

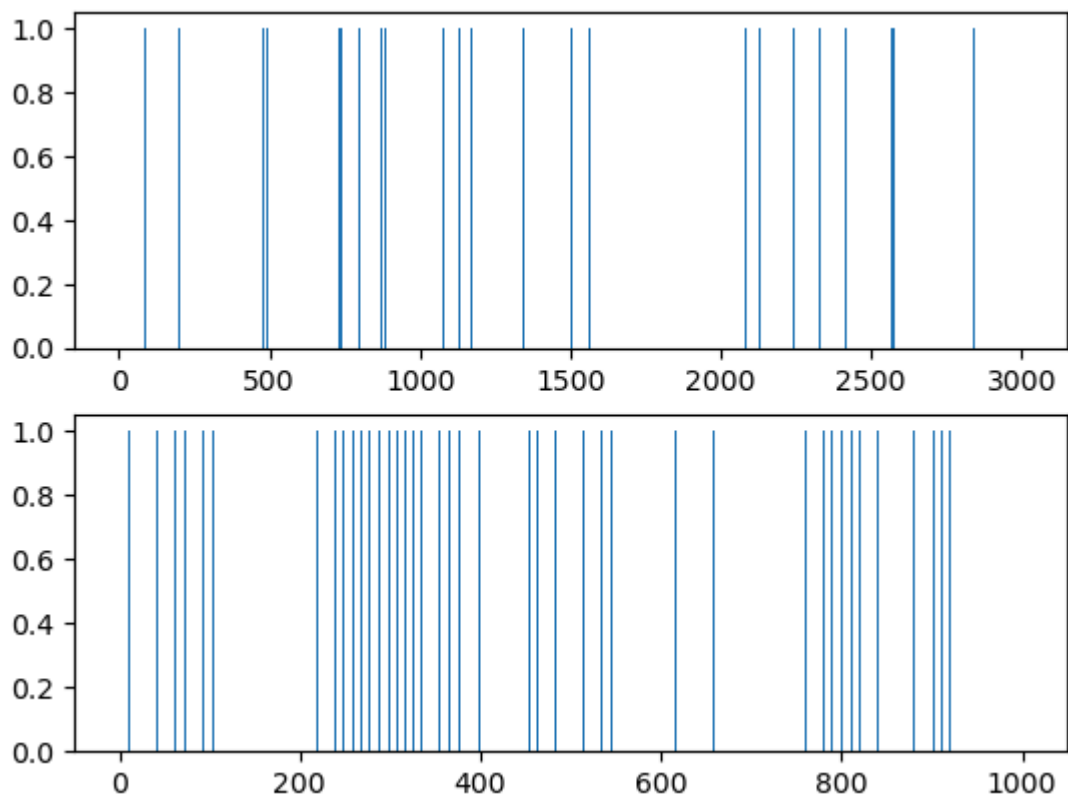
```
In [25]: from utils import readPoiSpikes, generatePoiSpikes, calcCV, calcFF, calcRate
import numpy as np
import matplotlib.pyplot as plt
```

```
In [10]: r = 94 #spikes per second
Fs = 1000 #Sampling frequency
totalTime = 30 #seconds
dt = 0.001 #seconds
binSize = 0.01 #secondsb
```

```
In [16]: spikeTrain1 = readPoiSpikes("rawSpikes1.mat", Fs)
spikeTrain2 = readPoiSpikes("rawSpikes2.mat", Fs)
```

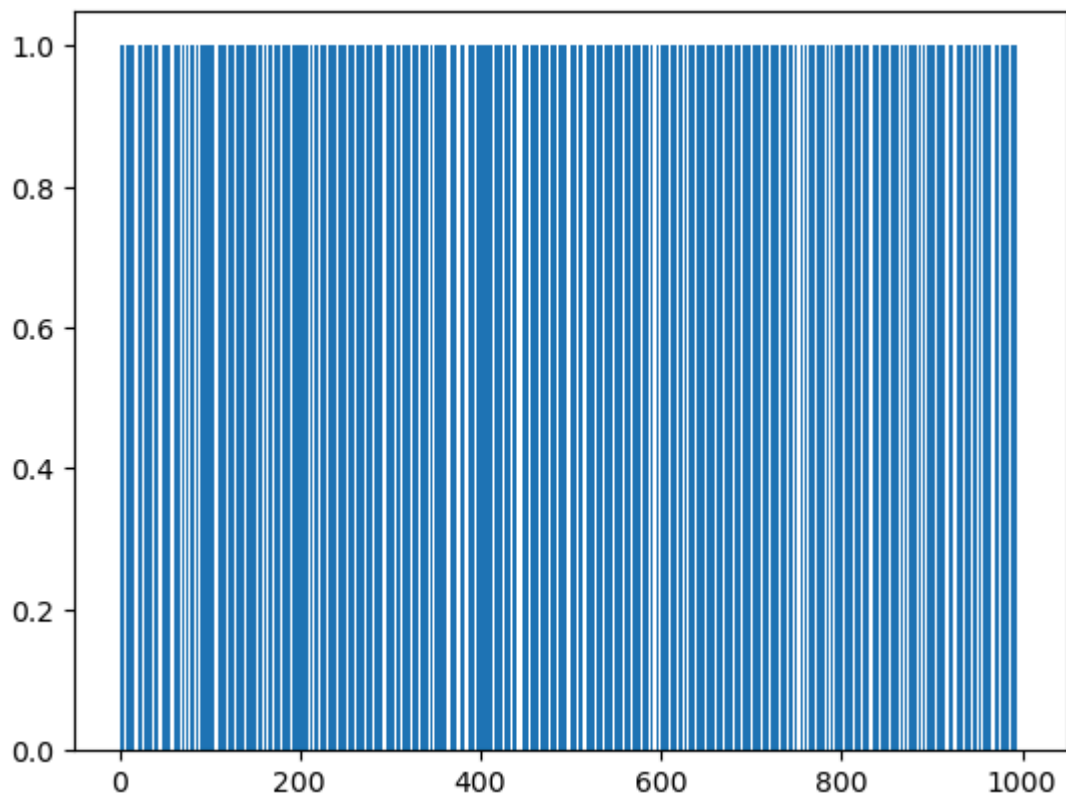
```
In [17]: plt.subplot(2,1,1)
plt.bar(np.arange(len(spikeTrain1)), spikeTrain1)
plt.subplot(2,1,2)
plt.bar(np.arange(len(spikeTrain2)), spikeTrain2)
```

Out[17]: <BarContainer object of 1000 artists>



```
In [24]: generate = generatePoiSpikes(r, dt, 1000)
plt.bar(np.arange(len(generate)), generate)
```

Out[24]: <BarContainer object of 1000 artists>



```
In [26]: print(f"The CV for the first spike train is {calcCV(spikeTrain1)}, and the FF is {calcFF(spikeTrain1)}")
          print(f"The CV for the second spike train is {calcCV(spikeTrain2)}, and the FF is {calcFF(spikeTrain2)}")
          print(f"The CV for the generated spike train is {calcCV(generate)}, and the FF is {calcFF(generate)}")
```

The CV for the first spike train is 1.0716732418819246, and the FF is 0.9396666666666665

The CV for the second spike train is 0.10037934695884893, and the FF is 0.8999999999999999

The CV for the generated spike train is 0.3136389343481033, and the FF is 0.0910000000000001

```
In [43]: plt.subplot(3,1,1)
          plt.plot(calcRate(spikeTrain1,0.1,dt))
          plt.subplot(3,1,2)
          plt.plot(calcRate(spikeTrain2,0.1,dt))
          plt.subplot(3,1,3)
          plt.plot(calcRate(generate,0.1,dt))
```

Out[43]: [<matplotlib.lines.Line2D at 0x2e0aeb1cc10>]

