

```
In [2]: import numpy as np
import pandas as pd

# Task - 1
data = np.random.randn(4, 4)
df = pd.DataFrame(data)
print(df)
```

	0	1	2	3
0	0.472497	0.027051	-0.559277	-1.180568
1	0.670849	-0.982486	1.384236	-1.835295
2	-0.115275	-1.821463	-0.398913	-0.212807
3	-0.421129	0.799116	0.783517	1.331568

```
In [3]: # Task - 2
df = df.rename(columns={0: 'Random value 1', 1: 'Random value 2', 2: 'Random value 3', 3: 'Random value 4'})
print(df)
```

	Random value 1	Random value 2	Random value 3	Random value 4
0	0.472497	0.027051	-0.559277	-1.180568
1	0.670849	-0.982486	1.384236	-1.835295
2	-0.115275	-1.821463	-0.398913	-0.212807
3	-0.421129	0.799116	0.783517	1.331568

```
In [4]: # 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	0.151736	-0.494445	0.302391	-0.474276
std	0.507226	1.146650	0.937402	1.376064
min	-0.421129	-1.821463	-0.559277	-1.835295
25%	-0.191738	-1.192230	-0.439004	-1.344250
50%	0.178611	-0.477717	0.192302	-0.696688
75%	0.522085	0.220068	0.933697	0.173286
max	0.670849	0.799116	1.384236	1.331568

```
In [5]: # Task - 4 (Continued)
null_values = df.isnull().sum()
data_types = df.dtypes

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

```
In [6]: # Task - 5
random_value_2_loc = df.loc[:, 'Random value 2']
random_value_3_loc = df.loc[:, 'Random value 3']

random_value_2_idx = df.iloc[:, 1]
random_value_3_idx = df.iloc[:, 2]

print("Random value 2 (Location):")
print(random_value_2_loc)
print("\nRandom value 3 (Location):")
print(random_value_3_loc)
print("\nRandom value 2 (Index Location):")
print(random_value_2_idx)
```

```
print("\nRandom value 3 (Index Location):")
print(random_value_3_idx)
```

Random value 2 (Location):

```
0    0.027051
1   -0.982486
2   -1.821463
3    0.799116
```

Name: Random value 2, dtype: float64

Random value 3 (Location):

```
0   -0.559277
1    1.384236
2   -0.398913
3    0.783517
```

Name: Random value 3, dtype: float64

Random value 2 (Index Location):

```
0    0.027051
1   -0.982486
2   -1.821463
3    0.799116
```

Name: Random value 2, dtype: float64

Random value 3 (Index Location):

```
0   -0.559277
1    1.384236
2   -0.398913
3    0.783517
```

Name: Random value 3, dtype: float64

In []:

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