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CSE AI AND ML
VIT AP

In [1]:
```
import numpy as np
import pandas as pd
```

In [2]:
```
# Using numpy to generate a random array of shape (4,4)
data = np.random.rand(4, 4)

# Creating a DataFrame using the random data
df = pd.DataFrame(data, columns=['Feature1', 'Feature2', 'Feature3', 'Featu
```

In [3]:
```
print(df)
```

```
   Feature1  Feature2  Feature3  Feature4
0  0.640394  0.592206  0.833549  0.486817
1  0.918379  0.152108  0.675998  0.496371
2  0.845991  0.342940  0.190268  0.123990
3  0.210905  0.625583  0.875434  0.388228
```

In [ ]:
```

```

In [4]:
```
#Renaming the task
df.columns = ['Random value 1', 'Random value 2', 'Random value 3', 'Random
```

In [5]:
```
print(df)
```

```
   Random value 1  Random value 2  Random value 3  Random value 4
0        0.640394        0.592206        0.833549        0.486817
1        0.918379        0.152108        0.675998        0.496371
2        0.845991        0.342940        0.190268        0.123990
3        0.210905        0.625583        0.875434        0.388228
```

In [6]:
```
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         0.653917        0.428209        0.643812        0.373851
std          0.317949        0.223125        0.314318        0.173599
min          0.210905        0.152108        0.190268        0.123990
25%          0.533022        0.295232        0.554566        0.322169
50%          0.743193        0.467573        0.754774        0.437523
75%          0.864088        0.600551        0.844020        0.489205
max          0.918379        0.625583        0.875434        0.496371
```

In [8]:
```
# To check the null values
null_values = df.isnull().sum()
print("Null values in each column:\n", null_values)
```

```
Null values in each column:
 Random value 1    0
Random value 2    0
Random value 3    0
Random value 4    0
dtype: int64
```

In [9]:
```
column_data_types = df.dtypes
print("\nData type of each column:\n", column_data_types)
```

```
Data type of each column:
 Random value 1    float64
Random value 2    float64
Random value 3    float64
Random value 4    float64
dtype: object
```

In [10]:
```
#Location Method
selected_columns_loc = df.loc[:, ['Random value 2', 'Random value 3']]
print("Using .loc:\n", selected_columns_loc)
```

```
Using .loc:
    Random value 2  Random value 3
0        0.592206        0.833549
1        0.152108        0.675998
2        0.342940        0.190268
3        0.625583        0.875434
```

In [11]:
```
#Index location Method
selected_columns_iloc = df.iloc[:, [1, 2]]
print("\nUsing .iloc:\n", selected_columns_iloc)
```

```
Using .iloc:
    Random value 2  Random value 3
0        0.592206        0.833549
1        0.152108        0.675998
2        0.342940        0.190268
3        0.625583        0.875434
```