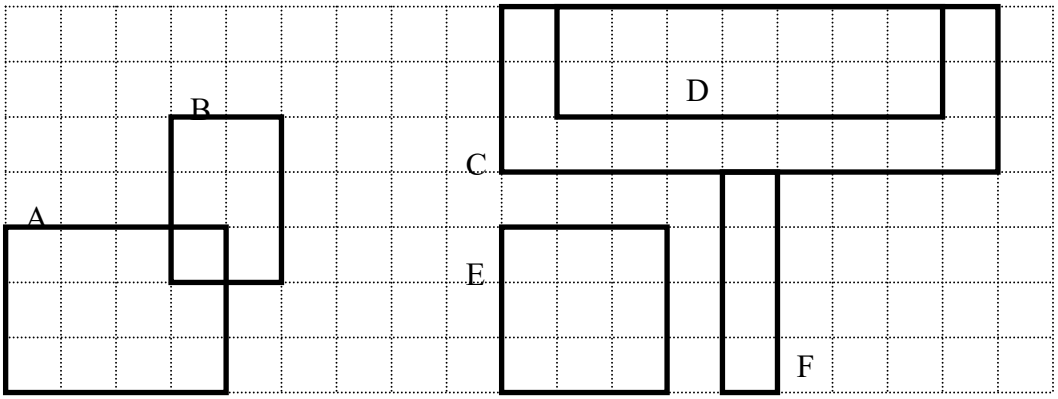
Rectangles Problem

Description. You are to write a program to determine if two rectangles overlap, one surrounds the other, or they have no overlap at all.



One rectangle surrounds another if the other rectangle lies entirely inside the first (their edges may lie on top of each other). Rectangles are said to overlap if both rectangles have some area in common and some are not in common. Lastly, two rectangles have no overlap if they do not share any area in common. Using the examples above:

A and B overlap
C surrounds D
C and F do not overlap (even though they share an edge)
E and F do not overlap

Input Format: Each line of input will contain the two rectangles, expressed as two sets of 4 numbers, for a total of 8 numbers. The coordinates of the rectangles will be listed with the coordinates of the lower-left corner listed first (x followed by y) and the upper-right corner listed second. Coordinates of rectangles will be non-negative integers. A problem involving rectangles A and B would be listed as:

```
3 2 5 5 0 0 4 3        or        0 0 4 3 3 2 5 5
```

There will be at most 100 problems to be solved.

Output Format: For each problem, print out one line of output that has one of the four forms:

overlap no overlap first surrounds second second surrounds first

Sample Input

```
3 2 5 5 0 0 4 3
0 0 4 3 3 2 5 5
9 4 18 7 10 5 17 7
10 5 17 7 9 4 18 7
13 0 14 4 9 4 18 7
9 4 18 7 13 0 14 4
13 0 14 4 10 5 17 7
```

Sample Output

```
overlap
overlap
first surrounds second
second surrounds first
no overlap
no overlap
no overlap
```