Lessons

# Assignment: 编程作业—动规2

You have not submitted. You must earn 50/100 points to pass.

**Deadline** Pass this assignment by June 5, 11:59 PM PDT

**Instructions (/learn/suanfa-jichu/programming/WSm9a/bian-cheng-zuo-ye-dong-gui-2)** My submissions (/learn/suanfa-jichu/programming/WSm9a/bian-cheng-zuo-ye-dong-gui-2/submissions) Discussions (/learn/suanfa-jichu/programming/WSm9a/bian-c

## 编程题 # 1：UNIMODAL PALINDROMIC DECOMPOSITIONS

来源: POJ (http://cxsjsxmooc.openjudge.cn/test2/E/)(Coursera声明：在POJ上完成的习题将不会计入Coursera的最后成绩。)

注意： 总时间限制: **1000ms** 内存限制: **65536kB**

描述

A sequence of positive integers is Palindromic if it reads the same forward and backward. For example:

23 11 15 1 37 37 1 15 11 23

1 1 2 3 4 7 7 10 7 7 4 3 2 1 1

A Palindromic sequence is Unimodal Palindromic if the values do not decrease up to the middle value and then (since the sequence is palindromic) do not increase from the middle to the end For example, the first example sequence above is NOT Unimodal Palindromic while the second example is.

A Unimodal Palindromic sequence is a Unimodal Palindromic Decomposition of an integer N, if the sum of the integers in the sequence is N. For example, all of the Unimodal Palindromic Decompositions of the first few integers are given below:

1: (1)

2: (2), (1 1)

3: (3), (1 1 1)

4: (4), (1 2 1), (2 2), (1 1 1 1)

5: (5), (1 3 1), (1 1 1 1 1)

6: (6), (1 4 1), (2 2 2), (1 1 2 1 1), (3 3),

(1 2 2 1), ( 1 1 1 1 1 1)

7: (7), (1 5 1), (2 3 2), (1 1 3 1 1), (1 1 1 1 1 1 1)

8: (8), (1 6 1), (2 4 2), (1 1 4 1 1), (1 2 2 2 1),

(1 1 1 2 1 1 1), ( 4 4), (1 3 3 1), (2 2 2 2),

(1 1 2 2 1 1), (1 1 1 1 1 1 1 1)

Write a program, which computes the number of Unimodal Palindromic Decompositions of an integer.

输入

Input consists of a sequence of positive integers, one per line ending with a 0 (zero) indicating the end.

输出

For each input value except the last, the output is a line containing the input value followed by a space, then the number of Unimodal Palindromic Decompositions of the input value. See the example on the next page.

样例输入

```
2
3
4
5
6
7
8
10
23
24
131
213
92
0
```

样例输出

```
2 2
3 2
4 4
5 3
6 7
7 5
8 11
10 17
23 104
24 199
131 5010688
213 1055852590
92 331143
```

提示

N < 250

## 编程题 # 2： Charm Bracelet

来源: POJ (http://cxsjsx.openjudge.cn/hw201505/B/) (Coursera声明：在POJ上完成的习题将不会计入Coursera的最后成绩。)

注意： **总时间限制: 1000ms 内存限制: 65536kB**

描述

Bessie has gone to the mall's jewelry store and spies a charm bracelet. Of course, she'd like to fill it with the best charms possible from the N(1 ≤ N≤ 3,402) available charms. Each charm iin the supplied list has a weight Wi(1 ≤ Wi≤ 400), a 'desirability' factor Di(1 ≤ Di≤ 100), and can be used at most once. Bessie can only support a charm bracelet whose weight is no more than M(1 ≤ M≤ 12,880).

Given that weight limit as a constraint and a list of the charms with their weights and desirability rating, deduce the maximum possible sum of ratings.

输入

Line 1: Two space-separated integers: N and M

Lines 2..N+1: Line i+1 describes charm i with two space-separated integers: Wi and Di

输出

Line 1: A single integer that is the greatest sum of charm desirabilities that can be achieved given the weight constraints

样例输入

```
4 6
1 4
2 6
3 12
2 7
```

样例输出

```
23
```

## How to submit

When you're ready to submit, you can upload files for each part of the assignment on the "My submission" tab.