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
2002,2009,2016,2023,2037,2044,2051,2058,2072,2079,2086,2093,2107,2114,2121,2128,2142,2149,2156,2163,2177,2184,2191,2198,22
Process finished with exit code 0
```

```
,2527,2534,2541,2548,2562,2569,2576,2583,2597,2604,2611,2618,2632,2639,2646,2653,2667,2674,2681,2688,2702,2709,2716,2723,
```

```
,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 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

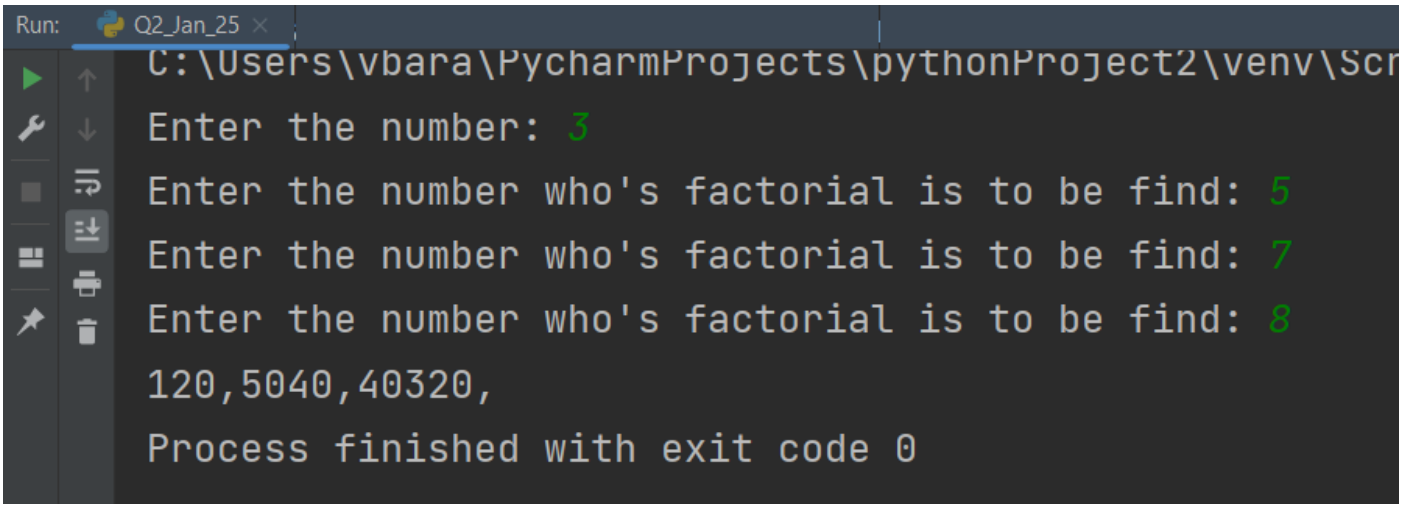
Then, the output should be:

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:



3) With a given integral number n, write a program to generate a dictionary that contains (i, i*i) such that 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

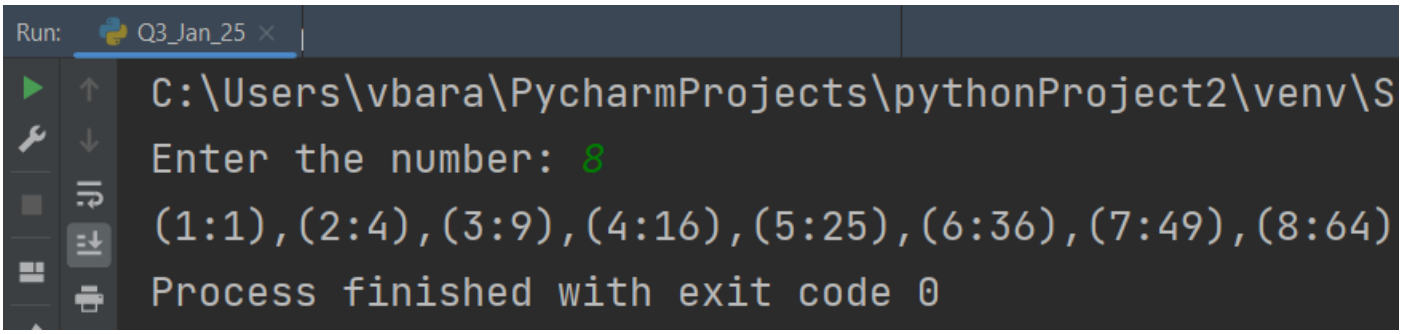
Then, the output should be:

