郑州大学计算机俱乐部技术部

2016 年招新测试题

特别招新题

说明：

1. *以下 A、B 卷任选一套完成即可。*
2. *请将你的答案以*.doc 或*.odt 格式保存，以添加附件的方式发送 zc0k27@163.com。为了避免兼容性问题造成不必要的麻烦，请将你文档中的全部内容额外粘贴到邮件正文中。*
3. *请以你的"姓名+电话"为主题发送电子邮件。你的来信收到后我们审核完成后会将审核结果回复到发信的邮箱，请注意查收。*
4. *请保护你所提交的答案，不要将你的答案告诉他人。*
5. *如果你有其它特长技能，诸如 UI 设计、媒体制作、软件开发、外挂制作、病毒编写、漏洞发掘、传感器及单片机使用等。请直接与我联系。*
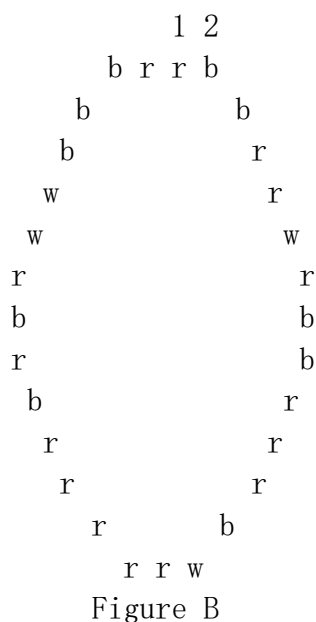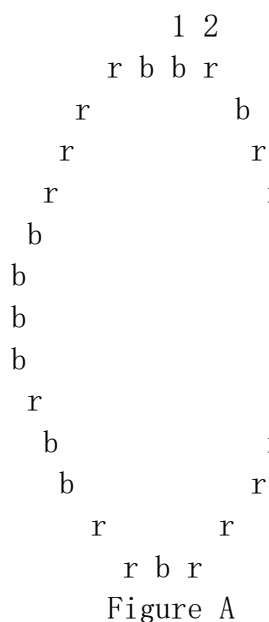
联系方式：

请将你的答案发送到 zc0k27@163.com，感谢。

A：ACM 测试题

仅限使用 C、C++、Java 语言，运行时间限制为 1 秒，内存为 16MB。此测试题请独立完成，不允许拷贝网上已有的代码！

Broken Necklace

You have a necklace of N red, white, or blue beads (3<=N<=350) some of which are red, others blue, and others white, arranged at random. Here are two examples for n=29:

```
            1 2                           1 2
          r b b r                       b r r b
        r         b                   b         b
       r           r                 b           r
      r             r               w             r
     b               r             w               w
    b                 b           r                 r
    b                 b           b                 b
    b                 b           r                 b
     r               r            b                 r
      b             r              r               r
       b           r                r             r
        r       r                    r           b
          r b r                       r r w
        Figure A                     Figure B

              r red bead
              b blue bead
              w white bead
```

The beads considered first and second in the text that follows have been marked in the picture.

The configuration in Figure A may be represented as a string of b's and r's, where b represents a blue bead and r represents a red one, as follows: brbrrbbbrrrrrbrrbbrbbbbrrrrb .

Suppose you are to break the necklace at some point, lay it out straight, and then collect beads of the same color from one end until you reach a bead of a different color, and do the same for the other end (which might not be of the same color as the beads collected before this).

Determine the point where the necklace should be broken so that the most number of beads can be collected.

Example

For example, for the necklace in Figure A, 8 beads can be collected, with the breaking point either between bead 9 and bead 10 or else between bead 24 and bead 25.

In some necklaces, white beads had been included as shown in Figure B above. When collecting beads, **a white bead that is encountered may be treated as either red or blue and then painted with the desired color**. The string that represents this configuration can include any of the three symbols r, b and w.

Write a program to determine the largest number of beads that can be collected from a supplied necklace.

INPUT FORMAT

Line 1: N, the number of beads
Line 2: a string of N characters, each of which is r, b, or w

SAMPLE INPUT

```
29
wwwbbrwrbrbrrbrbrwrwwrbwrwrrb
```

OUTPUT FORMAT

A single line containing the maximum of number of beads that can be collected from the supplied necklace.

SAMPLE OUTPUT

```
11
```

OUTPUT EXPLANATION

Consider two copies of the beads (kind of like being able to runaround the ends). The string of 11 is marked.

```
                Two necklace copies joined here
                              v
wwwbbrwrbrbrrbrbrwrwwrbwrwrrb|wwwbbrwrbrbrrbrbrwrwwrbwrwrrb
```

```
******|*****
rrrrrb|bbbbb  <-- assignments
5xr .....#|#####  6xb


5+6 = 11 total
```

Number Triangles

Consider the number triangle shown below. Write a program that calculates the highest sum of numbers that can be passed on a route that starts at the top and ends somewhere on the base. Each step can go either diagonally down to the left or diagonally down to the right.

```
        7

      3   8

    8   1   0

  2   7   4   4

4   5   2   6   5
```

In the sample above, the route from 7 to 3 to 8 to 7 to 5 produces the highest sum: 30.

INPUT FORMAT

The first line contains R (1 <= R <= 1000), the number of rows. Each subsequent line contains the integers for that particular row of the triangle. All the supplied integers are non-negative and no larger than 100.

SAMPLE INPUT

```
5
7
3 8
8 1 0
2 7 4 4
```

4 5 2 6 5

OUTPUT FORMAT

A single line containing the largest sum using the traversal specified.

SAMPLE OUTPUT

30

请提交你的代码给我们，我们将测试你的代码，并将测试结果反馈给你。如果你之前有参加过 ACM 省队、国家队，或者在 ACM 比赛上获得过什么奖，也请一并告诉我们，感谢。

B：WCTF 测试题

图片里的英语

一恒河沙中有三千世界，一张图里也可以有很多东西。

不多说了，答案是这个图片包含的那句英文的所有单词的首字母。

首字母中的首字母要大写，答案格式是 wctf{一坨首字母}

加油吧少年！看好你哦~

（图片地址：

http://ctf.idf.cn/data/upload/ueditor/547f180022db2.png）

真功夫或运气

这道题就要考验一点真功夫,或者是运气了

下面有一个网址，我举个栗子啊，

http://o5zfda3bu.qnssl.com/2016zx/3/00000.txt

相信聪明的你已经发现了，这个链接指向的文件叫做 00000.txt

于是这道题的目的，就是让你找到正确的文件，里面会写有正确的答案。

当然,为了防止你懵逼,我给出范围:00000-99999

即 http://o5zfda3bu.qnssl.com/2016zx/3/00000.txt 到

http://o5zfda3bu.qnssl.com/2016zx/3/99999.txt

还看不懂我就没办法了 高三班主任是体育老师怪我咯~

嗯，就是这样。

请提交你的结果给我们，我们将测试你的结果，并将测试结果反馈给你。如果你之前有获得过什么奖，也请一并告诉我们，感谢。