

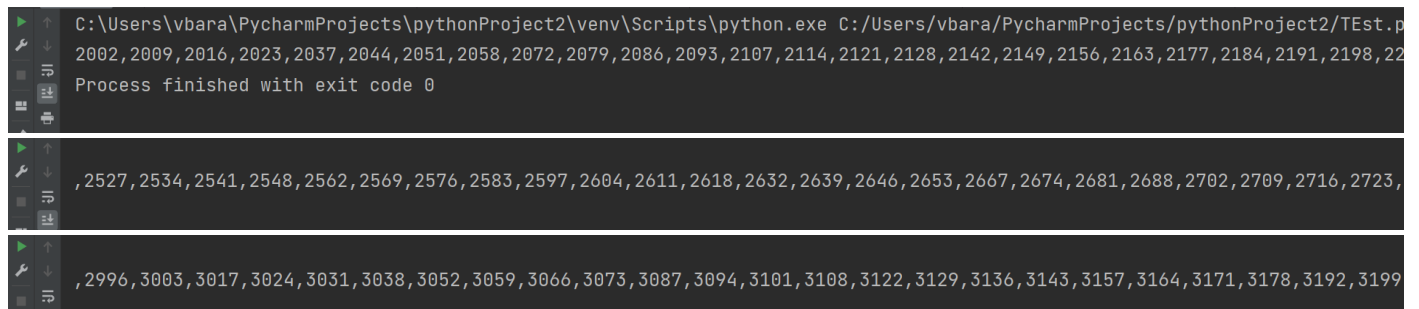
1) Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included).

The numbers obtained should be printed in a comma-separated sequence on a single line.

Source Code:

```
for num in range(2000,3200):  
    if num%7==0 and num%5!=0:  
        print(num,end=",")
```

Output:



```
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:/Users/vbara/PycharmProjects/pythonProject2/TEst.p  
2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,2205,2212,2229,2236,2250,2257,2264,2271,2278,2285,2292,2299,2306,2313,2320,2327,2334,2341,2348,2355,2362,2369,2376,2383,2390,2397,2404,2411,2418,2425,2432,2439,2446,2453,2460,2467,2474,2481,2488,2495,2502,2509,2516,2523,2530,2537,2544,2551,2558,2565,2572,2579,2586,2593,2600,2607,2614,2621,2628,2635,2642,2649,2656,2663,2670,2677,2684,2691,2698,2705,2712,2719,2726,2733,2740,2747,2754,2761,2768,2775,2782,2789,2796,2803,3003,3017,3024,3031,3038,3052,3059,3066,3073,3087,3094,3101,3108,3122,3129,3136,3143,3157,3164,3171,3178,3192,3199
```

2) Write a program which can compute the factorial of a given numbers.

The results should be printed in a comma-separated sequence on a single line.

Suppose the following input is supplied to the program:

8

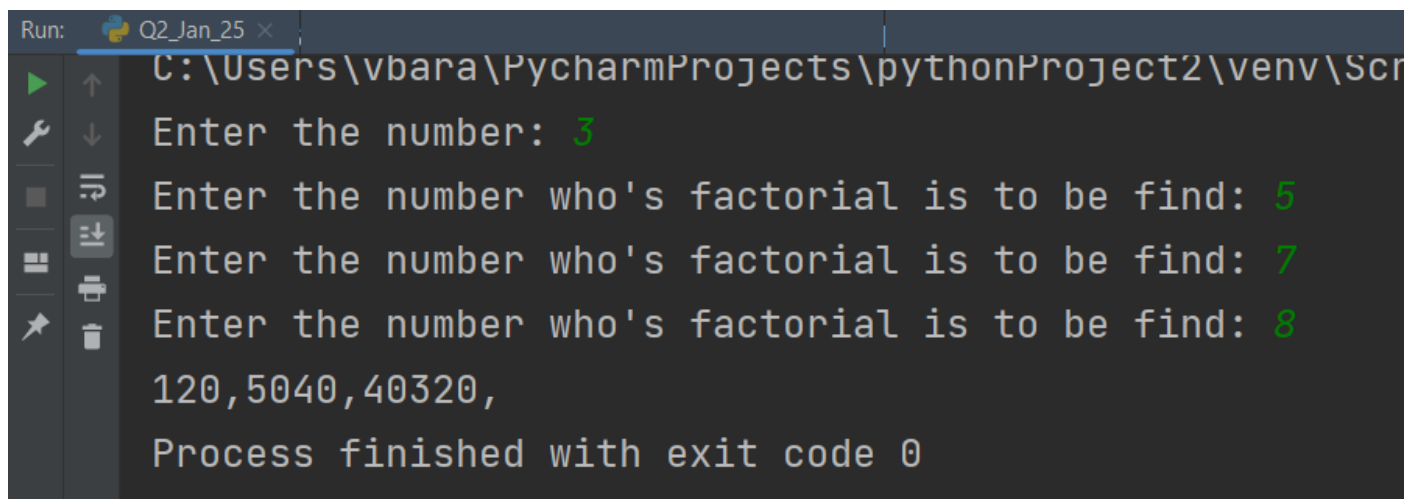
Then, the output should be:

