

Assignment 1

1. Write a program which will find all such numbers that are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included). The numbers should be printed on the output screen.

(Bonus point if you can print all the numbers on a single line)

```
1 #Question No. 1
2 a = [i for i in range(2000, 3201) if i % 7 == 0 and i % 5 != 0]
3 print(*a, sep=',')
4
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\assignment1.py"

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

2. Write a program that can compute the factorial of a given number. The number whose factorial is to be computed is input from the keyboard.

(Hint: Factorial of 3, also written as $3! = 3 \times 2 \times 1$. Similarly, $5! = 5 \times 4 \times 3 \times 2 \times 1$)

```
5 #Question No. 2
6 num=int(input("enter a number: "))
7
8 fact=1
9
10 a=1
11
12 while a<=num:
13     fact=fact*a
14     a=a+1
15
16 print("The factorial of ",num , "is", fact)
17
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

enter a number: 7

The factorial of 7 is 5040

PS C:\Users\user>

3. With a program to take as an input an integer number n, and generate a dictionary that contains (i, i*i) where “i” lies between 1 and n (both included). The program should then print the dictionary.

Suppose the following input is supplied to the program:

8

Then, the output should be:

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}

```
19 #Question 3
20
21 def dict(n):
22     my_dict = {}
23     for i in range(1, n + 1):
24         my_dict[i] = i ** 2
25     return my_dict
26
27 a=int(input("Enter a number: "))
28 print(dict(a))
29
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

Enter a number: 8

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}

PS C:\Users\user>

4. Write a program that can accept two strings as input and print the string with maximum length as an output. If two strings have the same length, then the program should print both the strings.

```
30 #Question 4
31 a=str(input('First String : '))
32 b=str(input('Second String : '))
33
34 if len(a)<len(b):
35     print(b)
36
37 elif len(b)<len(a):
38     print(a)
39
40 else:
41     print(a)
42     print(b)
43
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS SEARCH ERROR

```
PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"
First String : Aryan
Second String : Guragain
Guragain
PS C:\Users\user>
```

5. Write a program which can produce a dictionary where the keys are numbers between 1 and 20 (both included) and the values are the square of keys. The program should print the values only.

```
44 #Question 5
45 x=1
46 for x in range(1, 21):
47     d={x: x**2}
48     x+=1
49     print(d)
50
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS SEARCH ERROR

```
PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"
{1: 1}
{2: 4}
{3: 9}
{4: 16}
{5: 25}
{6: 36}
{7: 49}
{8: 64}
{9: 81}
{10: 100}
{11: 121}
{12: 144}
{13: 169}
{14: 196}
{15: 225}
{16: 256}
{17: 289}
{18: 324}
{19: 361}
{20: 400}
PS C:\Users\user>
```

6. Write a program which can generate and print a list where the values are square of numbers between 1 and 20 (both included).

```
51 #Question 6
52 x=1
53 for x in range(1,21):
54     y=x**2
55     x+=1
56     print(y)
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS SEARCH ERROR

```
PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"
1
4
9
16
25
36
49
64
81
100
121
144
169
196
225
256
289
324
361
400
PS C:\Users\user>
```

7. Write a program which can generate a list where the values are square of numbers between 1 and 20 (inclusive). The program should only print the last 5 elements of the list.

```
58 #Question 7
59
60 x=[i**2 for i in range(1,21)]
61 print(x[-5:])
62
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

[256, 289, 324, 361, 400]

PS C:\Users\user>

8. Write a program to convert Celsius (C) values into Fahrenheit (F). The program should ask for Celsius value from the user and print the Fahrenheit value as an output.

Formula to Convert Celsius o Fahrenheit: $[F = C * (9 / 5) + 32]$

```
D: > 2nd Semester > FODS > notes > assignment1.py > ...
63 #Question 8
64
65 temp_in_cel=float(input("Enter Temperature in Celsius : "))
66 temp_in_fahren= temp_in_cel*(9/5)+32
67 print("Temperature in Fahrenheit is ",temp_in_fahren)
68
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

Enter Temperature in Celsius : 36

Temperature in Fahrenheit is 96.8

PS C:\Users\user>

9. Write a program which accepts a string as input from the keyboard. If the input string is "even" or "EVEN" or "Even", print the even numbers from the list (my_numbers) given below. If the string is "odd" or

"ODD" or "Odd", print the odd numbers from the list. Otherwise simply print “Unknown Input!”

my_numbers = [7, 2, 4, 11, 19, 24, 66, 1, 42, 22, 37, 5, 3, 92, 73]

```
69 #Question 9
70
71 my_numbers = [7, 2, 4, 11, 19, 24, 66, 1, 42, 22, 37, 5, 3, 92, 73]
72 user_string = str(input("Enter even or odd"))
73 if user_string=='even' or 'EVEN' or 'Even':
74     print([num for num in my_numbers if num % 2 == 0])
75 elif user_string=='odd' or 'ODD' or 'Odd':
76     print([num for num in my_numbers if num%2 !=0])
77 else:
78     print ('Unknown Input!')
79
80
```

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

Enter even or odd:EVEN

[2, 4, 24, 66, 42, 22, 92]

PS C:\Users\user>

10. Write a program that prints the numbers from 1 to 20. But for multiples of three print “Fizz” instead of the number and for the multiples of five print “Buzz”. For numbers which are multiples of both three and

five print “Fizz Buzz”.

```
81 #Question 10
82 x=1
83 for i in range(1,21):
84     if i%3==0 and i%5!=0:
85         print("Buzz")
86     elif i%5==0 and i%3!=0:
87         print("Fizz")
88     elif i%3==0 and i%5==0:
89         print("Buzz Fizz")
90     else:
91         print(i)
92
93
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

PS C:\Users\user> python -u "d:\2nd Semester\FODS\notes\tempCodeRunnerFile.py"

```
1
2
Buzz
4
Fizz
Buzz
7
8
Buzz
Fizz
11
Buzz
13
14
Buzz Fizz
16
17
Buzz
19
Fizz
PS C:\Users\user>
```