```python
import numpy as np
array=np.random.randint(1,100,16) # randomly generate 16 numbers between 1 to 100
array
```

```
array([22, 48, 70,  7, 46, 92, 25, 31, 38, 12, 92,  4,  5, 55, 70, 61])
```

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

```
42.375
```

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

```
19.5
```

✍ **Generate**	create a dataframe with 2 columns and 10 rows	🔍	**Close**

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

```
42.0
```

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

```
63.25
```

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

```
92.0
```

```python
def outDetection(array):
  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
  lr,ur=outDetection(array)
  print(f"Lower range: {lr}, Upper range: {ur}")

array = np.random.normal(50, 25, 100)  # Example data
lr, ur = outDetection(array)


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


sns.histplot(new_array, kde=True)
plt.xlabel("Value")
plt.ylabel("Density")
plt.title("Distribution of Filtered Data")
plt.show()
```
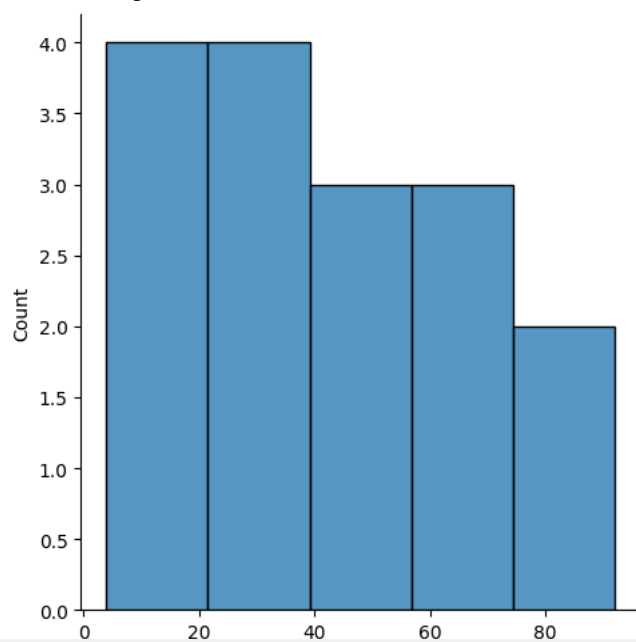
Distribution of Filtered Data
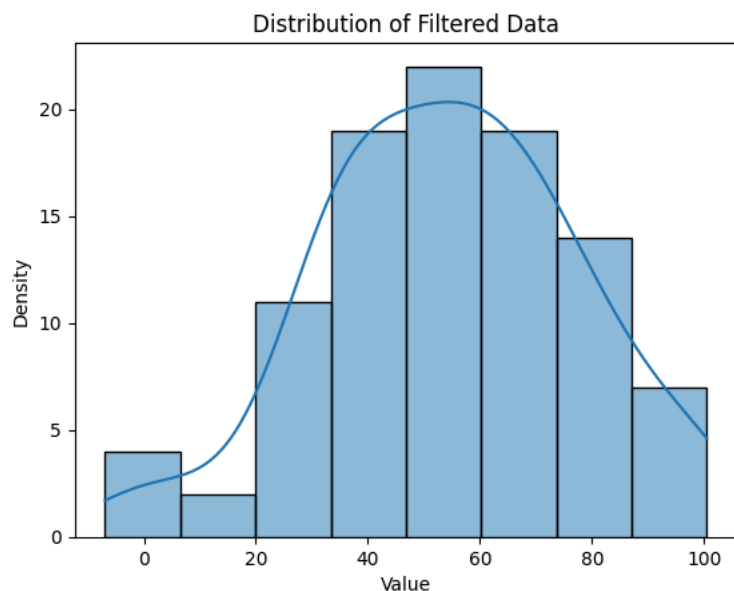
```python
import seaborn as sns
%matplotlib inline
sns.displot(array)
```