{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:



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:

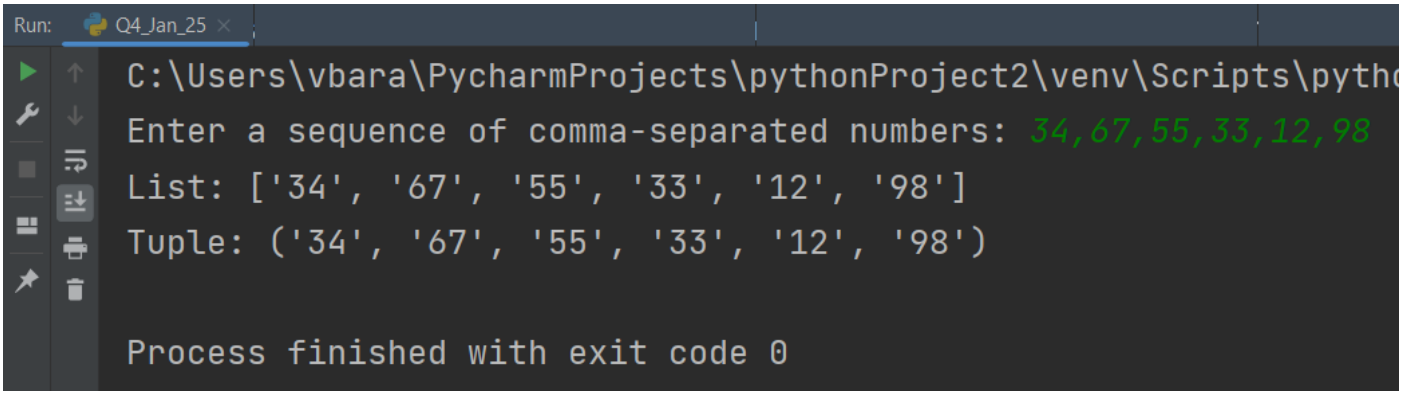
['34', '67', '55', '33', '12', '98']

('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:



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

Q = 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

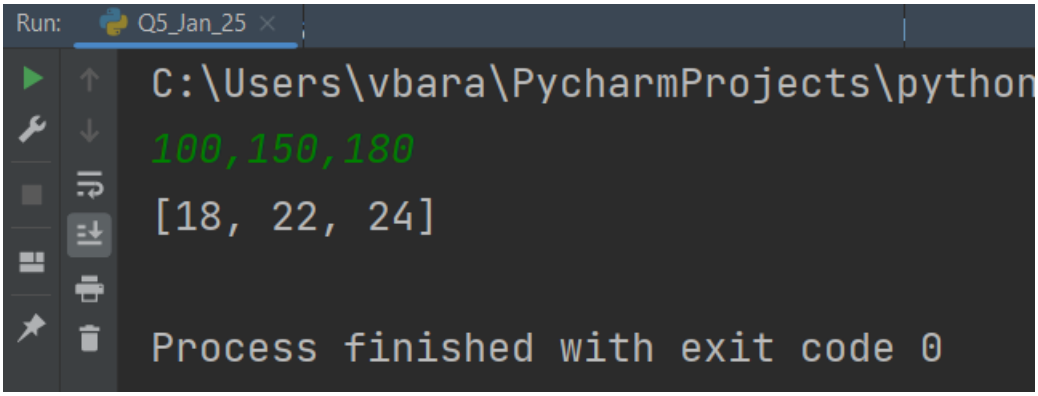
The output of the program should be:

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:



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

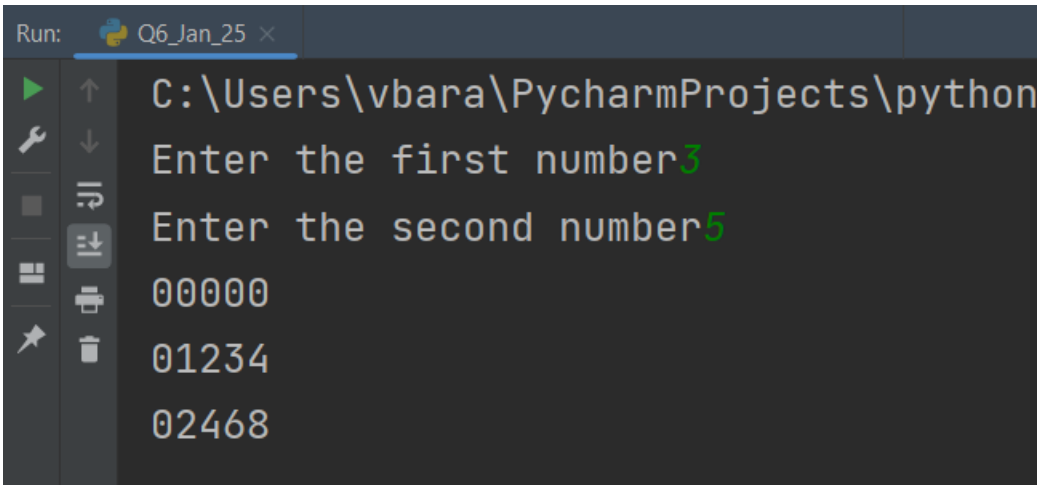
Then, the output of the program should be:

[[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:



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

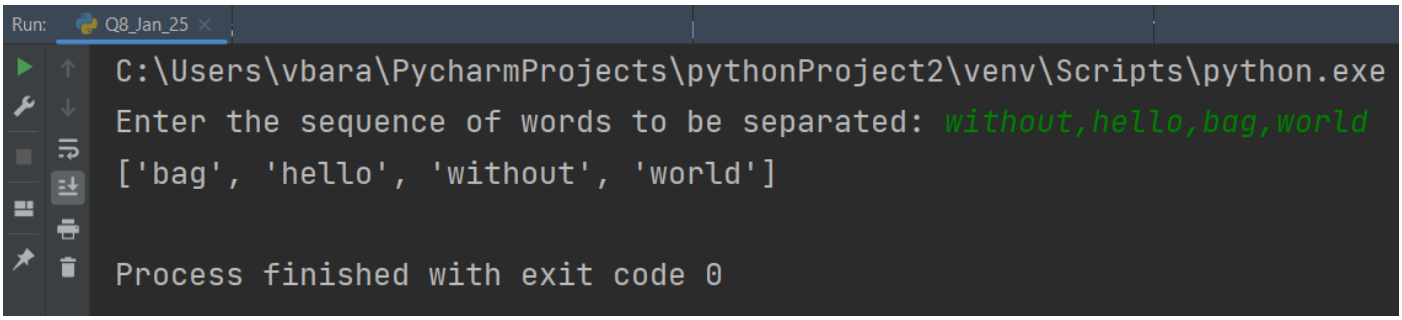
Then, the output should be:

bag,hello,without,world

Source Code:

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

Output:



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:

