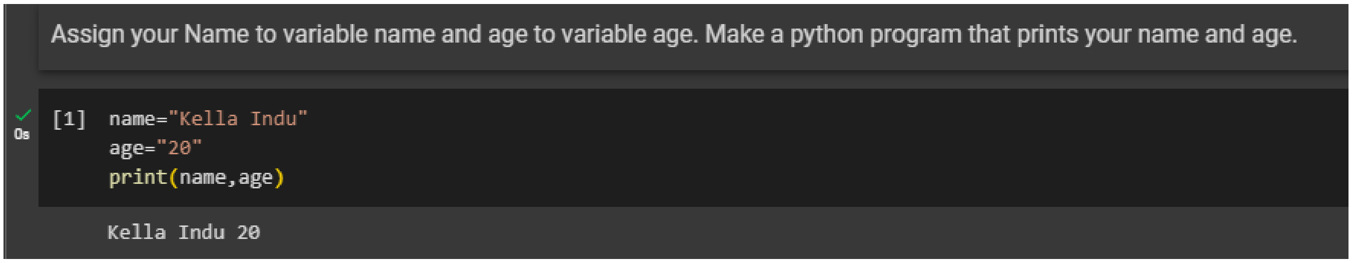
SmartBridge Applied DataScience

Assignment - 1

Name: Kella Indu

Reg. Num: 20BCE7599

1)

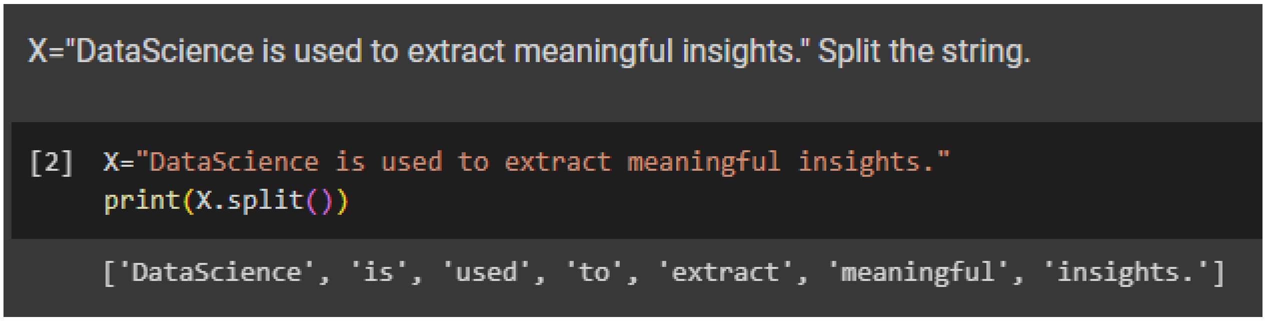


Assign your Name to variable name and age to variable age. Make a python program that prints your name and age.

```
[1]  name="Kella Indu"
     age="20"
     print(name,age)
```

```
Kella Indu 20
```

2)

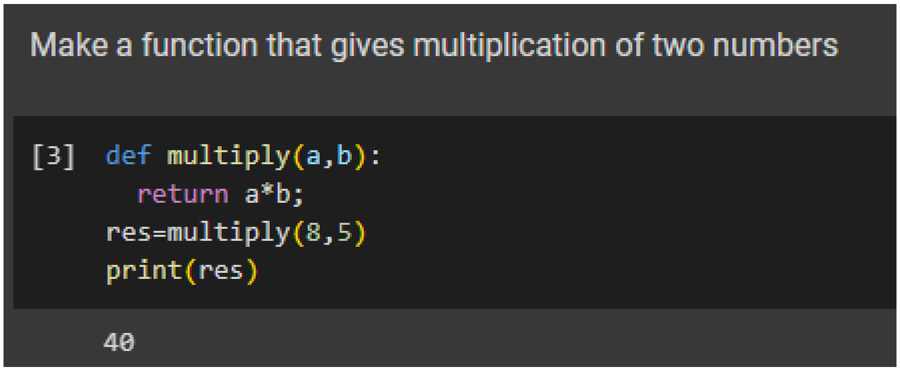


X="DataScience is used to extract meaningful insights." Split the string.

