EXPRIMENT - 10

measure of central Tendency

In [1]:

```
age = [45,63,32,12,5,61,15,14,18,19,94,65,4,28,65]
```

In [2]:

```
import numpy as np
```

In [3]:

```
print(np.mean(age))
```

```
36.0
```

In [4]:

```
print(np.median(age))
```

```
28.0
```

In [5]:

```
print(np.mode(age))
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[5], line 1
----> 1 print(np.mode(age))

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'
```

In [8]:

```
import statistics as st
```

In [10]:

```
print(st.mean(age))
```

```
36
```

In [12]:

```
print(st.median(age))
```

```
28
```

In [9]:

```
print(st.mode(age))
```

```
65
```

In [14]:

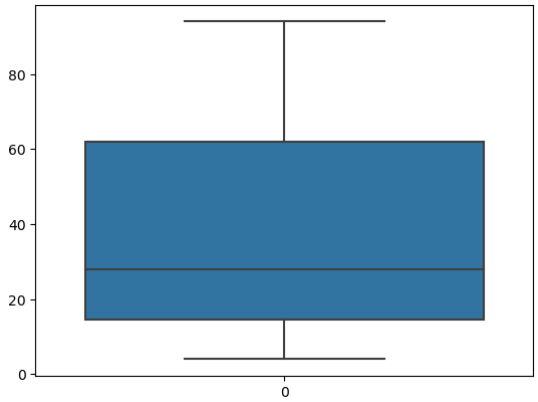
```
import seaborn as sns
```


In [15]:

```
sns.boxplot(age)
```

Out[15]:

```
<Axes: >
```



In [18]:

```
q1,q3 = np.percentile(age,[25,27])
print("q1=",q1)
print("q3=",q3)
```

```
q1= 14.5
q3= 14.780000000000001
```

In [19]:

```
iqr = q3-q1
iqr
```

Out[19]:

```
0.28000000000000114
```

In [21]:

```
lf = q1-1.5*(iqr)
lf
```

Out[21]:

```
14.079999999999998
```

In [22]:

```
hf = q3+1.5*(iqr)
hf
```

Out[22]:

```
15.200000000000003
```

In [23]:

```
print("mean",np.mean(age))
```

```
mean 36.0
```

In [34]:

```
def variance(data):
    n=len(data)
    mean= sum(data)/n
    dev=[(x-mean)**2 for x in data]
    var=sum(dev)/(n-1)
    return var
```

In [35]:

```
variance(age)
```

Out[35]:

```
761.4285714285714
```

In [39]:

```
np.var(age)
```

Out[39]:

```
710.6666666666666
```

In [33]:

```
statistics.variance(age)
```

Out[33]:

```
761.4285714285714
```

In [36]:

```
import math
```

In [37]:

```
math.sqrt(statistics.variance(age))
```

Out[37]:

```
27.593995205996748
```

In [38]:

```
np.std(age)
```

Out[38]:

```
26.65833203084294
```

In [ ]:

```

```