Name: Kelvin J Anil
Reg No: 21BCE0002

AI ML Assignment 1

Colab Link:
https://colab.research.google.com/drive/1xRUetGZ2_ZuWBs39FW7e4pRrTBPpM07k?usp=sharing

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

```
# task 1
import pandas as pd
import numpy as np

# Taking random values with 4 features and 4 observations
data = np.random.rand(4, 4)

# Creating the DataFrame
df = pd.DataFrame(data, columns=['Feature1', 'Feature2', 'Feature3', 'Feature4'])
df
```

	Feature1	Feature2	Feature3	Feature4
0	0.304242	0.524756	0.431945	0.291229
1	0.611853	0.139494	0.292145	0.366362
2	0.456070	0.785176	0.199674	0.514234
3	0.592415	0.046450	0.607545	0.170524

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

```
[18] # Task 2
     # Renaming the columns
     df.columns=['Random value 1','Random value 2','Random value 3','Random value 4']
     df
```

	Random value 1	Random value 2	Random value 3	Random value 4
0	0.304242	0.524756	0.431945	0.291229
1	0.611853	0.139494	0.292145	0.366362
2	0.456070	0.785176	0.199674	0.514234
3	0.592415	0.046450	0.607545	0.170524

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

```
# Task 3
# Descriptive Statistics
df.describe()
```

	Random value 1	Random value 2	Random value 3	Random value 4
count	4.000000	4.000000	4.000000	4.000000
mean	0.491145	0.373969	0.382827	0.335587
std	0.142582	0.343548	0.177650	0.143846
min	0.304242	0.046450	0.199674	0.170524
25%	0.418113	0.116233	0.269027	0.261053
50%	0.524242	0.332125	0.362045	0.328795
75%	0.597274	0.589861	0.475845	0.403330
max	0.611853	0.785176	0.607545	0.514234

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

```
[20] # Task 4
     # Check for null values in df
     df.isnull().sum()
```

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

```
     # Find the datatype of columns
     df.dtypes
```

```
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.

```
[27] # Task 5
     # Display Random value 2 columns with location method
     df.loc[:,'Random value 2']
```

```
0    0.524756
1    0.139494
2    0.785176
3    0.046450
Name: Random value 2, dtype: float64
```

```
df
```

	Random value 1	Random value 2	Random value 3	Random value 4
0	0.304242	0.524756	0.431945	0.291229
1	0.611853	0.139494	0.292145	0.366362
2	0.456070	0.785176	0.199674	0.514234
3	0.592415	0.046450	0.607545	0.170524

```
[29] # Display Random value 3 columns with location method
     df.loc[:,'Random value 3']
```

```
0    0.431945
1    0.292145
2    0.199674
3    0.607545
Name: Random value 3, dtype: float64
```

```
# Display Random value 2 columns with index location method
df.iloc[:,1]
```

```
0    0.524756
1    0.139494
2    0.785176
3    0.046450
Name: Random value 2, dtype: float64
```

```
[35] # Display Random value 3 columns with index location method
     df.iloc[:,2]
```

```
0    0.431945
1    0.292145
2    0.199674
3    0.607545
Name: Random value 3, dtype: float64
```