

Algorithms

Homework #0

Due: 2017 Sep 17, 23:59

Problem description:

Given a list of numbers, please conduct following operations to the list. Please modify the specific section in *homework0.py* file. By executing the .py file, a correct output file would be generated. The file would consist of the results after applying the operations. We will use following command to execute your code, please make sure the command works: (please rename your python source code as "student_id.py")

```
>>> python student_id.py input_filename.txt output_filename.txt
```

(for example, "python b05901001.py input.txt output.txt")

Input file format:

A string of numbers separated by space, for example:

1 2 3 4 5

Operations:

1. Transform "string" into "list of integers".
- Ex: "1 2 3 4 5" \rightarrow [1, 2, 3, 4, 5]
2. Add 1 to each of the items in the list.
- Ex: [1, 2, 3, 4, 5] \rightarrow [2, 3, 4, 5, 6]
3. Insert an integer 100 at the end of the list.
- Ex: [2, 3, 4, 5, 6] \rightarrow [2, 3, 4, 5, 6, 100]
4. Reverse the elements of the list.
- Ex: [2, 3, 4, 5, 6, 100] \rightarrow [100, 6, 5, 4, 3, 2]
5. Transform "list of integers" into "string".
- Ex: [100, 6, 5, 4, 3, 2] \rightarrow "100 6 5 4 3 2"

Output file format:

A string consists of numbers separated by space in .txt file, for example:

100 6 5 4 3 2

P.s. Please note that we may have different test cases. Be aware of the length of input string. You may use input files we provide to verify your code.

Hints:

You must have the knowledge about python built-in functions, list operations, loops, and I/O. In order to use given filenames in the program, we import “sys” library and use “sys.argv” to call the arguments given in the command.

Submission rule:

Please send email to alg2017ta@gmail.com with subject: [HW0]+student id, ex: [HW0]b05901001, and attach your python source code with name “student id.py”, ex: “b05901001.py”, before the deadline. You don’t need to submit the output file. We will use your source code to generate output file.