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

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

3)

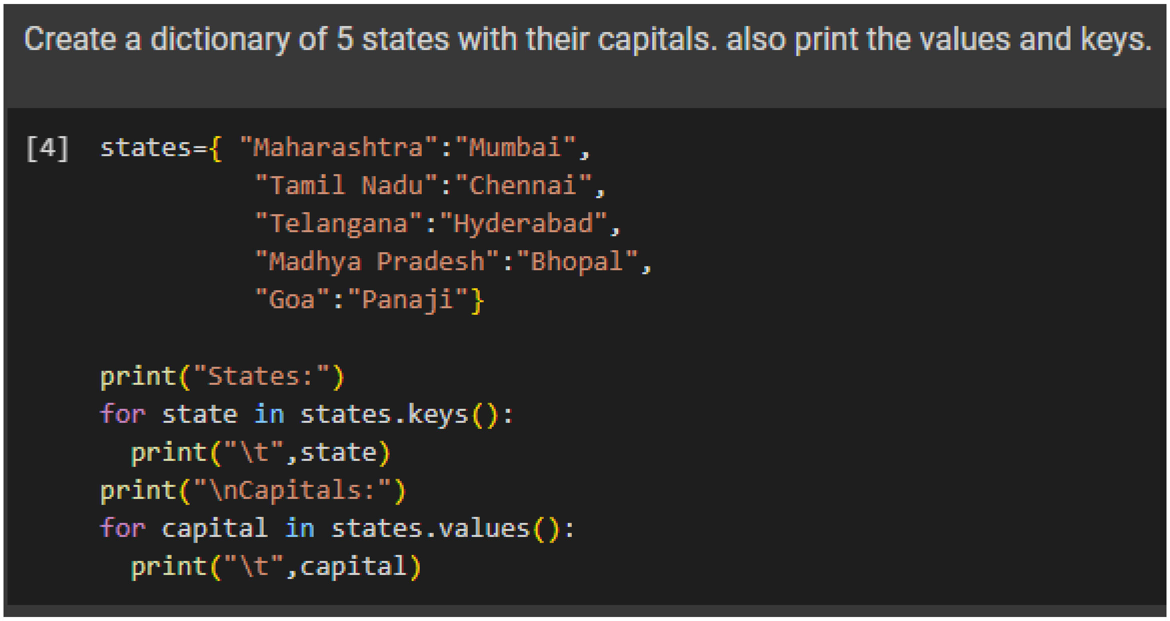


Make a function that gives multiplication of two numbers

```
[3]  def multiply(a,b):
       return a*b;
     res=multiply(8,5)
     print(res)
```

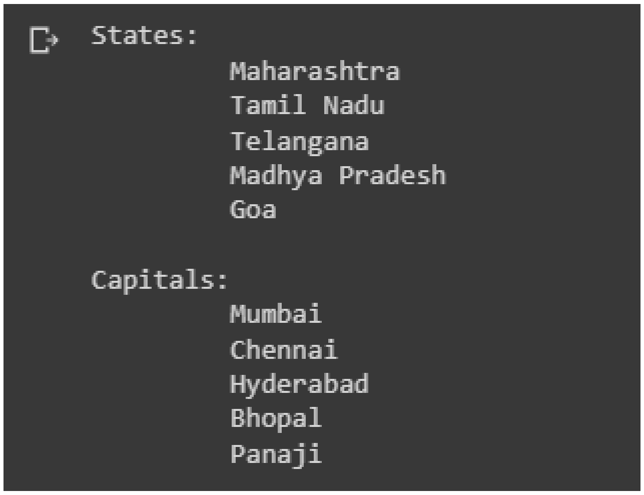
```
40
```

4)