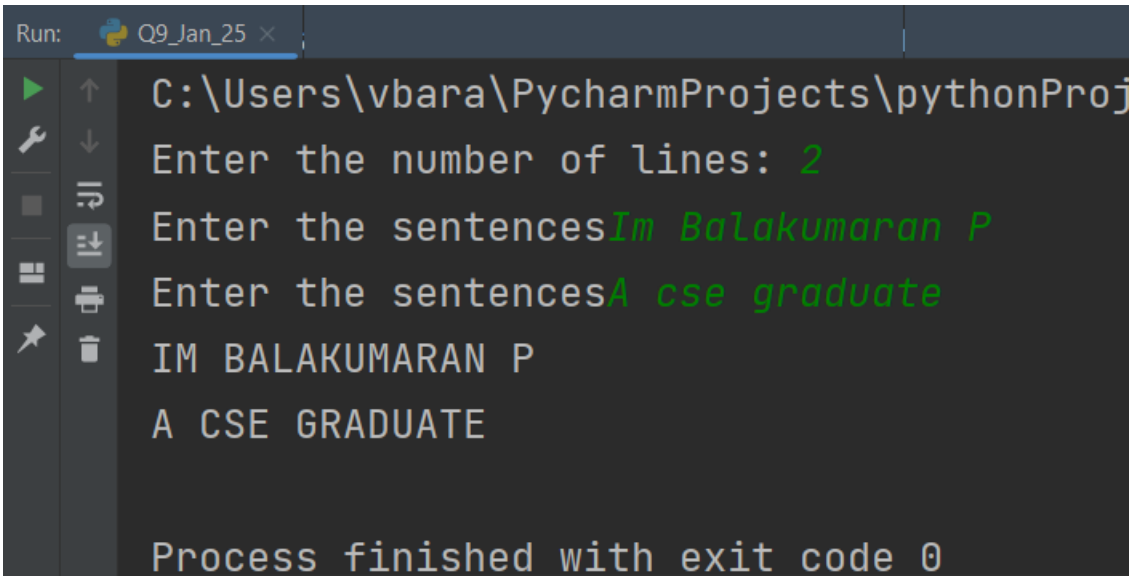
HELLO WORLD

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:



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

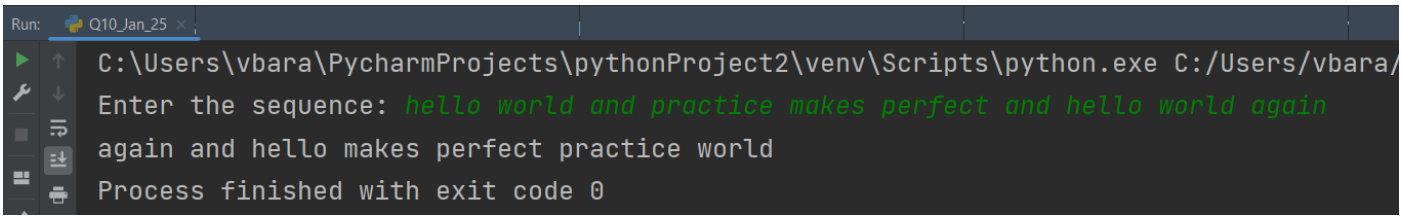
Then, the output should be:

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:



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

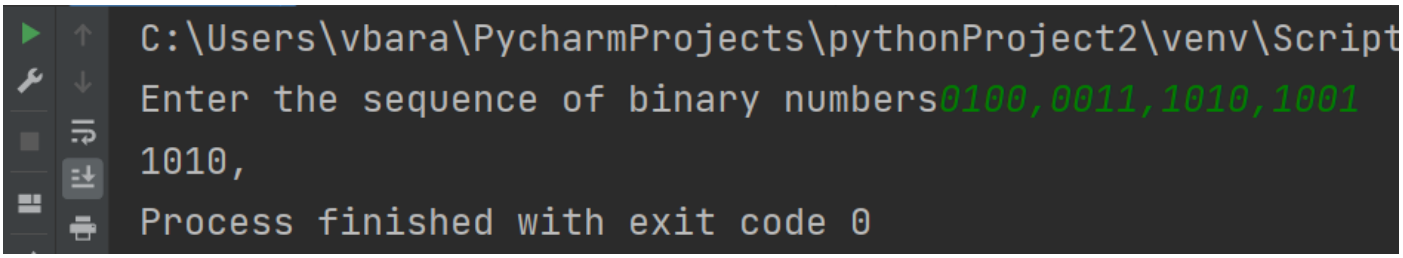
Then the output should be:

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:



