Task - 1

Task 1: 1. Install Jupyter notebook and run the first program and share the screenshot of the output.

Answer:

In [1]:

```
# Step 1: Creading a list of number
#from 2000 to 3200 and storing them to nums var

nums = [i for i in range(2000, 3201)]

#Step 2: using for loop iterate them one by one
for num in nums:
    # Step 3: taking modulus with 7 for checking divisibility
    if num % 7 == 0:
        # Step 4: Checking num should not be the multiple of 5
        if num % 5 != 0:
            # Step 5: Simply printing the num
            print(num, end=', ')

```

```
2002, 2009, 2016, 2023, 2037, 2044, 2051, 2058, 2072, 2079, 2086, 2093, 2107, 2114,'2121, 2128, 2142,
2149, 2156, 2163, 2177, 2184, 2191, 2198, 2212, 2219, 2226, 2233, 2247, 2254, 2261, 2268, 2282, 2289,
2296, 2303, 2317, 2324, 2331, 2338, 2352, 2359, 2366, 2373, 2387, 2394, 2401, 2408, 2422, 2429, 2436,
2443, 2457, 2464, 2471, 2478, 2492, 2499, 2506, 2513, 2527, 2534, 2541, 2548, 2562, 2569, 2576, 2583,
2597, 2604, 2611, 2618, 2632, 2639, 2646, 2653, 2667, 2674, 2681, 2688, 2702, 2709, 2716, 2723, 2737,
2744, 2751, 2758, 2772, 2779, 2786, 2793, 2807, 2814, 2821, 2828, 2842, 2849, 2856, 2863, 2877, 2884,
2891, 2898, 2912, 2919, 2926, 2933, 2947, 2954, 2961, 2968, 2982, 2989, 2996, 3003, 3017, 3024, 3031,
3038, 3052, 3059, 3066, 3073, 3087, 3094, 3101, 3108, 3122, 3129, 3136, 3143, 3157, 3164, 3171, 3178,
3192, 3199,
```

Ques 2. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included). The numbers obtained should be printed in a comma-separated sequence on a single line.

In [1]:

```python
# Step 1: Creading a list of number
#from 2000 to 3200 and storing them to nums var

nums = [i for i in range(2000, 3201)]

#Step 2: using for loop iterate them one by one
for num in nums:
    # Step 3: taking modulus with 7 for checking divisibility
    if num % 7 == 0:
        # Step 4: Checking num should not be the multiple of 5
        if num % 5 != 0:
            # Step 5: Simply printing the num
            print(num, end=', ')

```

```
2002, 2009, 2016, 2023, 2037, 2044, 2051, 2058, 2072, 2079, 2086, 2093, 2107, 2
114, 2121, 2128, 2142, 2149, 2156, 2163, 2177, 2184, 2191, 2198, 2212, 2219, 22
26, 2233, 2247, 2254, 2261, 2268, 2282, 2289, 2296, 2303, 2317, 2324, 2331, 233
8, 2352, 2359, 2366, 2373, 2387, 2394, 2401, 2408, 2422, 2429, 2436, 2443, 245
7, 2464, 2471, 2478, 2492, 2499, 2506, 2513, 2527, 2534, 2541, 2548, 2562, 256
9, 2576, 2583, 2597, 2604, 2611, 2618, 2632, 2639, 2646, 2653, 2667, 2674, 268
1, 2688, 2702, 2709, 2716, 2723, 2737, 2744, 2751, 2758, 2772, 2779, 2786, 279
3, 2807, 2814, 2821, 2828, 2842, 2849, 2856, 2863, 2877, 2884, 2891, 2898, 291
2, 2919, 2926, 2933, 2947, 2954, 2961, 2968, 2982, 2989, 2996, 3003, 3017, 302
4, 3031, 3038, 3052, 3059, 3066, 3073, 3087, 3094, 3101, 3108, 3122, 3129, 313
6, 3143, 3157, 3164, 3171, 3178, 3192, 3199,
```

Steps: Method 1:

1. Creading a list of number from 2000 to 3200 and storing them to nums var.
2. Take a range b/w 2000 t0 3200 (3200+1 including) iterate using for loop
3. Taking modulus with 7 for checking divisibility
4. Checking num should not be the multiple of 5 but checking num%5 is not equal to 0
5. Print the number