<seaborn.axisgrid.FacetGrid at 0x7d0420ce9720>


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

```
array([ 51.85014358,  34.83238679,  77.04117029,  99.26725507,
        26.25845082,  36.55006652,  29.2200325 ,   0.50667154,
        92.68224723,  68.30384579,  85.22523265,  55.66082601,
        17.78219061,  30.61821963,  40.97552024,  38.12614615,
        65.53605085,  72.35388289,  35.05798932,  65.28154547,
        61.81971967,  32.88327386,  76.46605909,  78.38958672,
         5.3214148 ,  42.68977065,  35.26354792,  35.57908961,
        63.13906371,  30.39185285,  52.19093272,  59.33087816,
        32.95300973,  44.81792357,  66.60719456,  64.22163439,
        57.54990457,  74.23770306,  48.42495291,  83.83619692,
        67.54061757,  78.38961525,  74.7177832 ,  61.91326406,
        27.28447422,  99.22865942,   1.20433312,  64.77780984,
        58.48901255,  99.43959417,  25.34749132,  60.67309344,
        40.39807124,  88.98561119,  56.66616456,  76.25656706,
        14.30884977,  42.29200712,  57.87269478,  46.95598493,
        -6.92314481,  31.07105886,  43.14610168,  60.6575837 ,
        43.99197508,  51.06009871,  67.72425833,  57.53197055,
        69.21108884, 100.49349834,  57.58021145,  56.38544687,
        85.59862204,  53.43489242,  47.31269244,  45.15913115,
        47.64678649,  37.9176987 ,  46.88784929,  65.72125821,
```

```
            31.95537796,  72.94356225,  86.22206455,  38.10331451,
            74.79789395,  53.18122882,  23.71646192,  37.42530255,
            55.99624825,  48.16180217,  72.39876339,  85.0479005 ,
            34.62866742,  70.10360734,  99.4590022 ,  43.74685633,
            84.41366831,  50.21390904])
```

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

    (-9.910459929045743, 117.75504029782823)

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

    array([51.85014358, 34.83238679, 77.04117029, 99.26725507,
            26.25845082, 36.55006652, 29.2200325 ,   0.50667154,
            92.68224723, 68.30384579, 85.22523265, 55.66082601,
            17.78219061, 30.61821963, 40.97552024, 38.12614615,
            65.53605085, 72.35388289, 35.05798932, 65.28154547,
            61.81971967, 32.88327386, 76.46605909, 78.38958672,
             5.3214148 , 42.68977065, 35.26354792, 35.57908961,
            63.13906371, 30.39185285, 52.19093272, 59.33087816,
            32.95300973, 44.81792357, 66.60719456, 64.22163439,
            57.54990457, 74.23770306, 48.42495291, 83.83619692,
            67.54061757, 78.38961525, 74.7177832 , 61.91326406,
            27.28447422, 99.22865942,   1.20433312, 64.77780984,
            58.48901255, 99.43959417, 25.34749132, 60.67309344,
            40.39807124, 88.98561119, 56.66616456, 76.25656706,
            14.30884977, 42.29200712, 57.87269478, 46.95598493,
            -6.92314481, 31.07105886, 43.14610168, 60.6575837 ,
            43.99197508, 51.06009871, 67.72425833, 57.53197055,
            69.21108884, 100.49349834, 57.58021145, 56.38544687,
            85.59862204, 53.43489242, 47.31269244, 45.15913115,
            47.64678649, 37.9176987 , 46.88784929, 65.72125821,
            31.95537796, 72.94356225, 86.22206455, 38.10331451,
            74.79789395, 53.18122882, 23.71646192, 37.42530255,
            55.99624825, 48.16180217, 72.39876339, 85.0479005 ,
            34.62866742, 70.10360734, 99.4590022 , 43.74685633,
            84.41366831, 50.21390904])
```

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

    <ipython-input-28-7ba96ada5b76>: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'>