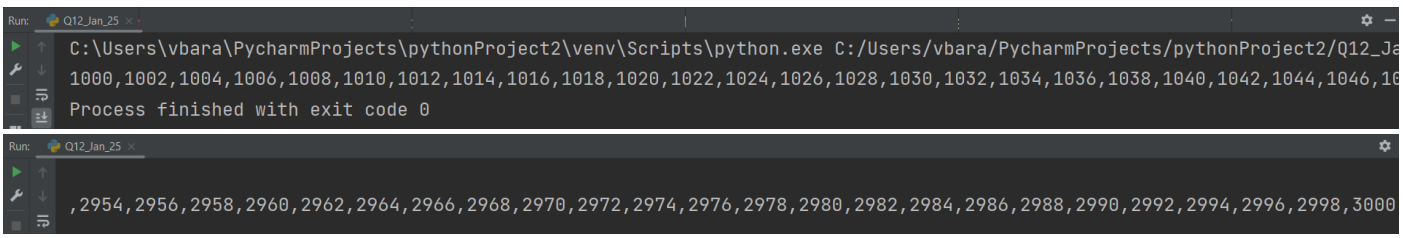
11) Write a program, which will find all such numbers between 1000 and 3000 (both included) such that each digit of the number is an even number.

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:



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:

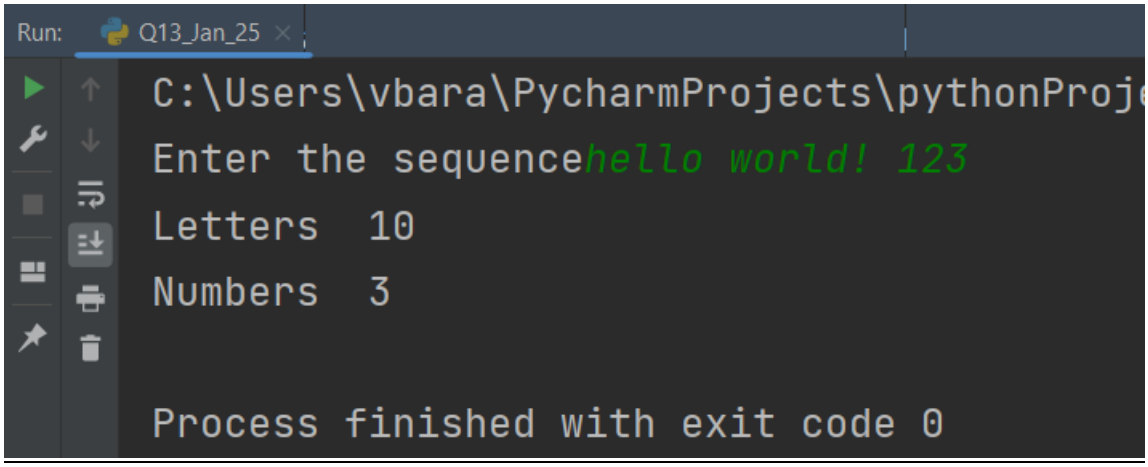
LETTERS 10

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:



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:

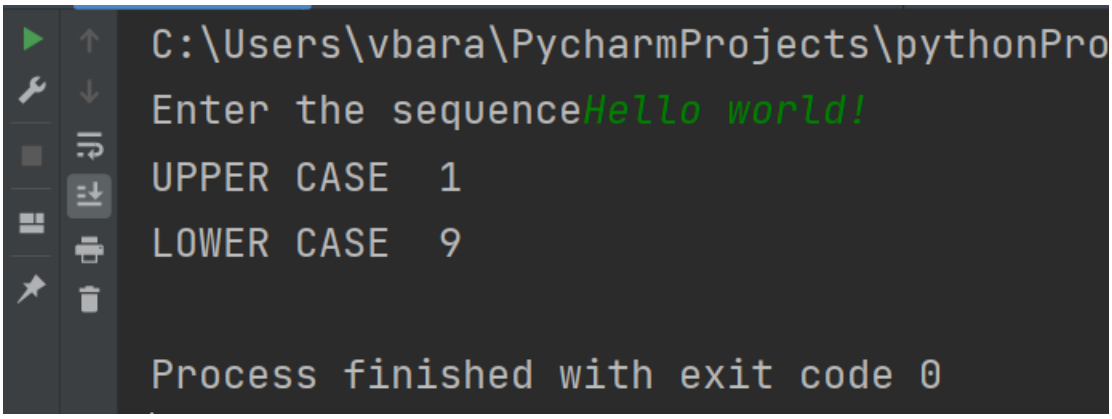
UPPER CASE 1

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:



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: