# SMART BRIDGE_APPLIED DATA SCIENCE
# ASSIGNMENT - 1

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Assign your Name to variable name and age to variable age. Make a python program that prints your name and age.

```
[1]  name="Nuthikattu Pranathi"
     age="20"
     print(name,age)

     Nuthikattu Pranathi 20
```

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

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

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

Make a function that gives multiplication of two numbers

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

     25
```

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

```
states={ "Karnataka":"Banglore",
         "Tamil Nadu":"Chennai",
         "Telangana":"Hyderabad",
         "Maharastra":"Mumbai",
         "Goa":"Panaji"}

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

Create list of 1000 numbers using range function

```
[6]  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

## Create an identity matrix of dimension 4 by 4.

```
[7]  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
```

## Create 3x3 matrix with values ranging from 1 to 9

```
[8]  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
```

## Create 2 similar dimensional array and perform sum on them.

```python
[9] 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]
```

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

```python
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
```

Given a dictionary, convert it into corresponding dataframe and display it

dictionary=['Brand':['Maruthi','Renault','Hyundai'],'Sales':[250,200,240]]

```
[11] 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
```

**GOOGLE COLAB LINK**

https://colab.research.google.com/drive/1dxeUMkm-kB6XwELslbtzLtpnJQZnlkzJ?usp=sharing