

# Smart Bridge Applied DataScienceAssignment -1

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X="DataScience is used to extract meaningful insights." Split the string.



```
X="DataScience is used to extract meaningful insights."  
print(X.split())
```

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

3)

Make a function that gives multiplication of two numbers

```
[10] def multiply(a,b):  
      return a*b;  
      res=multiply(5,5)  
      print(res)
```

25

4)

Create a dictionary of 5 states with their capitals. also print the values and keys.

```
[11] states={ "Karnataka":"Banglore",
               "Tamil Nadu":"Chennai",
               "Telangana":"Hyderabad",
               "Maharashtra":"Mumbai",
               "Goa":"Panaji"}

print("States:")
for state in states.keys():
    print("\t",state)
print("\nCapitals:")
for capital in states.values():
    print("\t",capital)
```

```
▶ States:
    Karnataka
    Tamil Nadu
    Telangana
    Maharashtra
    Goa

    Capitals:
        Banglore
        Chennai
        Hyderabad
        Mumbai
        Panaji
```

5)

Create list of 1000 numbers using range function

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

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,
31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45,
.
.
.
.
.
.
986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000]
```

6)

Create an identity matrix of dimension 4 by 4.

```
[12] def identity_Matrix(size):
    for row in range(0, size):
        for col in range(0, size):
            if (row == col):
                print("1 ", end=" ")
            else:
                print("0 ", end=" ")
        print()
    size = 4
    identity_Matrix(size)
```

```
1  0  0  0
0  1  0  0
0  0  1  0
0  0  0  1
```

7)

Create 3x3 matrix with values ranging from 1 to 9

```
[13] def matrix(size):  
    val=1;  
    for row in range(0,size):  
        for col in range(0,size):  
            print(val, end=" ")  
            val+=1  
        print()  
    size=3  
    matrix(size)
```

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

8)

Create 2 similar dimensional array and perform sum on them.

```
[14] arr1=[[1,2,3],[4,5,6]]  
    arr2=[[7,8,9],[1,2,3]]  
    result = []  
    for i in range(len(arr1)):  
        row = []  
        for j in range(len(arr1[i])):  
            row.append(arr1[i][j] + arr2[i][j])  
        result.append(row)  
    for row in result:  
        print(row)
```

```
[8, 10, 12]  
[5, 7, 9]
```

9)

Generate the series of dates from 1st feb,2023 to 1st mar,2023

+ Code

✓  
0s

```
[1] start_day = 1
    start_month = 2
    start_year = 2023

    end_day = 2
    end_month = 3
    end_year = 2023

    current_day = start_day
    current_month = start_month
    current_year = start_year
```

```
while (current_day != end_day or current_month != end_month or current_year != end_year):
    print(f"{current_year}-{current_month:02d}-{current_day:02d}")

    current_day += 1

    if current_month in [1, 3, 5, 7, 8, 10, 12]:
        max_days = 31
    elif current_month in [4, 6, 9, 11]:
        max_days = 30
    else:
        if current_year % 4 == 0 and (current_year % 100 != 0 or current_year % 400 == 0):
            max_days = 29
        else:
            max_days = 28
```

```
if current_day > max_days:
    current_day = 1
    current_month += 1
```

```
if current_month > 12:
    current_month = 1
    current_year += 1
```

2023-02-01  
2023-02-02  
2023-02-03  
2023-02-04  
2023-02-05  
2023-02-06  
2023-02-07  
2023-02-08  
2023-02-09  
2023-02-10

2023-02-11  
2023-02-12  
2023-02-13  
2023-02-14  
2023-02-15  
2023-02-16  
2023-02-17  
2023-02-18  
2023-02-19  
2023-02-20

2023-02-21  
2023-02-22  
2023-02-23  
2023-02-24  
2023-02-25  
2023-02-26  
2023-02-27  
2023-02-28  
2023-03-01

10)

Given a dictionary, convert it into corresponding dataframe and display it  
dictionary={'Brand':['Maruthi','Renault','Hyundai'],'Sales':[250,200,240]}

```
import pandas as pd

data = {'Brand': ['Maruthi', 'Renault', 'Hyundai'],
        'Sales': [250, 200, 240]}

df = pd.DataFrame(data)
print(df)
```

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