40320

Source Code:

```
n=int(input("Enter the number: "))
l=[]
for i in range(n):
    ele=int(input("Enter the number who's factorial is to
be find: "))
    l.append(ele)
for j in l:
    fact = 1
    for time in range(1,j+1):
        fact=fact*time
    print(fact,end=", ")
```

Output:



```
Run: Q2_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scr
Enter the number: 3
Enter the number who's factorial is to be find: 5
Enter the number who's factorial is to be find: 7
Enter the number who's factorial is to be find: 8
120,5040,40320,
Process finished with exit code 0
```

3) 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

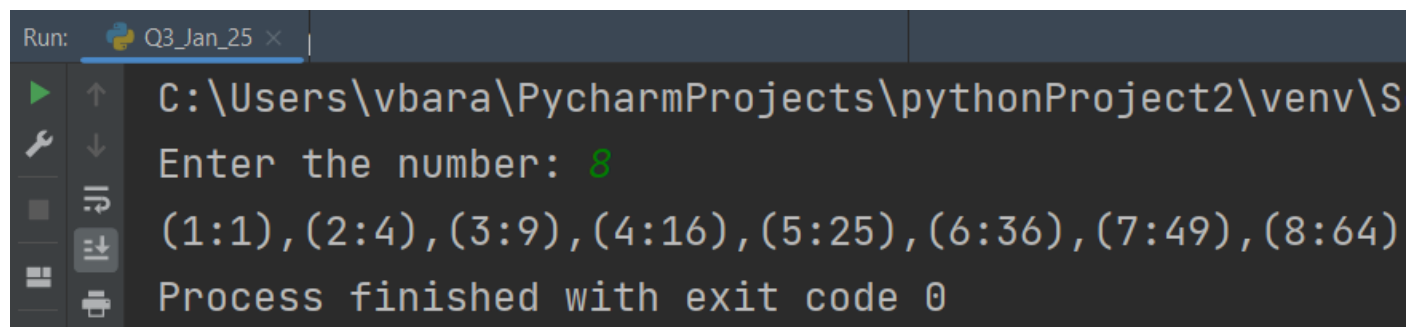
Then, the output should be:

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

Source Code:

```
n = int(input("Enter the number: "))
for i in range(1, n + 1):
    print("{}:{}".format(i, i*i), end=",")
```

Output:



The screenshot shows a PyCharm Run console window. The title bar indicates the file is 'Q3_Jan_25'. The console output shows the program's execution: it prompts 'Enter the number: 8', prints the dictionary '(1:1),(2:4),(3:9),(4:16),(5:25),(6:36),(7:49),(8:64)', and ends with 'Process finished with exit code 0'. The left sidebar contains standard IDE icons for running, debugging, and viewing output.

```
Run: Q3_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe
Enter the number: 8
(1:1),(2:4),(3:9),(4:16),(5:25),(6:36),(7:49),(8:64)
Process finished with exit code 0
```

4) Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number.

