Task - 1 Create a pandas dataframe (DataFrame name as 'df') with numpy random values (4 features and 4 observation)

```
import pandas as pd
import numpy as np

data = np.random.rand(4, 4)
df = pd.DataFrame(data, columns=['Feature1', 'Feature2', 'Feature3', 'Feature4'])

print(df)
```

```
   Feature1  Feature2  Feature3  Feature4
0  0.414644  0.095902  0.192806  0.356998
1  0.910864  0.219812  0.179026  0.744134
2  0.153315  0.696385  0.730468  0.522375
3  0.578972  0.335303  0.781687  0.788730
```

Task - 2 Rename the task - 1 'df' dataframe column names to 'Random value 1', 'Random value 2', 'Random value 3' & 'Random value 4'

```
df = df.rename(columns={'Feature1': 'Random value 1',
                        'Feature2': 'Random value 2',
                        'Feature3': 'Random value 3',
                        'Feature4': 'Random value 4'})
print(df)
```

```
   Random value 1  Random value 2  Random value 3  Random value 4
0        0.414644        0.095902        0.192806        0.356998
1        0.910864        0.219812        0.179026        0.744134
2        0.153315        0.696385        0.730468        0.522375
3        0.578972        0.335303        0.781687        0.788730
```

Task - 3 Find the descriptive statistics of the 'df' dataframe.

```
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         0.514449        0.336851        0.470997        0.603060
std          0.317115        0.258858        0.329894        0.201190
min          0.153315        0.095902        0.179026        0.356998
25%          0.349312        0.188835        0.189361        0.481031
50%          0.496808        0.277558        0.461637        0.633255
75%          0.661945        0.425574        0.743273        0.755283
max          0.910864        0.696385        0.781687        0.788730
```

Task - 4 Check for the null values in 'df' and find the data type of the columns.

```
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
```

Task - 5 Display the 'Random value 2' & 'Random value 3' columns with location method and index location method.

```
# Location method
random_value_2_3_loc = df.loc[:, ['Random value 2', 'Random value 3']]
print(random_value_2_3_loc)

# Index location method
random_value_2_3_iloc = df.iloc[:, [1, 2]]
```

```
print(random_value_2_3_iloc)
```

```
   Random value 2  Random value 3
0        0.095902        0.192806
1        0.219812        0.179026
2        0.696385        0.730468
3        0.335303        0.781687
   Random value 2  Random value 3
0        0.095902        0.192806
1        0.219812        0.179026
2        0.696385        0.730468
3        0.335303        0.781687
```