ASSIGNMENT-1

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AI Assignment 1	
Task - 1	Create a pandas dataframe (DataFrame name as 'df') with numpy random values (4 features and 4 observation)
Task - 2	Rename the task - 1 'df' dataframe column names to 'Random value 1', 'Random value 2', 'Random value 3' & 'Random value 4'
Task - 3	Find the descriptive statistics of the 'df' dataframe.
Task - 4	Check for the null values in 'df' and find the data type of the columns.
Task - 5	Display the 'Random value 2' & 'Random value 3' columns with location method and index location method.

Task-1:

```
import pandas as pd
import numpy as np

np.random.seed(42)
data = np.random.randn(4, 4)
df = pd.DataFrame(data, columns=['Feature 1', 'Feature 2', 'Feature 3',
'Feature 4'])
```

Task-2:

```
df.rename(columns={'Feature 1': 'Random value 1',
                   'Feature 2': 'Random value 2',
                   'Feature 3': 'Random value 3',
                   'Feature 4': 'Random value 4'}, inplace=True)
```

Task-3:

```
statistics = df.describe()
print(statistics)
```

Output:

Task-3

```
statistics = df.describe()
print(statistics)
```

	Random value 1	Random value 2	Random value 3	Random value 4
count	4.000000	4.000000	4.000000	4.000000
mean	0.008762	-0.435780	0.009641	0.315612
std	0.439772	1.043924	1.426317	1.007175
min	-0.469474	-1.913280	-1.724918	-0.562288
25%	-0.292984	-0.653923	-0.778793	-0.489869
50%	0.003904	-0.186201	0.092135	0.150852
75%	0.305650	0.031942	0.880570	0.956334
max	0.496714	0.542560	1.579213	1.523030

Task-4:

```
null_values = df.isnull().sum()
data_types = df.dtypes

print("Null Values:\n", null_values)
print("\nData Types:\n", data_types)
```

Output:

Task-4

```
[4] null_values = df.isnull().sum()
    data_types = df.dtypes

    print("Null Values:\n", null_values)
    print("\nData Types:\n", data_types)
```

```
Null Values:
 Random value 1    0
Random value 2    0
Random value 3    0
Random value 4    0
dtype: int64

Data Types:
 Random value 1    float64
Random value 2    float64
Random value 3    float64
Random value 4    float64
dtype: object
```

Task-5:

```
random_value_2_loc = df.loc[:, 'Random value 2']
random_value_3_loc = df.loc[:, 'Random value 3']

random_value_2_iloc = df.iloc[:, 1]
random_value_3_iloc = df.iloc[:, 2]

print("Random value 2 (using loc):\n", random_value_2_loc)
print("\nRandom value 3 (using loc):\n", random_value_3_loc)
print("\nRandom value 2 (using iloc):\n", random_value_2_iloc)
print("\nRandom value 3 (using iloc):\n", random_value_3_iloc)
```

Output:

Task-5

```
random_value_2_loc = df.loc[:, 'Random value 2']
random_value_3_loc = df.loc[:, 'Random value 3']

random_value_2_iloc = df.iloc[:, 1]
random_value_3_iloc = df.iloc[:, 2]

print("Random value 2 (using loc):\n", random_value_2_loc)
print("\nRandom value 3 (using loc):\n", random_value_3_loc)
print("\nRandom value 2 (using iloc):\n", random_value_2_iloc)
print("\nRandom value 3 (using iloc):\n", random_value_3_iloc)
```

```
Random value 2 (using loc):
 0   -0.138264
1   -0.234137
2    0.542560
3   -1.913280
Name: Random value 2, dtype: float64

Random value 3 (using loc):
 0    0.647689
1    1.579213
2   -0.463418
3   -1.724918
Name: Random value 3, dtype: float64

Random value 2 (using iloc):
 0   -0.138264
1   -0.234137
2    0.542560
3   -1.913280
Name: Random value 2, dtype: float64

Random value 3 (using iloc):
 0    0.647689
1    1.579213
2   -0.463418
3   -1.724918
Name: Random value 3, dtype: float64
```