

Assignment -1

Python Programming

Assignment Date	19 September 2022
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Maximum Marks	2 Marks

Question-1:

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.

Solution1:

Using for loop:

```
for i in range(2000,3201):
    if i%7 == 0 and i%5!=0:
        print(i,end=', ')
print("\b")
```

Output:

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

Using generators and list comprehension:

Solution2:

```
print(*(i for i in range(2000, 3201) if i%7 == 0 and i%5 != 0), sep=",")
```

Output:

2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,2212,2219,2226,2233,2247,2254,2261,2268,2282,2289,2296,2303,2317,2324,2331,2338,2352,2359,2366,2373,2387,2394,2401,2408,2422,2429,2436,2443,2457,2464,2471,2478,2492,2499,2506,2

513,2527,2534,2541,2548,2562,2569,2576,2583,2597,2604,2611,2618,2632,2639,
2646,2653,2667,2674,2681,2688,2702,2709,2716,2723,2737,2744,2751,2758,2772
,2779,2786,2793,2807,2814,2821,2828,2842,2849,2856,2863,2877,2884,2891,289
8,2912,2919,2926,2933,2947,2954,2961,2968,2982,2989,2996,3003,3017,3024,30
31,3038,3052,3059,3066,3073,3087,3094,3101,3108,3122,3129,3136,3143,3157,3
164,3171,3178,3192,3199

```
Using for loops

[1] for i in range(2000,3201):
    if i%7 == 0 and i%5 != 0:
        print(i,end=',')
    print("\b")

2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,2212,2219,2226,2233,2247,2254,2261,2268,2275,2282,2289,2296,2303,2310,2317,2324,2331,2338,2345,2352,2359,2366,2373,2380,2387,2394,2401,2408,2415,2422,2429,2436,2443,2450,2457,2464,2471,2478,2485,2492,2499,2506,2513,2520,2527,2534,2541,2548,2555,2562,2569,2576,2583,2590,2597,2604,2611,2618,2625,2632,2639,2646,2653,2660,2667,2674,2681,2688,2695,2702,2709,2716,2723,2730,2737,2744,2751,2758,2765,2772,2779,2786,2793,2800,2807,2814,2821,2828,2835,2842,2849,2856,2863,2870,2877,2884,2891,2898,2905,2912,2919,2926,2933,2940,2947,2954,2961,2968,2975,2982,2989,2996,3003,3010,3017,3024,3031,3038,3045,3052,3059,3066,3073,3080,3087,3094,3101,3108,3115,3122,3129,3136,3143,3150,3157,3164,3171,3178,3185,3192,3199

Using generators and list comprehension

[2] print(*(i for i in range(2000, 3201) if i%7 == 0 and i%5 != 0), sep=",")

2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,2212,2219,2226,2233,2247,2254,2261,2268,2275,2282,2289,2296,2303,2310,2317,2324,2331,2338,2345,2352,2359,2366,2373,2380,2387,2394,2401,2408,2415,2422,2429,2436,2443,2450,2457,2464,2471,2478,2485,2492,2499,2506,2513,2520,2527,2534,2541,2548,2555,2562,2569,2576,2583,2590,2597,2604,2611,2618,2625,2632,2639,2646,2653,2660,2667,2674,2681,2688,2695,2702,2709,2716,2723,2730,2737,2744,2751,2758,2765,2772,2779,2786,2793,2800,2807,2814,2821,2828,2835,2842,2849,2856,2863,2870,2877,2884,2891,2898,2905,2912,2919,2926,2933,2940,2947,2954,2961,2968,2975,2982,2989,2996,3003,3010,3017,3024,3031,3038,3045,3052,3059,3066,3073,3080,3087,3094,3101,3108,3115,3122,3129,3136,3143,3150,3157,3164,3171,3178,3185,3192,3199
```

Question-2:

With a given integral number n, write a program to generate a dictionary that contains (i, i*i) such that i is an integral number between 1 and n (both included). and then the program should print the dictionary.

Suppose the following input is supplied to the program:

8

Solution1:

Using for loop:

```
n = int(input())
ans = {}
for i in range (1,n+1):
    ans[i] = i * i
print(ans)
```

Output:

```
1
{1: 1}
```

Using dictionary comprehension:

Solution2:

```
n = int(input())
ans={i : i*i for i in range (1,n+1) }
print(ans)
```

Output:

```
3
```

```
{1: 1, 2: 4, 3: 9}
```

Solution3:

```
try:
    num = int(input("Enter a number: "))
except ValueError as err:
    print(err)

dic = dict()
for i in range(num+1):
    if i == 0:
        continue
    else:
        dic[i] = i * i
print(dic)
```

Output:

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

Solution4:

```
num = int(input("Number: "))
print(dict(enumerate([i*i for i in range(1, num+1)], 1)))
```

Output:

```
Number: 6
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36}
```

Using for loop

```
[3] n = int(input())
ans = {}
for i in range(1,n+1):
    ans[i] = i * i
print(ans)
```

```
1
{1: 1}
```

Using dictionary comprehension

```
n = int(input())
ans={i : i*i for i in range(1,n+1)}
print(ans)
```

```
3
{1: 1, 2: 4, 3: 9}
```

3s

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```
try:
    num = int(input("Enter a number: "))
except ValueError as err:
    print(err)

dic = dict()
for i in range(num+1):
    if i == 0:
        continue
    else:
        dic[i] = i * i
print(dic)
```

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

3s

```
[14] num = int(input("Number: "))
print(dict(enumerate([i*i for i in range(1, num+1)], 1)))
```

Number: 6
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36}