Task1:

You need to write a function in python that return all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included). Return the obtained numbers in a comma-separated sequence on a single line.

```
def divisors_of_7():
    obt=[]

    for num in range(2000,3201):
        if num%7==0 and num%5!=0:
                obt.append(str(num))


    return ','.join(obt)

divisors_of_7()
```

```
'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'
```

Task2:

You need code a function that calculates and returns the value according to the given formula: P = Square root of [(2 * A * B)/C] Following are the fixed values of A and B: A is 50. B is 30. The values of the literal C should be taken as console input to your program in a comma-separated sequence.

```
def calculate_p(c_values):
    import math

    A = 50
    B = 30
    result = []

    for C in c_values:
        P = math.sqrt((2 * A * B) / C)
        result.append(round(P,2))
    return result

input_values = input("Enter values for C (comma-separated): ")
```

```
c_values = [float(c) for c in input_values.split(',')]
results = calculate_p(c_values)
print("Results:", ', '.join(map(str, results)))
```

```
Enter values for C (comma-separated):  100,150,180
```

```
Results: 5.48, 4.47, 4.08
```

Task3:

You need to write a function that takes a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically.

```
def sort_alpha():
    words = input("Enter words (comma seperated)").split(',')
    ','.join(words)
    words.sort()
    print(words)

sort_alpha()
```

```
Enter words (comma seperated) and,i,o,idk
```

```
['and', 'i', 'idk', 'o']
```

Task4:

You need to write a program that takes sequence of lines as input and prints the lines after making all characters in the sentence capitalized.

```
def make_upper():

    """It takes no arguments, rather you call it first then it takes
the argument
    and makes whatever you write capitalized"""

    lines = input('Enter lines to capitalize: ')
    #iterating through the line
    for i in lines:
        #capitalizing every character one by one and assigning it
        lines = i.upper()
        print(lines,end='')

make_upper()
```

```
Enter lines to capitalize:  yes
```

```
YES
```

Task5:

You need to write a function that counts the number of vowels in a given sentence as input from console.

```
def count_vowels(string=None):
    if string==None:
        string = input("Enter sentence")

    a = ['a']
    e = ['e']
    i = ['i']
    o = ['o']
    u = ['u']

    for ch in string:
        if ch in a:
            a.append(ch)
        if ch in e:
            e.append(ch)
        if ch in i:
            i.append(ch)
        if ch in o:
            o.append(ch)
        if ch in u:
            u.append(ch)


    print(f"""number of times a appeared in this sentence: {len(a)-1}

number of times e appeared in this sentence: {len(e)-1}
number of times i appeared in this sentence: {len(i)-1}
number of times o appeared in this sentence: {len(o)-1}
number of times u appeared in this sentence: {len(u)-1}""")


count_vowels()
```

```
Enter sentence i am hammad kalmati

number of times a appeared in this sentence: 5
number of times e appeared in this sentence: 0
number of times i appeared in this sentence: 2
number of times o appeared in this sentence: 0
number of times u appeared in this sentence: 0
```

```
count_vowels('i am hammad kalmati')
```

```
number of times a appeared in this sentence: 5
number of times e appeared in this sentence: 0
number of times i appeared in this sentence: 2
```

```
number of times o appeared in this sentence: 0
number of times u appeared in this sentence: 0
```

Task6:

You need write a function that traces and makes a list of all such numbers from1000 to 3000 in which all the digits are even numbers.

```
def find_even_range():
    even_list = []
    for num in range(1000,3001):
        if num%2==0:
            even_list.append(str(num))
    return ', '.join(even_list)

find_even_range()
```

```
'1000, 1002, 1004, 1006, 1008, 1010, 1012, 1014, 1016, 1018, 1020,
1022, 1024, 1026, 1028, 1030, 1032, 1034, 1036, 1038, 1040, 1042,
1044, 1046, 1048, 1050, 1052, 1054, 1056, 1058, 1060, 1062, 1064,
1066, 1068, 1070, 1072, 1074, 1076, 1078, 1080, 1082, 1084, 1086,
1088, 1090, 1092, 1094, 1096, 1098, 1100, 1102, 1104, 1106, 1108,
1110, 1112, 1114, 1116, 1118, 1120, 1122, 1124, 1126, 1128, 1130,
1132, 1134, 1136, 1138, 1140, 1142, 1144, 1146, 1148, 1150, 1152,
1154, 1156, 1158, 1160, 1162, 1164, 1166, 1168, 1170, 1172, 1174,
1176, 1178, 1180, 1182, 1184, 1186, 1188, 1190, 1192, 1194, 1196,
1198, 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1218,
1220, 1222, 1224, 1226, 1228, 1230, 1232, 1234, 1236, 1238, 1240,
1242, 1244, 1246, 1248, 1250, 1252, 1254, 1256, 1258, 1260, 1262,
1264, 1266, 1268, 1270, 1272, 1274, 1276, 1278, 1280, 1282, 1284,
1286, 1288, 1290, 1292, 1294, 1296, 1298, 1300, 1302, 1304, 1306,
1308, 1310, 1312, 1314, 1316, 1318, 1320, 1322, 1324, 1326, 1328,
1330, 1332, 1334, 1336, 1338, 1340, 1342, 1344, 1346, 1348, 1350,
1352, 1354, 1356, 1358, 1360, 1362, 1364, 1366, 1368, 1370, 1372,
1374, 1376, 1378, 1380, 1382, 1384, 1386, 1388, 1390, 1392, 1394,
1396, 1398, 1400, 1402, 1404, 1406, 1408, 1410, 1412, 1414, 1416,
1418, 1420, 1422, 1424, 1426, 1428, 1430, 1432, 1434, 1436, 1438,
1440, 1442, 1444, 1446, 1448, 1450, 1452, 1454, 1456, 1458, 1460,
1462, 1464, 1466, 1468, 1470, 1472, 1474, 1476, 1478, 1480, 1482,
1484, 1486, 1488, 1490, 1492, 1494, 1496, 1498, 1500, 1502, 1504,
1506, 1508, 1510, 1512, 1514, 1516, 1518, 1520, 1522, 1524, 1526,
1528, 1530, 1532, 1534, 1536, 1538, 1540, 1542, 1544, 1546, 1548,
1550, 1552, 1554, 1556, 1558, 1560, 1562, 1564, 1566, 1568, 1570,
1572, 1574, 1576, 1578, 1580, 1582, 1584, 1586, 1588, 1590, 1592,
1594, 1596, 1598, 1600, 1602, 1604, 1606, 1608, 1610, 1612, 1614,
1616, 1618, 1620, 1622, 1624, 1626, 1628, 1630, 1632, 1634, 1636,
1638, 1640, 1642, 1644, 1646, 1648, 1650, 1652, 1654, 1656, 1658,
1660, 1662, 1664, 1666, 1668, 1670, 1672, 1674, 1676, 1678, 1680,
```

