```python
#sample calculation for low range(lr) , upper range (ur),percentile
import numpy as np
array=np.random.randint(1,100,16)  # randomly generate 16 numbers between  1 to 100
array
```

```
array([27, 50, 44,  6, 58, 61, 23, 86, 67, 20, 75,  7, 79, 61, 90, 54])
```

```python
array.mean()
```

```
50.5
```

```python
np.percentile(array,25)
```

```
26.0
```

```python
np.percentile(array,50)
```

```
56.0
```

```python
np.percentile(array,75)
```

```
69.0
```

```python
np.percentile(array,100)
```

```
90.0
```

```python
#outliers detection
def outDetection(array):
  sorted(array)
  Q1,Q3=np.percentile(array,[25,75])
  IQR=Q3-Q1
  lr=Q1-(1.5*IQR)
  ur=Q3+(1.5*IQR)
  return lr,ur
```
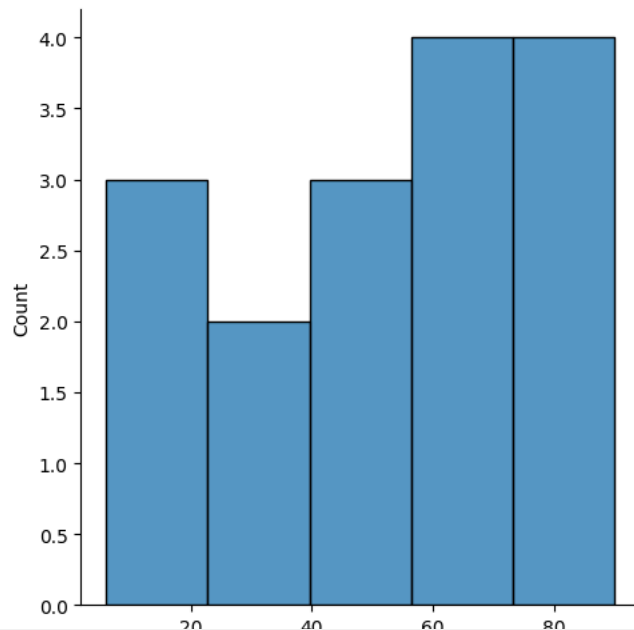
```python
lr,ur=outDetection(array)
```

```python
lr,ur
```

```
(-38.5, 133.5)
```

```python
import seaborn as sns
%matplotlib inline
sns.displot(array)
```

```
<seaborn.axisgrid.FacetGrid at 0x78f3291c2710>
```



```python
sns.distplot(array)
```

```
<ipython-input-19-d72101983c40>:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(array)
<Axes: ylabel='Density'>
```
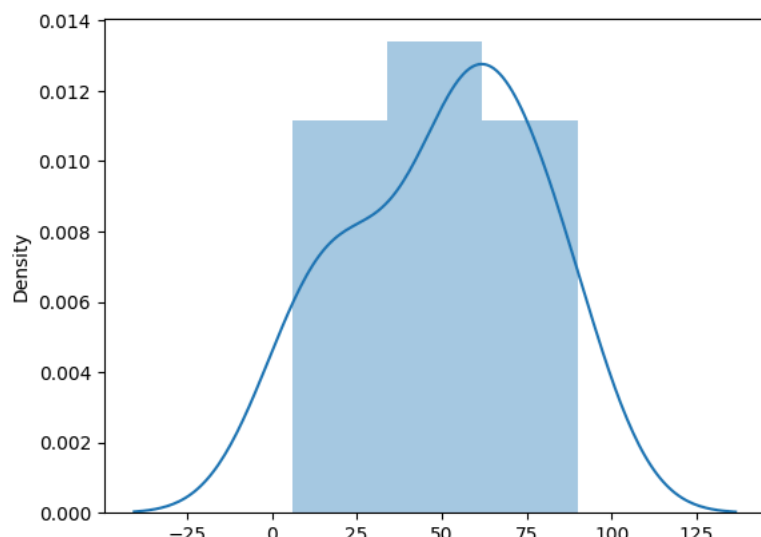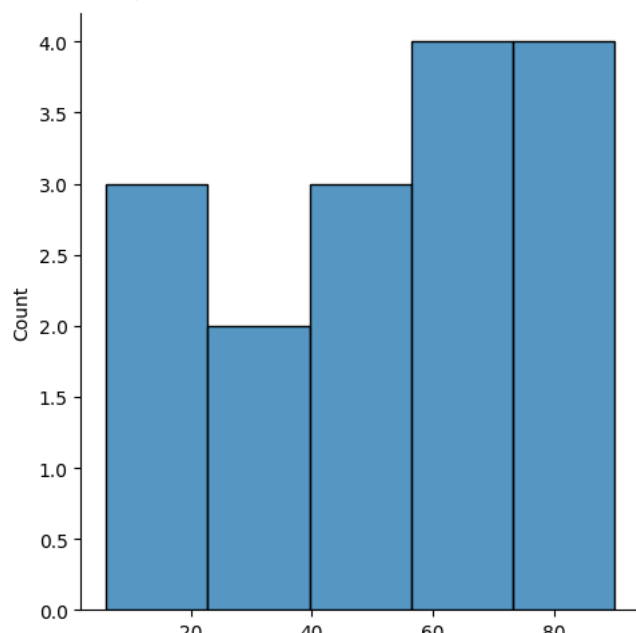


```
new_array=array[(array>lr) & (array<ur)]
new_array
```

```
array([27, 50, 44,  6, 58, 61, 23, 86, 67, 20, 75,  7, 79, 61, 90, 54])
```

```
sns.displot(new_array)
```

```
<seaborn.axisgrid.FacetGrid at 0x78f2e09bb580>
```



```
lr1,ur1=outDetection(new_array)
lr1,ur1
```

```
(-38.5, 133.5)
```

```
final_array=new_array[(new_array>lr1) & (new_array<ur1)]
final_array
```

```
array([27, 50, 44,  6, 58, 61, 23, 86, 67, 20, 75,  7, 79, 61, 90, 54])
```

```
sns.distplot(final_array)
```

<ipython-input-18-7ba96ada5b76>:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

```
  sns.distplot(final_array)
```
<Axes: ylabel='Density'>