

## **Abstract**

A preliminary method of determining the optimal spacing of columns, girders, and joists in a structural steel frame based on weight is developed and presented. The program uses a simplified structural design procedure for determining member sections and uses the complete enumeration method for determining the layout with the lowest structural weight. A function that adds a rudimentary labor cost based on the number of connections in the structure is also presented and analyzed. Data covering the entire design space of the optimization problem, rather than just the optimal solution, is produced with the program, presented, and analyzed.