**August 2013 - Urban Planning**



Urban planning requires careful placement and distribution of commercial and residential lots.  Too many commercial lots in one area leave no room for residential shoppers.  Conversely, too many residential lots in one area leave no room for shops or restaurants.

The 5x5 grid in Figure 1 shows a sample configuration of residential and commercial lots.  Your job is to reorder the 12 Residential green lots and 13 Commercial red lots to maximize the quality of the layout.  The quality of the layout is determined by a points system.  Points are awarded as follows:

    Any column or row that has 5 Residential lots = +5 points

    Any column or row that has 4 Residential lots = +4 points

    Any column or row that has 3 Residential lots = +3 points

    Any column or row that has 5 Commercial lots = -5 points

    Any column or row that has 4 Commercial lots = -4 points

    Any column or row that has 3 Commercial lots = -3 points

For example, the layout displayed in Figure 1 has a total of 9 points:

Points for each column, from left to right = -3, -5, +3, +4, +3

Points for each row, from top to bottom = +3, +3, +3, +3, -5

**Question:  What is the maximum number of points you can achieve for the layout?**