

Yashraj's Assignment 1

Task 1.1: Install Jupyter notebook and run the first program and share the screenshot of the output.

https://github.com/Yashraj890/AI_ML/blob/master/Session_1_Assignment_1/Task_1.png
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Task 1.2: 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 [24]: lst = [] #list variable to hold the list of numbers in string format
for num in range(2000, 3200 + 1): # iterate numbers starting from 2000 to 3200
    if (num % 7 == 0 and num % 5 != 0): # check if the number is divisible by 7
        and is multiple of 5
        lst.append(str(num)) # Append the current iterating number to list
print(','.join(lst)) # print the list separated with comma
```

```
2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,21
28,2142,2149,2156,2163,2177,2184,2191,2198,2212,2219,2226,2233,2247,2254,226
1,2268,2282,2289,2296,2303,2317,2324,2331,2338,2352,2359,2366,2373,2387,2394,
2401,2408,2422,2429,2436,2443,2457,2464,2471,2478,2492,2499,2506,2513,2527,25
34,2541,2548,2562,2569,2576,2583,2597,2604,2611,2618,2632,2639,2646,2653,266
7,2674,2681,2688,2702,2709,2716,2723,2737,2744,2751,2758,2772,2779,2786,2793,
2807,2814,2821,2828,2842,2849,2856,2863,2877,2884,2891,2898,2912,2919,2926,29
33,2947,2954,2961,2968,2982,2989,2996,3003,3017,3024,3031,3038,3052,3059,306
6,3073,3087,3094,3101,3108,3122,3129,3136,3143,3157,3164,3171,3178,3192,3199
```

Task 1.3 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 [10]: firstName = input("Please enter your first name: ") # Accept first name
lastName = input("Please enter your last name: ") # Accept last name
print ((firstName + ' ' + lastName)[::-1]) # print first & last name in revers
e order
```

```
Please enter your first name: Yashraj
Please enter your last name: Ekbote
etobkE jarhsaY
```

Task 1.4: Write a Python program to find the volume of a sphere with diameter 12 cm. Formula: $V = \frac{4}{3} \pi r^3$

```
In [13]: import math # imported math lib for usage of PI and POW in-built functions
diameter = 12 # setting up the diameter
radius = diameter / 2 # setting up radius as diameter divide by 2
volume = (4/3) * math.pi * math.pow(radius, 3) # calculating the volume of sphere
prntstr = "volume of a sphere with diameter {} cm is {} cm"
print (prntstr.format(str(diameter), str(volume))) # printing the volume of sphere using the in-built function "format"
```

volume of a sphere with diameter 12 cm is 904.7786842338603 cm

Task 2.1: Write a program which accepts a sequence of comma-separated numbers from console and generate a list.

```
In [1]: numbers = input("Please enter comma separated number: ") # Accept comma separated numbers
numbers = numbers.strip(',') # sanitize - utilize in-built function "strip" remove the leading & trailing commas
# utilize split in-built function "split" to convert the string of numbers separated by comma into numerical list
numlst = [int(num) for num in numbers.split(",")]
print (numlst) # print the list
```

Please enter comma separated number: 123,1,222,3323,
[123, 1, 222, 3323]

Task 2.2: Create the below pattern using nested for loop in Python.

```
In [29]: noOfRows = 10 # Total rows to be printed
for row in range(1, (noOfRows + 1), 1): # Row Loop
    if (row > (noOfRows / 2)): # check if we have traversed half # of rows?
        row = noOfRows - row # deduct current row count from total row count
    for col in range(1, (row + 1), 1): # Column Loop
        print("*", end = '') # print pattern character
    print("") # line break
```

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

Task 2.3: Write a Python program to reverse a word after accepting the input from the user.

```
In [2]: wordToReverse = input ("Please enter a word: ") # Accept word to be reversed  
print (wordToReverse[::-1]) # print the reversed word
```

Please enter a word: Yashraj
jarhsaY

Task 2.4: 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

```
In [12]: prntstr = "WE, THE PEOPLE OF INDIA, {}having solemnly resolved to constitute In  
dia into a SOVEREIGN, {}SOCIALIST, SECULAR, DEMOCRATIC REPUBLIC {} and to secu  
re to all its citizens"  
print (prntstr.format("\n\t", "!\n\t\t", "\n\t\t"))
```

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