Suppose the following input is supplied to the program:

34,67,55,33,12,98

Then, the output should be:

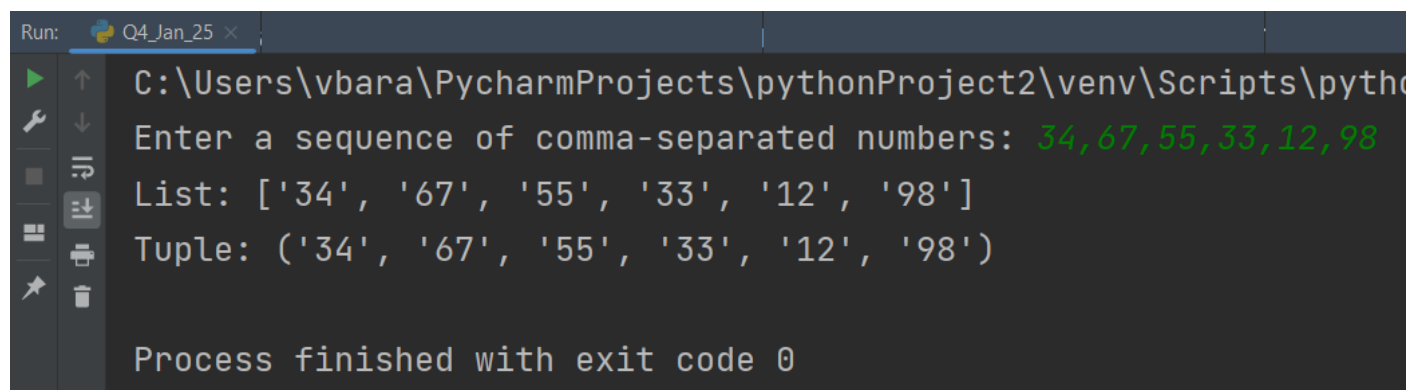
['34', '67', '55', '33', '12', '98']

('34', '67', '55', '33', '12', '98')

Source Code:

```
input = input("Enter a sequence of comma-separated numbers: ")
list = input.split(',')
tuple = tuple(list)
print("List:", list)
print("Tuple:", tuple)
```

Output:



Run: Q4_Jan_25 x

C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe

Enter a sequence of comma-separated numbers: 34,67,55,33,12,98

List: ['34', '67', '55', '33', '12', '98']

Tuple: ('34', '67', '55', '33', '12', '98')

Process finished with exit code 0

5) Write a program that calculates and prints the value according to the given formula:

$Q = \text{Square root of } [(2 * C * D)/H]$

Following are the fixed values of C and H:

C is 50. H is 30.

D is the variable whose values should be 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

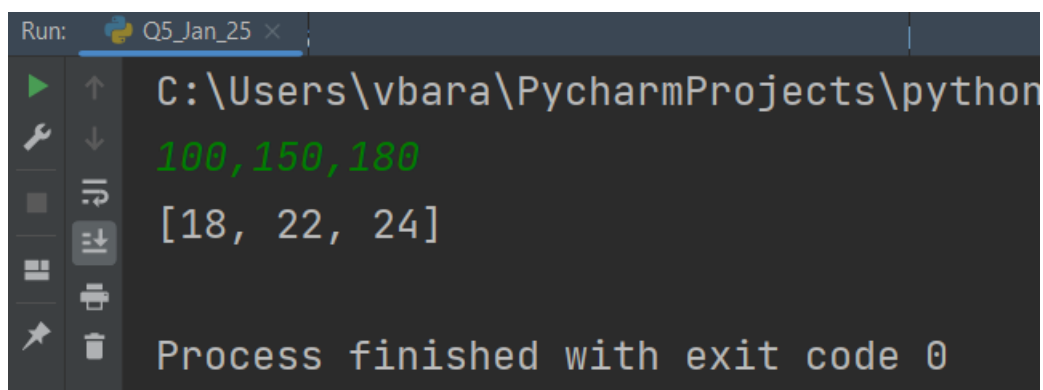
The output of the program should be:

18,22,24

Source Code:

```
from math import *
C=50
H=30
numbers=input()
D=numbers.split(',')
D=[int(i) for i in D]
result=[]
for l in D:
    Q=int(sqrt((2*C*l)/H))
    result.append(Q)
print(result)
```

Output:



```
Run: Q5_Jan_25 x
C:\Users\vbara\PycharmProjects\python
100,150,180
[18, 22, 24]
Process finished with exit code 0
```

6) Write a program which takes 2 digits, X,Y as input and generates a 2-dimensional array. The element value in the i-th row and j-th column of the array should be $i*j$.