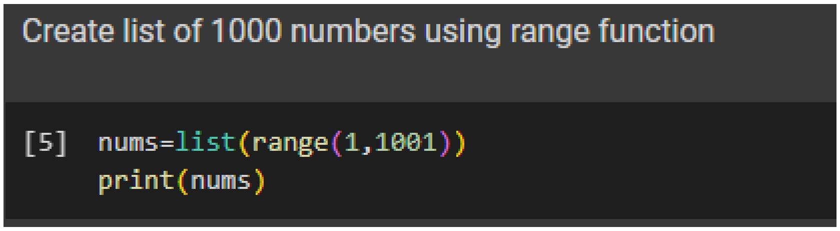
Create a dictionary of 5 states with their capitals. also print the values and keys.

```
[4]  states={ "Maharashtra":"Mumbai",
           "Tamil Nadu":"Chennai",
           "Telangana":"Hyderabad",
           "Madhya Pradesh":"Bhopal",
           "Goa":"Panaji"}

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



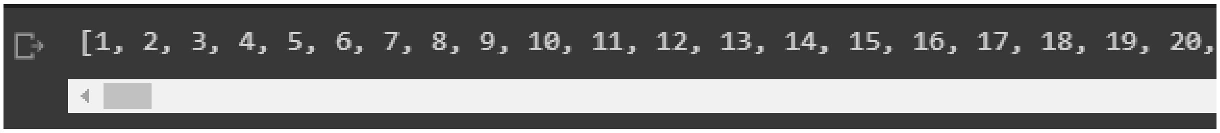
```
States:
         Maharashtra
         Tamil Nadu
         Telangana
         Madhya Pradesh
         Goa

Capitals:
         Mumbai
         Chennai
         Hyderabad
         Bhopal
         Panaji
```

5)

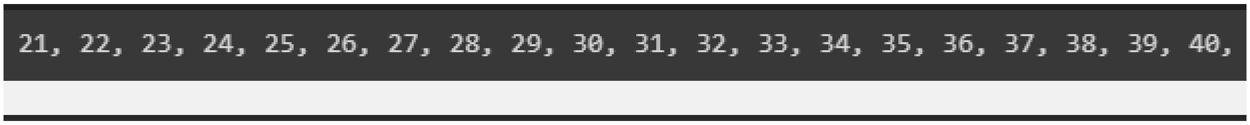


Create list of 1000 numbers using range function

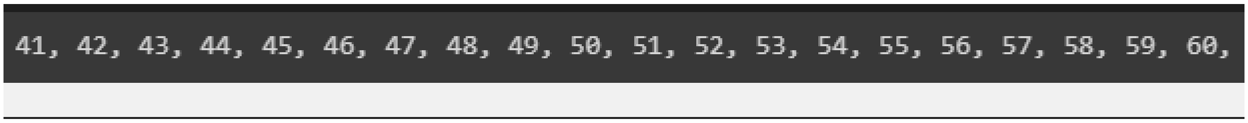
```
[5]  nums=list(range(1,1001))
     print(nums)
```



