

Intro. to CS 2021 Spring - assignment #1

Python Programming

Objective: Implement **two** functions (sum_of_prime_factors, even_occured_number) to exercise python grammar

1. Function 1: sum up the prime factors of a given integer n ($0 < n < 1e+12$).
Do prime factorization, i.e. $124 = 31 * 2 * 2$, therefore 35 is sum of the prime factors.

Example:

input: 124

output: 35

2. Function 2: find the single number which occurs even times in the given list.

Example

input: [2, 2, 3, 3, 3, 4, 4, 4]

output: 2

e.g., The number 2 occurs 2 times which is an even number, while 3 and 4 occur 3 times which is odd number. The input has only one number which occurs even times, $0 < \text{len}(\text{input_list}) < 1e+6$

Grading Policy

Testcases for scoring are not disclosed.

- 50pt : Function 1 (5 testcases, each 10 points)
- 50pt : Function 2 (5 testcases, each 10 points)

Deliverables

- You should use the baseline codes 'a1.py', 'main.py' and sample input files 'sample_input_1.txt', 'sample_input_2.txt'.
- You should submit the code naming as 'a1_your_student_id.py' on ICampus (e.g., 'a1_202131xxxx.py')
- It is not allowed to modify 'main.py' file, so you don't need to submit it.

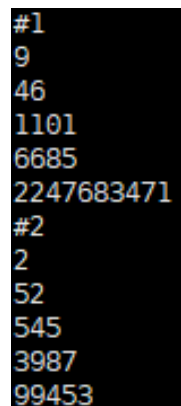
How to Run

- Type 'python3 a1.py' (or 'python a1.py' if your default python is python3) in the terminal will execute the sample inputs.
- Type 'python3 main.py' in the terminal will execute the program which prints the result of the sample input files 'sample_input_(num).txt'.

Comments

- If you are wondering about '(n: int) -> int' statement in the baseline code 'a1.py', see this "type hint" doc: <https://www.python.org/dev/peps/pep-0483/>
- If you run 'python3 main.py', the result should be same with right images.

Due : April 2 23:59:00



```
#1
9
46
1101
6685
2247683471
#2
2
52
545
3987
99453
```