we can plot a two-dimensional histogram by plt.hist2d()
function.

```python
import matplotlib.pyplot as plt
import numpy as np
#np.random.multivariate_normal(mean, covaraince, size) generate
random normal distribution data.
#.T is use in numpy for transposing the array.
x, y = np.random.multivariate_normal([0,0], [[1, 1],[1, 2]],
1000).T
plt.hist2d(x, y, bins=30, cmap='Blues')
plt.colorbar(label='bin counts')
plt.show()
```
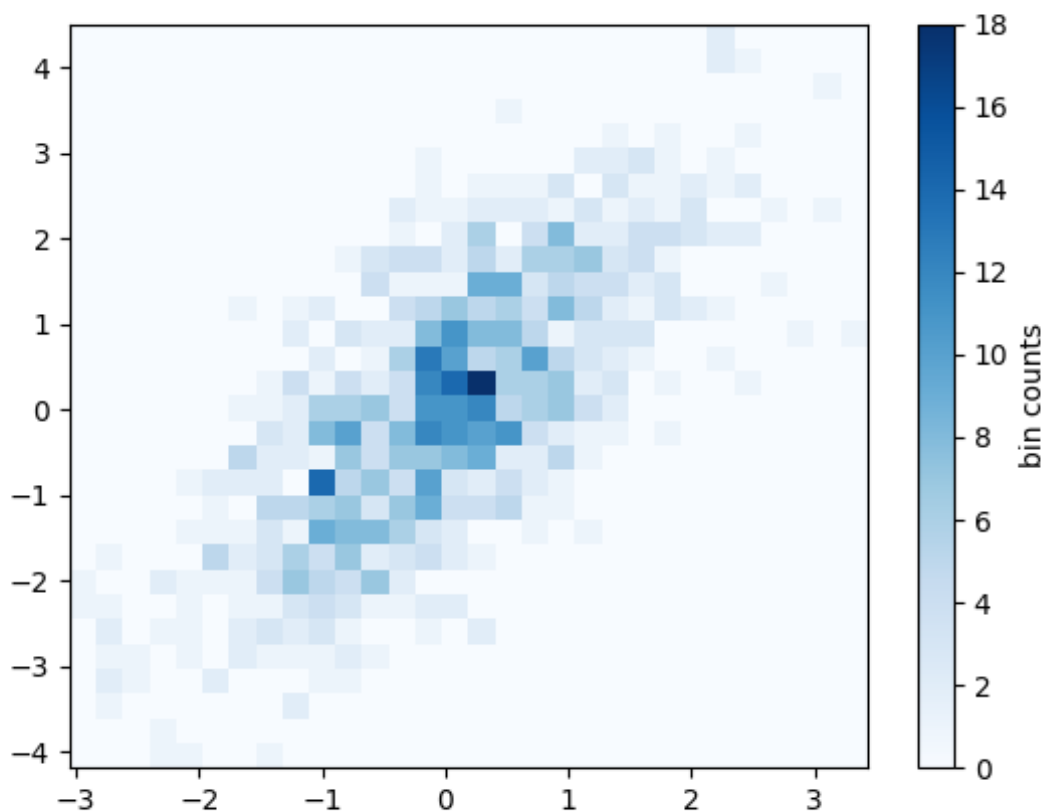


```python
plt.hist2d(x, y, bins=30, edgecolor='grey', cmap='Blues')
plt.colorbar(label='bin counts')
plt.show()
```
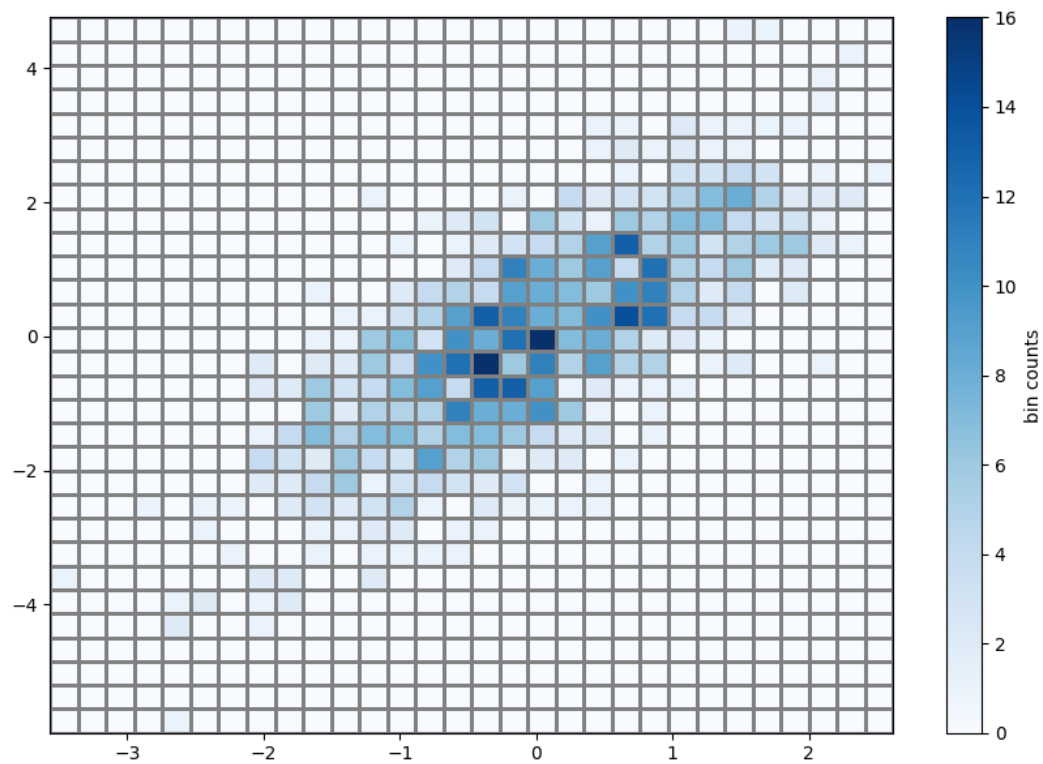
we can also present bins in hexagonal instead of sqaure and
this can achieve by function plt.hexbin().
#gridsize: number of hexagons in the x and y direction(default
100).

```
plt.hexbin(x, y, bins=30, gridsize=40, cmap='Purples')
plt.colorbar(label='bin counts')
plt.title('HEXbin Plot')
plt.show()
```

HEXbin Plot