

# on-variance-using-numpy-and-scipy

April 8, 2024

```
[1]: #Experiment no 4 to perform finding mean , median , mode , standard deviation ,  
     ↪,variance using numpy and scipy
```

```
[2]: #Name ::Shravani M Karne  
     #Roll no :39  
     #sec :A  
     #Year :3rd  
     #Subject :Big Data Analysis (ET 2 Lab)
```

```
[3]: import numpy as np  
     x=np.array([1,2,3,4,5,6,7,2,6,2,1,4,2,2,6])
```

```
[4]: x
```

```
[4]: array([1, 2, 3, 4, 5, 6, 7, 2, 6, 2, 1, 4, 2, 2, 6])
```

```
[5]: print(np.mean(x))
```

```
3.5333333333333333
```

```
[6]: print(np.median(x))
```

```
3.0
```

```
[7]: print(np.mode(x))
```

```
-----  
AttributeError                                Traceback (most recent call last)  
Cell In[7], line 1  
----> 1 print(np.mode(x))  
  
File C:\ProgramData\anaconda3\Lib\site-packages\numpy\__init__.py:320, in  
     ↪__getattr__(attr)  
    317     from .testing import Tester  
    318     return Tester  
--> 320 raise AttributeError("module {!r} has no attribute "  
    321                        "{!r}".format(__name__, attr))
```

```
AttributeError: module 'numpy' has no attribute 'mode'
```

```
[8]: from scipy import stats
```

```
[9]: print(stats.mode(x))
```

```
ModeResult(mode=2, count=5)
```

```
[10]: print(np.std(x))
```

```
1.9618585292749546
```

```
[11]: print(np.var(x))
```

```
3.8488888888888884
```

```
[12]: import numpy as np  
x=np.array([1,100,200,300,4000,5000])  
y=np.array([2,4,6,8,10]),
```

```
[13]: print(np.std(x))
```

```
2072.711623024829
```

```
[14]: print(np.std(y))
```

```
2.8284271247461903
```

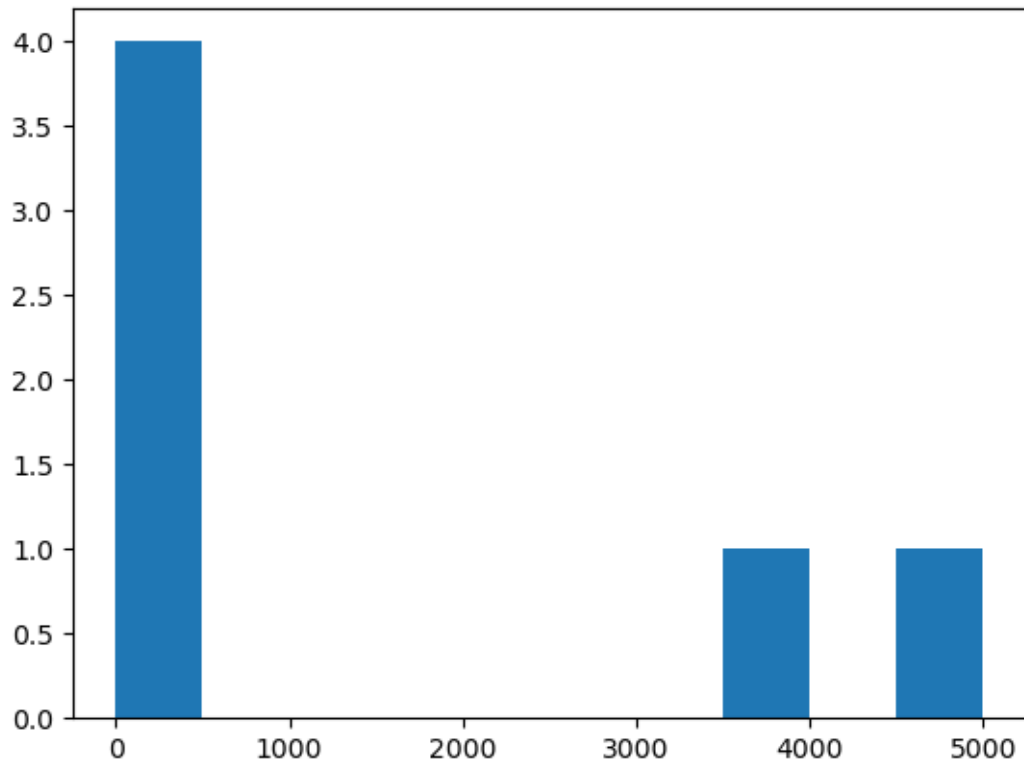
```
[15]: print(np.var(x))
```

```
4296133.472222221
```