```
[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, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60,
```

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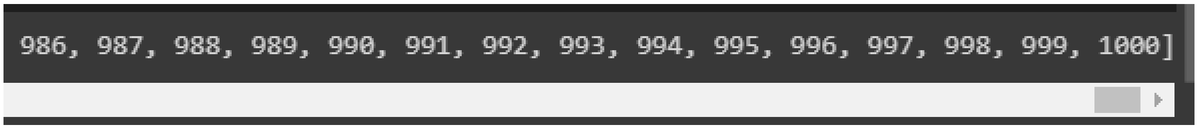
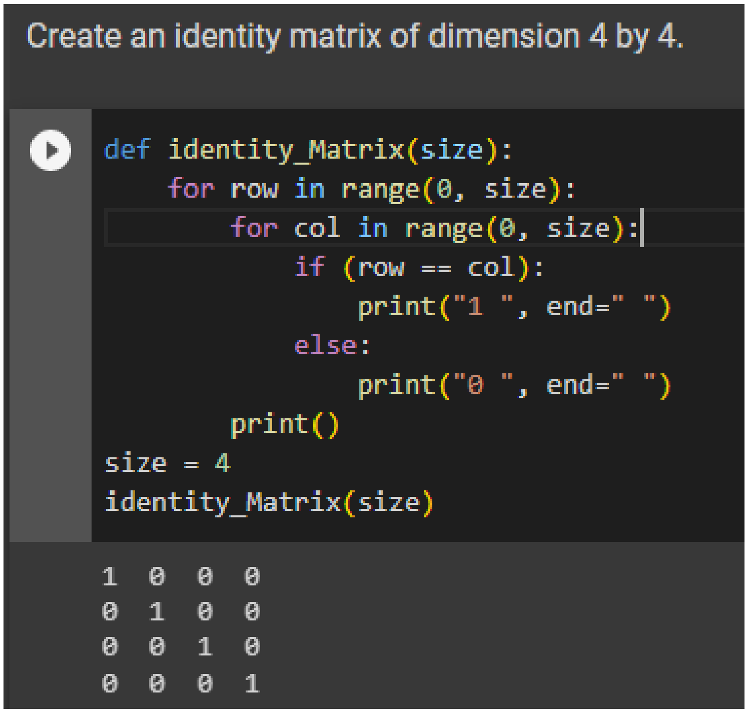


```
986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000]
```

6)

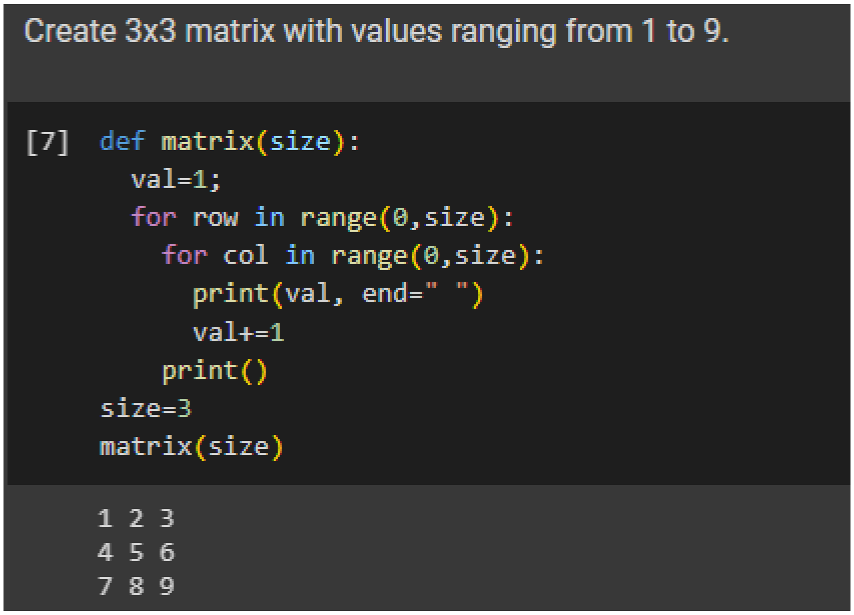


Create an identity matrix of dimension 4 by 4.

