ADS ASSIGNMENT-1

20BCD7239

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1)Assign your Name to variable name and Age to variable age. Make a Python program that prints your name and age.

```
[ ] name = "John"
    age = 25
    print("Name:", name)
    print("Age:", age)
```

```
Name: John
Age: 25
```

2)X="Datascience is used to extract meaningful insights." Split the string.

```
[ ] X = "Datascience is used to extract meaningful insights."
    split_string = X.split()
    print(split_string)
```

```
['Datascience', 'is', 'used', 'to', 'extract', 'meaningful', 'insights.']
```

3)Make a function that gives the multiplication of two numbers.

```
[ ] def multiply_numbers(a, b):
        return a * b

    result = multiply_numbers(5, 10)
    print("Result:", result)
```

```
Result: 50
```

4)Create a Dictionary of 5 States with their capitals. Also, print the keys and values.

```
[ ]  states_capitals = {
         "New York": "Albany",
         "California": "Sacramento",
         "Texas": "Austin",
         "Florida": "Tallahassee",
         "Illinois": "Springfield"
     }

     # Print keys and values
     for state, capital in states_capitals.items():
         print("State:", state, "Capital:", capital)
```

```
State: New York Capital: Albany
State: California Capital: Sacramento
State: Texas Capital: Austin
State: Florida Capital: Tallahassee
State: Illinois Capital: Springfield
```

5)Create a list of 1000 numbers using the range function.

```
[ ]  numbers = list(range(1, 1001))
     print(numbers)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
```

6)Create an identity matrix of dimension 4 by 4.

```
[ ]  import numpy as np
     identity_matrix = np.eye(4)
     print(identity_matrix)
```

```
[[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]
```

7)Create a 3x3 matrix with values ranging from 1 to 9.

```
[ ]  import numpy as np
     matrix = np.arange(1, 10).reshape(3, 3)
     print(matrix)
```

```
[[1 2 3]
 [4 5 6]
 [7 8 9]]
```

8)Create 2 similar dimensional arrays and perform a sum on them.

```
[ ]  import numpy as np
     array1 = np.array([[1, 2], [3, 4]])
     array2 = np.array([[5, 6], [7, 8]])
     sum_array = array1 + array2
     print(sum_array)
```

```
[[ 6  8]
 [10 12]]
```

9)Generate the series of dates from 1st Feb 2023 to 1st March 2023 (both inclusive).

```
[ ]  import pandas as pd
     dictionary = {'Brand': ['Maruti', 'Renault', 'Hyundai'], 'Sales': [250, 200, 240]}
     df = pd.DataFrame(dictionary)
     print(df)
```

```
      Brand  Sales
0   Maruti    250
1  Renault    200
2  Hyundai    240
```

10)Given a dictionary, convert it into a corresponding DataFrame and display it.

```
import pandas as pd
dictionary = {'Brand': ['Maruti', 'Renault', 'Hyundai'], 'Sales': [250, 200, 240]}
df = pd.DataFrame(dictionary)
print(df)
```

```
      Brand  Sales
0   Maruti    250
1  Renault    200
2  Hyundai    240
```