Note: $i=0,1.., X-1$; $j=0,1,i-Y-1$.

Example

Suppose the following inputs are given to the program:

3,5

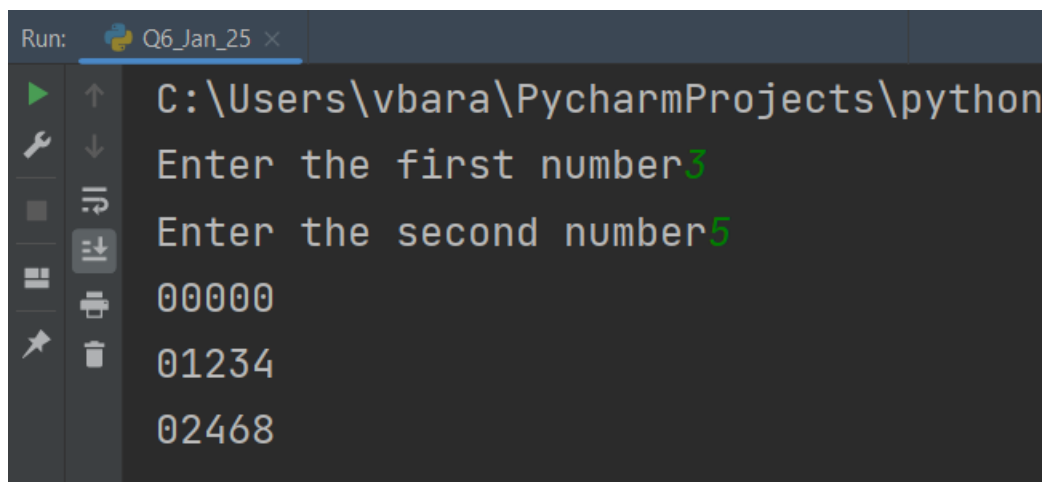
Then, the output of the program should be:

[[0, 0, 0, 0, 0], [0, 1, 2, 3, 4], [0, 2, 4, 6, 8]]

Source Code:

```
X=int(input("Enter the first number"))
Y=int(input("Enter the second number"))
for i in range(X):
    for j in range(Y):
        print(i*j,end=" ")
    print()
```

Output:



```
Run: Q6_Jan_25 x
C:\Users\vbara\PycharmProjects\python
Enter the first number3
Enter the second number5
00000
01234
02468
```

7) Write a program that accepts 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

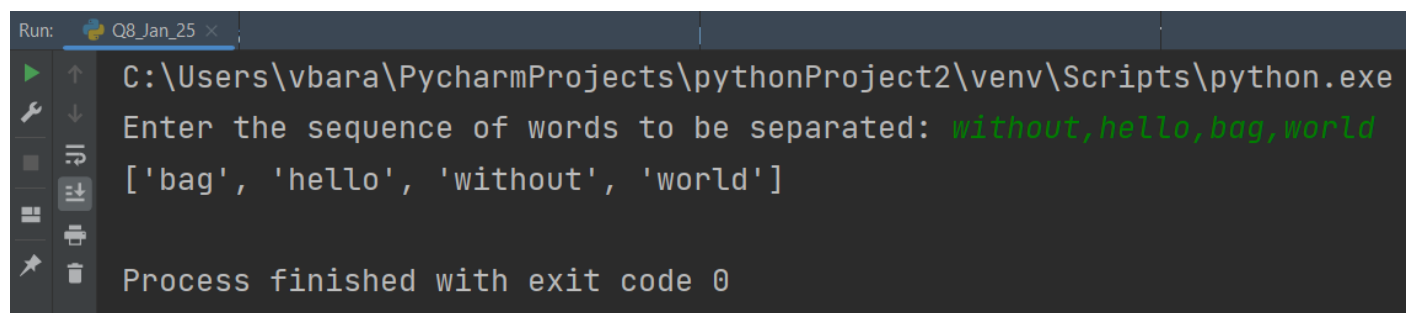
Then, the output should be:

