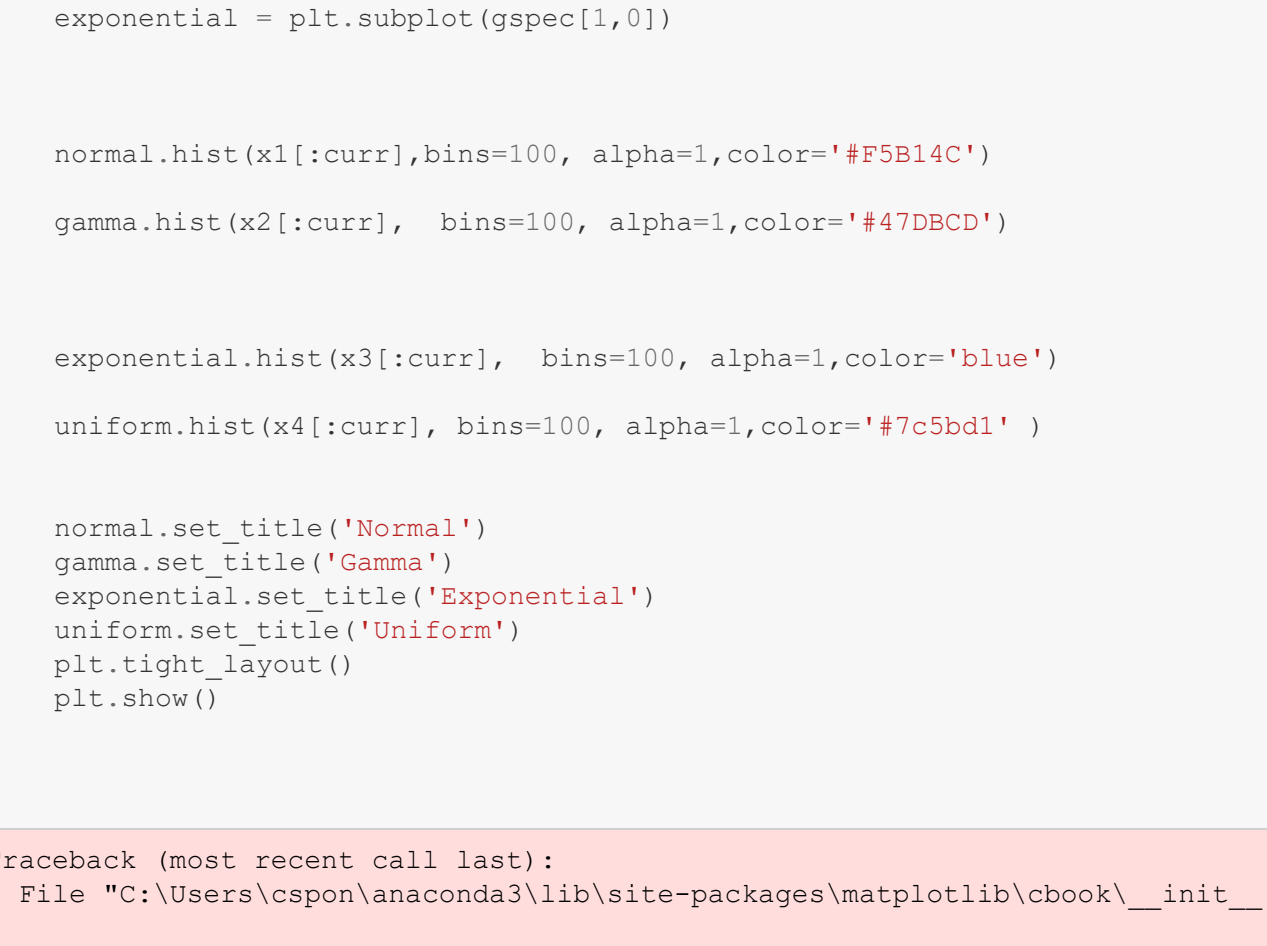
Project: Understanding Distributions Through Animation by Matplotlib

Creates a number of subplots using the pyplot subplots or matplotlib gridspec functionality. Creates an animation, pulling between 100 and 1000 samples from each of the random variables (x1, x2, x3, x4) for each plot and plotting this.

In [21]:
```
%matplotlib notebook
import matplotlib.pyplot as plt
import numpy as np
import matplotlib.gridspec as gridspec
import matplotlib.animation as animation



n=1000
x1 = np.random.normal(-2.5, 1, 1000)
x2 = np.random.gamma(2, 1.5, 1000)
x3 = np.random.exponential(2, 1000)+7
x4 = np.random.uniform(14,20, 1000)


def update(curr):


    if curr == n:
        a.event_source.stop()

    gspec=gridspec.GridSpec(2,2)



    normal= plt.subplot(gspec[0,0])
    gamma = plt.subplot(gspec[0,1])
    uniform = plt.subplot(gspec[1,1])
    exponential = plt.subplot(gspec[1,0])



    normal.hist(x1[:curr],bins=100, alpha=1,color='#F5B14C')

    gamma.hist(x2[:curr],  bins=100, alpha=1,color='#47DBCD')



    exponential.hist(x3[:curr],  bins=100, alpha=1,color='blue')

    uniform.hist(x4[:curr], bins=100, alpha=1,color='#7c5bd1' )


    normal.set_title('Normal')
    gamma.set_title('Gamma')
    exponential.set_title('Exponential')
    uniform.set_title('Uniform')
    plt.tight_layout()
    plt.show()
```

```
Traceback (most recent call last):
  File "C:\Users\cspon\anaconda3\lib\site-packages\matplotlib\cbook\__init__.py", line 196, in proces
s
    func(*args, **kwargs)
  File "C:\Users\cspon\anaconda3\lib\site-packages\matplotlib\animation.py", line 1467, in _stop
    self.event_source.remove_callback(self._loop_delay)
AttributeError: 'NoneType' object has no attribute 'remove_callback'
```

In [22]:
```
fig = plt.figure()
a = animation.FuncAnimation(fig, update, interval=10)
```



In [ ]:
```

```