```python
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)

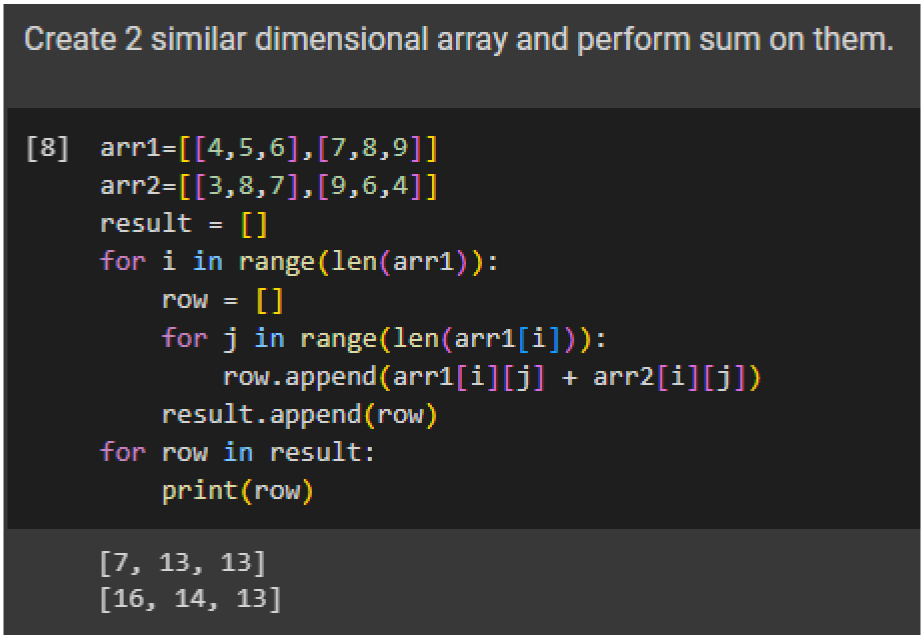


Create 3x3 matrix with values ranging from 1 to 9.

```python
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)

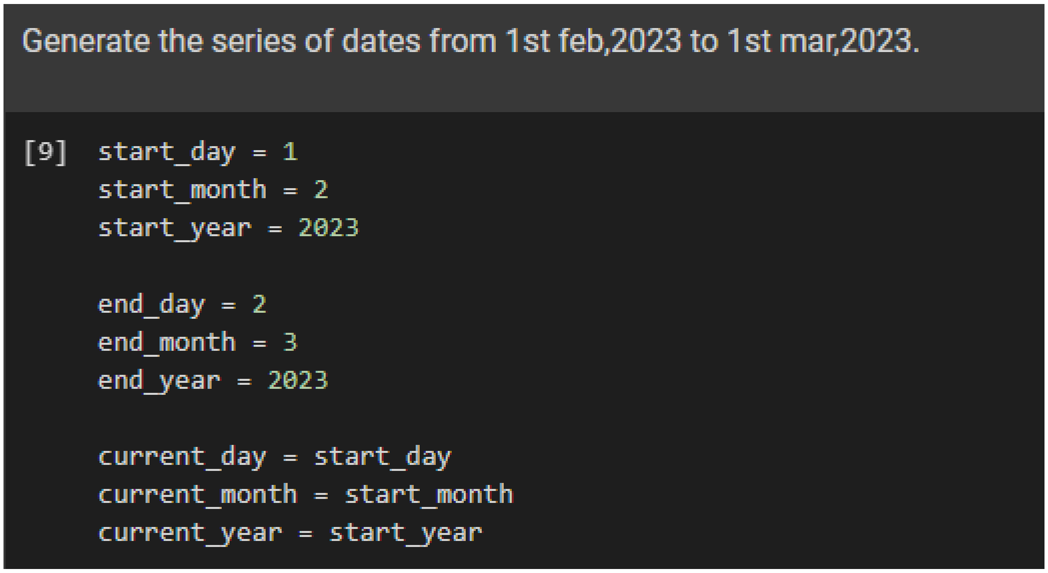


Create 2 similar dimensional array and perform sum on them.