bag,hello,without,world

Source Code:

```
input=input("Enter the sequence of words to be separated:")
words=input.split(',')
words.sort()
print(words)
```

Output:



The screenshot shows a terminal window with the following content:

```
Run: Q8_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe
Enter the sequence of words to be separated: without,hello,bag,world
['bag', 'hello', 'without', 'world']
Process finished with exit code 0
```

8) Write a program that accepts 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:

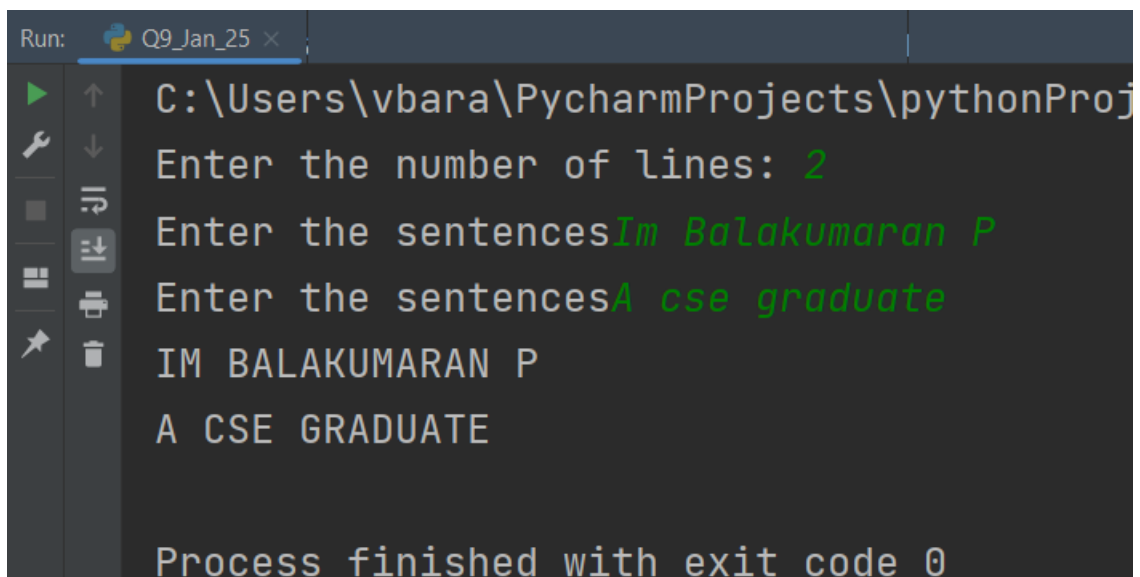
HELLO WORLD

PRACTICE MAKES PERFECT

Source Code:

```
line=int(input("Enter the number of lines: "))
l=[]
for i in range(line):
    sentences=input("Enter the sentences")
    l.append(sentences)
for sent in l:
    print(sent.upper())
```

Output:



```
Run: Q9_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProj
Enter the number of lines: 2
Enter the sentencesIm Balakumaran P
Enter the sentencesA cse graduate
IM BALAKUMARAN P
A CSE GRADUATE
Process finished with exit code 0
```


9) Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

Suppose the following input is supplied to the program:

hello world and practice makes perfect and hello world again

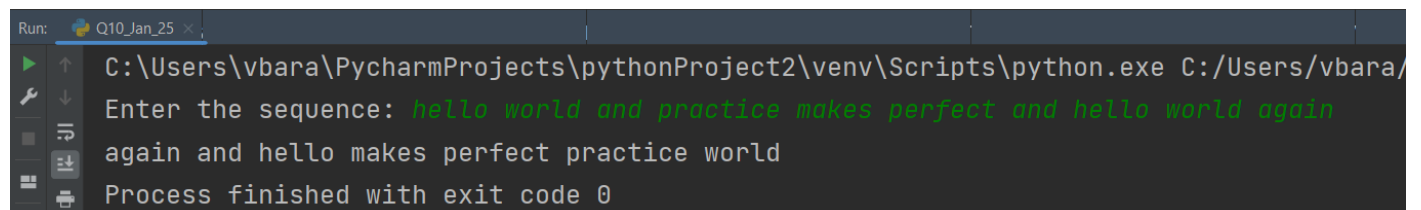
Then, the output should be:

again and hello makes perfect practice world

Source Code:

```
input=input("Enter the sequence: ")
words=input.split()
unique_word=[]
for i in words:
    if i not in unique_word:
        unique_word.append(i)
unique_word.sort()
for word in unique_word:
    print(word,end=" ")
```

Output:



```
Run: Q10_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:/Users/vbara/
Enter the sequence: hello world and practice makes perfect and hello world again
again and hello makes perfect practice world
Process finished with exit code 0
```

10) Write a program 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

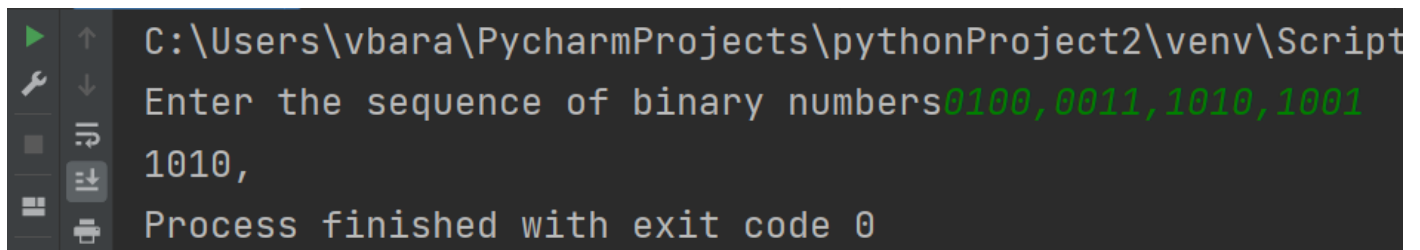
Then the output should be:

1010

Source Code:

```
input=input("Enter the sequence of binary numbers")
binary_num=input.split(',')
decimal_num=[]
for i in binary_num:
    decimal_num.append(int(i,2))
for j in decimal_num:
    if j%5==0:
        print(bin(j)[2:],end=",")
```

Output:



```
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts
Enter the sequence of binary numbers0100,0011,1010,1001
1010,
Process finished with exit code 0
```

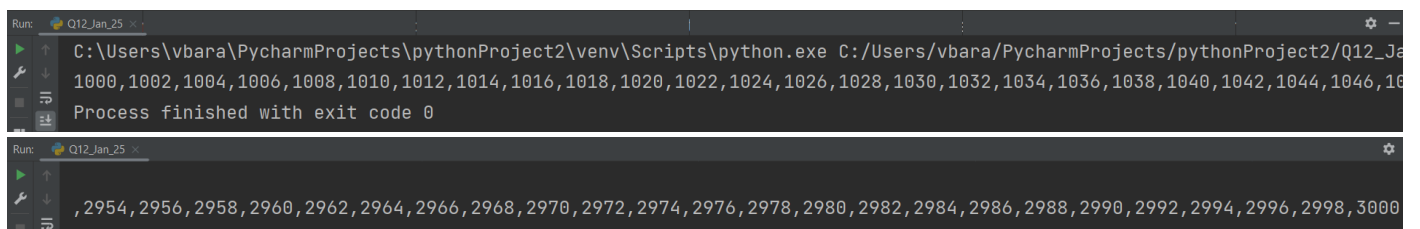
11) Write a program, which will find all such numbers between 1000 and 3000 (both included) such that each digit of the number is an even number.

