

## 460 Overlapping Rectangles

When displaying a collection of rectangular windows on a SUN screen, a critical step is determining whether two windows overlap, and, if so, where on the screen the overlapping region lies.

Write a program to perform this function. Your program will accept as input the coordinates of two rectangular windows. If the windows do not overlap, your program should produce a message to that effect. If they do overlap, you should compute the coordinates of the overlapping region (which must itself be a rectangle).

All coordinates are expressed in “pixel numbers”, integer values ranging from 0 to 9999. A rectangle will be described by two pairs of  $(X, Y)$  coordinates. The first pair gives the coordinates of the lower left-hand corner  $(X_{LL}, Y_{LL})$ . The second pair gives the coordinates of the upper right-hand coordinates  $(X_{UR}, Y_{UR})$ . You are guaranteed that  $X_{LL} < X_{UR}$  and  $Y_{LL} < Y_{UR}$ .

### Input

Input will contain several test case. It begins with a single positive integer on a line by itself indicating the number of the cases following, each of them as described below. This line is followed by a blank line, and there is also a blank line between two consecutive inputs.

Each test case consists of two lines. The first contains the integer numbers  $X_{LL}$ ,  $Y_{LL}$ ,  $X_{UR}$  and  $Y_{UR}$  for the first window. The second contains the same numbers for the second window.

### Output

For each test case, the output must follow the description below. The outputs of two consecutive cases will be separated by a blank line.

For each set of input if the two windows do not overlap, print the message ‘No Overlap’. If the two windows do overlap, print 4 integer numbers giving the  $X_{LL}$ ,  $Y_{LL}$ ,  $X_{UR}$  and  $Y_{UR}$  for the region of overlap.

Note that two windows that share a common edge but have no other points in common are considered to have ‘No Overlap’.

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### Sample Input

```
1
0 20 100 120
80 0 500 60
```

### Sample Output

```
80 20 100 60
```