```
[8]  arr1=[[4,5,6],[7,8,9]]
     arr2=[[3,8,7],[9,6,4]]
     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)
```

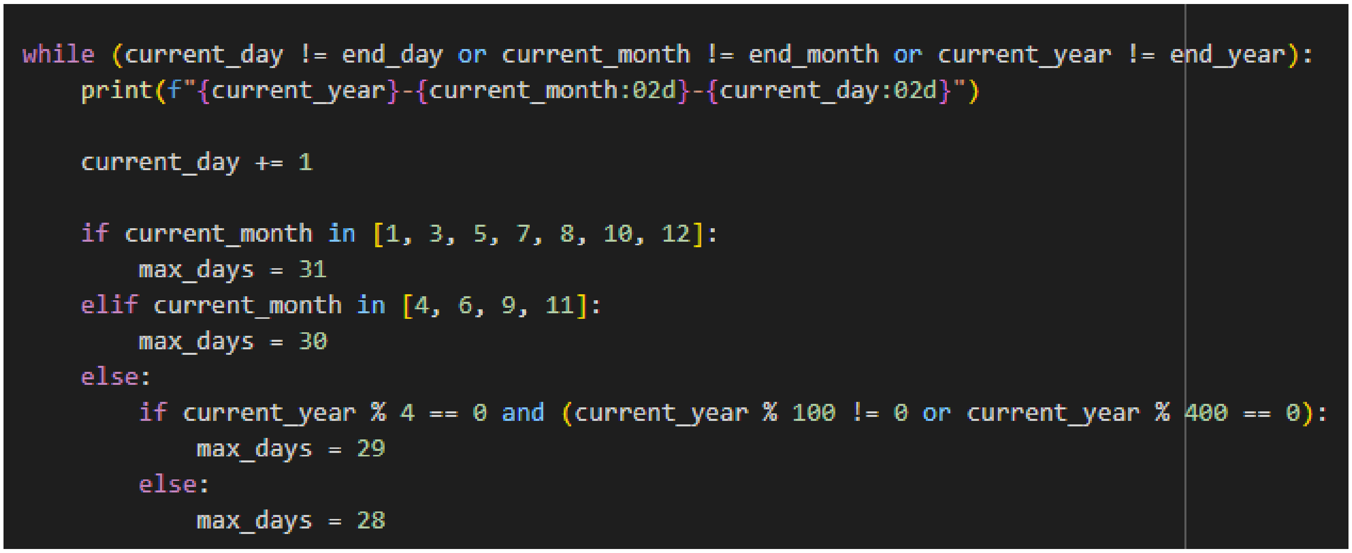
```
     [7, 13, 13]
     [16, 14, 13]
```

9)

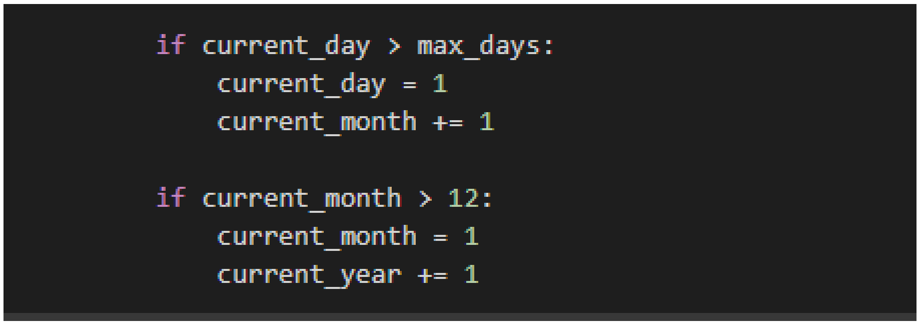


Generate the series of dates from 1st feb,2023 to 1st mar,2023.

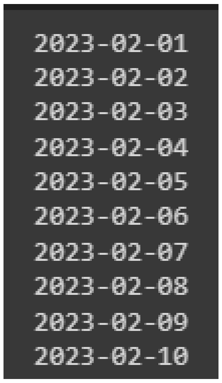
```
[9]  start_day = 1
     start_month = 2
     start_year = 2023

     end_day = 2
     end_month = 3
     end_year = 2023

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



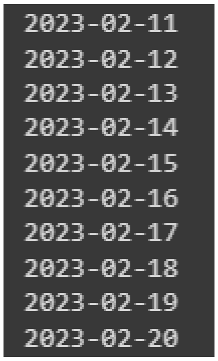
```
while (current_day != end_day or current_month != end_month or current_year != end_year):
    print(f"{current_year}-{current_month:02d}-{current_day:02d}")

    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
```



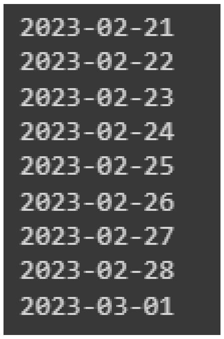
```
    if current_day > max_days:
        current_day = 1
        current_month += 1

    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
```

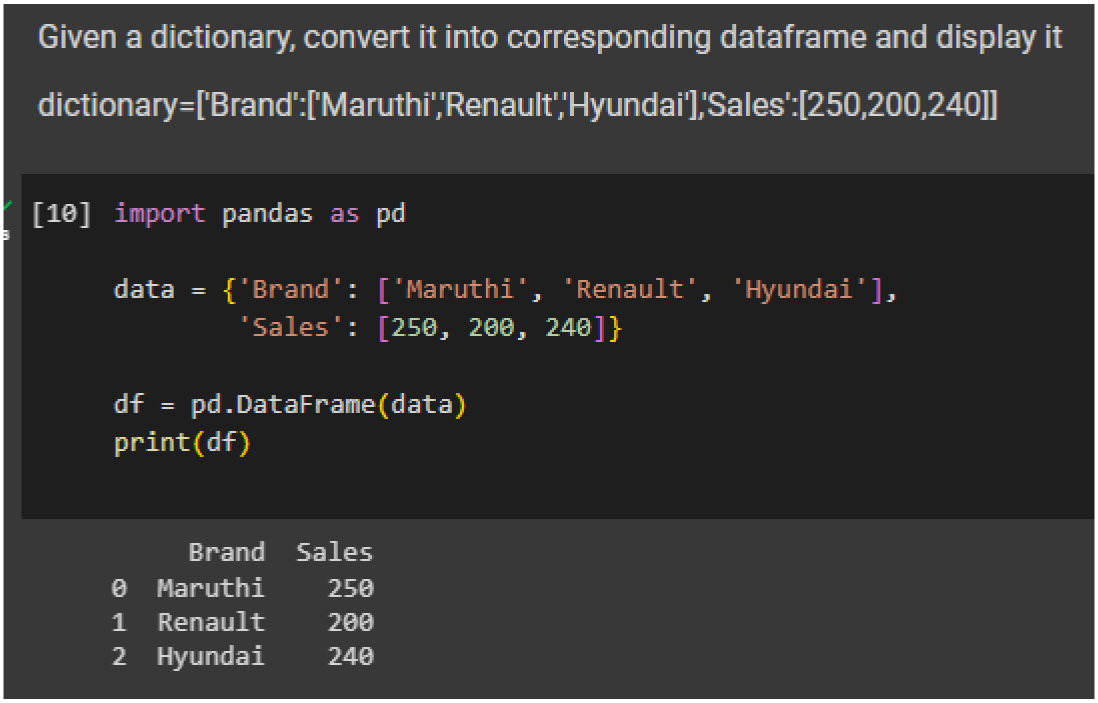


```
2023-02-11
2023-02-12
2023-02-13
2023-02-14
2023-02-15
2023-02-16
2023-02-17
2023-02-18
2023-02-19
2023-02-20
```



```
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]]

```
[10] 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
```

GoogleColab Link:

https://colab.research.google.com/drive/1Ajn6iUrJCZc635XeEf5Dm0FpbUdZcqpp?usp=sharing