ZJUADS_王灿2024_P5 (PR) 提交阶段

题目描述

8-1 Shopping With Coupons 分数 20

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There are N items on your shopping list, and you have N kinds of coupon that can save you some money on buying any of these items. At the mean time, you have D dollars in your pocket. How can you buy as many items as you can? Here you may use any coupon many times and buy any item many times, but only one coupon may be used to get a reduction of payment for one item once -- that is, for example, you may use coupon A1 to buy item B1, and then use coupon A2 to buy item B1. At the mean time, coupon A1 can be used to buy item B2. But you may not use coupon A1 to buy item B1 AGAIN.

For example, suppose there are 4 items with prices of $10, $12, $15 and $20; and 4 kinds of coupons with values of $6, $7, $8 and $9. If you have $30 in your pocket, the best way to buy is the following:

- buy $10 item for 4 times, with each coupon once, and hence pay $10x4 – $6 – $7 – $8 – $9 = $10 in total;
- buy $12 item for 3 times, with coupons of $7, $8 and $9, and hence pay $12x3 – $7 – $8 – $9 = $12 in total;
- buy $15 item with $9 coupon, and hence pay $6;
  Now you have $2 left, not enough to buy any more items. Therefore the maximum number of items you can buy is 8.

Input Specification:

Each input file contains one test case. For each case, the first line gives two positive integers: N ($\leq 10^5$), the number of items (and the coupons), and D ($\leq 10^6$), the amount of money you have.

Then N positive prices are given in the second line, and N positive coupon values are given in the third line. It is guaranteed that the highest value of coupons is less than the lowest price of items, and all the numbers are bounded above by 10^9. The numbers in a line are separated by spaces.

Output Specification:

Print in a line the maximum number of items you can buy, and the maximum amount of money left, separated by 1 space.

Sample Input:

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Sample Output:

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8 2
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Grading Policy:

Programming: Write the program (10 pts.) **with sufficient comments**.

Testing: Provide a set of test cases to fill in a test report (3 pts.). Write analysis and comments (3 pts.).

Documentation: Chapter 1 (1 pt.), Chapter 2 (2 pts.), and finally a complete report (1 point for overall style of documentation).

Markdown　所见即所得

上传附件

〈 上一题　　　　　提交本题作答　　　　　下一题 〉