

SMARBRIDGE – ARTIFICIAL INTELLIGENCE

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QUESTION 1:

CODE:

```
import pandas as pd
import numpy as np
#using numpy's randint
df = pd.DataFrame(np.random.randint(0,100,size=(4, 4)),
columns=list('ABCD'))
#preview the df
df
```

OUTPUT:

 1s 

```
import pandas as pd
import numpy as np
#using numpy's randint
df = pd.DataFrame(np.random.randint(0,100,size=(4, 4)), columns=list('ABCD'))
#preview the df
df
```



	A	B	C	D
0	71	16	68	83
1	39	64	84	77
2	21	92	56	42
3	44	12	45	6



QUESTION 2:

CODE:

```
df.columns = ['Random value 1', 'Random value 2', 'Random value 3',
'Random value 4']
df
```

OUTPUT:

0s

```
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	71	16	68	83
1	39	64	84	77
2	21	92	56	42
3	44	12	45	6

QUESTION 3:

CODE:

```
df.describe(include='all')
```

OUTPUT:

```
df.describe(include='all')
```

	Random value 1	Random value 2	Random value 3	Random value 4
count	4.000000	4.000000	4.000000	4.000000
mean	43.750000	46.000000	63.250000	52.000000
std	20.678088	38.712616	16.720746	35.599625
min	21.000000	12.000000	45.000000	6.000000
25%	34.500000	15.000000	53.250000	33.000000
50%	41.500000	40.000000	62.000000	59.500000
75%	50.750000	71.000000	72.000000	78.500000
max	71.000000	92.000000	84.000000	83.000000

QUESTION 4:

CODE:

```
df.isnull().sum()  
df.dtypes
```

OUTPUT:

```
✓ JS ▶ df.isnull().sum()

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

▶ df.dtypes

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

QUESTION 5:

CODE:

```
random_value_2_location = df.loc[:, 'Random value 2']
random_value_3_location = df.loc[:, 'Random value 3']
random_value_2_index = df.iloc[:, 1]
random_value_3_index = df.iloc[:, 2]
print("\n Displaying 'Random value 2' and 'Random value 3' columns:")
print("Using location method:")
print(random_value_2_location)
print(random_value_3_location)
print("\nUsing index location method:")
print(random_value_2_index)
print(random_value_3_index)
```

OUTPUT:

```

▶ random_value_2_location = df.loc[:, 'Random value 2']
random_value_3_location = df.loc[:, 'Random value 3']
random_value_2_index = df.iloc[:, 1]
random_value_3_index = df.iloc[:, 2]
print("\n Displaying 'Random value 2' and 'Random value 3' columns:")
print("Using location method:")
print(random_value_2_location)
print(random_value_3_location)
print("\nUsing index location method:")
print(random_value_2_index)
print(random_value_3_index)

```

```

● Displaying 'Random value 2' and 'Random value 3' columns:
Using location method:
0    16
1    64
2    92
3    12
Name: Random value 2, dtype: int64
0    68
1    84
2    56
3    45

```

Name: Random value 3, dtype: int64

```

Using index location method:
0    16
1    64
2    92
3    12
Name: Random value 2, dtype: int64
0    68
1    84
2    56
3    45
Name: Random value 3, dtype: int64

```