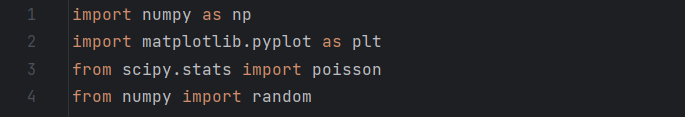
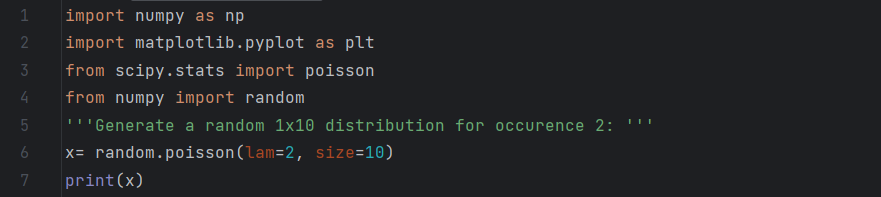
**•** Importing the required dependencies will be our first step.

* Now, to calculate poisson distribution we need 2 parameters which are 𝜆 & k. In our code, 𝜆 is 𝜇 or our expectation. We need to generate random variable for occurrence 2, we use Poisson’s function which is ***“random.poisson ( )”*** takes 𝜆 = 2 & 𝑘 = 10.

Then, it provides me with random numbers, and each time this code runs, a new set of random numbers is provided.

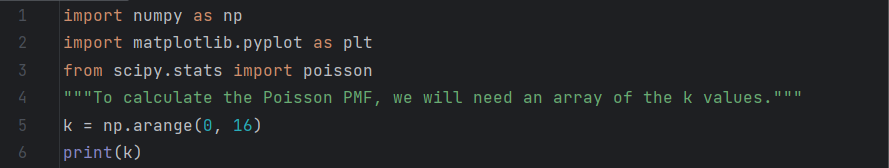


* Output:



* Here, we need an array of the **k** values. We use ***“np.arrange ( )”*** function and gave it numbers from 0 to 16 and print it.

create an array with these values:



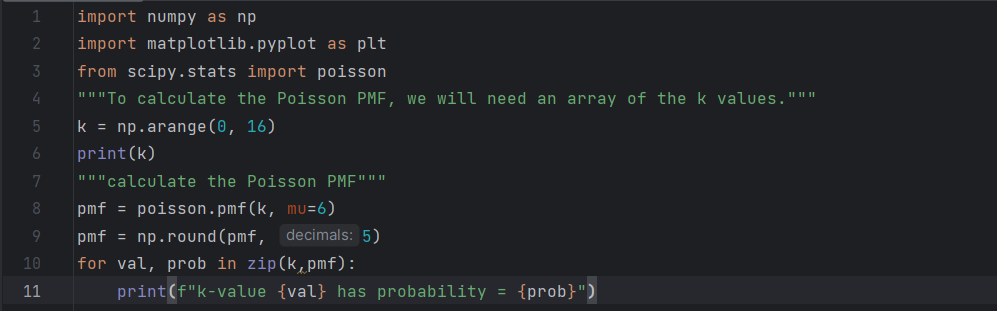
* Output:



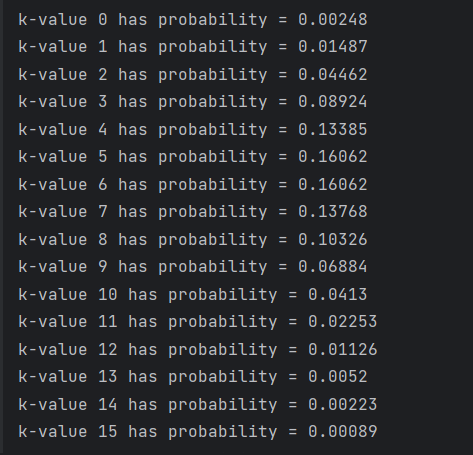
* to calculate the Poisson PMF, we will use the**. pmf()** method of the [Scipy.poisson](https://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.poisson.html" \t "_blank) generator. It will need two parameters:
* k value (the **k** array that we created).
* μ value (which we will set to 6 as in our example).

***“np.round ( )”*** function **:** to print 5 digits following the PMF's decimal.

We make for loop takes 2 parameters which are the value and the probability, then after substitute in Poisson’s equation ,it will give me the probability of each value .



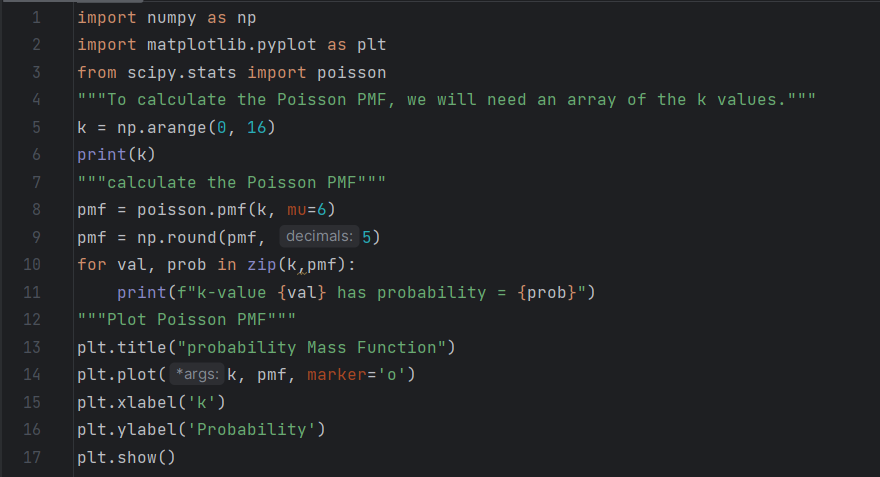
* Output:



* We will need the **k** values array that we created earlier as well as the **PMF** values array in this step.

Using ***matplotlib******library****.*

We need to plot PMF graph so, we use ***“plt.plot ( )”*** function takes PMF value and k .Then, we add label to X-axis and Y-axis by using ***“plt.xlabel ( )”*** and ***“plt.ylabel ( )”*.**



A graph of a function

Description automatically generated