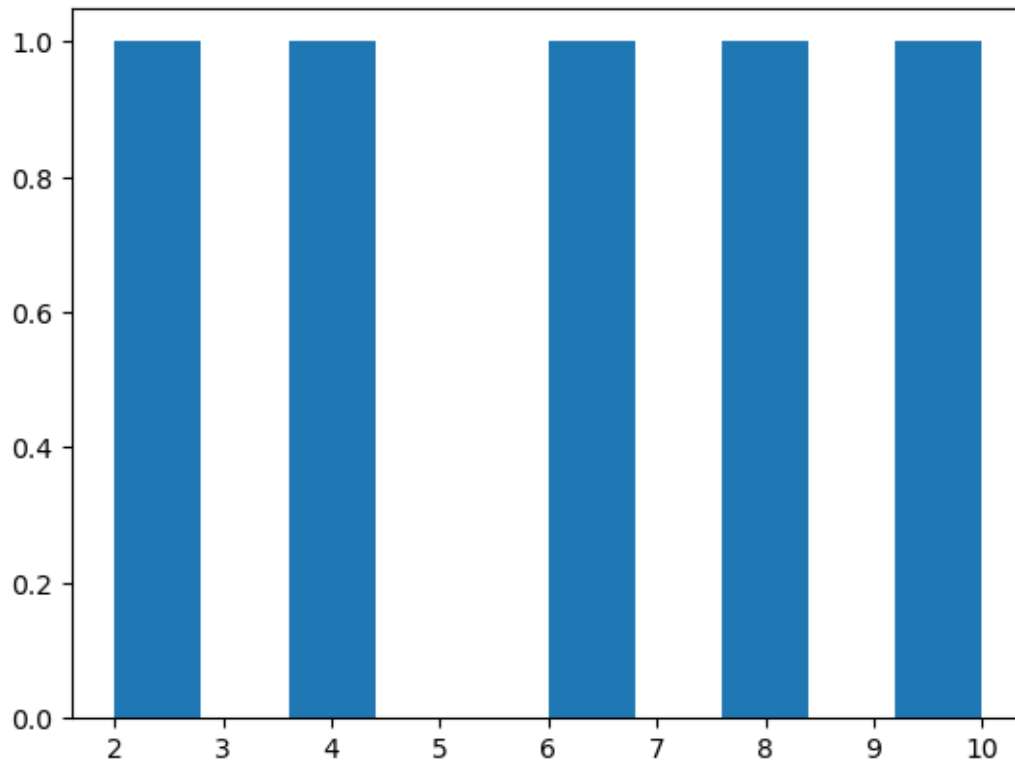
```
[16]: print(np.var(y))
```

```
8.0
```

```
[17]: from matplotlib import pyplot as plt  
plt.hist(x)  
plt.show()
```



```
[18]: from matplotlib import pyplot as plt
plt.hist(y)
plt.show()
```



```
[19]: from statsmodels.stats.weightstats import ztest as ztest
      #enter IQ levels for 20 patients
      data = [88, 92, 94, 94, 96, 97, 97, 97, 99, 99,
              105, 109, 109, 109, 110, 112, 112, 113, 114, 115]
      #perform one sample z-test
      ztest(data)
      (1.5976240527147705, 0.1101266701438426)
```

```
[19]: (1.5976240527147705, 0.1101266701438426)
```

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[ ]:
```