Assignment-05-(b)

December 26, 2024

1 Assignment#5: Functions

1.1 Question(1):

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.

[11]:
```
def numrange(a,b):
    list1 = []
    for i in range(a,b):
        if i%7 == 0:
            if i%5 != 0:
                list1.append(str(i))
    print(",".join(list1))
```

[12]:
```
numrange(2000,3200)
```

```
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
```

1.2 Question(2):

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. Example Let us assume the following comma separated input sequence is given to the program: 100,150,180 The output of the program should be: 18,22,24

[1]:
```
a = 50
b = 30
c = input("Enter the value of C in comma separated sequence:").split(",")
```

```
list1 = []

for i in range(len(c)):
    formula = ((2*a*b)//int(c[i]))**1/2
    list1.append(str(formula))

fanswer = ",".join(list1)
print("The solution is:",fanswer)
```

```
Enter the value of C in comma separated sequence: 100,150,180

The solution is: 15.0,10.0,8.0
```

1.3 Question(3):

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. Suppose the following input is supplied to the program: without,hello,bag,world Then, the output should be: bag,hello,without,world

[14]:
```
st = input("Enter the string by comma separated way:").split(",")
list1 = []
for i in range(len(st)):
    list1.append(st[i])
fa = sorted(list1)
print("The sorted string is:")
print(",".join(fa))
```

```
Enter the string by comma separated way: without,hello,bag,world

The sorted string is:
bag,hello,without,world
```

1.4 Question(4):

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. Suppose the following input is supplied to the program: Hello world Practice makes perfect Then, the output should be: HELLO WORLD PRACTICE MAKES PERFECT

[41]:
```
print("Enter the sentence:")
l = []
while True:
    line = input()
    if not line:
        break
    fa = line.upper()
    l.append(fa)
for line in l:
    print(line.upper())
```

```
Enter the sentence:
 hello world
 practice makes perfect


HELLO WORLD
PRACTICE MAKES PERFECT
```

1.5 Question(5):

You need to write a function that counts the number of vowels in a given sentence as input from console. Suppose the following input is supplied to the program: Hello world Practice makes perfect Then, the output should be: a appeared 2 times e appeared 5 times i appeared 1 time o appeared 2 times u appeared 0 time PRACTICE MAKES PERFECT

[2]:
```python
def count_vowels():
    print("Enter the sentences (Press Enter on an empty line to finish):")
    l = []
    while True:
        line = input()
        if not line:
            break
        l.append(line)

    text = " ".join(l).upper()

    # Define the vowels
    vowels = "AEIOU"

    # Create a dictionary to store the counts of each vowel
    vowel_counts = {vowel: 0 for vowel in vowels}

    # Count each vowel in the text
    for char in text:
        if char in vowels:
            vowel_counts[char] += 1

    # Print the results
    for vowel, count in vowel_counts.items():
        print(f"{vowel} appeared {count} time{'s' if count != 1 else ''}")

    # Print all sentences in uppercase
    print("\nSentences in uppercase:")
    for line in l:
        print(line.upper())

# Call the function
if __name__ == "__main__":
```

```
    count_vowels()
```

```
Enter the sentences (Press Enter on an empty line to finish):

 hlghja
 kjnblj


A appeared 1 time
E appeared 0 times
I appeared 0 times
O appeared 0 times
U appeared 0 times

Sentences in uppercase:
HLGHJA
KJNBLJ
```

1.6 Question(6):

You need write a function that traces and makes a list of all such numbers from 1000 to 3000 in which all the digits are even numbers.

[1]:
```
def evennum(a,b):
    list1 = []
    for n in range(a,b):
        if n%2 == 0:
            list1.append(n)
    print("The list of even number is:",list1)
```

[2]:
```
evennum(1000,3000)
```

```
The list of even number is: [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]
```

1.7 Question(7):

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. Example: 0100,0011,1010,1001 Then the output should be: 1010 Reference: https://www.datacamp.com/.../python-data-type-conversion

[48]:
```
list1 = []
print("Enter the binary number in comma separtad format:")
num = input().split(",")

for i in range(len(num)):
    if int(num[i],2)%5 == 0:
        list1.append(num[i])
print("Output is:")
for n in list1:
    print(n)
```

```
Enter the binary number in comma separtad format:

 1010,1100,0100,1101

Output is:
1010
```

1.8 Question(8):

Write a program that accepts a sentence and calculate the number of letters and digits. Suppose the following input is supplied to the program: hello world! 123 Then, the output should be: LETTERS 10 DIGITS 3

[17]:
```
dig = "1234567890"
alp = "abcdefghijklmnopqrstuvwxyz"
digit = 0
letter = 0
st = input("Enter the sentence:")
```

```
for n in range(len(st)):
    if st[n] in dig:
        digit +=1
    elif st[n] in alp:
        letter +=1
    else:
        continue
print(f"""
         DIGITS : {digit}
         LETTERS : {letter}
""")
```

```
Enter the sentence: hello world! 123

         DIGITS : 3
         LETTERS : 10
```

[ ]: