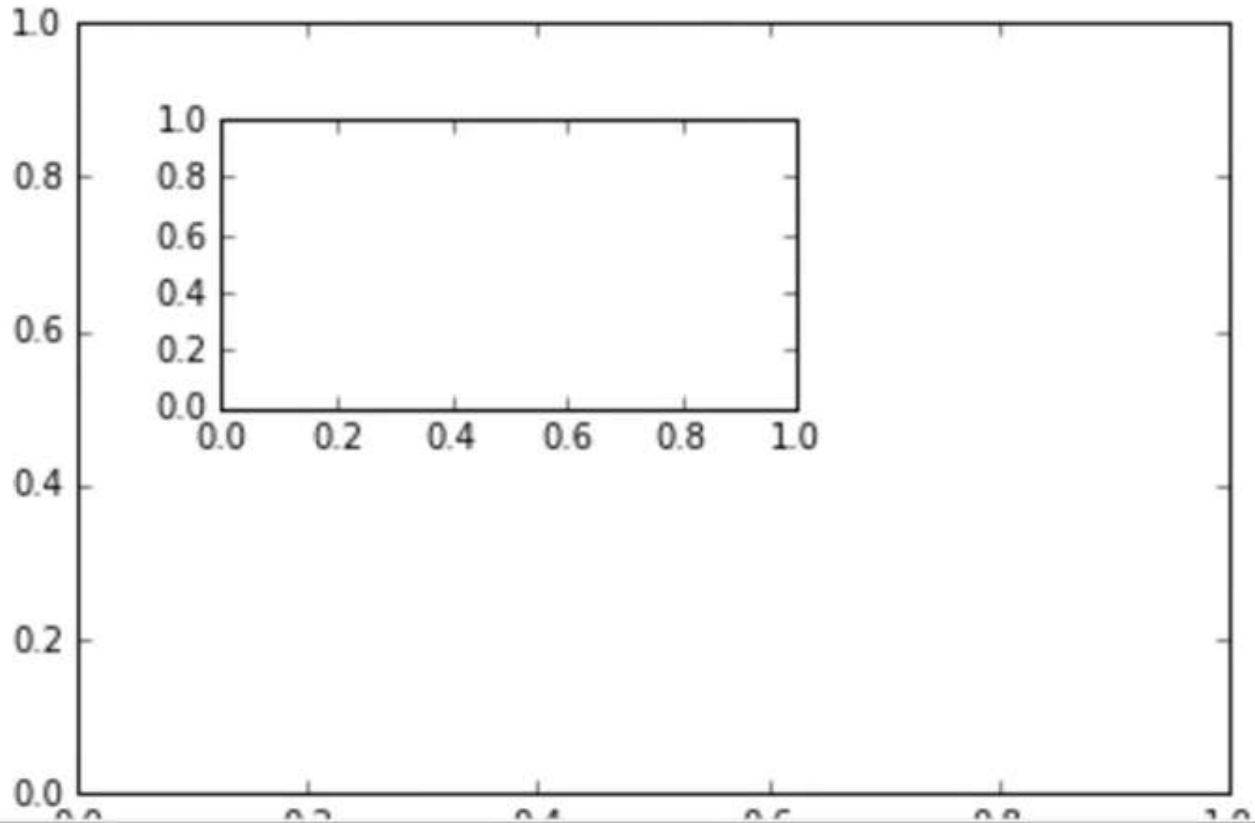
```
axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.5,0.15,0.4,0.3])
```



In [ ]:

In [26]:
```
fig = plt.figure()

axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.2,0.5,0.4,0.3])
```



