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Assignment - 1

TASK - 1

```
import pandas as pd
import numpy as np

np.random.seed(42)

data = {
    'Feature1': np.random.rand(4),
    'Feature2': np.random.rand(4),
    'Feature3': np.random.rand(4),
    'Feature4': np.random.rand(4)
}
df = pd.DataFrame(data)
print(df)
```

```
   Feature1  Feature2  Feature3  Feature4
0  0.374540  0.156019  0.601115  0.832443
1  0.950714  0.155995  0.708073  0.212339
2  0.731994  0.058084  0.020584  0.181825
3  0.598658  0.866176  0.969910  0.183405
```

TASK - 2

```
import pandas as pd
import numpy as np
np.random.seed(42)
data = {
    'Random value 1': np.random.rand(4),
    'Random value 2': np.random.rand(4),
    'Random value 3': np.random.rand(4),
    'Random value 4': np.random.rand(4)
}

df = pd.DataFrame(data)
print(df)
```

```
   Random value 1  Random value 2  Random value 3  Random value 4
0        0.374540        0.156019        0.601115        0.832443
1        0.950714        0.155995        0.708073        0.212339
2        0.731994        0.058084        0.020584        0.181825
3        0.598658        0.866176        0.969910        0.183405
```

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         0.663977        0.309068        0.574920        0.352503
std          0.241443        0.374263        0.400716        0.320267
min          0.374540        0.058084        0.020584        0.181825
25%          0.542629        0.131517        0.455982        0.183010
50%          0.665326        0.156007        0.654594        0.197872
```

```
75%         0.786674        0.333558        0.773532        0.367365
max         0.950714        0.866176        0.969910        0.832443
```

TASK - 4

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

# Get column data types
data_types = df.dtypes

# Display null values and data types
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
```

TASK - 5

```
print("Using .loc[]:")
random_value_2_3_loc = df.loc[:, ['Random value 2', 'Random value 3']]
print(random_value_2_3_loc)

# Using integer-based .iloc[] method
print("\nUsing .iloc[]:")
random_value_2_3_iloc = df.iloc[:, [1, 2]]
print(random_value_2_3_iloc)
```

```
Using .loc[]:
   Random value 2  Random value 3
0        0.156019        0.601115
1        0.155995        0.708073
2        0.058084        0.020584
3        0.866176        0.969910

Using .iloc[]:
   Random value 2  Random value 3
0        0.156019        0.601115
1        0.155995        0.708073
2        0.058084        0.020584
3        0.866176        0.969910
```

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