In [2]:

```python
# Step 1: Make an empty list
lst = list()

# Step 2: Take a range b/w 2000 t0 3200 (3200+1 including) iterate using for
for num in range(2000, 3201):
    # Step 3: putting condition 1 and 2
    if num%7==0 and num%5!=0:
        # Step 4: append the empty list adding the number
        lst.append(str(num))
#  Step 5: print the nun and join commas
print(', '.join(lst))
```

```
2002, 2009, 2016, 2023, 2037, 2044, 2051, 2058, 2072, 2079, 2086, 2093, 2107, 2
114, 2121, 2128, 2142, 2149, 2156, 2163, 2177, 2184, 2191, 2198, 2212, 2219, 22
26, 2233, 2247, 2254, 2261, 2268, 2282, 2289, 2296, 2303, 2317, 2324, 2331, 233
8, 2352, 2359, 2366, 2373, 2387, 2394, 2401, 2408, 2422, 2429, 2436, 2443, 245
7, 2464, 2471, 2478, 2492, 2499, 2506, 2513, 2527, 2534, 2541, 2548, 2562, 256
9, 2576, 2583, 2597, 2604, 2611, 2618, 2632, 2639, 2646, 2653, 2667, 2674, 268
1, 2688, 2702, 2709, 2716, 2723, 2737, 2744, 2751, 2758, 2772, 2779, 2786, 279
3, 2807, 2814, 2821, 2828, 2842, 2849, 2856, 2863, 2877, 2884, 2891, 2898, 291
2, 2919, 2926, 2933, 2947, 2954, 2961, 2968, 2982, 2989, 2996, 3003, 3017, 302
4, 3031, 3038, 3052, 3059, 3066, 3073, 3087, 3094, 3101, 3108, 3122, 3129, 313
6, 3143, 3157, 3164, 3171, 3178, 3192, 3199
```

Steps: Method 2:

1. Make an empty list
2. Take a range b/w 2000 t0 3200 (3200+1 including) iterate using for loop
3. Putting condition num % 7 == 0 and num % 5 != 0
4. Append the empty list adding the number
5. Print the nun and join commas

Observation :

1. We can Observe the above Algorithm print all the comma-separated numbers in a sequence. It print number in a sequence according to the condition I have provided.

Ques 3: Write a Python program to accept the user's first and last name and then getting them printed in the the reverse order with a space between first name and last name.

In [3]:

```
first_name = input("Enter your First Name : ")
last_name  = input("\nEnter your Last Name :  ")
full_name = first_name +" "+ last_name
print("\nYour full name is : {}".format(full_name))
print("\nInterchanging of your first name with lastname \nAnd last name with
full_name = full_name[::-1]
print("\nReverse of your full name is : {}".format(full_name))
```

```
Enter your First Name : Arpit

Enter your Last Name :  Dubey

Your full name is : Arpit Dubey

Interchanging of your first name with lastname
And last name with firstname is :  Dubey Arpit

Reverse of your full name is : yebuD tiprA
```

Steps:

1. Taking input as first_name and last_name
2. Concate first_name with last_name having a space B/W them into full_name var.
3. Interchange the position of both the first_name and last name using format()
4. Reverse the String using sliciging concept list[: : -1]
5. Print the Reverse of full_name having a space b/w them.

Ques 4. Write a Python program to find the volume of a sphere with diameter 12 cm.

Formula: V=4/3 * π * r

In [4]:

```python
import math as m

diameter = 12
radius = diameter/2
pie = 3.14
Pie = 22/7

Volume = 4/3 * m.pi * (radius**3)
print("When π = math.pi")
print("The volume of a sphere with diameter 12 cm is {}".format(Volume))

Volume = 4/3 * pie * (radius**3)
print("\nWhen π = 3.14 ")
print("The volume of a sphere with diameter 12 cm is {}".format(Volume))


Volume = 4/3 * Pie * (radius**3)
print("\nWhen π = 22/7")
print("The volume of a sphere with diameter 12 cm is {}".format(Volume))

```

```
When π = math.pi
The volume of a sphere with diameter 12 cm is 904.7786842338603

When π = 3.14
The volume of a sphere with diameter 12 cm is 904.3199999999999

When π = 22/7
The volume of a sphere with diameter 12 cm is 905.142857142857
```

Steps:

1. Importing math library and storing the given value 20 in diameter variable
2. Radius is half of the diameter and store it in radius variable.
3. Using the volume formula of sphere Volume = 4/3 * π * (radius**3) Calculate its value.
4. Taking different π values to check the differences.
5. Print the volume of sphere using different value of π

Task - 2

Ques 1. Write a program which accepts a sequence of comma-separated numbers from console and generate a list.

In [5]:

```
csv =  list(input().split(','))
print("\n",csv)
print("\n",type(csv))
```

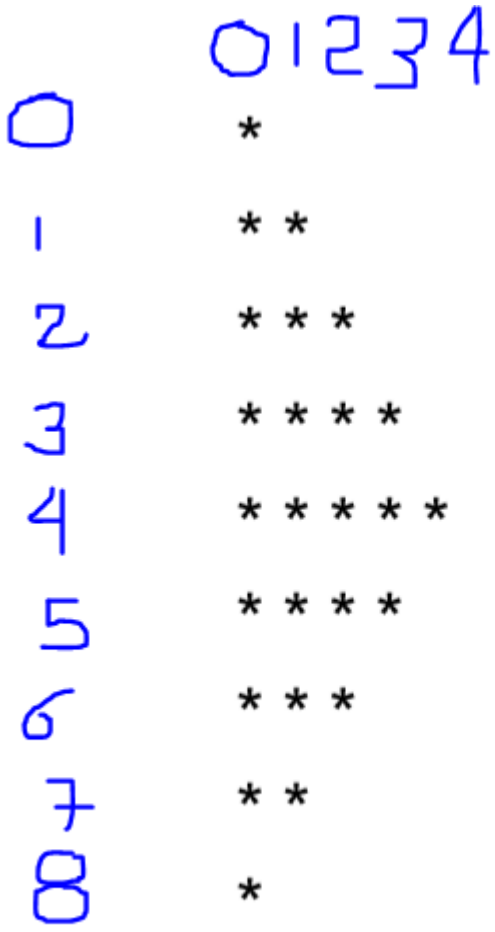
```
1,2,3,4,5,6,7,8,9,10

 ['1', '2', '3', '4', '5', '6', '7', '8', '9', '10']

 <class 'list'>
```

Steps:

1. Taking input from the user.
2. Split it using ',' using split()
3. Convert it into a list using list()
4. Storing it into csv variable and using type() cchecking it's type.
5. Print the values.

Ques 2. Create the below pattern using nested for loop in Python.

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```


0 1 2 3 4
0 *
1 * *
2 * * *
3 * * * *
4 * * * * *
5 * * * *
6 * * *
7 * *
8 *

In [6]:

```
n = 5
for i in range (n):
    for j in range(i+1):
        print("*", end=' ')
    print("\n")

for p in range (n, 0, -1):
    for q in range(p-1):
        print("*", end=' ')
    print("\n")
```

```
*

* *

* * *

* * * *

* * * * *

* * * *

* * *

* *

*
```

Steps:

1. Taking n value as 5.
2. we can see when i = 0 then j has 1 star but when i = 1, j has 2 star if i --> n then j --> i+1
3. From 2nd step we can find the half part of pattern now for same we have to decrement by 1
4. range same but opposite side means step size is -1 and starting from 0th element
5. Print the values.

Write a Python program to reverse a word after accepting the input from the user.

Sample Output:
Input word: AcadGild

Output: dilGdacA

In [7]:

```python
def split_(var):
    return [var for var in input_]

def swap_(list, loc1, loc2):
    list[loc1], list[loc2] = list[loc2], list[loc1]
    return list

input_     = input("\ninput word: ")
input_     = split_(input_)
input_     = input_[::-1]
print("\nReverse: ", input_)
loc1, loc2 = 1, 3
input__    = swap_(input_, loc1, loc2-1)

print('\nOutput: ', end='')
for input_ in input__:
    print(input_, end='')

```

```
input word: AcadGild

Reverse:  ['d', 'l', 'i', 'G', 'd', 'a', 'c', 'A']

Output: dilGdacA
```

Steps:

1. Creating two functions first for splitting the char and second one for swapping the char.
2. Taking the input
3. Using Slicing [: : -1] reversing that input
4. Giving location of char for swaping
5. Using a for loop printing the values.

Type *Markdown* and LaTeX: α^2

Ques 4. Write a Python Program to print the given string in the format specified in the sample output. WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN, SOCIALIST, SECULAR, DEMOCRATIC REPUBLIC and to secure to all its citizens

Sample Output:

WE, THE PEOPLE OF INDIA,
having solemnly resolved to constitute India into a SOVEREIGN, !
SOCIALIST, SECULAR, DEMOCRATIC REPUBLIC
and to secure to all its citizens

In [8]:
```
print("Sample Output:\n\n  WE, THE PEOPLE OF INDIA,\n\thaving solemnly resolve
```

```
Sample Output:

  WE, THE PEOPLE OF INDIA,
        having solemnly resolved to constitute India into a SOVEREIGN,!
              SOCIALIST, SECULAR, DEMOCRATIC REPUBLIC
                and to secure to all its citizens
```

Steps :

1. Giving input as the given string in the question
2. proving appropriate placeholder {} inside the string
3. using Simple print() statement or also using format() we proving the next line using \n and one tab space using \t and whitespaces
4. printing the output

SUBMITTED BY

Name : Arpit Dubey
Mobile Number : 8251999950