matplotlib

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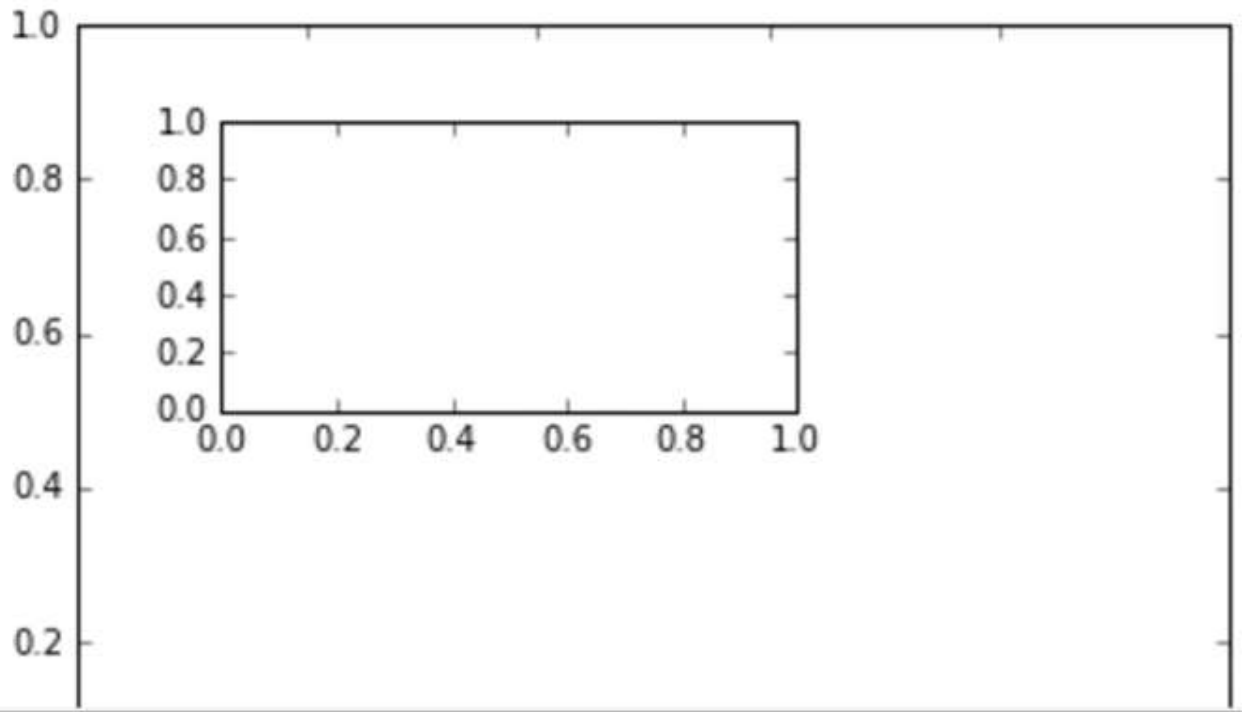
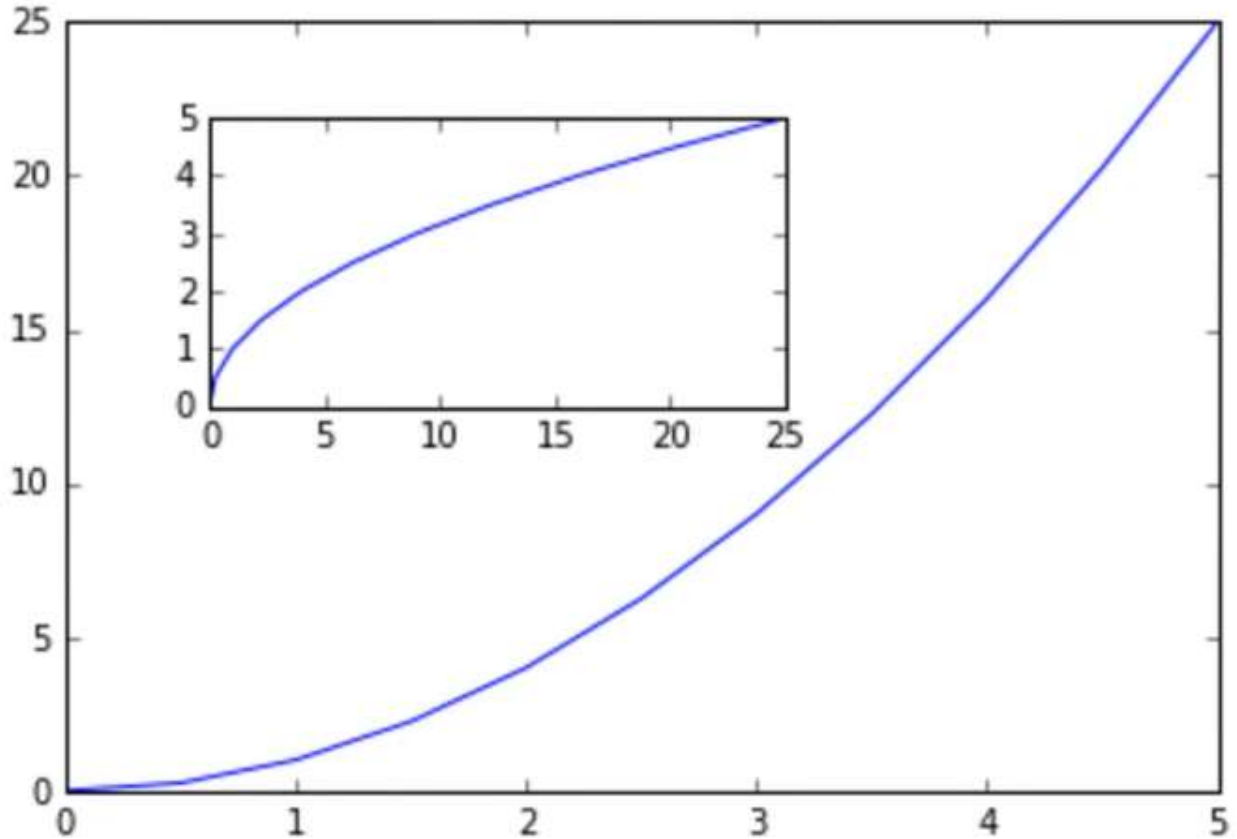
Python [conda env:py35]

In [26]:
```
fig = plt.figure()

axes1 = fig.add_axes([0.1,0.1,0.8,0.8])
axes2 = fig.add_axes([0.2,0.5,0.4,0.3])

axes1.plot(x,y)

axes2.plot(y,x)
```



```
axes2.plot(y,x)
```

Out[27]: [<matplotlib.lines.Line2D at 0x164afb7f710>]



```
axes1.plot(x,y)
axes1.set_title('LARGER PLOT')

axes2.plot(y,x)
axes2.set_title('SMALLER PLOT')
```

Out[29]: <matplotlib.text.Text at 0x164aea29198>