

DUE: Sun 05/30 @ 11:30pm, the assignment has to be submitted to the CANVAS

The name of the file: (your) lastname_hw8.py

Please start the program with: # your name

In the program you can use only methods and tools already introduced in the class!

PROBLEM: MANY LISTS

STEP 1

Write following functions:

- A value returning function `rand_list`, with a parameter representing the number of elements in a generated list, which returns a list of random integers from 10 to 5000.
- A value returning function `sum_digits`, with a parameter representing a list of positive integers, which returns a list of integers representing sums of digits of integers in the "parameter" list.
- A value returning function `change_list`, with a parameter representing a list of positive integers, which returns a list of strings created from integers in the "parameter" list such way, that even digits are replaced by the symbol 'X' and odd digits are replaced by the symbol 'Y'.
- A value returning function `num_XY`, with a parameter representing list of XY strings, which returns the number of symbols 'X' and 'Y' in the list.

STEP 2:

Use the functions created in the STEP 1 to write a program (using a function `main`) that prompts a user to enter a number of elements in a generated list and displays:

- The generated list of random integers from 10 to 5000;
- The list of sums of digits of integers in the generated list;
- The list of XY strings created from integers in the generated list;
- The number of symbols X and Y in the previous list.

The user can enter a multiple inputs, by entering 0 or a negative integer the program ends.

Example of a possible output:

This program works with random lists.
To end the program enter for the number of elements
0 or a negative integer.

Enter the number of elements in the random list:7
The generated list of random integers is:
[4690, 276, 3523, 3963, 4745, 131, 1698]

The list of digit sums is:
[19, 15, 13, 21, 20, 5, 24]

The list of strings is:
['XXYX', 'XYX', 'YYXY', 'YYXY', 'XXYX', 'YYY', 'YXYX']

The number of X's in the list is: 11
The number of Y's in the list is: 15

Enter the next number of elements in the random list:1
The generated list of random integers is:
[3799]

The list of digit sums is:
[28]

The list of strings is:
['YYYY']

The number of X's in the list is: 0
The number of Y's in the list is: 4

Enter the next number of elements in the random list:5
The generated list of random integers is:
[4034, 2283, 1322, 291, 4275]

The list of digit sums is:
[11, 15, 8, 12, 18]

The list of strings is:
['XXYX', 'XXXY', 'YYXX', 'XYX', 'XXYY']

The number of X's in the list is: 11
The number of Y's in the list is: 8

Enter the next number of elements in the random list:0
>>> |