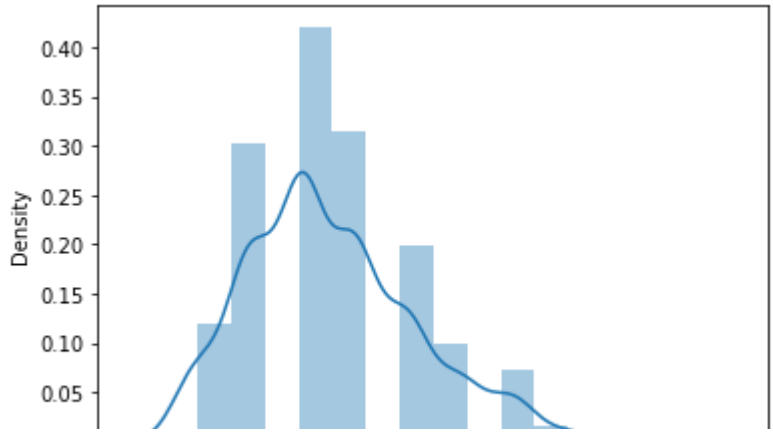
Poisson Distribution

```
# Goals in World cup soccer matches
import numpy as np
from scipy.stats import poisson
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns
```

```
G = [3, 4, 1, 4, 3, 4, 0, 1, 6, 3, 5, 0, 4, 2, 0, 0, 6, 3, 1, 2, 6, 2,
       1, 3, 4, 3, 2, 4, 0, 1, 1, 2, 3, 4, 3, 2, 2, 4, 2, 2, 3, 4, 3, 4,
       5, 3, 3, 0, 4, 2, 0, 5, 2, 0, 1, 5, 2, 4, 1, 5, 3, 2, 2, 3, 6, 3,
       1, 4, 3, 4, 2, 0, 4, 3, 7, 1, 3, 2, 3, 1, 3, 3, 2, 2, 2, 4, 2, 6,
       4, 2, 3, 2, 2, 2, 4, 5, 2, 4, 6, 3, 3, 2, 2, 2, 3, 2, 1, 2, 4, 2,
       2, 3, 1, 2, 1, 4, 1, 5, 6, 0, 2, 3, 0, 4, 2, 0, 2, 4, 0, 2, 5, 3,
       4, 3, 0, 2, 5, 1, 4, 2, 4, 4, 2, 0, 5, 2, 6, 4, 4, 1, 1, 6, 2, 3,
       0, 2, 3, 4, 2, 4, 1, 4, 2, 1, 1, 1, 2, 3, 2, 2, 0, 1, 5, 2, 2, 4,
       2, 1, 3, 5, 2, 1, 2, 5, 2, 3, 3, 2, 2, 5, 2, 3, 2, 2, 1, 2, 2, 5,
       4, 2, 6, 3, 1, 1, 2, 4, 0, 1, 3, 6, 1, 2, 2, 3, 7, 2, 1, 5, 1, 1,
       2, 3, 6, 2, 2, 3, 3, 3, 1, 2, 3, 3, 2, 1, 1, 4, 3, 2, 1, 1, 4, 2,
       3, 3, 2, 1, 0, 3, 1, 1, 1, 5, 2, 1, 0, 1, 3, 2, 3, 3, 1, 2, 2, 4,
       1, 7, 2, 3, 5, 1, 4, 3, 4, 1, 5, 4, 3, 1, 1, 4, 0, 1, 2, 3, 5, 3,
       5, 1, 1, 2, 1, 2, 3, 1, 2, 1, 5, 7, 1, 3, 6, 2, 3, 1, 3, 2, 2, 1,
       5, 2, 2, 1, 2, 4, 3, 3, 5, 2, 3, 6, 7, 1, 7, 3, 2, 2, 1, 3, 0, 2,
       3, 2, 1, 4, 5, 1, 3, 1, 2, 2, 3, 2, 3, 2, 6, 3, 1, 0, 5, 1, 3, 1,
       2, 2, 0, 6, 1, 0, 1, 1, 3, 3, 5, 0, 2, 3, 4, 2, 3, 3, 1, 5, 1, 1,
       4, 5, 3, 2, 2, 2, 1, 2, 5, 1, 4, 0, 1, 4, 4, 2, 2, 3, 2, 1, 2, 1,
       5, 4, 2, 2, 2, 2, 0, 3, 2, 1, 2, 3, 3, 0, 2, 2, 5, 5, 4, 1, 3, 3,
       2, 0, 1, 3, 6, 1, 1, 4, 7, 0, 1, 2, 2, 3, 2, 4, 5, 3, 6, 3, 9, 4,
       3, 3, 3, 3, 1, 1, 4, 2, 3, 4, 6, 4, 2, 1, 6, 3, 2, 3, 4, 6, 3, 2,
       2, 2, 4, 0, 0, 5, 3, 4, 7, 2, 3, 0, 2, 0, 3, 2, 1, 5, 3, 1, 6, 3,
       5, 1, 6, 1, 1, 2, 2, 2, 2, 2, 3, 2, 0, 6, 2, 0, 5, 0, 2, 3, 3, 4,
       3, 0, 1, 3, 2, 6, 4, 3, 8, 3, 2, 4, 1, 0, 1, 0, 4, 3, 3, 1, 2, 2,
       1, 1, 4, 3, 4, 1, 3, 1, 3, 3, 4, 2, 3, 4, 3, 1, 3, 8, 1, 1, 4, 4,
       4, 0, 2, 0, 2, 2, 5, 2, 6, 2, 4, 1, 2, 3, 0, 4, 4, 0, 4, 6, 0, 2,
       2, 3, 2, 4, 2, 2, 3, 1, 2, 0, 3, 1, 3, 0, 4, 0, 3, 4, 2, 4, 1, 6,
       1, 2, 2, 6, 1, 4, 2, 1, 2, 3, 5, 1, 2, 2, 1, 4, 2, 0, 2, 6, 1, 1,
       1, 3, 1, 1, 6, 2, 3, 2, 2, 4, 2, 3, 2, 3, 2, 2, 5, 1, 2, 6, 3, 3,
       5, 4, 2, 4, 1, 3, 1, 1, 3, 1, 1, 3, 1, 1, 3, 3, 2, 5, 3, 2, 2, 3,
       2, 2, 2, 2, 4, 2, 4, 1, 2, 4, 1, 2, 5, 6, 3, 3, 0, 3, 5, 2, 1, 4,
       2, 1, 1, 1, 2, 1, 1, 4, 0, 4, 3, 5, 2, 3, 2, 1, 0, 1, 3, 4, 1, 1,
       2, 6, 2, 4, 1, 3, 2, 0, 5, 2, 2, 6, 2, 4, 4, 1, 0, 0, 2, 3, 2, 2,
       2, 3, 3, 0, 1, 2, 3, 0, 3, 9, 3, 3, 1, 1, 1, 2, 2, 4, 5, 1, 3, 1,
       4, 2]
```

```
sns.distplot(G) # not gaussian for sure
```

```
/usr/local/lib/python3.7/dist-packages/seaborn/distributions.py:2619: FutureWa
  warnings.warn(msg, FutureWarning)
<matplotlib.axes._subplots.AxesSubplot at 0x7fa7b49391d0>
```




```
m = print(np.mean(G))
```

```
2.576
```

✓ 0s completed at 18:51