1682, 1684, 1686, 1688, 1690, 1692, 1694, 1696, 1698, 1700, 1702,
1704, 1706, 1708, 1710, 1712, 1714, 1716, 1718, 1720, 1722, 1724,
1726, 1728, 1730, 1732, 1734, 1736, 1738, 1740, 1742, 1744, 1746,
1748, 1750, 1752, 1754, 1756, 1758, 1760, 1762, 1764, 1766, 1768,
1770, 1772, 1774, 1776, 1778, 1780, 1782, 1784, 1786, 1788, 1790,
1792, 1794, 1796, 1798, 1800, 1802, 1804, 1806, 1808, 1810, 1812,
1814, 1816, 1818, 1820, 1822, 1824, 1826, 1828, 1830, 1832, 1834,
1836, 1838, 1840, 1842, 1844, 1846, 1848, 1850, 1852, 1854, 1856,
1858, 1860, 1862, 1864, 1866, 1868, 1870, 1872, 1874, 1876, 1878,
1880, 1882, 1884, 1886, 1888, 1890, 1892, 1894, 1896, 1898, 1900,
1902, 1904, 1906, 1908, 1910, 1912, 1914, 1916, 1918, 1920, 1922,
1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944,
1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966,
1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988,
1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010,
2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032,
2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054,
2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076,
2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098,
2100, 2102, 2104, 2106, 2108, 2110, 2112, 2114, 2116, 2118, 2120,
2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142,
2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164,
2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186,
2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208,
2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230,
2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252,
2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274,
2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296,
2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318,
2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340,
2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362,
2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384,
2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406,
2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428,
2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450,
2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472,
2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494,
2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516,
2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538,
2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560,
2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582,
2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604,
2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626,
2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648,
2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670,
2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692,
2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714,
2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736,
2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758,

```
2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780,
2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802,
2804, 2806, 2808, 2810, 2812, 2814, 2816, 2818, 2820, 2822, 2824,
2826, 2828, 2830, 2832, 2834, 2836, 2838, 2840, 2842, 2844, 2846,
2848, 2850, 2852, 2854, 2856, 2858, 2860, 2862, 2864, 2866, 2868,
2870, 2872, 2874, 2876, 2878, 2880, 2882, 2884, 2886, 2888, 2890,
2892, 2894, 2896, 2898, 2900, 2902, 2904, 2906, 2908, 2910, 2912,
2914, 2916, 2918, 2920, 2922, 2924, 2926, 2928, 2930, 2932, 2934,
2936, 2938, 2940, 2942, 2944, 2946, 2948, 2950, 2952, 2954, 2956,
2958, 2960, 2962, 2964, 2966, 2968, 2970, 2972, 2974, 2976, 2978,
2980, 2982, 2984, 2986, 2988, 2990, 2992, 2994, 2996, 2998, 3000'
```

Task7:

You need to write a code which accepts a sequence of comma separated 4 digit binary numbers as its input and then check whether they are divisible by 5 or not. The numbers that are divisible by 5 are to be printed in a comma separated sequence.

```
def binary_div_5():
    binary = input("Enter 4-digit binary numbers separated by commas:
").split(',')
    divisible = []
    if len(binary) > 4:
        print('Enter only 4 binary numbers.')
        return

    for b in binary:
        try:
            deci = int(b, 2)
            if deci % 5 == 0:
                divisible.append(b)
        except ValueError:
            print(f"Invalid binary number: {b}")
            return

    print(','.join(divisible) if divisible else "No numbers divisible
by 5.")

binary_div_5()
```

```
Enter 4-digit binary numbers separated by commas:  0100,0011,1010,1001

1010
```

Task8:

Write a program that accepts a sentence and calculate the number of letters and digits.

```
def count_letters_digits(string = None):

    if string==None:
        string = input("Enter sentence")

    letters = 0
    digits = 0

    for i in string:
        if i.isalpha():
            letters = letters+1
        if i.isdigit():
            digits = digits+1

    print(f"number of letters {letters} \nnumber of digits {digits}")

count_letters_digits("Hello 123")
```

```
number of letters 5
number of digits 3
```