```python
#TRAIN TEST SPLIT

import pandas as pd
import numpy as np
from itertools import permutations
import random
import math
import time
from sklearn.model_selection import train_test_split

df=pd.read_csv("/content/BostonHousing.csv",header="infer").values.astype(float)

x=df[:,0:-1]
y=df[:,-1]
print("Total Rows :- ",len(df))

trainrows=(df.shape[0])*0.8
train=math.floor(trainrows)

xtrain=np.random.permutation(x)
ytrain=np.random.permutation(y)
x_train=xtrain[0:train]
x_test=xtrain[train:]
y_train=ytrain[0:train]
y_test=ytrain[train:]
print(x_train)
print(x_test)
print(y_train)
print(y_test)
```

```
    ...
    [6.26300e-02 0.00000e+00 1.19300e+01 ... 2.10000e+01 3.91990e+02
     9.67000e+00]
    [1.64390e-01 2.20000e+01 5.86000e+00 ... 1.91000e+01 3.74710e+02
     9.52000e+00]
    [1.58744e+01 0.00000e+00 1.81000e+01 ... 2.02000e+01 3.96900e+02
     2.10800e+01]]
   [[5.37000e-01 0.00000e+00 6.20000e+00 ... 1.74000e+01 3.78350e+02
     1.16500e+01]
    [2.79570e-01 0.00000e+00 9.69000e+00 ... 1.92000e+01 3.96900e+02
     1.35900e+01]
    [9.51200e-02 0.00000e+00 1.28300e+01 ... 1.87000e+01 3.83230e+02
     8.94000e+00]
    ...
    [5.36000e-02 2.10000e+01 5.64000e+00 ... 1.68000e+01 3.96900e+02
     5.28000e+00]
    [6.16200e-02 0.00000e+00 4.39000e+00 ... 1.88000e+01 3.64610e+02
     1.26700e+01]
```

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21.  21.4 13.3 13.4 23.8  7.2 16.1 18.5 12.1 50.  43.5 21.1 23.  15.6
41.7 19.9 14.2 29.9  9.6 28.4 21.6 32.9 10.9 24.3 14.  23.9 23.3 20.
36.2 22.2 18.2 23.  24.7 25.1 28.7 17.4 50.  12.7 13.3 37.  20.9 12.7
21.  29.8 11.9 20.8 45.4 21.9 24.1 30.7 14.5 33.  22.  23.1 15.6 16.
31.2 19.7 27.5 33.2 27.5 19.4 30.1 14.1 42.3 21.2 22.8 16.7 22.8 18.2
20.7 11.7 30.1 18.7 25.  20.5 20.6 20.8 13.8 31.1  5.6 24.3 34.6 46.
28.1 25.  20.3 50.  18.6 20.6 19.3 32.7 22.  23.2 19.3 32.  30.3 26.7
11.3 10.2 24.1 21.2 37.6  8.3 24.5 17.8 15.2 12.  35.2 23.7 22.9 28.7
17.8 16.5 50.  13.3 27.1 33.2 20.  21.9 22.5 22.2 19.8 20.  23.8 19.6
18.1 21.2 17.9 10.8 33.3 36.1 22.2 22.7 22.6 16.4 19.5 22.4 25.  34.7
22.6 16.7 23.7 13.1 13.8 50.  19.1 17.  15.6 21.2 18.7 22.9 21.4 12.8
20.6 23.9 18.4 10.9 21.9 50.   7.  50.  18.4 29.  11.  18.8 13.5 21.7
11.8  9.7 18.3  8.3 28.7 24.7 13.1 17.4 16.8 17.8 29.1 21.4 46.7 23.4
27.9 37.3 29.1 19.2 16.6 50.  33.1 29.8 31.  18.5 21.7 17.2 22.  42.8
31.5 17.8 31.6 20.4 31.7 18.5 20.3 24.6  8.4 19.3 22.8 23.9 22.6 16.1
16.1 25.  23.1 14.1 24.2 20.1 50.  33.4 24.6 18.8 23.8 28.6  7.2 21.7
21.8 35.4 10.4 22.4  8.5 24.1  5.  20.2 27.5 50.  22.  13.6 17.3 20.4
23.1 12.7 17.1 23.1 16.3 20.1 14.9 23.9 20.4 17.6 14.6 13.1 24.8 14.9
26.5 44.8 22.5 20.   7.2 28.  18.5 19.6  9.5 19.6 21.5  8.7 23.1 19.3
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43.8 13.6 18.2 25.  20.6 32.5 19.7 18.  19.9 23.3 35.4 25.  22.6 19.
24.3 17.5 19.4 17.1 19.8 14.8 11.7 19.2 37.9 23.2 20.3 20.3 22.  23.9
15.3 26.4 10.2 19.4 13.8 36.  21.7 16.6 19.9 26.6 22.7 24.4 29.6 25.
16.5 23.6 13.9 21.7 48.3  5.  19.5 22.3 17.4 16.8 33.8 23. ]
[20.1 18.4 22.9 15.7 22.  25.  21.4 30.8 21.1 50.  50.  10.2 50.  13.1
21.4 23.3 13.4 14.3 14.5 23.  16.2 50.  24.7 18.9 17.2 20.2 17.5 24.
17.1 33.4  7.  20.1 13.4 15.  15.2 23.5 20.6 14.4 27.  24.8 19.5  7.4
21.7 12.6 26.4 19.1 34.9 22.1 21.7 36.5 48.8 24.  23.1 15.  37.2 21.8
 8.8 15.2 13.9 44.  43.1 17.5 23.4 27.1 28.4 11.9 23.6 15.1 20.5 50.
20.9 23.2 24.5 22.5 31.6 28.2 11.8 18.9 19.6 22.6 18.9 30.5 14.5 48.5
 8.8 23.7 22.2 18.7 23.3 13.8 24.8 22.3 20.7 21.  16.2 29.4 26.6 32.
38.7 29.  19.1 20. ]
```

#TRAIN TEST SPLIT

```python
import pandas as pd
import numpy as np
from itertools import permutations
import random
import math
import time
from sklearn.model_selection import train_test_split

df=pd.read_csv("/content/BostonHousing.csv",header="infer").values.astype(float)

x=df[:,0:-1]
y=df[:,-1]
print("Total Rows :- ",len(df))

test_split=float(input("Enter a ratio of test split :- "))
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=test_split)
print(x_train.shape,x_test.shape,y_train.shape,y_test.shape)
```

```
Total Rows :-  506
Enter a ratio of test split :- 0.8
(101, 13) (405, 13) (101,) (405,)
```

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