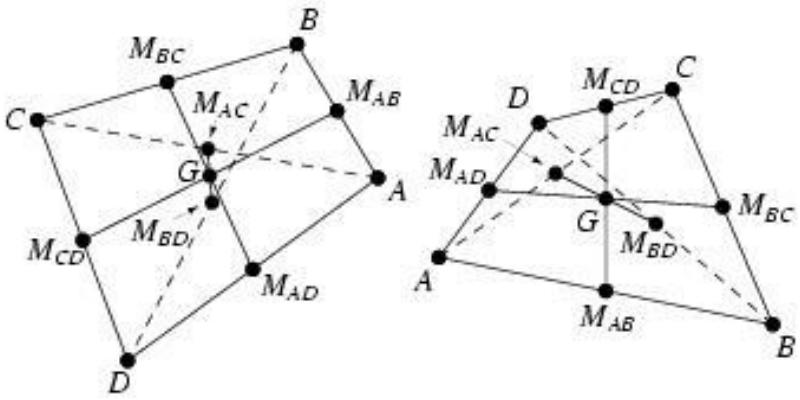
DWITE Online Computer Programming Contest
November 2005

Problem 1

Quadrilateral Centroid

The centroid (centre of mass) of the vertices of a quadrilateral occurs at the point of intersection of the bimedians (i.e., the lines $M_{AB}M_{CD}$ and $M_{AD}M_{BC}$ joining the pairs of opposite midpoints) OR the centroid of the vertices of a quadrilateral is the midpoint of the line $M_{AC}M_{BD}$ connecting the midpoints of the diagonals AC and BD.

http://mathworld.wolfram.com/Quadrilateral.html



Your job as a computer programmer is to determine the centroid of a quadrilateral given the points of its four vertices.

The input file (**DATA11.txt** for the first submission and **DATA12.txt** for the second submission) will contain five sets of data. Each set of data will contain four lines. The first line will contain the X and Y coordinates of point A. The second line will contain the X and Y coordinates of point B. The third line will contain the X and Y coordinates of point C. The fourth line will contain the X and Y coordinates of point D.
-1000 <= X and Y coordinates <= 1000

The output file (**OUT11.txt** for the first submission and **OUT12.txt** for the second submission) will contain five lines of data, corresponding to each set in the input file. It will contain the X and Y coordinates of the centroid, rounded to two decimal places. These two numbers are separated by a single space.

Sample Input (Only three sets of data given)	**Sample Output**
1 -1 1 1 -1.0 1 -1.0 -1.0 4.5 2.5 4.5 10.5 1 10.5 1 4.5 0 0 0 100.5 -250.25 35 -110 1	0.00 0.00 2.75 7.00 -90.06 34.13