SMARTBRIDGE EXTERNSHIP (Applied Data Science)-Assignment 1

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Q1) Assign your Name to variable name and age to variable age. Make a python program that prints your name and age.

```
name="Sindhura"
age="20"
print(name,age)
```

```
Sindhura 20
```

Q2)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.']
```

Q3) Make a function that gives multiplication of two numbers

```
def multiply(a,b):
  return a*b;
result=multiply(12,16)
print(result)
```

```
192
```

Q4)Create a dictionary of 5 states with their capitals. also print the values and keys.

```
states={ "UP":"lucknow",
          "Bihar":"Patna",
          "Telangana":"Hyderabad",
          "Assam":"Dispur",
          "Goa":"Panaji"}

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

```
States:
	UP
	Bihar
	Telangana
	Assam
	Goa

Capitals:
	lucknow
	Patna
	Hyderabad
	Dispur
	Panaji
```

Q5)Create list of 1000 numbers using range function

```
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,
```

Q6) Create an identity matrix of dimension 4 by 4.

```
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
```

Q7) Create 3x3 matrix with values ranging from 1 to 9

```
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
```

Q8) Create 2 similar dimensional array and perform sum on them.

```
arr1=[[1,2,3],[4,5,6]]
arr2=[[7,8,9],[10,11,12]]
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]
[14, 16, 18]
```

Q9) Generate the series of dates from 1st feb,2023 to 1st mar,2023

```
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
```

Q10)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
```