The numbers obtained should be printed in a comma-separated sequence on a single line.

Source Code:

```
for i in range(1000,3000+1):
    if i%2==0:
        print(i,end=",")
```

Output:



```
C:\Users\vbara\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:/Users/vbara/PycharmProjects/pythonProject2/Q12_Ja
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
Process finished with exit code 0
```

12) 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:

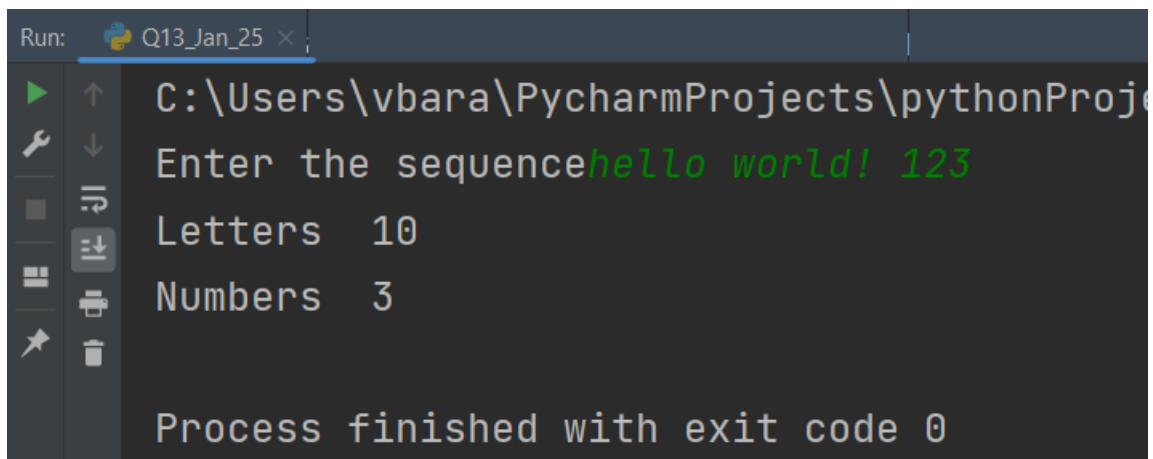
LETTERS 10

DIGITS 3

Source Code:

```
input=input("Enter the sequence")
word=[char for char in input]
letters=0
numbers=0
for i in word:
    if i.isalpha():
        letters+=1
    elif i.isdigit():
        numbers+=1
print("Letters ",letters)
print("Numbers ",numbers)
```

Output:

A screenshot of a Python IDE's run window. The window title is 'Run: Q13_Jan_25'. The output shows the program's execution: the path 'C:\Users\vbara\PycharmProjects\pythonProje' is visible, followed by the prompt 'Enter the sequence' and the user input 'hello world! 123' in green. The output then shows 'Letters 10' and 'Numbers 3'. At the bottom, it states 'Process finished with exit code 0'.

```
Run: Q13_Jan_25 x
C:\Users\vbara\PycharmProjects\pythonProje
Enter the sequencehello world! 123
Letters 10
Numbers 3
Process finished with exit code 0
```

13)Write a program that accepts a sentence and calculate the number of upper case letters and lower case letters.

Suppose the following input is supplied to the program:

Hello world!

Then, the output should be:

