**ASSESS SUPERSTEP**

**1. REPLACING NAN VALUES WITH MEAN**

import pandas as pd

import numpy as np

df = pd.DataFrame([[10, np.nan, 30, 40], [7, 14, 21, 28], [55, np.nan, 8, 12],

[15, 14, np.nan, 8], [7, 1, 1, np.nan], [np.nan, 4, 9, 2]],

columns=['Apple', 'Orange', 'Banana', 'Pear'],

index=['Basket1', 'Basket2', 'Basket3', 'Basket4',

'Basket5', 'Basket6'])

print("THE ORIGINAL VALUES")

print(df)

print("REPLACING THE VALUES WITH MEAN")

df.fillna(df.mean(),inplace=True)

df

**Output:**

THE ORIGINAL VALUES

Apple Orange Banana Pear

Basket1 10.0 NaN 30.0 40.0

Basket2 7.0 14.0 21.0 28.0

Basket3 55.0 NaN 8.0 12.0

Basket4 15.0 14.0 NaN 8.0

Basket5 7.0 1.0 1.0 NaN

Basket6 NaN 4.0 9.0 2.0

REPLACING THE VALUES WITH MEAN

**2.REPLACING NAN VALUES WITH MEDIAN**

import pandas as pd

import numpy as np

df = pd.DataFrame([[10, np.nan, 30, 40], [7, 14, 21, 28], [55, np.nan, 8, 12],

[15, 14, np.nan, 8], [7, 1, 1, np.nan], [np.nan, 4, 9, 2]],

columns=['Apple', 'Orange', 'Banana', 'Pear'],

index=['Basket1', 'Basket2', 'Basket3', 'Basket4',

'Basket5', 'Basket6'])

print("THE ORIGINAL VALUES")

print(df)

print("REPLACING THE VALUES WITH MEAN")

df.fillna(df.median(),inplace=True)

df

**Output:**

THE ORIGINAL VALUES

Apple Orange Banana Pear

Basket1 10.0 NaN 30.0 40.0

Basket2 7.0 14.0 21.0 28.0

Basket3 55.0 NaN 8.0 12.0

Basket4 15.0 14.0 NaN 8.0

Basket5 7.0 1.0 1.0 NaN

Basket6 NaN 4.0 9.0 2.0

REPLACING THE VALUES WITH MEAN

**3.REPLACING NAN VALUES WITH MODE**

import pandas as pd

import numpy as np

df = pd.DataFrame([[10, np.nan, 30, 40], [7, 14, 21, 28], [55, np.nan, 8, 12],

[15, 14, np.nan, 8], [7, 1, 1, np.nan], [np.nan, 4, 9, 2]],

columns=['Apple', 'Orange', 'Banana', 'Pear'],

index=['Basket1', 'Basket2', 'Basket3', 'Basket4',

'Basket5', 'Basket6'])

print("THE ORIGINAL VALUES")

print(df)

print("REPLACING THE VALUES WITH MEAN")

for column in df.columns:

df[column].fillna(df[column].mode()[0], inplace=True)

df

**Output:**

THE ORIGINAL VALUES

Apple Orange Banana Pear

Basket1 10.0 NaN 30.0 40.0

Basket2 7.0 14.0 21.0 28.0

Basket3 55.0 NaN 8.0 12.0

Basket4 15.0 14.0 NaN 8.0

Basket5 7.0 1.0 1.0 NaN

Basket6 NaN 4.0 9.0 2.0

REPLACING THE VALUES WITH MEAN

**4.REPLACING NAN VALUES WITH MINIMUM**

import pandas as pd

import numpy as np

df = pd.DataFrame([[10, np.nan, 30, 40], [7, 14, 21, 28], [55, np.nan, 8, 12],

[15, 14, np.nan, 8], [7, 1, 1, np.nan], [np.nan, 4, 9, 2]],

columns=['Apple', 'Orange', 'Banana', 'Pear'],

index=['Basket1', 'Basket2', 'Basket3', 'Basket4',

'Basket5', 'Basket6'])

print("THE ORIGINAL VALUES")

print(df)

print("REPLACING THE VALUES WITH MEAN")

df.fillna(df.min(),inplace=True)

df

**Output:**

THE ORIGINAL VALUES

Apple Orange Banana Pear

Basket1 10.0 NaN 30.0 40.0

Basket2 7.0 14.0 21.0 28.0

Basket3 55.0 NaN 8.0 12.0

Basket4 15.0 14.0 NaN 8.0

Basket5 7.0 1.0 1.0 NaN

Basket6 NaN 4.0 9.0 2.0

REPLACING THE VALUES WITH MEAN