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Assignment 1

```
import numpy as np
import pandas as pd

# Task 1: Create a pandas dataframe with numpy random values
data = np.random.randint(1, 101, size=(4, 4))
df = pd.DataFrame(data)
print("Task 1: DataFrame 'df' with random values:")
print(df)

# Task 2: Rename the dataframe columns
df.columns = ['Random value 1', 'Random value 2', 'Random value 3',
'Random value 4']
print("\n\nTask 2: Renamed DataFrame columns:")
print(df)

# Task 3: Find the descriptive statistics of the dataframe
descriptive_stats = df.describe()
print("\n\nTask 3: Descriptive statistics of 'df':")
print(descriptive_stats)

# Task 4: Check for null values and data types
null_values = df.isnull().sum()
data_types = df.dtypes
print("\n\nTask 4: Null values in 'df' and data types of columns:")
print("Null Values:")
print(null_values)
print("\nData Types:")
print(data_types)

# Task 5: Display 'Random value 2' & 'Random value 3' columns by
location
# Using column location
column_location = df[['Random value 2', 'Random value 3']]
print("\n\nTask 5: 'Random value 2' & 'Random value 3' columns using
location and index:")
print("Column Location:")
print(column_location)

# Using index location
index_location = df.iloc[:, 1:3]
print("\n\nIndex Location:")
print(index_location)
```

Task 1: DataFrame 'df' with random values:

|   | 0  | 1  | 2  | 3  |
|---|----|----|----|----|
| 0 | 60 | 90 | 57 | 37 |

|   |    |    |    |     |
|---|----|----|----|-----|
| 1 | 59 | 41 | 64 | 1   |
| 2 | 31 | 5  | 4  | 100 |
| 3 | 13 | 23 | 70 | 9   |

Task 2: Renamed DataFrame columns:

|   | Random value 1 | Random value 2 | Random value 3 | Random value 4 |
|---|----------------|----------------|----------------|----------------|
| 0 | 60             | 90             | 57             | 37             |
| 1 | 59             | 41             | 64             | 1              |
| 2 | 31             | 5              | 4              | 100            |
| 3 | 13             | 23             | 70             | 9              |

Task 3: Descriptive statistics of 'df':

|       | Random value 1 | Random value 2 | Random value 3 | Random value 4 |
|-------|----------------|----------------|----------------|----------------|
| count | 4.000000       | 4.000000       | 4.000000       | 4.000000       |
| mean  | 40.750000      | 39.750000      | 48.750000      | 36.750000      |
| std   | 22.867371      | 36.582099      | 30.30264       | 44.902673      |
| min   | 13.000000      | 5.000000       | 4.000000       | 1.000000       |
| 25%   | 26.500000      | 18.500000      | 43.750000      | 7.000000       |
| 50%   | 45.000000      | 32.000000      | 60.500000      | 23.000000      |
| 75%   | 59.250000      | 53.250000      | 65.500000      | 52.750000      |
| max   | 60.000000      | 90.000000      | 70.000000      | 100.000000     |

Task 4: Null values in 'df' and data types of columns:

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 | int64 |
| Random value 2 | int64 |
| Random value 3 | int64 |
| Random value 4 | int64 |

dtype: object

Task 5: 'Random value 2' & 'Random value 3' columns using location and index:

Column Location:

|   | Random value 2 | Random value 3 |
|---|----------------|----------------|
| 0 | 90             | 57             |
| 1 | 41             | 64             |
| 2 | 5              | 4              |
| 3 | 23             | 70             |

Index Location:

|   | Random value 2 | Random value 3 |
|---|----------------|----------------|
| 0 | 90             | 57             |
| 1 | 41             | 64             |
| 2 | 5              | 4              |
| 3 | 23             | 70             |