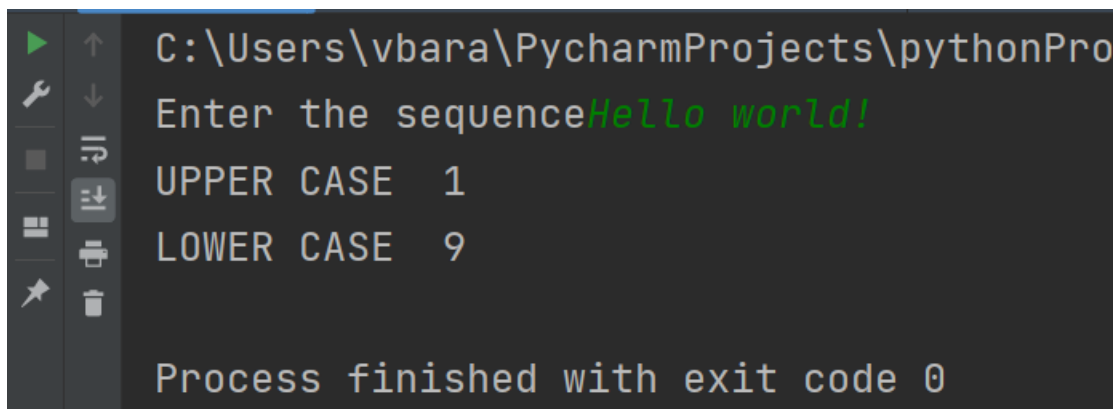
UPPER CASE 1

LOWER CASE 9

Source Code:

```
input=input("Enter the sequence")
input_in_char=[char for char in input]
upper_count=0
lower_count=0
for i in input_in_char:
    if i.isupper():
        upper_count+=1
    elif i.islower():
        lower_count+=1
print("UPPER CASE ",upper_count)
print("LOWER CASE ",lower_count)
```

Output:



```
C:\Users\vbara\PycharmProjects\pythonPro
Enter the sequenceHello world!
UPPER CASE 1
LOWER CASE 9
Process finished with exit code 0
```

14) Write a program that computes the value of $a+aa+aaa+aaaa$ with a given digit as the value of a .

Suppose the following input is supplied to the program:

9

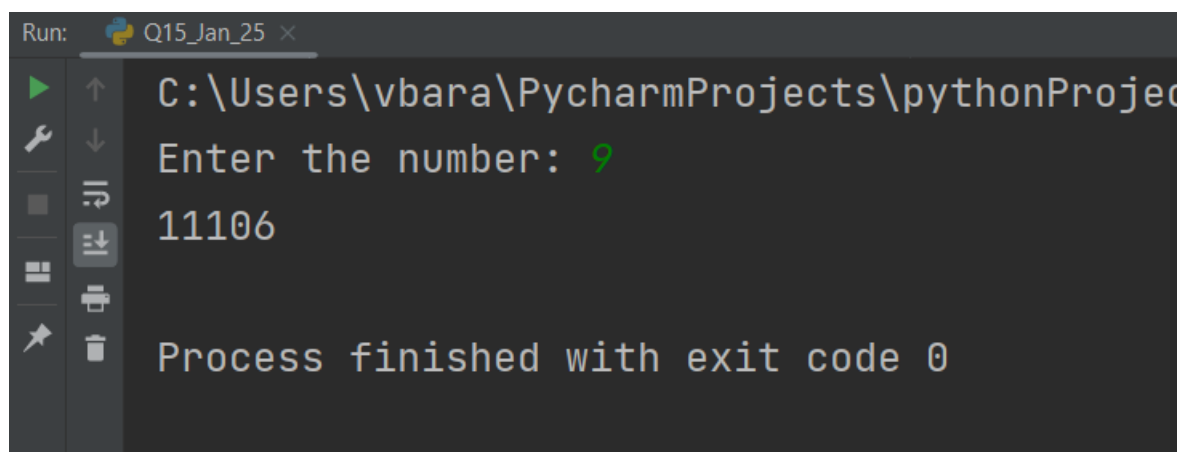
Then, the output should be:

11106

Source Code:

```
num=input("Enter the number: ")
l=[]
for i in range(4):
    ele=num
    for j in range(i):
        ele+=num
    l.append(ele)
integers=[]
for j in l:
    integers.append(int(j))
result=0
for number in integers:
    result+=number
print(result)
```

Output:

A screenshot of a Python IDE's run window. The window title is "Run: Q15_Jan_25". The output shows the file path "C:\Users\vbara\PycharmProjects\pythonProje...", the input "Enter the number: 9", the output "11106", and the message "Process finished with exit code 0".

```
Run: Q15_Jan_25 ×
C:\Users\vbara\PycharmProjects\pythonProje...
Enter the number: 9
11106
Process finished with exit code 0
```