

# ASSESSMENT 1

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

In [1]:

```
import pandas as pd
import numpy as np

# Set the random seed for reproducibility
np.random.seed(42)

# Create a 4x4 array of random values
data = np.random.rand(4, 4)

# Create a DataFrame using the random values
df = pd.DataFrame(data, columns=['Feature 1', 'Feature 2', 'Feature 3', 'Feature 4'])

# Display the DataFrame
print(df)
```

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

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

In [2]:

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

print(df)
```

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

## Find the descriptive statistics of the 'df' dataframe.

In [4]:

```
print(df.describe())
```

	Random value 1	Random value 2	Random value 3	Random value 4
count	4.000000	4.000000	4.000000	4.000000
mean	0.491029	0.506780	0.248122	0.654537
std	0.291252	0.386153	0.329856	0.350875
min	0.156019	0.155995	0.020584	0.183405
25%	0.319910	0.198253	0.048709	0.494845
50%	0.487828	0.460206	0.119954	0.732417
75%	0.658947	0.768733	0.319367	0.892110
max	0.832443	0.950714	0.731994	0.969910

## Check for the null values in 'df' and find the data type of the columns.

In [6]:

```
print(df.isnull())
```

	Random value 1	Random value 2	Random value 3	Random value 4
0	False	False	False	False
1	False	False	False	False
2	False	False	False	False
3	False	False	False	False

In [7]:

```
print(df.dtypes)
```

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

## Display the 'Random value 2' & 'Random value 3' columns with location method and index location method.

In [10]:

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

	Random value 2	Random value 3
0	0.950714	0.731994
1	0.155995	0.058084
2	0.708073	0.020584
3	0.212339	0.181825

In [9]:

```
print(df.iloc[:, [1, 2]])
```

	Random value 2	Random value 3
0	0.950714	0.731994
1	0.155995	0.058084
2	0.708073	0.020584
3	0.212339	0.181825

In [ ]: